

**A Visit to the Priory: An Interactive Audio Tour**

by

**Caitlin Malone**

A Project Report

submitted to the faculty of

WORCESTER POLYTECHNIC INSTITUTE

in partial fulfillment of the requirements for the

Degree of Master of Science

in

Interactive Media and Game Development

19 April 2016

Approved

---

Brian Moriarty, Project Chair

---

Jeffrey Forgeng

---

Dean O'Donnell

## **Abstract**

The chapter house of the Benedictine priory of Saint John Le Bas-Nueil, currently located in the Worcester Art Museum, is an impressive piece of architecture. However, visitors are currently restricted to admiring the structure and its restoration only, as there is limited information presented in the museum about the room's original use.

The purpose of this project was to produce a low-impact, narrative-driven audio experience designed to increase visitor interest in the museum in general and Benedictine life during the twelfth century in particular. The prototype produced combines elements of traditional audio tours, radio drama, and question-and-answer interaction sequences to provide a self-driven immersive experience.

## **Acknowledgements**

This project could not have been completed without the generous support and contributions of many people. I must first thank my thesis committee for their advice and hands-on collaboration. Brian Moriarty was an invaluable source for game design and audio production advice, as was Jeffrey Forgeng for his expertise in medieval history and museum exhibits. Jeffrey also contributed greatly to the script, character design, and experience design. Thanks also to Dean O'Donnell, who provided concept ideas, editing assistance, and voice acting for the final prototype.

Thanks to our voice actors, who donated their time and abilities to help give the prototype life: Brian Moriarty, Dean O'Donnell, Lee Sheldon, and Anthony Ward. Additional thanks goes to the wonderful Helen Lisanti, who provided narration for the introduction and end credit sequences. This project would not be half as immersive or enjoyable without their voices.

Thanks also to the Worcester Art Museum, for providing this opportunity and making the chapter house available to the local community, and to the monks of St. Joseph's Abbey, who provided psalms from the Divine Office to be included in the tour.

I would further like to extend my thanks to the WPI IMGD community. My fellow students took the time to test my game and I appreciate it greatly. Thanks specifically to Klew Williams and additionally to Allison Kate, who tested the final prototype. Thanks also to everyone in the program who have encouraged me over these past two years.

Thanks also to my friends and family for their endless support and encouragement. Words cannot express how much your enthusiasm for this project means to me.

# Table of Contents

<b>INTRODUCTION.....</b>	<b>1</b>
<b>PROJECT BACKGROUND.....</b>	<b>2</b>
CONCEPT.....	2
PROJECT MOTIVATION.....	3
EXPERIENCE GOAL.....	4
PRECEDENTS.....	4
<i>Definition of Terms.....</i>	<i>7</i>
AUDIENCE.....	7
<b>USER EXPERIENCE.....</b>	<b>9</b>
CONSTRAINTS.....	9
<i>User Knowledge.....</i>	<i>9</i>
<i>Locational Restraints.....</i>	<i>9</i>
<i>Audio Constraints.....</i>	<i>10</i>
<i>App Design Constraints.....</i>	<i>10</i>
<i>Hardware Constraints.....</i>	<i>11</i>
AUDIO EXPERIENCE AND PLAYER MOVEMENT.....	12
ACCESSIBILITY DESIGN.....	12
<i>English as a Second Language (ESL) Players.....</i>	<i>13</i>
<i>Visually Impaired and Hearing Impaired Players.....</i>	<i>13</i>
<b>INSTRUCTIONAL DESIGN.....</b>	<b>13</b>
CORE QUESTION.....	13

SUBTOPICS AND THEMES .....	14
REQUIREMENTS.....	15
USE CASES.....	17
DESIGN .....	17
<b>AUDIO, STORY, AND GAME DESIGN.....</b>	<b>20</b>
THE ISSUE OF CHOICE .....	20
WRITING CONSIDERATIONS .....	21
WRITING THE PROTAGONIST.....	22
WRITING ABOUT GENDER .....	23
<b>GAME OVERVIEW .....</b>	<b>24</b>
STORY.....	24
<i>Premise</i> .....	24
<i>Setting</i> .....	24
<i>Characters</i> .....	26
STRUCTURE.....	29
<i>Tour Types</i> .....	29
<i>Introduction</i> .....	31
<i>Screens</i> .....	32
<i>Audio Experience</i> .....	33
<i>Asking Questions</i> .....	34
<i>Areas and Choices</i> .....	36
<i>Transitions as Information Points</i> .....	37
<i>Ending and Quiz</i> .....	37

<i>Credits</i> .....	41
MECHANICS .....	41
<i>Character Interaction (Asking Questions)</i> .....	41
<i>Areas and Choice</i> .....	42
<i>Quiz</i> .....	42
CONTROLS .....	44
VISUAL ART .....	45
<i>Style</i> .....	45
<i>Area Backgrounds</i> .....	45
<i>Buttons</i> .....	45
<i>Icons</i> .....	45
<i>Maps</i> .....	46
<i>Transition Images</i> .....	46
<i>Synchronized Text</i> .....	46
<i>Character Labels</i> .....	46
<i>Audio/Text Screen Options</i> .....	46
<i>Game Icon</i> .....	47
<i>Main screen</i> .....	47
<b>AUDIO RECORDING AND EFFECTS</b> .....	<b>48</b>
RECORDING PROCESS.....	49
VOICE ACTING .....	49
SOUND EFFECTS AND AMBIENCES .....	49
<b>PLATFORMS AND PRODUCTION SOFTWARE</b> .....	<b>49</b>

<b>TECHNICAL DEVELOPMENT .....</b>	<b>50</b>
CONCEPT RESEARCH (PROTOTYPE 1.0).....	50
SCRIPT EDITING/TECHNICAL RESEARCH (PROTOTYPE 2.0).....	50
TESTABLE PROTOTYPE (3.0) .....	50
FINAL PROTOTYPE (4.0).....	51
DEVELOPMENT IN REN'PY 6.99 .....	51
APPLICATION DEVELOPMENT .....	52
<b>PROJECT TESTING .....</b>	<b>53</b>
<b>PROJECT TEAM AND PROJECT MANAGEMENT .....</b>	<b>54</b>
<b>POST MORTEM .....</b>	<b>55</b>
THINGS THAT WENT WELL.....	56
THINGS THAT WENT POORLY .....	57
THINGS THAT COULD HAVE BEEN IMPROVED .....	57
<b>CONCLUSIONS &amp; FUTURE WORK .....</b>	<b>59</b>
<b>WORKS CITED.....</b>	<b>60</b>
<b>APPENDIX A: AUDIO TOUR SCRIPT .....</b>	<b>61</b>
FULL EXPERIENCE .....	61
<i>Purpose: Describe opening experience, 7 areas, characters, and player interaction .....</i>	<i>61</i>
<b>PLAYER CORE INTERACTION.....</b>	<b>61</b>
<b>OPENING EXPERIENCE.....</b>	<b>61</b>
<b>MODULE 1: FRONT GATE.....</b>	<b>62</b>

PORTER: BROTHER MATTHEW .....	62
<i>Characterization</i> .....	62
KEY MESSAGES .....	63
AMBIENCE .....	63
DRAFT.....	63
PLAYER INTERACTION .....	67
<b>AREA 2: CHAPTER HOUSE .....</b>	<b>69</b>
CHARACTER: CHAMBERLAIN, BROTHER NICHOLAS.....	69
<i>Characterization</i> .....	69
KEY MESSAGES .....	69
AMBIENCE .....	70
DRAFT.....	70
<i>3 Areas</i> .....	71
<i>Other</i> .....	71
PLAYER INTERACTIONS.....	71
TRANSITIONS .....	72
<i>To Ending</i> .....	72
<i>Area Transitions</i> .....	73
<b>AREA 3: INFIRMARY .....</b>	<b>74</b>
CHARACTER: INFIRMARIAN, BROTHER JOHN .....	74
KEY MESSAGES .....	74
AMBIENCE .....	74
DRAFT.....	75



PLAYER INTERACTION .....	76
<i>To Ending</i> .....	78
<i>Area Transitions</i> .....	78
<b>AREA 4: CHURCH .....</b>	<b>80</b>
CHARACTER: SACRISTAN, BROTHER SIMON .....	80
<i>Characterization</i> .....	80
KEY MESSAGES .....	80
AMBIENCE .....	81
DRAFT.....	81
PLAYER INTERACTION .....	83
TRANSITIONS .....	85
<i>To Ending:</i> .....	85
<i>Area Transitions</i> .....	85
<b>AREA 5: KITCHEN .....</b>	<b>87</b>
CHARACTER: CELLARER, BROTHER MARTIN.....	87
KEY MESSAGES .....	87
AMBIENCE .....	88
DRAFT.....	88
PLAYER INTERACTION .....	89
TRANSITIONS .....	91
<i>To Ending:</i> .....	91
<i>Area Transitions</i> .....	91

**AREA 6: SCRIPTORIUM..... 92**

CHARACTER: PRECENTOR, BROTHER STEPHAN ..... 92

*Characterization* ..... 92

KEY MESSAGES ..... 93

AMBIENCE ..... 93

DRAFT..... 93

PLAYER INTERACTION ..... 95

*To Ending*..... 97

*Area Transitions*..... 97

**AREA 7: CHAPTER ROOM ..... 99**

CHARACTER: PRIOR, PETER OF POITIERS ..... 99

*Characterization* ..... 99

KEY MESSAGES ..... 99

AMBIENCE ..... 99

DRAFT..... 99

PLAYER INTERACTION ..... 101

QUIZ RESPONSES ..... 102

END TRANSITION ..... 102

CREDITS..... 102

**APPENDIX B: QUIZ QUESTIONS ..... 104**

FRONT GATE..... 104

*Core*..... 104

<i>Specific</i> .....	104
CHAPTER HOUSE.....	105
<i>Core</i> .....	105
<i>Specific</i> .....	105
INFIRMARY .....	106
<i>Core</i> .....	106
<i>Specific</i> .....	106
CHURCH.....	107
<i>Core</i> .....	107
<i>Specific</i> .....	108
DINING HALL/KITCHENS .....	108
<i>Core</i> .....	108
<i>Specific</i> .....	109
SCRIPTORIUM.....	110
<i>Core</i> .....	110
<i>Specific</i> .....	110
<b>APPENDIX C: USE CASES AND USER STORIES .....</b>	<b>112</b>
USAGE EXAMPLES .....	112
<i>Family Players</i> .....	112
<i>Educator Player</i> .....	112
USER STORIES.....	114
<i>Generic User Accessing App through Online Marketplace</i> .....	114
<i>Generic Player</i> .....	114

<i>English as a Second Language (ESL) Player</i> .....	115
<i>Hearing Impaired Player</i> .....	115
<i>Vision Impaired Player</i> .....	115
<i>Middle-School Aged Player</i> .....	116
<i>High-School Aged Player</i> .....	116
<i>Generic Adult Player</i> .....	116
<i>Subject Matter Expert (SME)</i> .....	117
<i>SME Adult Player</i> .....	117
<i>Educator</i> .....	117
<i>Audio Designer</i> .....	118
<i>Programmer</i> .....	118
<i>Interface Designer</i> .....	118
<b>APPENDIX D: PLAYER TESTING SURVEYS</b> .....	<b>119</b>
PRE-TEST .....	119
POST-TEST .....	120
<b>APPENDIX E: SOUND EFFECT RESOURCE LIST</b> .....	<b>122</b>

## Introduction

This paper will discuss the IMGD Master's Project *A Visit to the Priory*, an interactive audio drama produced in relation to the chapter house at the Worcester Art Museum. An advanced prototype was produced in Ren'Py showcasing the audio experience, player interactivity, and look-and-feel of the final smartphone app, with resources produced for further production.

This was a solo student project. I worked in tandem with Brian Moriarty and Jeffrey Forgeng to design the initial experience and iterate the script. Brian provided technical expertise in app design, player experience, game mechanics, and audio production as well as access to resources such as sound libraries. Jeffrey acted as a representative of the Worcester Art Museum and provided expertise in audience engagement, content appropriateness for the audience, and player experience, along with access to the chapter room in the museum. Dean O'Donnell also assisted in the project, acting as a reader and providing access to campus comedy productions for voice talent.

The current prototype is feature complete. Further production would involve continuous testing with the target audience and iterating on feedback, as well as production of original sound and art assets and the use of professional voice talent.

# **Project Background**

## **Concept**

The player takes the persona of a young boy in the twelfth century, sent to his uncle's priory to deliver a manuscript to copy. The boy is considering becoming a monk, and his uncle, Prior Peter, has arranged for him to take a tour of the cloister while he is there. The player has the choice of three tour lengths, and for each they will encounter up to six different areas and nine unique characters living in the cloister. Each area and its characters are associated with different rooms of the priory and specific themes.

The first part of every area consists of preset audio that introduces the room, its purpose, and the main character for that area. This audio includes not only direct dialogue to the player but also sound effects and conversations happening in the background.

Although the game technically has a silent protagonist, in that the character has no voice, the player can interact by asking three questions for each area, each of which receives a response from the area-specific character discussing a topic in more detail. These questions are drawn from the topics discussed in the preset audio for each area.

At the end of the experience, the player has the option to take a quiz to see how well they listened to the information presented. The quiz consists of five questions drawn from the questions the player asked during the tour, or from a general bank of questions if the player asked no questions.

The priory inhabitants, eager to encourage the son of a wealthy patron to become a monk, tell the player about their daily lives, but the player can also learn from the interactions they have with each other and the soundscape surrounding them.

The app is designed to be experienced in the chapter house at the museum, but is flexible enough to be experienced almost anywhere.

## **Project Motivation**

This project was completed under the advisement of Jeffrey Forgeng, Curator of Arms & Armor and Medieval Art, acting as a representative of the Worcester Art Museum. Due to time constraints and concerns that directly working with the museum would gridlock the project, we worked in an informal capacity based on Jeffrey's needs as an exhibit curator. The next step for this project will be to officially present it to the appropriate subcommittees at the museum (see *Conclusions & Future Work* for more information).

The chapter house in the museum is presented with information about its restoration, but with little explanation as to how it was used in the original priory. We wanted to create material that would supplement the existing architecture and add context to the otherwise empty space. By developing visitor interest and appreciation for the chapter house, we also hoped to develop an appreciation for museums in general and for the Worcester Art Museum in particular.

The chapter house is a fragile reconstruction, and very few permanent fixtures are allowed there. In addition, the museum's technological resources are never dedicated to specific installations for very long and were already accounted for. We were interested in working within the limitations given to us to produce an interactive media product that would not be intrusive to enjoyment of the room or to the museum in general.

A strong motivation to this project was to present historical information interactively, but more specifically presenting information in a human way – describing the lives of people in ways that would promote an emotional response in the player.

## **Experience goal**

The experience goal for this project was primarily immersion and secondarily knowledge presentation. It is important both to representatives of the Worcester Art Museum and myself to present information that is useful to the core experience goal and answers questions about medieval monastic life. Ideally, we would like visitors to walk away from the experience with new understanding of the time period. However, immersion and enjoyment also important considerations. Our primary goal was to arouse visitor interest in the museum in general, and we wanted to encourage exploration and reward curiosity.

We developed a specific question that the tour should answer that covered both the experience goal and our knowledge goal. Our stated goal was, “How did the monks live in these architectural spaces, and why?” From this starting point, we developed a set of subtopics and themes that different parts of the tour would answer. Visitors would undoubtedly pick up some of this information in their tour session, and hopefully use that information to produce greater understanding of the core message of the tour, while associating a pleasant experience in the tour with the Worcester Art Museum.

## **Precedents**

Self-guided audio tours are already a well-established medium, and many freely downloadable options exist for smartphones and media players. The established format of many audio tours is non-interactive and linear. Visitors to a location with an audio tour are often given



a map outlining the expected route of the tour. When the visitor reaches a point of special interest on the map, they start the audio, listen to a short clip, and then stop the audio and continue on to the next checkpoint. These clips often contain anecdotes or factual information that are only tangentially related to each other.

In the local area, the Boston Public Gardens offers a free tour for media players and web-capable devices. It consists of eighteen sites situated on a path through the gardens. Each key location is accompanied by stories about the history of the gardens narrated by local people, ambient sound effects, and original music. These audio clips are frequently factual or otherwise contain short stories that are not associated with each other and have no narrative arc.

The Alcatraz Cellhouse Audio Tour is one of the most well-known and successful self-guided museum tours. Visitors to the former prison are provided with the audio tour materials and a set route to follow. At specific points, the visitor is instructed to turn on the tour and listen to a segment of audio. The audio clips contain narration, ambient sound effects, and the voices of former guards and inmates telling stories about their time in Alcatraz. The voices of the actors and narrators, as well as the sound effects, were recorded with binaural sound to help the visitor visualize what the prison would have been like when it was in service.

However, one of the limitations of the Alcatraz Audio Tour is a lack of interactivity. The original tour was distributed using cassette tapes, and as a result the narration is linear and the user's path predetermined. Visitors to the museum are restricted to the format presented to them.

Another form of interactive education is historical reenactments. The DuPont power yards and Hagley Museum in Wilmington, Delaware, use actors in period dress in its permanent structures to interact with visitors. These buildings, which include workers' houses, machinery

buildings, and a schoolhouse, are reproductions containing personal details of how people of the 19<sup>th</sup> century lived. The actors are trained to point out key details of the environment and to give expert demonstrations of skilled tasks that the workers performed. Of particular note is that these actors will often tailor their information to specific demographics. For example, mixed tour groups receive a general overview of information for a particular area, while school tour groups receive information that would have directly affected children, including what life in the schoolhouse was like and what chores they would have been expected to complete.

The method of writing was influenced by radio drama, particularly by crime dramas of the 1940s and 1950s such as the Richard Diamond and *Dragnet* radio shows. These shows used dialogue to present information and a combination of dialogue (as exposition) and sound effects to express action, movement, and even the emotional states of characters. Additionally, analysis of Orson Welles' 1938 broadcast of *The War of the Worlds* was used to understand how sound effects, pauses, and tone of voice could be used to convey personality through entirely auditory means (Hand 22-32). Both the serial radio shows and the one-time production of *The War of the Worlds* attempted to create a fictional, yet believable, scenario through sound effects, characterization, and information presentation in a compelling way.

A specific influence on the concept and writing of the tour is *The Name of the Rose* by Umberto Eco. *The Name of the Rose* is a 1980 historical murder mystery set in an Italian Benedictine monastery. Eco imbued his work with historical detail and intrigue. A great deal of his novel is dedicated to describing the environment of the monastery and the interactions between monks, including the organizational structure and how monks spoke to one another.

## ***Definition of Terms***

The design of the app defies a direct application of usual definitions. Is it an audio drama, if it is interactive? Is it an audio tour, if the player never leaves their seat, and instead tours a virtual world? Is it a game, if the major goal is not controlled by the player, and the major goal for the designers is information presentation? Does it count as a work of interactive fiction, despite the enormous emphasis on the script, if it defies so many of the conventions that interactive fiction consumers often expect – such as click-to-advance, self-controlled plots; an emphasis on text over audio; and a focus on interpersonal relationships over facts? Is it really an app, even a fledgling one, if the prototype never made it onto a smartphone?

For the purposes of this document, I will use the term *interactive audio tour*. I feel that this most clearly represents what we were trying to accomplish in our design: an interactive way of engaging in content while, in some sense, touring a virtual world. I will continue to use the term *player* to describe users of the interactive audio tour, because I feel it best represents the gamified mindset that we used to approach user design.

## **Audience**

Our audience draws from the general museum audience. According to requirements for museum exhibits, we needed to appeal to visitors who had at most an education and proficiency in English equivalent to middle school students. In particular, we needed to make sure the vocabulary and concepts presented would be understandable by seventh grade students and older.

In order to present information in an efficient way, and to avoid repeating information that players may already know (especially adults), we made some assumptions about players'

background information. In particular, we assumed that the player would already have some idea of what a monk and a monastery were, even if they had no knowledge of any specific monastic order such as the Benedictine Order. We also assumed that the player had some general knowledge of life as a medieval noble, particularly the life of a knight. As the museum has a permanent display of arms and armor located near the chapter house, we felt this was a reasonable expectation.

Additionally, we made assumptions about what visual information could be left out, as only minimal visual media is included in the design (see *Visual Media* for details), and an audio format is not an efficient way to describe visual information given the goals of the project and the time constraints of keeping the player's interest (see *User Experience*). We assume that the player has seen some depiction of a medieval monk's habit and hairstyle (tonsure) as well as a medieval manuscript. We found that leaving out these details allowed for more freedom for the player to develop their own mental image of the monks and the experience. As exact information retention was not a learning goal, it was more advantageous to us to allow the player to develop their own interpretation of the experience rather than to lecture them. In particular, we asked the player to contemplate the chapter house itself instead of lecturing them on what they ought to see.

Alternatively, we tried not to make assumptions as to the cultural background of the player. In particular we do not assume that the player is Christian, and we included information about Communion and Mass in the general sense as we explained particulars of the monks' religious observances.

Finally, we also attempted to use specific life experiences in our characterization of the monks in order to discuss facts that might be misrepresented in popular media. These facts

include the distinction of feasting as a religious celebration (as opposed to the depiction of feasting common in fantasy and medieval media); how much monks ate and how they were affected by food supplies and famine; how often monks are silent and how practical the requirements of monastic life were; and how much medieval people, particularly monks, cared for the sick.

## **User experience**

### **Constraints**

#### *User Knowledge*

The user experience involved one of the classic challenges of experience design: How to design a system for a variety of usage types for a variety of users. Although this may seem to allow for a great degree of freedom in design, we could make no assumptions about the player's familiarity with interactive media, their intended use of the system, or the player's interest.

#### *Locational Restraints*

Museum representatives preferred a system with minimal impact on the museum exhibits themselves. This is particularly true in the chapter room, as the walls are fragile and permanent displays are kept to a minimum. We were also concerned that we could not rely on Internet connectivity in the museum or chapter room, and that download times for accessing the app from online stores would be prohibitive if the app was advertised in the chapter room itself.

Although the project did not advance to the deployment stage, these considerations explain why we went with a low-impact design with minimal advertisements or displays for the app outside of the main lobby of the museum.

We were also limited by producing an application that is designed to be used primarily in a public space. In these environments, interruptions are frequent and noise levels are not controllable by the player. We needed to create an audio experience that could be clear and understandable in these situations, and which also had the ability to pause the experience so the player can attend to interruptions.

### ***Audio Constraints***

Apple smartphones have significant restrictions on the quality and range of audio that can be experienced in a web browser. This restriction prevented us from using web-based platforms for the audio tour, as only very basic audio would be experienced by players using iPhones.

### ***App Design Constraints***

Certain considerations regarding app design were pertinent to the prototype's user interface. The relatively small screen size of smartphones limited the amount of information that could be presented at a time. A great deal of the implementation of the tour in the prototype was adjusted based on this limitation. Text had to be large in order to be readable, and the amount of text on the screen had to be adjusted based on its appearance to the user. This meant that some sentences had to be broken apart at key points, and the corresponding audio had to be adjusted to match. Some rewrites to the script had to occur, primarily in sentence structure, so information would be presented more logically on the screen in this format.

The nature of touchscreens necessitated that any player interactions had to occur with large interaction areas and limited options. A rule of thumb we followed for these interactions is that no more than four options should be provided to the user on any one screen. This dictated the number of questions available for each section and the size and layout of the image map used

for area choices (see *Game Overview* for more information). We also limited the amount of information presented to the user on screen to prevent confusion, electing to produce a minimalistic design that also aligned more closely with other branded content produced by the Worcester Art Museum.

### ***Hardware Constraints***

Users of the app could potentially be using smartphones from a variety of manufacturers, each model of which could have a different screen size and resolution. I sought to make my design adaptable to most phone controls (see *Technical Development*), and looked for prototype tools that could be easily ported to a variety of devices. I focused my attention on the two largest distributors of phones, Android and Apple, and intended to release the finished app on both iTunes and Google Play. In addition, I used a 720p resolution in landscape mode in the prototype to mimic the orientation and screen 16:9 ratio common on most phones for testing purposes. If Ren'Py is used for deployment, the Ren'Py distributor would automatically resize this screen size to work on a variety of devices (see *Technical Development*).

We also could make no assumptions about the quality of the equipment that the player would use. Although most smartphones generally have adequate sound performance, it is likely that many players would use basic headphones or earbuds to listen to the tour. The design of the audio experience therefore had to accommodate the fact that much sound quality and quiet background noises might be lost. This is the main motivation behind our movement from binaural to stereo recording for background ambiences (see *Audio Recording and Effects*).

## **Audio Experience and Player Movement**

It was initially suggested that the tour experience should incorporate an element of traditional self-guided audio tours by having players move around the chapter room and the adjacent space. The player would be directed to stand facing in a specific direction at each location, and directional audio would then be used to give the impression of the player being surrounded by the sounds of the priory on a typical working day (see *Audio Recording and Effects* for discussion of directional audio). The area directly outside the chapter room is designed in the same style as a Romanesque courtyard, which was a direct inspiration for the monastic cloister and similar in design to what the priory floorplan may have actually been like. The exact order and method behind this concept was changed several times before the concept was removed entirely. The museum layout is not entirely accurate to the floorplan of the priory, and as such many of the “rooms” that players would have been directed to stand in were not physically present. The resulting confusion players might have experienced would likely have detracted from the experience more than directional audio would have added to it. The player is now asked to sit in the chapter room so they can focus on the audio in the environment that the monks would have lived in. No orientation information is given to the player.

## **Accessibility Design**

My stretch goals for this project were to implement support for English as a Second Language players (particularly by supporting Spanish translations) and for visually impaired and hearing impaired players. The audio-based nature of this project necessitated that these considerations be included in design planning from an early stage, but the final form of the project and the way the prototype was implemented naturally supported audio-text pairing.



### ***English as a Second Language (ESL) Players***

Ren'Py, the engine used for the development of the prototype, has built-in support for different languages. Although this feature was not taken advantage of in the prototype, language support will be an important feature of future development.

### ***Visually Impaired and Hearing Impaired Players***

The prototype design uses a synchronized audio and text combination in most screens. Synchronized text was suggested as a way to provide visual stimulation to players and to retain interest, but this feature also works well for players with visual or auditory disabilities.

Most of the screens in the experience have both auditory and visual components, with the exceptions being menus, the area choice map, and the quiz. Ren'Py has a system for voicing menu options built in. Future versions in the tour will likely need to have voiced menu options as part of the application design.

## **Instructional Design**

### **Core Question**

This project sought to answer the question “How did the monks live in these architectural spaces, and why?” Our interest was to show the human side of these characters and show, by example, how they might have lived their lives in a way that makes the concepts accessible to many people. We intended to focus on the practical nature of monastic life and how it would affect many things that would personally impact the listeners.

## Subtopics and Themes

We developed a list of general concepts that could be discussed to answer our core question. It was decided that these concepts would easily translate to specific areas and characters, especially to characters in an organizational capacity. (*See **Game Overview** for details about areas and characters.*) These concepts included:

- How their day was organized. Benedictine monks schedule their day around the Divine Office, a series of observances at set times for prayer. This information was primarily given in the Church by the Sacristan.
- What they wore and what items they were allowed to keep. Monks took a vow of poverty and were issued their clothing, hygiene products, and work tools by the monastery. This information was associated with the Chapter House and the Chamberlain.
- The monastery as a place isolated from the rest of the world. Monks were expected to never leave the cloister unless absolutely necessary, and outsiders were rarely permitted inside. This information was associated with the Gatehouse and the Porter.
- What they ate and how much food they were allowed to eat. Monks ate regularly and in fact better than most people in the medieval ages, but were given specific rations and were forbidden certain foods. This information was presented in the Kitchen by the Cellarer.
- What medical care was like and how they received it. The infirmary was located slightly away from the cloister to isolate infectious monks, and monks received consistent care for medical problems at all stages of life. This information was provided in the Infirmary by the Infirmarian.

- The purpose and effects of copying books. Monks copied old manuscripts (or codices) primarily to practice reading and writing for their studies of Scripture, but the libraries they built up were useful for other studies and preserved knowledge that would otherwise have been lost. These concepts were discussed in the Scriptorium by the Precentor.

These topics were selected based on whether they represent features of monastic life that are significantly different from modern life and modern understanding of medieval life in general, as well as whether the information can be of direct interest to the player. These topics all involve experiential information that would affect the player on a personal, even basic level if they experienced the monk's lifestyle: What they would eat, how they would dress, and how they would be expected to spend their time.

## **Requirements**

As many of our potential users are likely to try the app during a larger, extended visit to the museum, significant limitations on the instructional design were expected.

Our primary concern was to produce an educational experience that succinctly described the core message of the app in a limited time frame. Players visit the museum to see physical art, not to do something they could experience at home. The app needed to be designed to be used during downtime in the chapter room or elsewhere in the museum. The chapter room itself is an ideal spot for quiet relaxation due to being out of the way of most museum traffic and being made of stone, which naturally dampens sound. The lack of information present in the room itself means that visitors who are interested in the room and want to know more may be willing to sit down in this space and experience a more restful activity before resuming the rest of their museum tour.

Once players began playing the app, we needed to present information in a way that keeps their attention. Interactions needed to have concrete results and information needed to be presented that could be directly interesting or important to the user. We wanted to avoid a passive experience, or the feeling the app was lecturing at the player, rather than interacting with them. We also needed to present information in a way that makes the player feel compelled to sit through to the end of the tour. Unlike many other apps, this app is likely a one-time-use activity and players are unlikely to visit it frequently in the future, if at all. The first use of the app needed to feel substantial, satisfying, and compelling, because it is unlikely that the player will pick it up again.

We also had to present our information in a small screen space. As mentioned in *User Experience*, in order to accommodate a variety of users and phones, text needs to be big and choices needed to be limited to four per screen or less. This affected the structure of the script, as only about one or two lines of text could comfortably fit on the screen. This also limited the amount of options we could present to the player, as any more buttons may induce “information burnout” or choice overload on the player. Rather than add in additional screens to cover more topics, we limited our choices to three questions per area, and edited the script accordingly. Thankfully there was significant enough flexibility in the script that this worked to the app’s benefit, rather than its deficit, producing a more streamlined experience. In some cases, questions were integrated with others, some information that was extraneous was dropped, and other information was worked into the preset audio as references, background actions, or sound effects.

## **Use Cases**

*Please see **Appendix C** for full list of use cases.*

A set of use cases were produced in order to understand how different players may use the audio tour and have different expectations of it. In particular, it was assumed that different players may have different usage styles depending on their expectations of the tour. Although there may be an “ideal” way to use the tour considering how it is designed, it is understood that few players in real life will conform to this standard. I attempted to predict how the tour might be used by different players of different ages, understanding of the topic, play goals, and levels of interest. The tour is designed to be used by a single person, but cases for group or classroom use were also included.

## **Design**

Our fundamental instructional design conclusion was that we should produce an experience with a minimum of restrictions or requirements on the part of the player. Players who are using an app for a limited period of time have low investment in the experience and are likely to end the session early if they are inconvenienced or are not getting any enjoyment out of it. It was my job as a designer, therefore, to produce an app that would work with rather than against a player, and would not necessarily inhibit the use of the app if it is not used in the specific way it was intended to be used. Furthermore, the audio tour needed to be designed to attract and keep the player’s attention by consistently providing new information, opportunities for interaction, and novel experiences.

Originally, the interactive audio tour was designed to have a specific goal that needed to be completed: The player was told that they needed to deliver a book, Theophilus’ *List of Various*

*Arts*, to the Prior, but had to track him down through a variety of locations throughout the priory. At each location, the player could ask a question (“Have you seen the Prior?”) designed to help them reach this goal, and the area character would respond in confirmation (“You just missed him!”) or negation (“He hasn’t been here.”), along with a suggestion as to where the Prior might be. The goal itself was largely an illusion, in that the player would “win” as long as they reached the end of the tour. This method was rejected for two reasons: One, in that it contributed to issues of choice (see *Audio, Story, and Game Design* for details), and for another, that it worked against the experience goal by encouraging players to reach the end in the most efficient time. If players focused on finding the Prior, the learning goal could become secondary or ignored completely, and not all areas would be visited. This design also discouraged exploration by implying that there was a “correct” way to play the game, or that there was a goal that the player “should” be focusing on instead of learning about the virtual world.

We incorporated elements of this previous design into the area choices, allowing the player to focus on what they considered the most interesting, but avoiding giving them choices with permanent (and potentially undesirable) consequences. To accommodate players who would prefer shorter experiences, we present a tour length choice at the beginning of the experience of short, medium, and long, in which the player visits three, five and seven areas respectively. The goal of delivering the book became a premise of the story that the player could not effect, as the book is mostly an excuse for the player character to visit the priory. The questions at the end of each section were turned entirely into information-gathering opportunities rather than goal-oriented actions.

We present the information in the interactive audio tour without comment. The experience is open-ended to allow for passive or active listening. Players can interact with the

tour as much or as little as they want, and can take away any information that they personally engage with. We wrote the script with the themes described in *Subtopics and Themes* in mind so that they are referenced or reappear in multiple parts of the experience, particularly in the preset audio sections, in the mandatory first two areas of each tour (The Gatehouse and the Chapter House), and in the two areas that are visited by both the medium-length and full-length tours, the Church and Scriptorium. The player can also choose to take the ending quiz, but will receive no penalty if they do not.

Obtaining and sustaining player interest required limiting the length of non-interactive sections and the length of the whole tour. The audio sections are limited to a maximum of about two minutes and are regularly interspersed with interactivity. Text is presented on screen synchronized with the audio, as this technique has been found to hold the attention of viewers of audiovisual media (an example of this done well is Brian Moriarty's *Whispering Pines*). We purposely avoided lecturing the player and attempted to “show, not tell”, in an auditory sense, by presenting information with character interactions and sound effects. The soundscape thus created allows the players to imagine the priory and immerse themselves in their own virtual world.

The premise itself – exclusive access into a normally forbidden area and experiencing the past in first-person – can help attract and sustain player interest, as they can explore the priory at their own pace and learn what their life might have been like in this slice of medieval culture.

# Audio, Story, and Game Design

## The Issue of Choice

Concerns about player choice arose multiple times during prototype development. As this interactive audio tour is designed for one-time use, every choice the players make count. If a player misunderstands a choice, makes a mistake, or is given options in a branching narrative, whatever they were unable to access is forever a missed opportunity for them. We were concerned with balancing two issues that often plague branching interactive fiction: The scourge of missed opportunities, and the blight of clearly illusionary choice. We did not want the player to feel stressed by a choice that requires them to limit their choices or punishes them for exploring, as was the case with the “finding the Prior” goal mentioned in *Instructional Design -- Design*, but requiring the player to visit all areas effectively made this goal useless to the player – it can’t be acted upon, so why have it? Such goals are uninteresting and even patronizing to the user. This is why when the “finding the Prior” goal was removed from gameplay, it was moved into the story premise as a character motivation and informational concept, rather than remaining as an interaction.

Our goal therefore was to provide player choice and interactivity that promotes exploration and the opportunity to do everything, while being clear as to how the tour is organized. The player is given both audio and visual cues during transitions between areas and when presented with choices such as asking questions, selecting a new area from the map, and choosing whether to take the ending bonus quiz. For example, in the second area of the tour (when the mechanic of choice is first presented to the player), if the player has selected a tour length involving choice (the five-area or seven-area tours), then they are presented with a map



showing all of the areas they can access and are asked “Where would you like to go **first**<sup>1</sup>?”

Text-based indicators were also carefully designed to be clear in their purpose; for example, during question interactions the button to end the interaction is tersely labeled “Done” rather than something like “Go to next area” to be very clear as to its purpose.

## **Writing Considerations**

As mentioned before, a guiding concept for the writing of the script was “show, don’t tell” – or more appropriately for this format, “Hear, don’t tell”. The audio sections are written with little vignettes of priory life going on around the player. For example, the Chamberlain and the Cellarer both interrupt their introductions to the player to give orders to other monks, and the player overhears the Infirmarian while he is treating a patient. These sections are used with sound effects to present information organically, and often incompletely, so that further inquiries can be made during the interaction sessions. These vignettes often included opportunities to present information that may never be explained to the player despite being important to immersion, such as hearing activities going on in a space or observing how managers in a priory speak to their subordinates.

These sections also helped to present opportunities for characterization, which was an important way of differentiating areas of the priory. For example, the Infirmarian and the Precentor both run traditionally quiet areas of the priory (the Infirmary and the Scriptorium), and are more softly spoken compared to the Chamberlain, who is associated with the Chapter House (the one place that monks can speak freely) or the Cellarer (who runs the noisy and busy kitchens). When writing these characters in a limited space, every opportunity counts. Characters

---

<sup>1</sup> Emphasis is for the purposes of this essay and is not present in the prototype.

were differentiated by the way they spoke to other monks, how they addressed the player, their personal interests in the topics they discuss, and their occupations within the priory.

Sound effects were added both to explain the actions of unseen characters and to create a feeling of immersion in a space. Ambient audio provides important details to the player that helps them orient themselves in the virtual world, such as whether or not they are outside or the direction of specific sounds (with stereo audio). Additionally, sound effects were important in giving the player character a sense of presence in the world, as the character never speaks (see *Writing the Protagonist*, below).

A significant portion of the bulk of the script is taken up by transitions and supplementary audio. These are dialogue snippets that do not directly relate to the game premise or learning goals, but are necessary in order to keep the flow of the experience clear to the player and to inform them when they need to make a choice. Transitional audio includes short statements associated with the map explaining which areas are available to visit, and statements made by the characters when a choice is made or when the tour directs the player to a new place (for example, “I’ll just walk you there,” when a choice is made, or “Have you been to the Scriptorium yet?” if there is only one area left to visit).

## **Writing the Protagonist**

The protagonist needed to appeal to a wide audience or at least not prove objectionable to a large portion of people. He was made to be a silent protagonist and to have little backstory for this reason; we avoided imposing any characteristics onto the player whenever possible. We did however make him a young man considering becoming a monk for a specific reason – it is the most historically accurate reason why a person would be given access to the cloister who did not

already know about monastic life. Beyond this, we made an effort not to talk down to the player or to assume the opinions or characteristics of the person playing the interactive audio tour.

## **Writing about Gender**

It is notable to mention issues concerning gender as they affected some of the structure and information presented in the tour. By modern standards, the ideology of the Catholic Church in the twelfth century was sexist. Women were never allowed within the walls of a monastery and monks were forbidden to have any contact with a woman in any capacity. This fact is considered by many to be important to an understanding of medieval history, and we considered at great length addressing it directly during the audio tour. I submit, however, that this fact is already well known by the public at large, especially in our target audience of middle school age children and older. In some sense, this is often the bulk of knowledge that many people have about women in history. I felt that the addition of this information would be unnecessary and looked for other information that might address the role of women in the clerical estate. In particular, it is notable that women in the nobility could be patrons of the arts, and thus it would make sense that a woman would both have access to a copy of Theophilus' *List of Various Arts* and the ability (and willingness) to lend it to a priory.

We were also very fortunate to acquire voice acting by the excellent Helen Lisanti as our narrator. We feel that the addition of this narration by a woman rounds out the feel of the audio tour.

## Game overview

### Story

#### *Premise*

On introduction to the audio drama portion, the player is presented with two related motivations. The player character is a boy, the younger son of a noble who is considering becoming a monk. The character has been sent to the priory by his mother, Lady Marie of Poitiers, to visit his uncle, Prior Peter. The player has brought a manuscript of the *Schedula Diversarum Artium*, or *List of Various Arts*, to be copied by the monks in the priory. During his time there, he is also allowed into the cloister to tour the priory and learn about monastic life.

#### *Setting*



Figure 1: The complete version of the priory map. Although all areas are visited in the full tour, separate maps are used in different situations to show available areas and to set the scene for visited areas.

## *General*

The priory is set in 12<sup>th</sup> century France, although besides place names, this is not directly mentioned in the script. It is midmorning on a summer's day that is not Sunday.

The priory is represented in the tour by maps highlighting areas that are currently being visited or are available to visit (see Figure 1). The maps show a top-down view of the cloister and associated workrooms. Peripheral features of the priory such as the exterior walls, farmland, mill, and lay brothers' outbuildings were omitted for clarity.

## *Gatehouse and Cloister*

The Gatehouse and Cloister comprise the first audio area the player experiences. The player is met at the front gate by Brother Matthew and is led to the Cloister.

## *Chapter House*

The Chapter House is directly off the Cloister. The player visits it first after the chapter meeting and as the second audio area, while meeting the Chamberlain. The player returns to this area at the end of the tour when meeting the Prior. The Chapter House is a branching off point for the audio tour.

The Gatehouse, Cloister, and Chapter House are the only areas visited in the short three-area tour. The Chapter House is used for two audio experiences, the first with the Chamberlain and the second with the Prior.

## *Infirmary*

The Infirmary is set back from the rest of the priory and is accessed by a gravel path. This is a quiet space, and is the priory's hospital, managed by Brother John. This area is visited only in the full (seven-area) tour.

## *Church*

The church is a mostly empty and echoing room managed by Brother Simon, the Sacristan. It is a standard area visited during both the medium sized (five-area) and full-length (seven-area) tours.

## *Kitchen and Refectory*

The Kitchen is a loud and busy place managed by Brother Martin, the Cellarer. This area is visited only in the full length (seven-area) tour.

Although the Refectory is mentioned, it is never visited by the player. This area is described as being “the place where [the monks] take [their] meals” and with walls “covered with images from the New Testament” (See **Appendix A, Audio Tour Script**).

## *Scriptorium*

This is a quiet area, with monks primarily reading and writing. It is managed by Brother Stephan, the Precentor. It is visited in both the medium length (five-area) and full length (seven-area) tours.

## *Characters*

See **Appendix A: Audio Tour Script** for more characterization information.

### *The Player Character*

The Player Character is a young man who is considering becoming a monk. He is the son of Lady Marie of Poitiers.

The Player Character was not given a name, nor did he receive much of a backstory. He is also a silent protagonist, communicating entirely through sound effects and through player interactions. This was an attempt to accommodate as wide an audience as possible.

### *Brother Matthew, the Porter*

Brother Matthew is the first monk the player meets. He is initially hostile before realizing the player is an expected guest and modifies his behavior accordingly.

### *Brother Nicholas, the Chamberlain*

The Chamberlain is a former knight and the day-to-day organizing force for the priory. He is fond of issuing orders to his fellow monks and upholding the tenets of the Rule.

### *Brother John, the Infirmarian*

Brother John is a kindly soul who runs the Infirmary. He was born with a club foot, and his family of nobles was able to secure him a place in the Benedictine Order.

We chose to include a character with a physical disability so we could show a variety of people and the ways in which monks dealt with their problems during that time period. The question of “Infirmity?” is available for the player to ask, and we wanted to have a concrete example for the player to relate to and for a character to be able to describe their problem firsthand.

### *Brother Simon, the Sacristan*

Brother Simon looks after the material needs of the Church and, during the tour, is in charge of directing the Novice in his daily tasks. Traditionally, the Sacristan looked after the choir books, vestments, and religious relics of the church, as well as any donations made by patrons. In the story, Brother Simon is concerned about the upkeep of the Church’s communion chalice, and is also one of the few priests in the priory, and thus able to lead Mass.

### *Brother Martin, the Cellarer*

Brother Martin is a congenial but constantly busy man in charge of the food supplies and the cooks in the kitchens. He also oversees setting the tables in the Refectory, the monks' dining hall, for meals.

### *Brother Stephan, the Precentor*

Brother Stephan is the shy but enthusiastic overseer of the Scriptorium (the monks' workplace for copying and studying Scripture) and the priory's library. He is an illustrator himself, and is the most enthusiastic about the book the player is carrying, a copy of Theophilus' *Schedula Diversarum Artium*, for the artistic recipes it contains.

### *Brother Peter of Poitiers, the Prior*

Prior Peter is the player character's uncle. He is also the moral authority for the priory, its main connection to patrons in the outside world, and its administrative head. The Prior is a wise, middle-aged man who highly values learning and the preservation of knowledge.

### *Additional characters*

#### **Lady Marie of Poitiers**

Lady Marie is a wealthy patron of the priory and the sister of Prior Peter. She is the owner of the manuscript that the player character has brought to the priory and is his mother. Lady Marie is mentioned several times in the tour but does not appear.

#### **The Novice**

The Novice is a secondary character with several lines of dialogue that is mentioned in the Chapter House and appears in the Church. This young man has only recently qualified to become a monk.



## Brother Phillip

Brother Phillip is an elderly monk who has dialogue in the Infirmary. He is in the Infirmary on a permanent basis and suffers from arthritis associated with old age.

## Structure

### *Tour Types*

All tour types include the options to ask questions and take the ending quiz. See *Mechanics – Quiz* for a discussion on how questions and tour types influence the quiz.

Only the Medium Tour and the Full Tour include area choices.

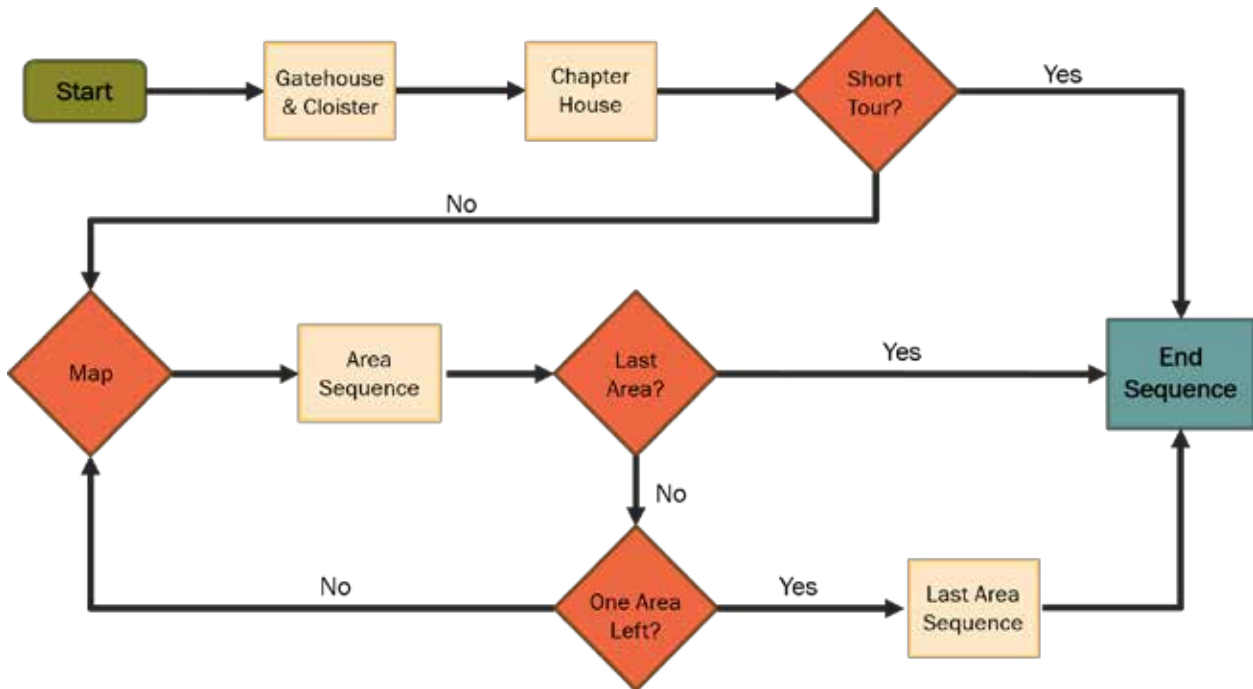


Figure 2: A flow diagram of player progress through a tour.

### *All Tours*

All tours begin with a section of opening narration (described in the next section) and then the Gatehouse area. This area sets up the scene of the player arriving at the priory, explains the premise of the tour and the manuscript, and describes the priory and the Benedictine Rule in basic detail. When the player is finished asking questions, they are transitioned to the Chapter House, where the daily meeting has just ended. They are introduced to the Chamberlain, who introduces concepts related to the daily organization of the priory in an aside to other monks. After the player is finished asking questions, they are either directed to the end section (if they are taking the short tour) or are given the option to choose the next area to visit (in the medium and full tours).

Once all areas for a tour have been finished, the player is directed to the end section. This section takes place in the Chapter House, and introduces the Prior. The Prior takes the book from the player, provides a summation of what the player has learned during their tour, and offers the player the opportunity to take the quiz (see *Structure – Ending and Quiz* and *Mechanics – Quiz* for more details).

### *Short Tour (Three Areas)*

The short tour transitions directly to the end after the Chapter House (the second area). The quiz is still an available option for this tour, but choosing areas is not available.

### *Medium Tour (Five Areas)*

In the medium tour, the player has the option to choose between two areas, the Church and the Scriptorium. The map is shown once, for the initial choice. The player is transitioned directly to the unvisited area when they are finished in the first. They are then transitioned to the end section when they are done in the second area.

### *Full Tour (Seven Areas)*

In the full tour, the player can visit four areas: the Church, the Infirmary, the Kitchen, and the Scriptorium. The map is available for the first three area choices. For the fourth and final area, the player is transitioned directly, without interacting with the map. This method was used to eliminate unnecessary and redundant choices (as the player can do nothing but go to the last available area). They are then transitioned to the end section.

### *Introduction*



*Figure 3: A screen capture of the tour during the opening narration.*

Each tour begins with a brief portion of narration which introduces the premise and conducts an audio test of the player's equipment. The player is encouraged to adjust the audio on their device and to check their headphones to make sure that the stereo audio in the production

can be heard properly. The end of the introduction mentions that the player can “ask questions” as a way to interact with the tour, and describes how to do so.

## *Screens*

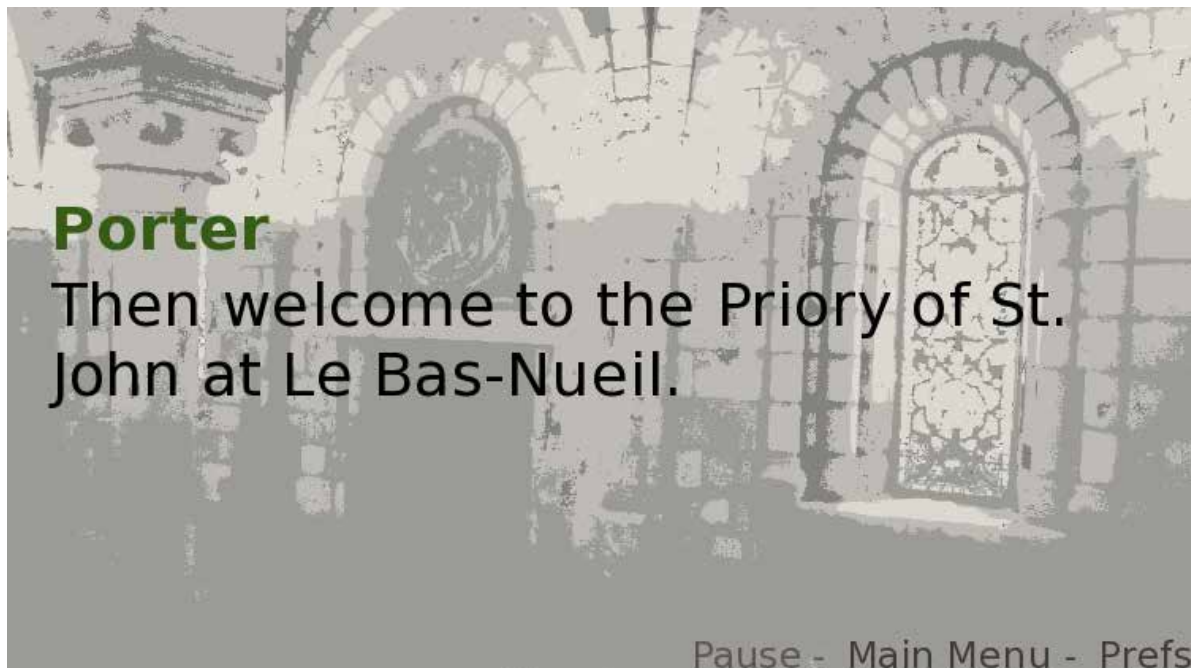
Information in the tour is presented in one of several types of screens. These types are:

- **Audio synced with text** – used to present audio clips, synced with text on-screen on a plain background. (Please see *Audio Experience* for more details.)
- **Questions** – After the preset audio sequence for each area, a menu with four options appears on screen. Selecting one of the question buttons plays a secondary audio/text sequence on the question topic. Selecting “Done” finishes interaction in that area and continues on to the next section.
- **Transitions** – Transition screens occur when the tour is switching between content (or, in the conceit of the tour, moving to a different area of the priory). A short audio series of audio clips are played over an image or animation. These images can be used to show movement or to indicate to the player what areas are available on the map for selection.
- **Image Map** – The map is a representation of the floor plan of the priory and contains clickable hotspots for available locations. This screen has up to four available locations at any one time and has no less than two at any time. Available locations are highlighted in location-specific colors and have a symbol indicating their purpose (see *Game Overview* – *Setting* for a picture of the image map).
- **Quiz Questions** – Quiz question screens are menus with three options. These questions are presented in multiple-choice format, where only one option is correct.

- **Quiz responses** – Quiz response screens show text without audio. These screens first indicate whether the player’s answer to the question was correct or incorrect, then include text that describes what the correct answer was.

### *Audio Experience*

The main audio experience consists of a series of screens with synced text and audio. Text appears written letter by letter as the lines are spoken. With exception to the narration in the introduction and credit sequences (which is unlabeled), all voices are associated with an occupation printed above the text on screen (for example, lines by Brother Martin are labeled “Cellarer”). Text on screen waits until the audio segment is finished before continuing to the next segment of associated text/audio.



*Figure 4: An example of the tour during a synchronized text/audio Gatehouse segment.*

While audio/text screens are playing, a “Pause” text link is available at the bottom of the screen. Clicking on this link will pause both the audio and synced text until the link is clicked again, at which point the audio and text will resume.

Although the audio/text can be paused, it cannot be skipped. The audio also cannot be rolled back, and previous sections in the tour cannot be revisited.

Each tour section (or “area”) contains an introduction of preset audio that introduce the main concepts of the area and provide topics for further exploration in the question interaction phase (see *Asking Questions* below).

### ***Asking Questions***

An asking questions interaction section follows all sections of the audio tour except for the ending section in the Chapter House (where the player has the option to take a quiz). When the preset audio experience (see *Audio Experience*, above) is finished, the player is prompted to ask questions by the main character of the section. The player is then presented with a menu consisting of four options.

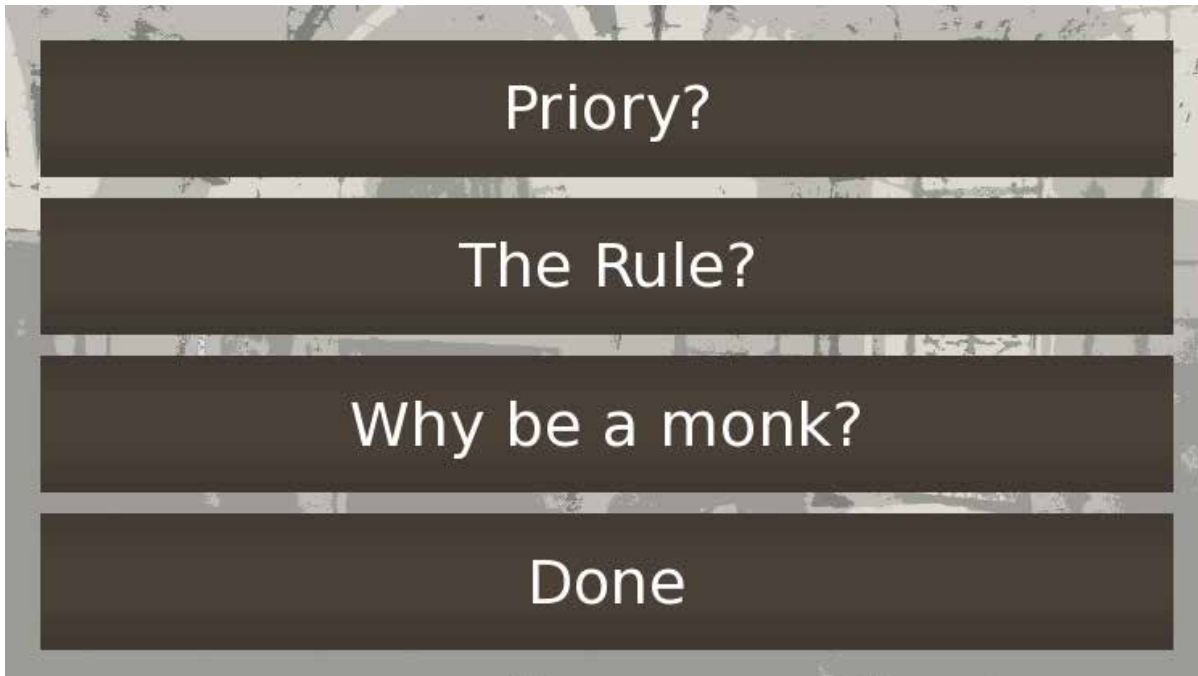


Figure 5: An example of a menu for asking questions, from the Gatehouse segment.

Three of the options are questions the player can ask based on the preset audio to which they just listened. After selecting one of these choices, the player will then hear audio clips (synced with text) that discuss the question topic in more detail. These choices are optional and can be replayed after the audio is finished.

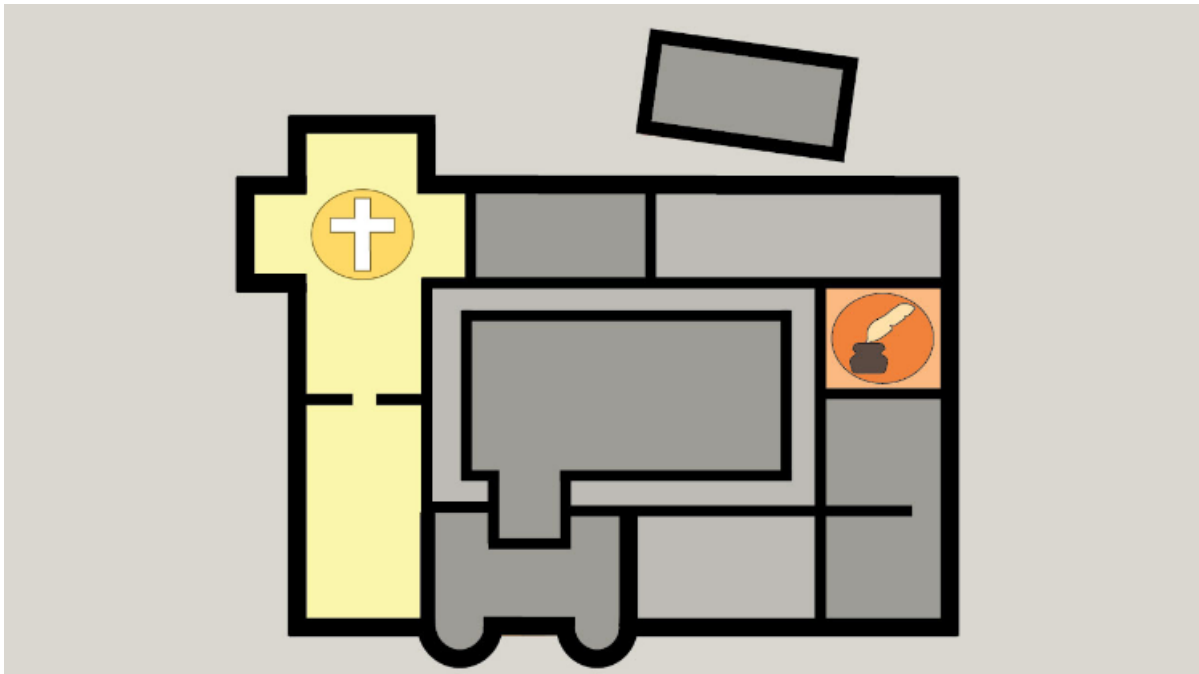
The fourth option is labeled “Done” and ends the current interaction. The audio tour transitions to a new topic and associated area of the priory and starts a new series of preset audio clips. Once the “Done” option is selected, the player cannot return to any previous sections or interactions.

The labels on menu choices are not voiced by the tour characters, but the game engine we used to produce our prototype has a voice option for the vision impaired (see *Technical Development* for more information about development in Ren’Py).

## *Areas and Choices*

The map is used in the medium (five area) and full length (seven area) tours. In these tours, the player is presented with two areas and four areas to choose from, respectively. All areas presented to the player are visited in each tour, but the order is variable.

The map is an interactive image map that uses the same priory floorplan representation as the transition images (see *Transitions as Information Points*). Each area has a color and icon associated with it. When an area is available for the player to visit, the area is highlighted on the map in its designated color and its icon is visible (see *Visual Media* for more information about icons). The player can click in the highlighted region to select a certain area to visit.



*Figure 6: An example of the interactive image map. This version is from the medium-length tour. The yellow and orange areas are clickable and are associated with the Church and Scriptorium, respectively.*



When the map is first shown to the user, an audio/text transition informs the player of which areas are available to visit. The player is then prompted with an audio clip to select an area to visit.

### ***Transitions as Information Points***

Transitions serve to add breaks between content topics, to give the illusion of changes of location in the priory, and to introduce the next area and character. Each transition begins when the player ends a question interaction session (see *Asking Questions*). If an area choice is possible (in other words, if there are two or more areas left to choose from), the current character prompts the player to make a choice, and the priory map is shown (see *Areas and Choices*). Otherwise, the current character provides information to tell the player what their next location is, and the tour takes them there.

When the tour moves to a different area, footsteps are played while the priory map is shown, with the next area highlighted. This auditory information about moving spaces helps to give the illusion of movement and to provide a pause in between changing topics. Once the player “arrives” at the new area, the character from the last area says some dialogue designed to introduce the next character or to set up one of the concepts that will be discussed.

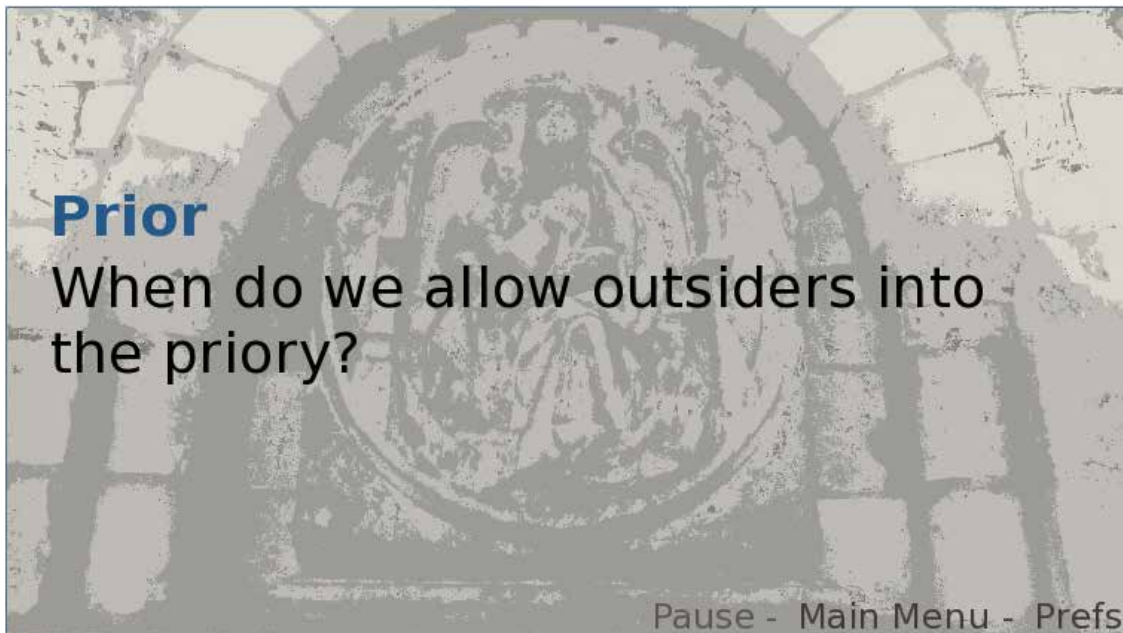
### ***Ending and Quiz***

The ending section occurs in all tours and serves as a conclusion to the information discussed in the tour as well as the narrative arc. The player meets the player character’s uncle, officially delivers the manuscript, and is asked to reflect on what they experienced in the tour.

Towards the end of this section, the player is offered the opportunity to take a quiz to test their acquired knowledge. The quiz is described to the player both as an opportunity to test their

knowledge as well as an opportunity for the player character to “see if [he] has what it takes to be a monk”, following the conceit of the tour. This quiz is optional and the player receives no penalty for declining it. If the player declines the quiz, the Prior acknowledges the choice but no other action specific to this choice is taken.

If the player accepts the quiz, they are asked five questions. The first question is always the same in every quiz, and asks “When do we allow outsiders into the priory?” This question is asked to gauge whether the premise of the audio tour story helped or hindered the main learning goal.



*Figure 7: The first question asked during every quiz.*

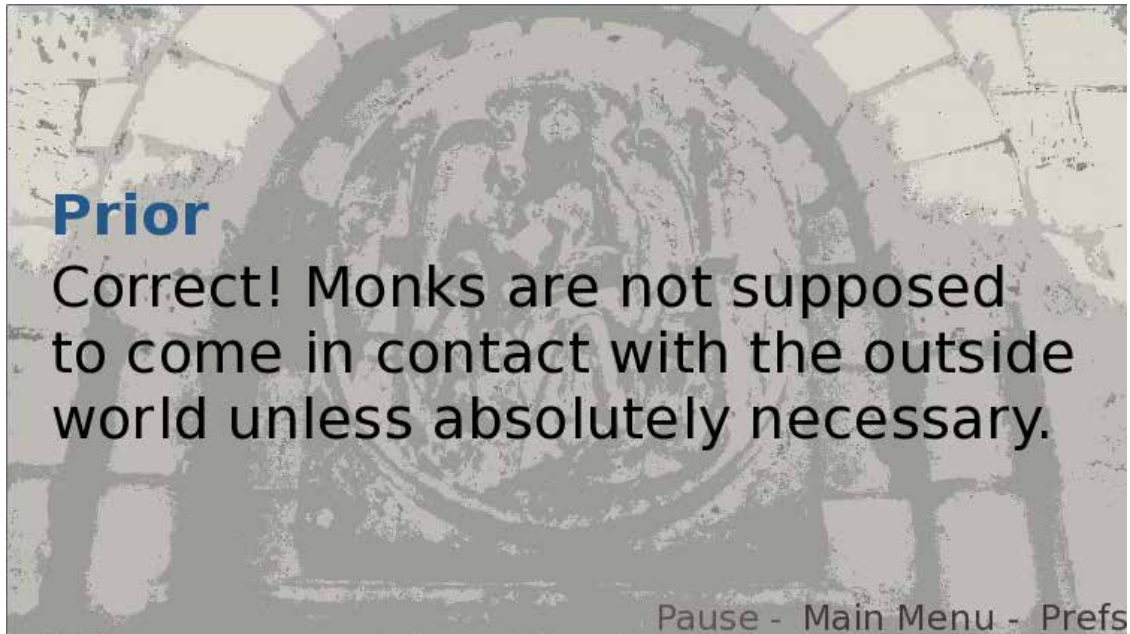


*Figure 8: The option menu to respond to the quiz question.*

The next four questions are randomized and their topics are determined by the tour taken and which questions the player asked. If the player took the short (three area) tour and did not ask any questions, then a set of general questions on the Gate, Cloister and Chapter House topics are asked. Additional sets for general questions are also used for the medium-length and full-length tours, including questions for all areas visited in the specific tour. (For a full list of the question bank, see *Appendix A: Quiz Questions*).

Otherwise, the tour keeps a log of which questions the player asked during gameplay (see *Mechanics – Quiz* for more information). The questions asked in the quiz are analogous to questions asked by the player during the tour.

After each question, the player is shown a screen that indicates whether their response was correct or incorrect. They are then shown text that explains what the correct answer was.



*Figure 9: An example of a response screen for the first quiz question.*

The player receives a point for every correct question. Scoring determines the Prior's response after the quiz is finished. The Prior's response is meant to follow the conceit on whether the player character would be a good monk.

- If the player receives 4 or 5 points, they “win” and are said to be a good candidate for the Benedictine Order. [positive response]
- If the player receives 2 or 3 points, they are said to be “of two minds on the matter” and are welcomed to return to the priory. [moderate response]

- If the player receives 1 point or 0 points, they are said to be unsuited to being a monk and are encouraged to become a knight instead. [response indicating negative performance]

After the quiz, every tour includes the same ending transition, in which the Prior thanks the player for visiting the priory and says goodbye. The experience then transitions to the end credits section.

### ***Credits***

The credit sequence occurs at the end of all tours. This sequence is voiced by the narrator and acknowledges all voice actors, thesis committee members, and organizations involved in the production of the audio tour.

## **Mechanics**

### ***Character Interaction (Asking Questions)***

The player can choose from three preset questions available at the end of each area's preset audio sequence. Each question, which are available on a menu screen with buttons, consists of a word or short phrase relating to content mentioned in the preset audio. When the button is pressed, the area's main character will respond with more detail on the specific topic. Players can repeat the questions as many times as they like, or can opt to ask no questions at all.

The questions asked by the player during the tour affect which questions are asked during the quiz at the end if they choose to take it. See *Quiz*, below, for details.

## ***Areas and Choice***

Players who take the five-area and seven-area tours are given the option to choose the order of visiting two and four unique areas, respectively. In both tours, the player first visits the Gatehouse and the Chapter Room. After interaction is finished in the Chapter Room, the interactive map is shown with the available options highlighted and selectable (see ***Game Overview – Setting*** for a picture of the image map). The player’s options are described to them verbally, and they are prompted to choose one of the options available onscreen.

Once an area has been chosen, it cannot be revisited. If there is only one area left, such as in the five-area tour, then the player is directed to this area. In this sense, the player can only make a choice once during the five-area tour.

Otherwise, the player is directed back to the map screen. The map screen is updated to a new image that reflects what options are still available, and an audio prompt will ask the player to choose a new area to visit.

## ***Quiz***

*Please see **Appendix B** for the full quiz question bank.*

The ending quiz is an optional interaction designed to test player knowledge of the presented material. The quiz consists of five questions corresponding to major ideas and themes expressed in the various areas. In keeping with the premise of the tour, the quiz is proctored by one of the characters, Prior Peter, who is the main character for the ending interaction section.

The first question, “When do we allow outsiders into the priory?” is always the same. This was a key concept we wanted to get across and one that we were particularly concerned

may be confused for players, since the premise of the story is based on a significant exception to the rule of monastic isolation.

The next four questions are chosen with controlled randomization based on the length of the tour and the questions the player asked. In the unlikely event that the player chose to ask no questions during the tour, three sets of backup questions covering generic topics for each of the tours are used. Otherwise, the questions asked by the player during the tour are recorded and used to determine questions asked during the quiz. When the player asks a question, a key (as a short character string) is inserted into an array. During the quiz, a random number is generated corresponding to an index in this array. If the question corresponding to the key at that position has not been asked, then the question is presented to the player and its key is inserted into a second array which keeps track of what questions have been asked. If the questions asked by the player have been exhausted (or if the random number generated cannot find an unasked question after three tries), then a backup array of questions is used.

For each question, the player is presented with three multiple choice options. Selecting the correct answer shows a confirmation message and a short explanation. The player's score is incremented by one, the question is inserted into the asked question array, and a new question is randomly chosen. If the player chooses incorrectly, a message stating this appears on screen, along with the same short explanation as to the correct answer. The player's score is not incremented in this instance.

Score is represented to the player in terms of their aptitude to becoming a monk. A score of four or five receives a positive response from Prior Peter. A score of two or three earns an equivocal response, while a score of one or zero earns a response that acknowledges low aptitude

but attempts to preserve the player's dignity by suggesting that "[p]erhaps [they] are destined to become a knight after all."

Players who choose not to participate in the quiz are given a short response acknowledging their decision. They then continue through the same end of the tour and credits as the quiz participants.

## **Controls**

Although the final product will be designed for smartphones, the current prototype is built for personal computers and mouse-based input. However, the main interface is designed to be touch-screen friendly, with what are currently clickable maps as navigational aids, large buttons, and minimal interfaces.

The main menu contains the options to Start, open Preferences, and view the Credits. Preferences are available for debugging purposes only and will not be available in the final product. These preferences allow adjustment for separate audio channels and control of the auto forward function that allows the tour's audio/text screens to advance automatically. In the final product, the player will adjust the overall volume on their device and will not be able to affect the auto forward function.

Asking questions and answering quiz questions are both accomplished through clicking text buttons on the screen. Likewise, the map is operated by clicking on available options. Clicking elsewhere on the map does nothing.

While the audio/text screens are running, three options are available in the lower right corner of the audio tour: Pause, Main Menu, and Pref. (Preferences). Clicking Pause stops the audio/text at the end of the current segment of audio and waits until it is toggled off again. Main



Menu and Pref. take the player to the respective menus. If the player returns to the Main Menu, they are prompted with a notification that their progress will not be saved. Saving the game was not useful during prototype development, so it was omitted from the design.

## **Visual art**

### ***Style***

The interactive audio tour's style is purposefully minimalist and attempts to follow the branding design of other Worcester Art Museum promotional materials (such as the museum's website). The overall tour design is neutral, with colors associated with specific areas and characters in the tour.

### ***Area Backgrounds***

Screen backgrounds in the tour correspond to a specific area or the Introduction and Credits sections. Each area is associated with a stylized picture of the chapter house that appears under text and buttons.

### ***Buttons***

Text buttons are large rectangles that cover the width of the screen. They are simple brown gradients and use white text.

### ***Icons***

The icons used on the map are color-coded symbols meant to be understood without labels or a fluent understanding of the English language. Each symbol is contained within a circle that is the area's color. The symbol relates to a feature of the area and its purpose and are simple images with two to three colors. For example, the Kitchen icon shows a knife and a round loaf of bread, symbolizing food and showing the basic utensils used in medieval meals.

## ***Maps***

The image map used in area choices is an overhead view of the floorplan of the priory. Walls are delineated with black lines, with outside walls much thicker than inside walls. Areas that can be visited are highlighted in their associated color and show their icon, while areas that cannot be visited are beige. Areas that have already been visited are a darker shade of beige.

## ***Transition Images***

Images used in transitions are non-interactive, static versions of the image map. These pictures only show the area currently being visited as highlighted and with its icon. All other areas are represented in beige. These images also include areas and their associated icons that cannot be chosen by the player, for example the Gatehouse and Cloister.

## ***Synchronized Text***

The synchronized text appears on the screen at thirty-three characters per second. It is in Déjà Vu Sans and is black.

## ***Character Labels***

Character labels are used for synched audio/text spoken by non-player characters. These labels are in a shade of the color of the area with which they are associated. For example, the Church has two characters associated with it, the Sacristan and the Novice. Both characters have text labels in some shade of yellow.

## ***Audio/Text Screen Options***

The options menu that appears in the bottom right corner of the screen during audio/text sequences uses brown for non-selected options and for a selected (on) Pause option, gold for hover and grey for the unselected (off) Pause option.

### ***Game Icon***

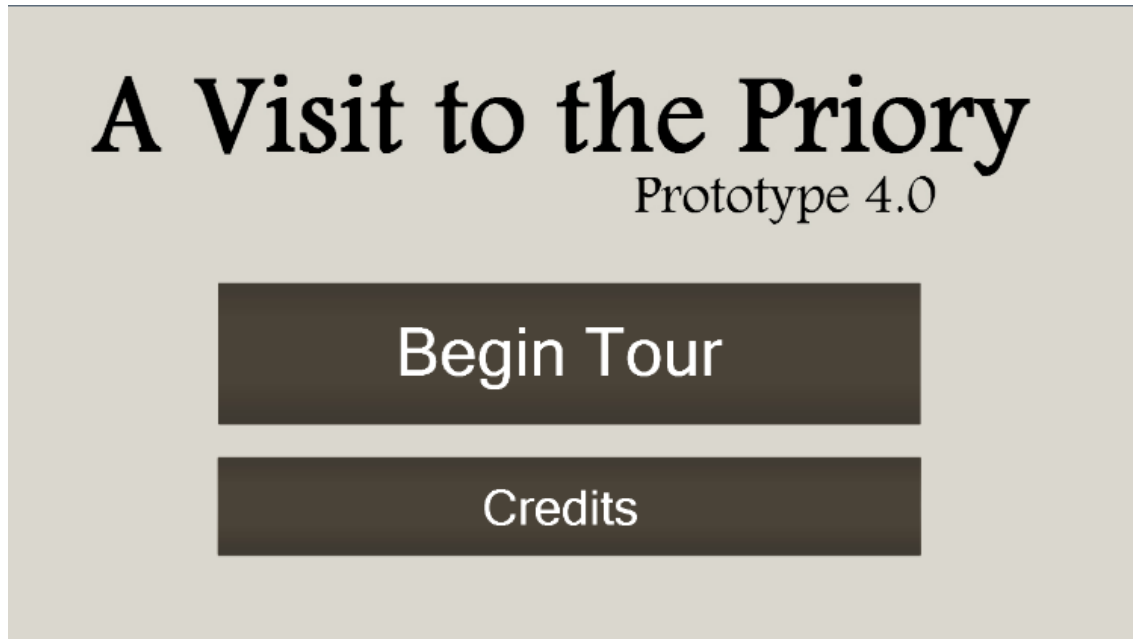
A game icon was produced for the prototype. It is a simple blue circle with the letters “VP”, standing for *Visit to the Priory*. This design was chosen to mimic the “WAM” stickers handed out at the museum to visitors and to give the prototype a minimalist, cohesive feel.



*Figure 10: The executable's icon.*

### ***Main screen***

The main screen was made with a minimal design. The prototype’s name appears at the top of the screen, and options to begin the tour and view the credits are available. The screen background and base button colors are the same as in the tour. Please see figure 5 (below) for an image of the screen.



*Figure 11: The prototype's main screen.*

## **Audio Recording and Effects**

Originally, we considered using stereo recording for voice acting and binaural recording for sound effects and ambiences. Binaural recording devices use a pair of microphones placed in a mannequin head to replicate the way the human ear recognizes sound. This method of recording produces a truly immersive quality to the resulting audio making the listener feel surrounded by the sound. As mentioned above, we moved to stereo audio due to concerns that the binaural audio would not present well in earbud-style headphones that are often used with smartphones. Additionally, binaural microphones are extremely sensitive to background noise, and we could not find accessible recording locations with the right ambiences that did not have significant background noise from street traffic or HVAC systems. We instead used stereo audio for all recordings.

## **Recording Process**

Voice recording was performed using a Zoom H2 microphone in the IMGD sound booth. The resulting sound files were edited using Audacity and converted to OGG files for use in the prototype.

## **Voice Acting**

We were limited to using local actors who were willing to work for free. Understandably, few qualified actors outside of the project showed interest. Thankfully, we have a pool of experienced voice talent in our department. Although ideally our characters should speak with French accents, we were working with American talent and went with what we had.

## **Sound Effects and Ambiences**

Ambiences and sound effects were sourced from several of Sound Ideas' online sound libraries, specifically the Art of Foley, Lucasfilm, and Sound Ideas Series 7000 Ambience II libraries. Sound effects were used based on three criteria: whether they helped to show the player character's interactions with the virtual world, whether they could be used to supplement understanding of the dialogue, and whether they helped produce an immersive soundscape. Likewise, ambiances were used based on whether they helped to create immersion and whether they helped to provide information about the setting the player was in.

## **Platforms and Production Software**

Ren'Py can package its distributions for both Windows PC and OS X. However, all development and testing was performed on Windows machines, including Windows 7 and 10.

One round of playtesting occurred on a Dell Latitude 3150 laptop with earbud-style in-ear headphones. Other testing occurred on test subjects' personal devices and computers. (See *Project Testing* for more details.)

Audio editing was performed in Audacity. Visual art was produced in Adobe Illustrator. Programming occurred using Notepad++ and was tested with Ren'Py's built in debugging tools.

## **Technical Development**

### **Concept Research (Prototype 1.0)**

Our initial prototype was created to test the audio tour concept and the sound of the script as voiced dialogue. It was produced with Twine 2, an HTML-based interactive story engine. This version was used to test the current format of area choices and questions, while using some placeholder text and character information.

### **Script Editing/Technical Research (Prototype 2.0)**

A second prototype was created using Twine 1 in order to take advantage of built-in support for menus and for audio files (as it was assumed at the time that Twine might be used for final development). This prototype was used to observe the experience of text on the screen and to test a new version of the script. Placeholder audio was used in conjunction with the script for all areas.

### **Testable Prototype (3.0)**

This prototype was made in Ren'Py using a greatly edited script and placeholder audio provided by Brian Moriarty. This format moved to the synchronized audio/text screens, clickable buttons for interactions, and introduced the quiz with finalized questions (as opposed to

placeholder questions). This prototype was tested informally with several members of the IMGD program.

## **Final Prototype (4.0)**

The final prototype was also produced in Ren'Py. This version is optimized for a 16:9 aspect ratio common to smartphones. It contains finalized art, audio with dedicated voice actors for four areas (the Gatehouse, Chapter House, Kitchen and End sections), sound effects, and completed quiz, image map, and interactions. Although some placeholder audio remains, this prototype is feature-complete.

## **Development in Ren'Py 6.99**

Ren'Py is built on Python, with a specialized language used to interface between Python and Ren'Py commands. Its files are interpreted like Python and the engine itself has built in debugging options.

Ren'Py is designed primarily for interactive adventure games, with the design focus being text and images. Text dialogue is written to the screen in a transparent box behind which background and foreground images can be shown. The engine has an auto-forward feature with built-in character printing with an adjustable speed. It also has three default audio channels: music, sound and voice. Voice commands play audio clips in synchronization with the text, sound is used for short sound effects and the music channel is used for looping ambiences.

Although Ren'Py has synched audio and text, the engine is built with text only in mind and a convention of interactive adventure games is that the player clicks on the screen to advance the dialogue. The auto-forward feature is optional and is turned off by default in most games. For the prototype experience to operate automatically, I had to disable clicking to advance the text

and turn on auto-forward as a default. Besides this, many of the default features of Ren'Py games worked to my advantage during development.

The Ren'Py method of creating games, however, has some limitations. Games have one main file, `script.py`, in which content is placed semi-linearly. Specific interactions can be performed using menus, while different branches or resulting actions to player choices are organized under labels. Code under a label is executed when the program *jumps* to that label. Jump commands cannot appear in functions, and said functions are defined in Python, so other Ren'Py commands (such as *voice* and the *say* command, which writes dialogue to the screen) cannot be kept in functions either. The target of jump commands, furthermore, must generally be a label, not a text string produced from a function. This can result in long, bloated files and easily disorganized code, as *say* statements generally must appear linearly and logical blocks are restricted by jumps. However, the use of *jump expression*, a sadly under popularized piece of Ren'Py code, allows predefined functions to be used in determining jump targets and outputting strings, which drastically reduces the problems of spaghetti code.

## **Application Development**

Complete development of the final product would be in HTML 5, with distribution using PhoneGap to package the files into an app for iPhone and Android. This method of production would allow for complete control over the features of the app and the use of a custom audio and text engine. This method of development was delayed due to time constraints. Development of the tour design and script as well as audio recording took up much more of the original production schedule than was previously budgeted. We feel that this work was essential to developing a solid product, and that a feature-complete prototype was more useful than a completed generic application.



Ren'Py is also capable of packaging apps to mobile platforms, including for iPhones and Android smartphones. Time constraints again prevented this from occurring for the current prototype. Proper packaging for both platforms is a prolonged process and development on the prototype continued until the end of the production schedule.

## **Project Testing**

Due to concerns surrounding our ability to obtain approval from the Institutional Review Board in the allotted time, general time constraints and lack of testers in our development group, and a lack of an available audience, we did not test the audio tour with middle school-aged children. We restricted our testing to adults in the local area.

The first round of testing was informal and was designed to determine whether there were any inconsistencies in the script that could cause confusion with players. Prototype 3.0 was packaged and emailed to a list of graduate students along with links to a pre-test and a post-test hosted on Murvey. We received three responses all indicating no confusion with the project premise or information presented in the tour.

A second playtest occurred in the chapter room with Jeffrey Forgeng. This test was performed on a Dell Latitude 3150 laptop with earbud headphones. This test was to get approval from our subject matter expert and to make sure that the audio could be heard satisfactorily in the museum environment. We did not conduct pre- or post-tests for this session as outside testers could not be acquired for the time slot.

A third playtest was conducted with one graduate student who had tested prototype 3.0 and another subject who had never seen the project before. This test was conducted on a subject's Windows 10 laptop in a crowded environment to determine sound quality. Both

subjects indicated that the user interface was decently understandable but could use labels, and the new subject tested the tour with little prompting or confusion as to the premise. One subject stated in their post-test that they felt “[p]retty engaged”, while another said that they felt “[p]leasant and welcomed” during their experience. (Please see *Appendix D, Player Testing Surveys* for pre-test and post-test used in the first and third playtests).

## **Project Team and Project Management**

This thesis project had a one-person team. Additional help was provided by Jeffrey Forgeng, as our historical subject matter expert and an editor; Brian Moriarty, as a voice actor, audio recording expert, game design expert, and editor; and Dean O’Donnell, as an interactive design expert and a voice actor.

Team meetings were conducted weekly with Jeffrey, Brian, and myself. At these meetings, I discussed the progress I had made that week, described any problems I had encountered, and went over my plan for the following week. Deliverables were sent to Jeffrey and Brian several days ahead of time and were discussed at this meeting. We discussed script changes, game design issues, and prototype builds as well as scheduling and resource procurement.

Our production of prototypes occurred concurrently with script development. Testing of the script, particularly with placeholder audio, was essential to understanding the user experience. Likewise, testing the interface was essential for understanding how players would respond to opportunities for interaction. The map used for navigation also developed over time based on feedback on historical accuracy from Jeffrey. The final audio and sound effects were the capstone for development and were recorded as soon as the final script was finished.

Group organization and communication occurred primarily using email. Scripts and prototype builds were made accessible by email and regular progress updates were also sent out via email. Slack was originally used for this purpose, but it proved incompatible with our team's organizational style. Some files were made available on Google Docs before this method was found to be unreliable. Git was used for source control and Trello was used for task management.

## Post Mortem

My thesis proposal put forward a set of criteria by which the final prototype could be compared. For the application, the criteria and our accomplishments are as follows:

- **Clear audio** – The audio present in the prototype is clear and understandable for native English speakers.
- **Visual media contributes to understanding** – The background images of the chapter room contribute to a focus on the room itself and do not detract from the audio experience. The map of the priory promotes understanding, has visible distinctions between rooms, and uses recognizable icons.
- **Functioning user interface, tested with members of target demographic to ensure general usability** – The user interface functions as designed without notable bugs. The prototype has been tested with members of the target audience, but not to a degree that significant findings can be reported.
- **Lack of bugs that interfere with use** – No notable bugs have been observed in the prototype.
- **Good performance quality in museum** – The prototype has no requirements that would affect its performance in the museum (such as wireless connectivity). Tests conducted in

the museum indicate that the audio is understandable using standard earbud headphones in the space without too much outside interference.

For the audio tour, the criteria and our accomplishments are as follows:

- **Design must satisfy the requirements of representatives of the Worcester Art Museum** – Jeffrey Forgeng, acting as a representative of the Worcester Art Museum, has worked closely with this project and has given his approval of the prototype.
- **Generally attractive to users in the target audience** – The interface has been found to be non-offensive to users in the target audience, who complimented its minimalist design.
- **Design must be clear and useable by most members of the audience** – The interface has been found to be useable by players in the target audience, but could use more clarification, particularly with labels on the interactive map.
- **Appropriate theme that is used cohesively across the application and all peripherals** – The design has been used cohesively across all portions of the application and has been approved by Jeffrey Forgeng as being in keeping with the desired aesthetic for the project. No peripherals were produced for the prototype.

It is interesting to note that the original evaluation criteria do not include any factors evaluating the user experience or of the script and audio experience, considering that they were in fact so important to the development of this project. However, based on these requirements, I submit that the expectations set forth in my thesis proposal have been met.

### **Things that went well**

Historical research and script writing went well. Script concept development and editing were a group process and our respective skills complemented each other. Development in

Ren'Py of the final prototype progressed smoothly once I familiarized myself with Python.

Audio recording was a much quicker process than I had previously assumed and was made easier by using experienced voice actors.

### **Things that went poorly**

As Brian Moriarty is wont to say, “Every time we make a game, we are doing research.” This project involved a great deal more research than was initially anticipated. The design of the audio tour, the script, and the experience developed concurrently from the beginning. Our production schedule was too rigid, with iterative development happening only at a specific phase (during prototype production). Actual development in multiple phases happened at the same time, particularly in script writing, prototyping, audio recording, and testing. I underestimated the time needed to develop the tour design and the script.

However, attempting to produce a complete, distributable app with a one-person team was itself overambitious. Simply put, there were not enough people on the project team, and for one person there was not enough time.

### **Things that could have been improved**

The design process could have been greatly helped by a more fluid period of iteration and testing with the target audience. The script, experience and premise could have been tested together and concrete feedback from potential users would have guided development. In addition, proper scoping of the project expectations would have greatly help in removing uncertainty regarding the schedule and what could – and should – be accomplished. This project was a positive experience in that I learned a great deal about audio recording and writing for the medium, as well as giving me good experience in all phases of production, but the greatest lesson

learned was the limitations of one-person teams as well as my own limitations. Now that I understand for myself the scale of the work involved in such a project, I intend to plan more realistically in the future.

## Conclusions & Future Work

In this IMGD Master's Project, Caitlin Malone created *A Visit to the Priory*, an interactive audio drama designed to promote understanding of the chapter house at the Worcester Art Museum. An advanced prototype was produced in Ren'Py showcasing the audio experience, player interactivity, and look-and-feel of the final smartphone app, with resources produced for further production.

The current prototype is feature complete. Most importantly, this audio tour concept will need to be formally presented to the Worcester Art Museum for approval if production is to proceed. Further production would involve continuous testing with the target audience and iterating on feedback, as well as production of original sound and art assets and the use of professional voice talent. The final smartphone app can be completed in Ren'Py or, as originally planned, in HTML 5 using the PhoneGap service to package and distribute it to appropriate devices via iTunes and Google Play.

## Works Cited

“Alcatraz Island: Guided Tours”. *National Park Service*. National Park Service, U.S. Department of the Interior. Web. 21 Apr 2015.

<<http://www.nps.gov/alca/planyourvisit/guidedtours.htm>>

- Also see “Alcatraz Cellhouse Tour (in HD)”, copyright holder unknown,

<<https://www.youtube.com/watch?v=fsVw5BeIqa>>

Eco, Umberto. *The Name of the Rose*. New York: Harcourt, Inc. and Martin Secker & Warburg Limited, 1983. Print.

Clark, Josh. *Tapworthy: Designing Great iPhone Apps*. USA: O’Reilly Media, Inc., 2010. Print.

Hagley. Hagley Museum & Library, n.d. Web. 15 September 2015.

Hand, Richard J. *The Radio Drama Handbook: Audio Drama in Context and Practice*. London: Bloomsbury Academic, 2011. Print.

Hart, Jack. *Storycraft: The Complete Guide to Writing Narrative Nonfiction*. Chicago: The University of Chicago Press, 2011. Print.

“The Public Garden Audio Tour.” *Audissey Guides*. Audissey Guides, n.d. Web. 13 September 2015.

Singman, Jeffery L. *Daily Life in Medieval Europe*. Wesport, Connecticut: Greenwood Press, 1999. Print.

Verheyen, Rev. Boniface. “Holy Rule of Saint Benedict: The 1949 Edition.” *e-Catholic 2000*. e-Catholic2000.com, 2016. Web. 12 Feb 2016.



## **Appendix A: Audio Tour Script**

### **Full Experience**

*Purpose: Describe opening experience, 7 areas, characters, and player interaction*

### **Player Core Interaction**

- 7 areas
- Player can choose order of 4 areas: church, scriptorium, dining hall/Kitchen, and infirmary
- Questions

### **Opening Experience**

NARRATOR

Welcome to *A Visit to the Priory*, an audio drama for the Worcester Art Museum.

This app is designed for listening in the priory chapter house at the museum, but can be experienced anywhere. Find a comfortable place to sit and enjoy.

This is primarily a sound-based presentation. Before beginning, adjust the volume on your device so my voice is playing at a comfortable level.

Portions of this program were recorded with a stereo microphone. For best results, make sure your headphones being worn correctly.

LEFT: This sentence should be heard in your *left* ear. This is the *left* channel.

RIGHT: This sentence should be heard in your *right* ear. This is the *right* channel.

(PAUSE)

You will be given the option to interact with characters in the story by asking questions. To ask a question, choose one of the prompts available on screen. You may ask as many questions as you like.

And now, let's begin your visit to the priory.

## **Module 1: Front Gate**

### **Porter: Brother Matthew**

#### *Characterization*

- Age-range: elderly
- Local, youngest son of a noble

- Been in Order for longer than anyone including prior, but probably not this priory
- Doesn't want to be on gate duty. Is suspicious of outsiders.
- Was bored and probably doing something idle to pass the time at the beginning.
- Feels need to recruit player character.

### **Key Messages**

- Division between outside world and priory
- As self-sufficient as possible
- Cloister as center of monastic complex
- Benedictine Rule
- Chapter room and meeting

### **Ambience**

- Outside, daytime ambience
- Small village
- Sound of birds, insects
- Summer

### **Draft**

FADE IN:

EXT. THE FRONT GATE -- AROUND TERCE (9 AM)

BINAURAL AUDIO: FADE IN SOUNDS OF SUMMER: HEAT HAZE (OR MOVEMENT OF HOT AIR), INSECTS BUZZING, AND BIRDS CHIRPING. A KNOCK SOUNDS ON A WOODEN DOOR IN FORWARD AUDIO.

BROTHER MATTHEW opens a window in the door; hinges may SQUEAK IN FORWARD AUDIO as he does this.

BROTHER MATTHEW

State your business.

*(A horse stamps its foot. The jingle of an expensive-sounding harness can be heard.)*

Wait. You're the courier, aren't you? Then one moment.

(PAUSE, AND THEN DOOR IS UNBOLTED AND HINGES CREAK OPEN)

BROTHER MATTHEW

*(Friendlier)* Come in, come in.

(OUTSIDE AMBIENCE FADES BUT DOES NOT STOP. DOOR IS CLOSED AND BOLTED AGAIN.)

You're...you're the Prior's nephew, yes? Son of Lady Marie of Poitiers? Then welcome to the Priory of St. John at Le Bas-Nueil. My name is Brother Matthew.

*(Secretive)* Do you have your mother's book?

*(A heavy parchment codex is jostled, as though held up for inspection.)*

Ah yes, I see. Your uncle is attending to business outside the priory at the moment, but should be back soon. You should deliver the book directly to him.

In the meantime, he has granted you access into the Cloister. He said you might be interested in exploring the priory.

I'll just take you to the Cloister to show you the way around.

(FOOTSTEPS ON FLAGSTONES BEGIN IN THE BACKGROUND.)

This is a rare opportunity, you know. The priory is a place for the worship of God, and we are supposed to have very little contact with the outside world. Outsiders are almost never permitted inside.

(FOOTSTEPS STOP. FAINT VOICES CAN BE HEARD FROM ONE DIRECTION.)

(CLEARS THROAT)

*(Very officially)* The Cloister is this courtyard, at the center of the priory as it is the center of our lives. The arcade around it connects all the main buildings of the priory. The Cloister serves as a workspace, though as monks our main work is prayer. It's all governed by the Rule of St. Benedict, written by the greatest abbot of our order more than five hundred years ago.

I will let the Chamberlain explain more about life in the priory. He is running the chapter meeting right now. It's an administrative meeting, and it's held in the chapter house, just here.

From the sound of it, the chapter is still in progress. While you're waiting, do you have any questions for me?

## **Player Interaction**

QUESTION 1: Priory?

BROTHER MATTHEW

A priory is a small monastery. There are only a couple dozen monks here, with some lay brothers living outside the walls to do some of the heavier labor. The Prior – your uncle -- is the leader and moral authority within the priory. We may be able to speak our minds during the chapter meeting, but the Prior has the final word in all matters.

QUESTION 2: The Rule?

BROTHER MATTHEW

The Benedictine Rule is a set of written guidelines that tell us how to best govern the priory and promote a pure life for ourselves. It tells us how to schedule our days, how to appoint officers for specific positions, what kinds and how much food we should eat, and how we should act towards our brothers.

It was created by Saint Benedict many hundreds of years ago for his monastery in Italy. Now there are Benedictine monasteries in all lands that obey the Pope.

QUESTION 3: Why be a monk?

BROTHER MATTHEW

Well, like you, many of our number are the younger sons of nobles, those who will not inherit the fortune of their fathers. In such a position, your options are limited. You can become a hired sword for a noble, and live a hard, dangerous life, or enter into the church. The promise of monastic life is a roof over our heads, our needs provided for until death, and a life of learning, peace, and prayer.

## Transition

(Outside ambient audio fades. The sounds of talking grow louder, accompanied by the sounds of clatter and footsteps.)

BROTHER MATTHEW

It sounds as though the chapter meeting is over. I'll just introduce you to the Chamberlain.

(FOOTSTEPS ON FLAGSTONES)

BINAURAL AUDIO: PLAYER SLOWLY BECOMES SURROUNDED BY THE SOUNDS OF VOICES IN AN ECHOING ROOM.



Brother Nicholas? This is the Prior's nephew, son of Lady Marie of Poitiers. He is considering becoming a monk, if you remember, and he's brought the *List of Various Arts* for us to copy.

Well, I'll leave you to it.

## **Area 2: Chapter House**

### **Character: Chamberlain, Brother Nicholas**

#### *Characterization*

- Age-range: middle-age (40ish equivalent)
- Used to be a knight, now retired
- Well-organized
- Strong authority in the monastery with booming voice; gives commands precisely and with the expectation that they will be followed
- Concerns himself with management activities; considers himself instrumental
- Would feel need to play up his importance and be formally polite to the prior's nephew

#### **Key Messages**

- Hub of priory / Administrative space
- Material life
- chests for shifts to be washed
- what their clothing would have looked like
- What items each monk would be given
- Vow of poverty
- Daily schedule around religious observances

## **Ambience**

- Starting sounds: Monks leaving the room, end of meeting, clatter in the cloister
- While inside the room: Conversations, someone opening a chest, footsteps

## **Draft**

INT. CHAPTER HOUSE, AFTER TERCE -- [9:30ish]

BINAURAL AUDIO: TO LEFT AND RIGHT, SOUNDS OF VOICES IN AN ECHOING ROOM, CLATTER, AND OCCASIONAL FOOTSTEPS.

BROTHER NICHOLAS

Ah yes. It is an honor to have you here.

Would you wait for one moment? I must attend to some business.

*(To unnamed monk)* Do not forget to issue a new habit to the novice today. It is in with the clean laundry. Tell him to change after High Mass, but if he is late to dinner he will have to take a turn reading Scripture during the meal.

*(To another monk)* And you, make sure that Brother Stephan is given more pens for the Scriptorium. The copiers go through them like soldiers through a hot meal.

Oh, and don't any of you forget what I said today. If I catch you talking again during a silent period, I *will* inform the Prior.

(AMBIENT SOUNDS FADE)

Thank you for your patience. As you can see, managing the needs of a priory is no simple task.

So, you have expressed an interest in becoming a novice? Then I hope we can give you some sense of the life you would be living.

### ***3 Areas***

I am sure the Prior will be back soon. While you're waiting, do you have any questions for me?

### ***Other***

The Prior, in his wisdom, has instructed me to show you some areas of the priory and have you speak to some of the other monks.

But first, do you have any questions for me?

## **Player Interactions**

QUESTION 1: Silent period?

BROTHER NICHOLAS

We do not speak during much of the day, never at meals, and only quietly when permitted. We are allowed to speak only to say useful things or to practice devotion to God. We just finished our silent working period before the morning Mass and the chapter meeting. We will have another this afternoon.

QUESTION 2: Chapter meeting?

BROTHER NICHOLAS

We hold a daily meeting in which we discuss the running of the priory and read a chapter of St. Benedict's Rule. Today, for example, I assigned the weekly cooks to the Kitchen, and read part of the sixth chapter of the Benedictine Rule, regarding the use of speech. Some of our number have become more talkative in the cloister at late, and needed reminding that they should speak constructively or not at all. Normally the Prior might discipline them for their lax behavior, but we shall have to wait until the chapter tomorrow to see what he thinks.

### QUESTION 3: Lifestyle?

Our lives are strictly regulated so that our attention is always on worship, as will yours be, if you choose to become a monk. Your days would be arranged around the cycle of the Divine Office, six dedicated times for prayer. You would get up before dawn every day to begin this cycle and go to bed around nightfall. In between you would work in the cloister or study Scripture.

Your clothes and work tools would be issued to you by the monastery, and you would wear an official uniform like ours. You would take a vow of poverty, and own nothing of your own. This is to free you from the distractions and temptations of physical things.

## **Transitions**

### *To Ending*

(AMBIENT SOUND, GROWING LOUDER: FOOTSTEPS ON STONE)

If I am not mistaken, I hear the Prior returning. Then I shall take my leave and let you talk to him.

## *Area Transitions*

### *5 Area choice*

Well, you may go to the Church and the Scriptorium.

### *7 Area choice*

Well, you may go to the Church, the Infirmary, the Scriptorium, and the Kitchen.

### *Additional Audio*

Where would you like to go first?

(INTERACTABLE MAP SHOWN)

Good. Then I will walk you there.

(MAP ANIMATION SHOWN)

(BINAURAL: FOOTSTEPS FOR SEVERAL SECONDS, THEN STOPS. If going to/from the Infirmary, footsteps are always on gravel. Otherwise, footsteps are on flagstones. In both cases, faint outside ambience can be heard. Ambience is louder for footsteps to/from Infirmary.)

### *Location-Based Transitional Audio*

TO INFIRMARY: I see Brother John is with one of his patients. He will be with you in a moment.

TO CHURCH: Brother Simon will be with you soon. He is just instructing our newest brother.

TO KITCHEN: (*Over the clatter of the Kitchen*) Brother Martin...Brother Martin! Stop a moment and see to our guest.

TO SCRIPTORIUM: Brother Stephan, our guest has brought a manuscript for you to copy, and wants to know about the Scriptorium. Come and meet the Prior's nephew.

### **Area 3: Infirmary**

#### **Character: Infirmarian, Brother John**

- Age-range: Adult (30-35 equivalent)
- Local, been in Order all his life but possibly not this priory
- Has a wide variety of knowledge available to him

#### **Additional Character: Brother Phillip**

- Elderly monk receiving care
- Has rheumatism

#### **Key Messages**

- Healthcare and medicine
  - Traditional remedies (that they recorded)
  - Took care of monks
  - Took care of elderly monks (retirement/healthcare)'

#### **Ambience**

- Quiet space?
- Handling dried plants and/or other medicinal items? (bottles clattering around, rustling of plant-based ingredients)

- Coughing from a sick patient

## **Draft**

(AMBIENT AUDIO: coughing patient)

BROTHER JOHN

*(To unnamed monk)*

How are you feeling today, Brother Phillip?

BROTHER PHILLIP

My knees ache. Same as yesterday. Same as the day before.

BROTHER JOHN

All right, I will see what I can do.

(AMBIENT AUDIO: Rustling of dried objects and clattering of bottles for a few seconds, then stop)

*(To unnamed monk)* Brother, go to the millpond and get some willow bark for me please – just whatever comes off easily from the trunk. And the next time you see Brother Martin, kindly ask him for some red meat for Brother Phillip’s supper.

Oh, before you go, can you hand me my cane?...Much obliged.

*(To Brother Phillip)* We’ll have you feeling better soon, Brother. Rest easy.

*(Uneven footsteps and tapping noise on stone start for a brief period, get closer to the player, then stop.)*

*(To the player)* Hello there! I am Brother John. Welcome to the Infirmary.

*(Very officially)* Be it sickness, age, or infirmity, the Rule of St. Benedict commands us to take care of our brothers. The Infirmary is a space set aside for sick monks, away from the cloister, so they can get better without risking infection within the priory. We use the knowledge from our library to care for our brothers.

Do you have any questions for me? I am happy to help.

## **Player Interaction**



QUESTION 1: Sickness?

BROTHER JOHN

(Ambient audio: coughing patient)

St. Benedict was clearly a practical man, and the Rule reflects this in its chapter on illness. We do not allow our brothers to suffer if they are sick. We provide these brothers with medical care, and extra warm clothes and food. The Rule even allows them red meat to help in their recovery. I use the knowledge of the books we keep and my own experience to take care of my brothers, but if I am unable to help, we may bring in an outside physician from the city.

QUESTION 2: Age?

BROTHER JOHN

Our vows as monks are for life, and that does not change even if we are unable to do our duties anymore. Elderly monks stay in the Infirmary for constant care, and may be provided a helper if necessary. We look after their spiritual needs as well, and the community will witness the last rites. It gives me reassurance to know that I can rely on such good people no matter what infirmities may befall my body.

QUESTION 3: Infirmity?

BROTHER JOHN

When I was a boy, my nurse brought me to the guest-house of a monastery to consult about my club foot. The Infirmarian came out to meet us and to recommend a treatment. He told my nurse that there was little medicine could do for me, but that a life in the cloister would provide for my needs. Thankfully my family had connections that paid my way into the Order. This life suits me, and I enjoy the opportunity to help my brothers.

## Transitions

### *To Ending*

*(To another monk)* Yes, brother, what is it?

(FAINT WHISPERING)

Ah! It appears that the Prior has returned. I will just escort you to the chapter house, then. He is waiting for you there.

### *Area Transitions*

*(Transitions based on how many areas are left, as a voiceover for map instructions.)*

#### *3 Areas*

The Chamberlain said you may visit the Church, the Scriptorium, and the Kitchen.

#### *2 Areas*

- You may visit the Church and the Scriptorium.

- You may visit the Church and the Kitchen.
- You may visit the Scriptorium and the Kitchen.

### *Additional Audio*

Where would you like to go next?

(INTERACTABLE MAP SHOWN)

### *I Area*

- Have you been to the Church yet?
- Have you been to the Scriptorium yet?
- Have you been to the Kitchen yet?

### *All Area Transitions*

Then it would be my pleasure to take you there.

(MAP ANIMATION SHOWN)

(BINAURAL: UNEVEN FOOTSTEPS ON GRAVEL FOR SEVERAL SECONDS, THEN STOPS)

Location-Based Transitional Audio

TO CHURCH: I hope you enjoy the beauty of our church. It may be humble in size, but it is grand in design.

TO KITCHEN: (*Over the clatter of the Kitchen*) Brother Martin...Brother Martin! Will you speak with our guest for a moment?

TO SCRIPTORIUM: (*Stage whisper*) Brother Stephan, come and meet the Prior's nephew. He has brought a manuscript for you to copy, remember?

## **Area 4: Church**

### **Character: Sacristan, Brother Simon**

#### ***Characterization***

- Age-range: Middle Aged (30-45 modern equivalent)
- Only priest besides the prior
- Completely rejects outside world
- Singing a song when you come in
- Gets optimism from his beliefs

#### **Key Messages**

- Church and religious observances were center of daily life
- Day structured around observances

- Main job was religious piety
- Other jobs were secondary to this and only to keep monastery running
- Most of day spent on religious duties, not on secular work

## **Ambience**

- High ceilinged and echoing room
- If no observances going on, mostly silence
- At start, the echoing voice of the sacristan giving orders to the Novice, and clattering of metal objects being cleaned

## **Draft**

(AMBIENT AUDIO: Large door closes)

(AMBIENT AUDIO: When last sound ends, clattering of metal and wooden objects)

BROTHER SIMON

*(To Novice)*

If I am to trust you with the communion chalice, then you must show great care when cleaning it.

It's not even a few decades old, and it's already very fragile. Some of the stones are already becoming loose, as you can see.

NOVICE

Yes, Brother Simon. I'll be careful.

BROTHER SIMON

*(To Novice)* Good. When you get a chance, try to polish off some of this tarnish, but avoid the stones. *(Sighs)* I do hope that Brother Stephan will let me look at that manuscript when he receives it. This chalice has needed repairs for years now.

*(To Novice)* Brother, I see that our guest is here. Why don't you go and get changed into your new habit, like the Chamberlain said.

(AMBIENT AUDIO: Clattering of metal and wooden objects stops)

NOVICE

Yes, Brother Simon.

*(A large, heavy wooden door closes)*

BROTHER SIMON

Yes, hello there. My apologies for keeping you waiting. I'm Brother Simon, the Sacristan.

Welcome to our church. It is relatively new to the priory, and we are very proud of it. It is of a design, we hope, that is worthy of God.

As monks, much of our time is spent here in the Church, observing the Divine Office. The Office is a cycle of prayers that we sing together every day – you might say it is the main reason monks like us exist, even more so than the Mass. We pray to reaffirm our connection to God and ask for his good favor. We sing hymns and psalms together as part of our prayers.

However, we also observe all of the rituals that any good Christian will, including Mass and the religious holidays. As one of the few priests here, I often officiate at Mass, as does the Prior.

Do you have any questions?

### **Player Interaction**

QUESTION 1: Sacristan?

As Sacristan, it is my job to look after the religious objects of the Church, including the books and vestments we use in our services, as well as any religious objects, like the chalice we use for

Communion. I understand the manuscript you have brought contains information that I may be able to use to care for these objects. I will be very interested to see it.

I also look after donations from wealthy patrons. The life of the world outside is full of sin, and many people are eager to support the prayers of monks to help them win forgiveness in the eyes of God.

QUESTION 2: Mass?

BROTHER SIMON

We celebrate the same Mass as you do, but more frequently and with more celebration. It is the ritual of Communion, after all, and it allows us to reaffirm our connection to Christ and all of Christendom. We monks will sing or chant during Communion, but the focus is in ritual, not in prayer like in the Divine Office. Although all monks will sing during the Divine Office, only those who are ordained as priests can officiate at a Mass.

QUESTION 3: Church design?

BROTHER SIMON

Our church was finished only a few decades ago, in the new style they developed around Paris. You can see it even better in the Chapter House, which was started around the time they were finishing the church. The graceful columns and ribbed vaulting overhead give the building an elegance you won't find even in a noble's great hall. It's beautiful, isn't it?



## **Transitions**

### ***To Ending:***

(AMBIENT AUDIO: HEAVY DOOR OPENING)

*(To Novice)* Back already?

*(Faint whispering)*

*(To Novice)* I see.

Apparently the Prior has returned, and has asked for you. I will take you to the chapter house. He is waiting for you there.

### ***Area Transitions***

#### ***3 Areas***

You may go to the Infirmary, the Scriptorium, and the Kitchen.

#### ***2 Areas***

- You may go to the Infirmary and the Scriptorium.

- You may go to the Infirmary and the Kitchen.
  
- You may go to the Scriptorium and the Kitchen.

### *Additional Audio*

Where would you like to go next?

(INTERACTABLE MAP SHOWN)

### *1 Area*

- Have you been to the Infirmary yet?
- Have you been to the Scriptorium yet?
- Have you been to the Kitchen yet?

### *All Areas*

Then allow me to escort you there.

(HEAVY DOORS OPEN AND CLOSE.)

(MAP ANIMATION SHOWN)

(BINAURAL: FOOTSTEPS ON FLAGSTONES FOR SEVERAL SECONDS, THEN STOPS)

### *Location-Based Audio*

TO INFIRMARY: I see Brother John is with one of his patients. He will be with you in a moment.

TO KITCHEN: (*Over the clatter of the Kitchen*) Brother Martin...Brother Martin! Stop a moment and come speak to our guest, if you please.

TO SCRIPTORIUM: (*Stage whisper*) Brother Stephan, won't you please speak with our guest? He's brought the book by Theophilus to copy.

## **Area 5: Kitchen**

### **Character: Cellarer, Brother Martin**

- Age-range: Middle-age (35-40 as modern equivalent)
- Local, noble's son
- Cynical humor ("can't interrupt the meal. It would be heresy...of a sort.")
- Misses meat, wishes they could have it

### **Key Messages**

- What they ate
- Rationed food, but pretty good portions for the time
  - no red meat
  - basic meals
  - bread, ale, seafood
  - some simple recipes
- How they ate

- share plates of food, drinking containers
  - no talking -- use sign language
  - listen to Bible passages during meal
- continuing theme of silence and contemplation of religion

## **Ambience**

- Kitchen only, preparing for midday meal
- sound of chopping, utensils clattering, running water
- Fire crackling
- Quite loud & bustling

## **Draft**

(BINAURAL AUDIO: SOUNDS OF BUSY KITCHEN WORK: Clattering dishes, chopping, running water, fire crackling, and boiling water)

BROTHER MARTIN

*(To an unnamed monk)* The wine needs to be on the tables before the end of High Mass, and don't forget to put out the cheese on the shared plates today.

Oh, hello there! Sorry, we have little time to chat. We have much to do before dinner is served, and we can't be late – it would be heresy...of a sort.

One moment. *(To an unnamed monk)* On second thought, I think fruit would be best for today. Go and see if we have enough apples left in the cellar.

Have I introduced myself? I'm the Cellarer here. I'm in charge of the food and the cooks.

Brother Martin is my name. You want to know what life is like here, yes?

(AMBIENT AUDIO: loud clattering of dishes)

Every day, we have two meals in the refectory – a midday meal and one towards evening. Our food may be plain and dull compared to a noble's table, but at least we never lack for it, even in times of poor harvest. Saint Benedict knew that monks needed to eat sensibly.

Excuse me. *(To an unnamed monk)* I see those hand signals over there! Look lively and don't dawdle! If you don't check those beans soon they'll overcook!

Where was I? Oh yes. We have many fast days, when we only have one meal and simpler fare, but no one wants to hear about that! At any rate, we're always fed well enough to do our work. We also have many feast days, when we can have more treats, much more to my fancy.

So, what else do you want to know?

### **Player Interaction**

QUESTION 1: Food?

BROTHER MARTIN

Well, every day we each receive a pound of bread in addition to our regular meals of beans and boiled vegetables. We have wine – in moderation, of course – and season our food with salt. Depending on the day, we'll also receive extra dishes of food, like eggs, fruit, and occasionally seafood. Seafood usually means fish caught from the Priory's millpond. For fruit we might have apples or pears, and we have cheese regularly too. We do not eat red meat.

QUESTION 2: Refectory?

BROTHER MARTIN

The Refectory is where we take our meals. When we eat, we are required to be silent. If we need something, we use hand signals to ask for it. For example, if you were asking for a plate, you might put your hand out flat, or for fish, you might wave your hand around like a fish's tail.

One of our brothers reads from Scripture or another holy text while the rest of us eat. Not only do we hear the word of God, but we see it depicted on the walls, which are covered with paintings that show the stories of the New Testament.

QUESTION 3: Feast and fast days?

BROTHER MARTIN

Like you on the outside, we have feast days to celebrate religious holidays like Christmas. We'll have extra food at our meals and special things to eat, like eel or dumplings and pancakes. We also have many days when we are supposed to fast, including Lent, Fridays and the evenings of

feast days. For monks that means one less meal -- we eat as much as we need, but not as much as what our bodies want, and not the things we crave. You outsiders might cut out certain foods, but we already observe those restrictions, so we must fast by limiting our portions.

## **Transitions**

### ***To Ending:***

Have you been everywhere else? Then I will take you to the chapter house. The Prior is surely back by now, or he would miss the start of dinner. He will meet you there.

### ***Area Transitions***

#### ***3 Areas***

You may go to the Church, the Infirmary, and the Scriptorium.

#### ***2 Areas***

- You may go to the Church and the Infirmary.
- You may go to the Church and the Scriptorium.
- You may go to the Infirmary and the Scriptorium.

### ***Additional Audio***

Where would you like to go next?

(INTERACTABLE MAP SHOWN)

#### ***1 Area***

- Have you been to the Church yet?
- Have you been to the Infirmary yet?

- Have you been to the Scriptorium yet?

Then I can spare a few moments, I think. It will be my pleasure to take you there.

(MAP ANIMATION SHOWN)

(BINAURAL: FOOTSTEPS ON FLAGSTONES FOR SEVERAL SECONDS, THEN STOPS)

### *Location-Based Transitions*

TO INFIRMARY: It looks like Brother John is with a patient, but he is a most welcoming person. He will be happy to speak with you in a moment.

TO CHURCH: I hope you enjoy the beauty of our church. It may be humble in size, but it is grand in design.

TO SCRIPTORIUM: One moment, please.

*(Stage whisper)* Brother Stephan, our guest is here! He's brought the book you've been waiting for. Come and meet him, will you!

## **Area 6: Scriptorium**

**Character: Precentor, Brother Stephan**

### *Characterization*



- Age-range: Middle age (30-40 modern equivalent)
- From Germany: little known but impressive illustrator
- softly spoken, nervous, but speaks more when asked about his work and quickly becomes enthusiastic
- possibly nervous around others and doesn't know what to say

### **Key Messages**

- Center of learning and preservation of knowledge
- Rare in time period
- Preserved important texts, both religious and secular
- Recorded traditional remedies for the Infirmary's use
- Traded works with other monasteries and borrowed from powerful secular groups
- Also, precentor in charge of religious texts in church

### **Ambience**

The player should be able to hear scratching of quills on paper, and any of the following sounds: chalk on parchment, people shifting wooden chairs or desks, clattering of quills in ink wells, ambient noise of people in the room (low voices talking, coughing, etc.)

### **Draft**

BROTHER STEPHAN

*(A clatter of desk, shifting chair, and writing implements. Brief footsteps on stone)*

Hello.

(PAUSE)

You are the Prior's nephew, yes? I am Brother Stephan. I am the Precentor. I look after the religious texts and the Scriptorium. We copy manuscripts here.

(PAUSE)

Is that the manuscript you brought? May I take a look at it?

*(A heavy parchment codex passes between hands.)*

*(Speaking more quickly)* Marvelous. Truly marvelous. Theophilus' *Schedula diversarum artium*, the *List of Various Arts*. A collection of the secrets to the creation of great artistic works and in particular, the secrets of illumination. To hold such a beautiful copy in my hands is a truly rare opportunity.

Have you ever seen an illustrated manuscript before? They are things of great beauty. We will take this old book and give it to one of our copiers, who will produce a new version on good vellum. Then, one of our illustrators will add color and embellishments to the text, and pictures in the margins. Of course, one of the delights of this knowledge is for it to be used. Parts of the work are dedicated to painting, making stained glass, and metalwork. I would love to work on this book. I could even use some of Theophilus' own recipes to illustrate his work.

(PAUSE, DURING WHICH AMBIENT AUDIO: SLIGHT COUGH AND SCRATCHING OF QUILLS ON PARCHMENT CAN BE HEARD.)

*(More quietly)* Please, excuse my enthusiasm. I am not sure I answered what you came to ask, but I do not know what else to say.

## **Player Interaction**

QUESTION 1: Scriptorium?

BROTHER STEPHAN

Not many people know how to read and write, but monks need our letters in order to study Holy Scripture, so copying old books is one of the most useful works we can do. Here in the Scriptorium, we copy books, study, and sometimes translate old texts from other languages.

Without this practice, much knowledge might be lost. If we didn't copy these books, where would Christians find the knowledge to understand God, to heal His creatures, or to create beautiful things for His glory?

QUESTION 2: Precentor?

BROTHER STEPHAN

As Precentor, I look after the religious texts as well as the work that goes on in the Scriptorium. The priory has a small library, which I keep under lock and key. The monks come to me when it is time for them to read or copy a book. Of course, some of these books are by pagan authors. I am careful to make sure that only wise monks have access to books that could endanger a Christian soul.

QUESTION 3: Manuscripts?

BROTHER STEPHAN

We keep all sorts of manuscripts here, and sometimes monks produce new ones. Our collection is humble compared to the great monastic houses, but it is the best for miles around. We have books by ancient and modern authors, books of grammar, of religion, of medicine, even of poetry.

These manuscripts are very valuable, and a great deal of care is put into them. We use a variety of pigments to create illustrations that go with the text and demonstrate the religious messages of many of the stories held within.

## Transitions

Well, I...suppose you need the manuscript back now, yes? Well.

*(A heavy parchment codex passes between hands.)*

### ***To Ending***

Have you gone everywhere you wanted? Then I will take you to the chapter house. If the Prior is back, he will be expecting you there.

### ***Area Transitions***

#### ***3 Areas***

You may go to the Church, the Infirmary, and the Kitchen.

#### ***2 Areas***

- You may go to the Church and the Infirmary.
- You may go to the Church and the Kitchen.
- You may go to the Infirmary and the Kitchen.

Where would you like to go next?

(INTERACTABLE MAP SHOWN)

*1 Area*

- Have you been to the Church yet?
- Have you been to the Infirmary yet?
- Have you been to the Kitchen yet?

*All Areas*

I'll just take you there.

(MAP ANIMATION SHOWN)

(BINAURAL: FOOTSTEPS ON FLAGSTONES FOR SEVERAL SECONDS, THEN STOPS)

*Location-Based Transitions*

TO INFIRMARY: Brother John is just with a patient. He should be with you in a moment.

TO CHURCH: Brother Simon is here, I see. Then he will be happy to speak with you.

TO KITCHEN: (*Over the clatter of the Kitchen*) Brother Martin...Brother Martin! Come talk to the Prior's nephew, please.

## **Area 7: Chapter Room**

### **Character: Prior, Peter of Poitiers**

#### *Characterization*

- Age-range: Middle-age (45-55 as modern equivalent)
- Only member of the monastery to go outside on a regular basis
- Sees himself as a moral guide to his nephew (player-character)
- Values knowledge highly
- Sees life in the monastery as a way of self-betterment
- May manage less but holds high-level view (summarizer) and acts as moral authority, focusing on the ethics of actions instead of simply who should do what

#### **Key Messages**

- Summing up and review of what the player has learned
- Tie back into: Religion, knowledge, and self-sufficient life in the service of God

#### **Ambience**

- One of the only places they could speak freely
- Opened onto cloister
- Meetings held in the morning -- what would have been happening outside in the cloister during this time? Would all monks attend or only some? Would some stay after the meetings to discuss things and was talking allowed after the meetings if in the room?

#### **Draft**

(AMBIENT AUDIO: Fire crackling in grate)

PRIOR PETER

Ah yes, there you are. I apologize for not being here when you arrived, but I hear from Brother Nicholas that you have had a useful experience in my absence.

I suppose I should introduce myself properly, since the last time I saw you, you were only just learning to talk. I am Prior Peter of Poitiers. It is a pleasure to welcome my sister's son to my priory. I am sad to say I have not seen Marie in many years, though I have heard good things from her letters to me.

Well, I believe you have something for me.

(SOUND OF MANUSCRIPT CHANGING HANDS)

Thank you for bringing this manuscript so far. By copying this work, we will be able to preserve its contents for future generations. I would like to think that this book will help monks continue making beautiful things in God's honor for many centuries to come.

But you had another goal in coming here. I hope you found our humble priory to be of interest to you. Perhaps you learned something that you did not know before. When you leave today, I hope



that you will compare the outside world to the one within this cloister, and find yourself wishing to return.

In fact, I would like to see what you think of what you have learned here today. Would you like to see if you have what it takes to become a monk?

### **Player Interaction**

=> No, thank you

Response: Ah, you would prefer to return to your earthly delights and possessions then. I suppose I cannot blame you. But I hope what you have learned here has been of interest to you.

=> Yes, please quiz me

Response: Good! Let's see how well you fare.

*Please see Appendix B, Quiz Questions for questions asked in this section.*

## **Quiz Responses**

*Three responses are possible to the quiz outcomes – whether the player seems like they would be suited to being a monk, probably not suited, or on the fence.*

- Well, it seems like monastery life might suit you! I'm pleased. I'll look forward to the day when you join us in the Order.
- It seems that the life of a monk may not be for you. Perhaps you are destined to become a knight after all.
- I sense that you may be of two minds on the matter. You are always welcome back if you so choose.

## **End Transition**

(THE SOUND OF BELLS RINGING FROM THE CHURCH TOWER CAN BE HEARD. THE PRIOR STANDS, AND A CHAIR OR BENCH IS PUSHED BACK AS HE DOES THIS.)

I must go change into my vestments for High Mass. Fare you well, and thank you for visiting the Priory.

(FOOTSTEPS ECHO ON FLAGSTONES, THEN FADE AS THE PRIOR LEAVES.)

## **Credits**

(BACKGROUND AMBIENCE OF MONKS SINGING MAY PLAY.)

NARRATOR

*A Visit to the Priory* was created as a Master's thesis by Caitlin Malone, a student in the Interactive Media and Game Development program at Worcester Polytechnic Institute. It was completed with the generous help of Jeffrey Forgeng, as a history advisor and representative of the Worcester Art Museum; Brian Moriarty, as thesis committee chair and technical advisor; and Dean O'Donnell, as a reader.

This narration is by Helen Lisanti.

Additional voice acting was generously donated by members of the local community. Our cast members are:

*[Further credits were provided by the specific actor, ex. "X as Brother Martin".]*

ADDITIONAL NARRATOR

Additional audio was graciously provided by the monks of St. Joseph's Abbey in Spencer, Massachusetts.

NARRATOR

On behalf of everyone who contributed, thank you for listening.

## Appendix B: Quiz Questions

The following questions were provided based on what areas were visited and what questions were asked – front gate core question 1 was asked in all quizzes, and the other four were selected from the list based on criteria described in the essay.

Options in **green text** indicate the correct answer. Options as listed below may not appear in the same order in the finished product.

### Front Gate

#### *Core*

**1. When do we allow outsiders into the priory?**

- a. **Almost never**
- b. Relatives only
- c. On holy days

**2. What is the cloister used for?**

- a. Prayer
- b. The chapter meeting
- c. **Work**

#### *Specific*

**1. What is a priory?**

- a. The prior's house
- b. A large monastery
- c. **A small monastery**

**2. What is the Benedictine Rule?**

- a. The rule of absolute silence
  - b. Instructions for running a monastery
  - c. The daily meeting
- 3. What kinds of people often become monks?**
- a. Children from poor families
  - b. Priests' sons
  - c. Younger sons of noblemen

## Chapter House

### *Core*

- 1. What does the Chamberlain do?**
- a. Manage supplies
  - b. Order food for the monastery
  - c. Clean the dormitory

### *Specific*

- 1. When are monks allowed to talk?**
- a. Never
  - b. Always
  - c. During certain times
- 2. What is the purpose of a chapter meeting?**
- a. Prayer
  - b. Discussion of priory business
  - c. Testing monks on their studies

**3. Who owns a monk's equipment and clothing?**

- a. The monk
- b. The monastery
- c. No one

**4. What is the focus of the priory's daily schedule?**

- a. Mass
- b. The Divine Office
- c. Work

## **Infirmary**

### *Core*

**1. What does a monk do if he is no longer able to work?**

- a. Beg for donations
- b. Go back to his family
- c. Remain in the care of the monastery

**2. How do we care for the sick?**

- a. Pray and hope they get better
- b. Provide medicine and extra food
- c. Send them to a hospital

### *Specific*

**1. Where does an infirmarian get his medicine?**

- a. He makes it himself

- b. From a nearby town
  - c. From traveling merchants
- 2. What do sick monks receive to help them recover?**
- a. Red meat
  - b. Brandy
  - c. Visits from a priest
- 3. Who is allowed to stay in the Infirmary?**
- a. Sick monks
  - b. Elderly monks
  - c. Both
- 4. What does the monastery do with sick outsiders?**
- a. They are taken to the Infirmary
  - b. They are referred to a physician in the nearby town
  - c. The Infirmary can come treat them
- 5. Where do Infirmarians get their medical knowledge?**
- a. Traditional remedies plus books
  - b. They are trained physicians
  - c. Lots of trial and error

## **Church**

### *Core*

- 1. What does the Sacristan do?**
- a. Look after the Church

- b. Lead Mass
- c. Supervise the Scriptorium

### *Specific*

#### **2. What do the monks do during Mass?**

- a. Take turns giving the sermon
- b. Read from the Bible
- c. Take Communion

#### **3. What is the Divine Office?**

- a. A daily cycle of prayers and psalms
- b. The Prior's office
- c. A set of rules for the priory

#### **4. Why are we proud of our church?**

- a. All monks are proud of their churches
- b. Many pilgrims come to worship here
- c. It's built in a new style

## **Dining Hall/Kitchens**

### *Core*

#### **1. How many meals do we eat each day?**

- a. One (1)
- b. Two (2)
- c. Three (3)

#### **2. When do we eat less food?**



- a. On fast days
- b. On Christmas
- c. When the harvest is bad

### *Specific*

#### **1. What are monks not allowed to eat?**

- a. Red meat
- b. Seafood
- c. Sweet foods

#### **2. What do the monks do while eating?**

- a. Listen to readings from the Bible
- b. Take turns praying
- c. Discuss Priory business

#### **3. Why do we use hand signals?**

- a. To talk without the Prior knowing
- b. To ask for things during silent periods
- c. To avoid talking with food in our mouth

#### **4. Why do we fast?**

- a. To conserve food
- b. To observe Lent
- c. As punishment

#### **5. When do we feast?**

- a. When there is a good harvest
- b. When the Prior says we can

- c. On holy days

## **Scriptorium**

### *Core*

- 1. What does the Precentor do?**
  - a. Manage the Church
  - b. Manage the Priory
  - c. Manage the Scriptorium
- 2. What is Theophilus' work about?**
  - a. Painting, stained glass, and metalwork
  - b. The Benedictine Rule
  - c. The meaning of the Bible

### *Specific*

- 1. What is the purpose of the Scriptorium?**
  - a. To teach reading and writing
  - b. A place for monks to work
  - c. To study how to make stained glass
- 2. What texts does the library hold?**
  - a. Religious texts
  - b. Pagan texts
  - c. Both
- 3. What do we do with pagan texts?**

- a. Burn them
- b. Give them to the Prior
- c. Keep them under lock and key

**4. What do our religious books look like?**

- a. Beautiful and colorful
- b. Simple and undecorated
- c. Big letters so elderly monks can read them

## Appendix C: Use Cases and User Stories

### Usage Examples

#### *Family Players*

(It is assumed that children elementary school age your younger will be using the app with the help of adults or older children).

- **Interrupted players with outside interaction:** Small children may focus only partial attention on the app, while being distracted by events in the physical space.
  - These players may select all options available to them, or random options available to them, but may not pay close attention to the results; or may focus only on the basic concept of the app, with little understanding of the details.
  - Alternatively, adults using the app to entertain younger children may notice this tendency and may speed through the app in order to maintain the child's attention. These players may complete the app with the minimum possible time and while asking few or no questions. These players will also get only the basic concept from the app, and will be looking primarily for interactivity and novelty, not information.

#### *Educator Player*

- **Educator using app in museum trip:**
  - Students may be encouraged to download the app before or during the trip and may listen to the app silently or with a partner.
  - The educator may play the audio on speaker in the chapter room to provide context and ambience to their visit.

- Additional activities may be suggested or required by the educator (including worksheets).
- **Educator using app in classroom:**
  - Educator may encourage students to download the app themselves as part of a homework assignment, individual class assignment, or as a free-time activity.
  - Educator may alternatively use the app on speaker as a group activity in the classroom. They may go into depth using the questions to spark class discussion, or may only use the main audio items in tandem with a class discussion or alternate activity.
  - Future versions of the app may be used for language learning activities using the close-caption and audio language select features.
- **Interrupted class with lack of time:**
  - An educator who has used the app beforehand may be able to plan for this and choose a tour that can be completed within the allotted time.
  - An educator who is not able to complete their chosen tour may be able to encourage their students to finish the tour on their own time in the museum or classroom, or to complete the tour at home.
- **Interrupted player with outside interaction:**
  - The audio may be paused while playing to accommodate outside interaction or instruction.
  - The app does not continuously play audio, so interactions may be planned for these periods.

- Additionally the player may wait until an audio break to attend to an outside interaction.

## **User Stories**

### ***Generic User Accessing App through Online Marketplace***

1. As an Online Marketplace User, I want to be able to access the app directly from my chosen marketplace.
2. As an Online Marketplace User, I want the app to be free.
3. As an Online Marketplace User, I want to be able to understand the point of the app and what it should be used for based on the description.
4. As an Online Marketplace User, I want to be able to view the features of the app in the detailed description.
5. As an Online Marketplace User, I want to be able to view screenshots of the app that highlight its behavior and features while in use.
6. As an Online Marketplace User, I want to be able to view the accessibility options available in the app.

### ***Generic Player***

1. As a Player, I want to be able to access the app from my smartphone while inside the chapter room.
2. As a Player, I want to be able to understand how to operate the main menu screen based on the options available.

### ***English as a Second Language (ESL) Player***

1. As an ESL Player, I want to be able to turn on my preferred language without being confused about the interface.
2. As an ESL Player, I want the interface choices to be clear enough that I do not need labels in order to understand them.

### ***Hearing Impaired Player***

1. As a Hearing Impaired Player, I want the interface controls to be understandable without labels or a phonetic understanding of language.
2. As a Hearing Impaired Player, I want the closed captions to be easily accessible.
3. As a Hearing Impaired Player, I want the closed captions sound effects to make sense even if I have never heard the sound.

### ***Vision Impaired Player***

1. As a Vision Impaired Player, I want the interface controls to be clear and easy to press without bumping other controls.
2. As a Vision Impaired Player, I want descriptive audio labels for all on-screen interface options.
3. As a Vision Impaired Player, I want the option to use voice commands for each on-screen interface option.
4. As a Vision Impaired Player, I want the app's design to use highly contrasting colors.
5. As a Vision Impaired Player, I want the font size to either be large by default, or to be adjustable in the app.

### ***Middle-School Aged Player***

1. As a Middle-School Aged Player, I want to be able to understand the vocabulary used in the app and not feel left out of the experience.
2. As a Middle-School Aged Player, I want to be able to understand the concepts described in the audio based on my prior knowledge.

### ***High-School Aged Player***

1. As a High-School Aged Player, I want to be challenged by the experience by being presented with vocabulary and ideas I haven't encountered before.
2. As a High-School Aged Player, I want the experience to be open-ended so that I can make my own conclusions on the presented topics.
3. As a High-School Aged Player, I want the experience to be written in a way that does not talk down to me or makes it clear that the target audience is for younger children.
4. As a High-School Aged Player, I want to be able to make choices to customize my experience.

### ***Generic Adult Player***

1. As an Adult Player, I want the experience to be written in a way that does not talk down to me or restrict my ability to make choices.
2. As an Adult Player, I want to be able to make choices to customize my experience.
3. As an Adult Player, I want to be able to explore the app and access information of greater depth than the required audio clips.
4. As an Adult Player, I want to be able to access information at a variety of detail and difficulty without feeling condescended to if I don't already know the information.



### ***Subject Matter Expert (SME)***

1. As an SME, I want the app to avoid using commonly misunderstood information.
2. As an SME, I want users of the app to learn a general impression of what it was really like to live in a Benedictine priory.
3. As an SME, I want the app to convey the human aspects of the priory.
4. As an SME, I want the app to challenge conventional wisdom about life in the Middle Ages.

### ***SME Adult Player***

1. As an SME Player, I want the experience to convey information with enough depth that it goes beyond generalizations.
2. As an SME Player, I want the experience to be open-ended so that I can draw conclusions myself about the presented information.

### ***Educator***

1. As an Educator, I want my students to be able to pause the app after audio has played so they can listen to or follow instructions.
2. As an Educator, I want my students to be able to pause the app at any time to follow instructions.
3. As an Educator, I want my students to be able to run the app in the shortest steps possible so possible mistakes in following directions are avoided.
4. As an Educator, I want the experience to be reliably repeatable so that I can give students operating instructions.
5. As an Educator, I want the experience to be reliably repeatable so that I can be sure that students are getting key points out of the experience.

6. As an Educator, I want the experience to be reliably repeatable so that I can measure student's learning.

### ***Audio Designer***

1. As an Audio Designer, I want the app to focus the user's attention on the audio experience as much as possible.

### ***Programmer***

2. As a programmer, I want the audio engine interface to be generic enough that the engine is not directly tied to the app design.
3. As a programmer, I want the audio engine to accommodate multiple language functionality.
4. As a programmer, I want the design and interface to be decoupled from the system design as much as possible.
5. As a programmer, I want the animations to be easy to replace if necessary.
6. As a programmer, I want any closed captioning or text engines to be supported easily by the engine even if it is not implemented.
7. As a programmer, I want the text engine to be decoupled as much as possible from the audio engine and user interface.

### ***Interface Designer***

1. As a designer, I want the interface to be as minimal as possible.

## Appendix D: Player Testing Surveys

Pre- and post-tests were administered using the online Murvey service. Questions are reproduced here, while formatting is not identical to the site (but is analogous).

### Pre-Test

Welcome to the tour demo! Please fill out the following survey before starting your tour.

1. How familiar are you with medieval history?

1	2	3	4	5	6
Not at all					Very familiar

2. How long would you be willing to sit somewhere and experience something during a museum visit?
  - a. I wouldn't
  - b. A few minutes, if I wanted to sit down
  - c. 20 minutes or less
  - d. Around 30 minutes
  - e. Up to an hour
  - f. Depends on the subject, then up to: (Free input option)
3. Have you used an audio tour before?
  - a. Never
  - b. Once or twice
  - c. Several times

- d. 5 or more times
4. Have you been to the priory chapter house in the Worcester Art Museum?
- a. Never
  - b. Once or twice
  - c. Several times
  - d. 5 or more times
5. How interesting is the chapter house to you?

1	2	3	4	5	6
Not at all					Very interesting

Thank you for your participation! Please start the demo now. Choose whichever option seems the most interesting.

**Post-Test**

Now that you're done with the demo, please let us know about your experience.

1. Which tour length did you choose?
  - a. 3 areas
  - b. 5 areas
  - c. 7 areas
2. Why? (Open-ended text response)
3. How did you feel during your experience? (Open-ended text response)

4. How did you like the premise of the tour? Did it make sense? (Open-ended text response)
5. Was there any point during which you didn't immediately understand what was going on? If so, what didn't make sense? (Open-ended text response)
6. Where there any terms used in the tour that you weren't familiar with? If so, which terms and were they explained? (Open-ended text response)
7. Were the menus or maps in the tour ever confusing? (Open-ended text response)
8. Did you take the quiz at the end?
  - a. Yes
  - b. No
9. If you took the quiz in the end, did you like it? If you did not take the quiz, why? (Open-ended text response)
10. If you had the opportunity, would you use an app like this again? Would you enjoy using this app in a museum environment? (Open-ended text response)

Thank you for trying out the demo!

## Appendix E: Sound Effect Resource List

Items marked as “Not used” were slated to be added to the tour, but have not been added as of the writing of this paper.

Abbreviations: “Infirm” means Infirmary, “C.H.” means Chapter House and “Script” means Scriptorium.

Item	Category	Description	Status	App Area
Insects buzzing	Ongoing effect	Outdoor Ambience (see script)	Completed	Outdoor ambience at Gate
Birds chirping	Ongoing effect	Outdoor Ambience (see script)	Completed	Outdoor ambience at Gate
Knock on wooden door	Effect	Player interaction with environment (introduction)	Completed	Gate
Metal bolt sliding	Effect	Window in gate door or gate door being opened	Not used	Gate
Creaking hinges (small door)	Effect	Window in gate door opened	Completed	Gate
Horse snort	Effect	Needed to indicate player has a presence in the world and "sounds wealthy"	Not used	Gate
Harness jingle	Effect	Needed to indicate player has a presence in the world and "sounds wealthy"	Not used	Gate
Creaking hinges (large door)	Effect	Gate door opened	Not used	Gate
Manuscript jostled (paper or book moved around)	Effect	Used to show that player has book	Completed	Gate
Manuscript changing hands (paper or book transferred to another character)	Effect	Used to show movement of manuscript	Completed	Gate, Script, End
Footsteps on stone	Ongoing effect	Need a version for the player (M) as well as guides (L)	Completed	Transitional: Gate, C.H, Script, Kitchen, Church, End

Crowd of voices, general	Ongoing effect	Sound coming from Chapter house to right of player while in cloister	Not used	C.H.
Crowd of voices, echoing	Ongoing effect	Sound surrounds player	Not used	C.H.
Echoing clatter	Ongoing effect	Primarily from left, with player character facing fireplace	Not used	C.H.
Echoing footsteps	Ongoing effect	Need versions in both L and R stereo to be used periodically in chapter house ambience	Not used	C.H.
Footsteps on gravel	Ongoing effect	Player's guide, walking alongside them to Infirm	Completed	Transitional: To Infirmary
Coughing male (two versions in same voice)	Effect	Ambience for Infirmary	Not used	Infirm
Rustling of dried objects	Ongoing effect	Character interaction with environment - Infirmarian	Completed	Infirm
Clattering of bottles	Ongoing effect	Character interaction with environment - Infirmarian	Completed	Infirm
Uneven footsteps on stone	Ongoing effect	Infirmarian approaching player	Not used	Infirm
Uneven footsteps on gravel	Ongoing effect	Infirmarian walking alongside player	Not used	Transitional: From Infirmary
Tapping cane on stone	Ongoing effect	Infirmarian additional effect -- approaching player	Not used	Infirm
Tapping cane on gravel	Ongoing effect	Infirmarian additional effect -- walking alongside player	Not used	Transitional: From Infirmary
Large door opening in echoing room	Effect	Characters entering/leaving church	Not used	Church
Large door closing in echoing room	Effect	Characters entering/leaving church	Not used	Church
Clattering of metal and wooden objects on wooden table with tablecloth	Ongoing effect	Character interaction with environment - Sacristan	Completed	Church
Putting metal objects down?				
Clattering dishes	Ongoing effect	Ambience for Kitchen	Not used	Kitchen

Chopping food	Ongoing effect	Ambience for Kitchen	Completed	Kitchen
Running water	Ongoing effect	Ambience for Kitchen	Not used	Kitchen
Fire crackling	Ongoing effect	Ambience for Kitchen and End	Completed	Kitchen, End
Boiling water	Ongoing effect	Ambience for Kitchen	Completed	Kitchen
Clatter at desk	Ongoing effect	Ambience for Scriptorium	Not used	Script
Shifting wooden chair/bench on stone	Effect	Ambience for Scriptorium	Not used	C.H., Script, End
Clattering writing implements on wood	Ongoing effect	Ambience for Scriptorium	Not used	Script
Slight cough	Ongoing effect	Effect during pause in main audio, Scriptorium	Not used	Script
Scratching of quills on parchment	Ongoing effect	Ambience for Scriptorium	Not used	Script
Parchment being shaken out/rattled	Effect	Ambience for Scriptorium	Not used	Script
Tapping of quills in inkwells	Effect, repeated	Ambience for Scriptorium	Not used	Script
Monks singing psalm or hymn	Music	Ambience for End Credits	Not used	Credits (also beginning)
Ringling church bells	Ongoing effect	Sound effect for End Transition (see script)	Not used	End