GAME ANALYSIS WIKI

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Abstract

The goal of this project was to create a system that challenged conventional game analysis in order to encourage deeper thought about game design. To accomplish this goal, a game analysis wiki was created for cataloging movement-based game mechanics found across various different games. This report documents the development of this wiki from start to finish, as well the creation of a tag-based system for game analysis. Significant issues that arose during development are also discussed in this report.

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1. Introduction

1.1 Generic Introduction to Game Wikis

A video game wiki, typically known as an encyclopedic knowledge website for video games that anybody can contribute to, is not a new concept within the space of interactive fiction and fandom. In general, a wiki addresses the need for organizing information about a subject by using some type of collaborative software. As the concept of a wiki dates back to the dawn of the 21st century, at a time when video games had begun to reach significant popularity with the general public, the need to collectivize knowledge about a game would inevitably be connected with the technology that would fulfill that need to do so.

Today, video game wikis are best recognized for their extensive coverage of video game documentation, as these wikis cover a vast array of different games and genres. Each of these wikis reflects the work of a collaboration, the work of tens if not hundreds of people who come together to share and promote their knowledge on video games. Moreover, this means that game wikis are always evolving to keep up with the newest changes and additions in the landscape of gaming. Most of all, anybody can easily access all this information by searching about a game subject on any web engine, and chances are, the wiki in question will show up with that information. When video game wikis can readily provide up-to-date information for a variety of different games, what other aspects have yet to be explored?

1.2 Initial project goal/vision of the advisors

The original vision for the project was to create a resource for WPI students, and possibly faculty as well, to compare abstract aspects of games separated from conventional definitions established by modern game design. A game's pre-defined genre has historically determined the comparisons we are allowed to make between them, allowing for very little overlap in discussion. Our advisors wanted to be able to defy this convention to a degree, inviting users of a platform to draw comparisons between all games, defying traditional convention.

Our advisors advertised the IQP with the following description: *"In this on-campus IQP we will do just that: play games and then analyze their mechanics, systems, and stylistic elements to understand how they work and how they give shape to the played experience. These observations will then be organized, cataloged, and cross-referenced in a wiki that we will build."* This description of the project describes a desire to emphasize the act of play to actively be involved in the analysis of games, as well as cross-referencing between games to be a primary end goal of the platform to be created. With additional discussion, the website *TVTropes* played as a major source of additional inspiration, being a resource that allowed for easy cross-comparison between various pieces of media, which further emphasizes the desire to reach beyond conventional definitions of genera that are typically used.

1.3 Determining objectives and metrics for success

As previously stated, the purpose of a video games wiki is to act as a resource that allows for easy access for and documentation of aspects of video games. In our case, that would mostly be shaped around meeting the goal of our advisors as well as creating a platform that allows for clear and concise cross-referencing of aspects between games.

A successful version of this project would first require that we meet the expectations of the user for what video game wikis have historically been in terms of both ease of access and understandable structure. In addition, the application would also need to allow for broad cross-referencing of a vast array of topics and games, so that all aspects of game design could be documented on the wiki. Our project advisors have made their desires to see an experimental take on this system attempted, so while focusing on maintaining a deliverable, we decided it was important to realize the unique value the wiki would bring on its own that other existing wikis do not currently provide.

In addition to these metrics, our advisors mentioned that we would be planting the seeds for future development of the wiki. Therefore, it is critical that the foundation developed for the wiki is intuitive and flexible for the future development and expansion of the application. By the end of the project period, if we meet the previously mentioned metrics of success, then this criteria will be met as well.

1.4 Report Outline

The background section of this report provides an overview on previous research linked to this project, which are game analysis and wiki sites. This section examines various wiki sites and game analysis tools that break down and frame information into components, which relates to the project's fundamental goal of analyzing parts of games.

Next, the report presents the initial design proposal that was created for this project after researching the background. This section explores the brief experiments conducted by mimicking existing strategies for analyzing games and structuring wikis. The data from these experiments

were used to justify a possible system that could be used for analyzing games' components in a way that could be fit for presentation on a wiki website.

Following the proposal is the design process, which details the methodology for implementing the project proposal. This section describes the target audience of our project, the use of various data collection methods, and the system that was created to organize and store collected data. Additionally, this section discusses the various setbacks that significantly hindered the implementation of these features during the design process.

Subsequently, the final design section describes the analytical lens and wiki website structure the project eventually landed on. This section briefly talks about how this lens works, how the website's pages are structured, and the automation system developed for quickly transcribing information on those pages.

Afterwards, this report will dive into an analysis section, which focuses on evaluating the overall design of the project. This section reflects upon the project's evolution, assesses how well the analytical lens performs, compares the project to other sites discussed in the background, and explains some of the rationale behind the choice of games used.

Then, the reflection section of this report showcases reflections from the team that worked on this project. This section expresses each member's individual thoughts on more personal aspects about the project, such as lessons learned, team dynamics, and achievements.

Finally, this report presents the conclusions & future work section, which suggests some possible ways for the project to be developed in the future. This section mostly focuses on how features from the final design, specifically the wiki site and the analytical lens, could be expanded upon in the future.

2. Background

2.1 Research Approach

When we first started our research for this project in A term we were not quite sure where we should start. Our advisors provided us with links to different articles related to different lenses used to categorize and analyze games. Some of these lenses included Arcs and Loops, creative design pillars, design structure and steam tags. Our team first started out by getting an understanding of what these various lenses used in order to categorize different games. The next thing we did was focus on getting some actual data that we could use. In order to collect this data we initially all agreed on both a game that we would all play as well as a lens that we would use to describe that game and classify it. After a week or two of collecting data this way, we changed our approach to splitting up into sub groups. Each sub group would pick a game and a lens so that we would be able to collect more data over a shorter period of time.

2.2 Existing Wikis that Catalog Multiple Games

A wiki is most commonly defined as a website that organizes and supports collaborative editing of its information. While occasionally used as personal information organizers and manuals, the wiki is most noted for its use as an encyclopedia (Dennis, 2024). Similarly, wiki software is frequently used by fan-communities to create fan sites dedicated to documenting knowledge on movies, books, TV shows, and celebrities (Hanna, 2023). The use of wikis as encyclopedias or movie fan sites means that wikis are not limited to coverage over a specific

instance of media. Rather, wikis are capable of cataloging multiple instances of media, which naturally leads to the question of how these sites are structured to do so.

There are plenty of wikis that cover a range of topics about gaming. Some of these wikis are tailored for gaming specifically; other wikis simply include gaming topics as part of a broader scope to document media as a whole. Crucially, each of these wikis will assess the same game in different ways. This subsection will review some of these wikis to evaluate what different information they choose to present about the same game, and how they organize this information. *Super Mario Bros*, a video game whose "impact on pop culture and the gaming industry cannot be overstated" (Cavacini, 2023), will be chosen as the game to evaluate across these wikis, as the game's broad cultural reach makes it well-documented.

2.3 Researching other “wiki” sites for reference

2.3.1 Wikipedia

Wikipedia's entry on "*Super Mario Bros.*" (2024) is an article that provides information on various subtopics that are relevant to the game. Some of the listed subtopics in the article are gameplay, development, and reception, which are subjects that individually carry a broader meaning outside of *Super Mario Bros*. itself. This opens up the possibility that writers could reuse these subtopics when writing up articles for other games, which would allow a reader to compare *Super Mario Bros*. to a different game article on *Wikipedia* in terms of gameplay, development, and reception. Such a process can be surmised as "cross-referencing between games", which is a critical component of our project goals, so this method could be a potential option for evaluating games in the project.

In the article, each subtopic has its own section header that describes the game in context of that particular subtopic. The section for a subtopic conveys the bulk of its information as passages, but occasionally makes use of captioned images to help illustrate certain points, such as the visuals used in the gameplay of *Super Mario Bros.*, or the arcade cabinet that was built for the game's release. As passages and images can convey a lot of information by themselves, this enables writers to discuss a game's relation to the subtopic more deeply, which could also help a reader understand the application of the subtopic itself. The use of passages and images could benefit our project similarly to how it benefits the subtopics found in *Super Mario Bros.*

2.3.2 TVTropes

TVTropes's video game article on "*Super Mario Bros.*" begins with an introductory passage, followed by a list of tropes, which are storytelling devices and conventions that apply to the game. The passage gives a general overview of the game by discussing its background, story, and legacy; paragraph by paragraph. Meanwhile, the list of tropes contains the main information about the game, with each list item describing how a trope fits into the game. The combined formatting of the passage and list complement each other to introduce the topic and convey information about it. However, the fact that the list of tropes takes up more content on the page implies that only the list of tropes is essential to the article. This means that while the passage serves to help the reader understand the topic, text passages are not necessarily the only method for assessing games, and thus could be discarded in favor of an alternative formatting method like *TVTropes*'s list of tropes.

The list of tropes provided on the page for *Super Mario Bros.* exhibits some notable formatting patterns. Every item in the list is made up of two different components, which are the trope name and the example. The first component, the trope name, is a short identifier for the

trope that is used in the list item, typically composed of two to three words. The second component, the example, is a description of an action or event about the game that is associable with a trope. The description length varies from a sentence to a paragraph. Furthermore, trope names and examples are mapped one-to-one to each other, which means that no two trope names have the same example, and no two examples have the same trope name. These features of the list of tropes define the structure of the list in a way that makes the list easy for a reader to understand by restricting the combinations of tropes and examples, as well as putting a limit on the word count. As readability is a strong benefit for any wiki, a list built with similar restrictions on combinations and word count could be an option for how our wiki would be structured.

2.4 Other existing methods of categorization for games

In our research for inspiration of how to approach the categorization of games we looked upon pre-existing methods that seemed to be working for websites such as *TVTropes*, *Fandom*, and others of the likes. The common denominator between such websites is the use of genres to divide games into digestible portions. These methods are effective at providing a general division of games while allowing for a concentration into a certain genre. Other methods of categorization included the division of game elements into what makes a game enticing. Such as this table shown below:

#	Basic element	Definition
1	Mechanics	The mechanics of the game refer to the set of rules and procedures which regulate the players' performances to achieve the goals of the game. In fact, what differentiates between more linear entertainments (such as book, movies, etc.) and games is the element of mechanics and their vital role to complement other elements of "aesthetics", "story", and "technology"
2	Aesthetics	As the name suggests, this element is very much related to how the overall environment of the game looks. Aesthetics are considered to be an exceptionally important aspect of game design because of their direct positive correlation to the players' experience. In order to help players grasp an assured feel of the game and truly immerse in the story, a certain visual technology needs to be adopted to intensify the aesthetic features of the game
3	Story	Game story refers to a series of events and the way they unfold throughout the game. This process could be either linear and predefined or emergent and in a bifurcating manner. There exists a close relation between the game mechanics and the story, as the former can pave the way for a powerful emergence and unfolding of the events in the latter
4	Technology	Represents the set of tools, resources, and know-how needed to bring the game to life. Technology is related to any form of these elements, from crayons and duct tape used in your first prototype. It is the very medium of your game where technology aesthetic elements are implemented. Highly important for the final outcomes of the game

Schell J. The Art of Game Design: A Book of Lenses. Burlington, USA: Morgan Kaufmann Publishers; 2008

These methods also seem effective in determining the successful features of a game that make it playable but also enjoyable. With the combination of game elements and genre categorization, websites like those mentioned before have provided gamers and the like with valuable resources to examine games while not being too overwhelming.

The human brain is wired to categorize items, which is an important adaptation for survival, so it is not surprising that it is important for us to categorize things in order to understand them and that we attempt to do so with everything we encounter (Branan, 2010). Traditionally, media, such as books and movies, have primarily been categorized by genre - fiction, non-fiction books or action, drama, horror movies. Given the success of this method of categorization, like the famous Dewey Decimal System for libraries, it is not surprising that categorization of new interactive media, like video games, followed the same path of using genres. Certainly the earliest and most prevalent categorization systems for video games used

genres, but video games “challenge traditional genre conceptualizations and boundaries” (Clarke, 2015). Due to their interactive nature, built on their gameplay elements, video games are more than their narrative, and so typical categorization techniques, “fail to capture the novel complexity inherent in these games” (Clarke, 2015). Genre-based categorization fails both to properly identify and explain the true game experience and limits the creativity that is found in video games by placing them in a specific box. So, genres are expanded and many games are identified as genre-bending, in multiple genres, but the result is the categorization system becomes so fluid as to be unusable. In order to address the problem with genre-based categorizations, many systems have been proposed as alternatives and this is the genesis of the Game Analysis Wiki project. The following are summaries of some of the newest categorization methods proposed by academic researchers, game designers and game companies.

2.4.1 A Game Design Vocabulary (Anthropy & Clark)

“*A Game Design Vocabulary: Exploring the Foundational Principles Behind Good Game Design”* by Anna Anthropy and Naomi Clark was one of the first pieces of writing that we considered while determining how exactly to analyze/categorize games. The main concept that we delved on within this writing was that of “verbs & objects” which brought forth the idea of “rules” that game developers implicitly create in order to have a game interact in the way that they intended. In continuation, these verbs and objects explained that there is context between every interacting feature of a game. The interactions between these specially defined verbs & objects(different for each game) is what we mainly initially focused on within this reading. Each of the team members took on different games and explained what “verbs & objects” meant for the context of said game.

2.4.2 Arcs & Loops (Daniel Cook)

Arcs and loops is a game design structure classified by Daniel Cook (Cook, 2012), in which he says the process revolves around a model that repeatedly prompts player action to enter a looping state for the game world to respond to. This player response then either creates another loop to prompt the player with or reinitialize the current loop with updated parameters. Arcs on the other hand, while following the same structural format as a loop, do not repeat. They instead seek to transition between each loop created. Cook provides examples such as reading a book or watching a movie as applicable examples of an arc, as these are prompts that don't entice the player to return to them once consumed. Both of these proposed structure do have their faults, also highlighted by Cook, arcs can become tiresome as they typically don't entice the player to return to their experience, and while loops provide the player with numerous branches and pathways to shape their individual experience, they lack a distinct start and endpoint for the player to enter or exit from once inside the loop. In that regard, arcs serve the purpose to bridge between instances of itself or of other loops in a game.

2.4.3 Pillars (Max Pears)

Pillars is another system of understanding games, and is often used as a core part of the design process when creating a video game (or almost anything else, for that matter). As Max Pears writes in Design Pillars – The Core of Your Game, pillars are the "main elements/emotions your game is trying to explore and make your players feel" (Pears, 2017). He talks about the game *The Last of Us*, and lists four pillars that the game stands on: Crafting, Story, AI Partners, and Stealth.

Game designers use this method very frequently, to guide the design of a game throughout its development. Some game studios even have pillars listed on their websites that all the games they produce follow. This is useful to players as well, as if a player enjoys mechanics built on a certain pillar within a game, they can find other games that share a similar pillar, and thus would likely be also enjoyable to them. However, in the context of our wiki, this method's usefulness is limited; Our wiki categorizes games at the element level, and design pillars is a concept that largely exists at the concept level. Pillars are broader statements that guide game development, and while they are infinitely useful for the creation of games, they are not as well suited for categorization of existing games.

2.4.4 Design Structure (A Pattern Language)

A pattern language is a way to describe any creative concept by determining the design patterns that occur in the medium and how they interrelate. This concept began describing architecture using elements and patterns that recur throughout the history of human architecture. A pattern language begins with the idea that anything creative needs to solve problems. A "pattern" is a description of a problem and solution to that common problem, and the "language" is the way in which the patterns fit together to form the piece of media they are a part of (Dawes & Ostwald, 2017). This can be a useful concept for categorizing ideas in any creative media where there is a large set of "patterns" that can be assembled to describe and improve any piece of media.

An informative example in media is the work of Vladimir Propp, a Soviet folklorist and scholar who studied Russian folklore to break it down to its simplest structural units. He identified 31 "functions", or basic structural elements of Russian folklore tales, that would occur in order, though not all of them would occur in every tale (Dogra, 2017). This idea can be

applied to any media, including video games. Researchers, Staffan Bjork and Jussi Holopainen applied these concepts to game design in their book, Patterns In Game Design in 2004. They identified over 100 patterns that recur in video games, but did not specify the problems the patterns addressed and so these patterns are simply examples that a developer can choose to use (Barney, 2018). Chris Barney took this concept further to analyze the elemental patterns and languages that exist within video games in their work Pattern Language for Game Design, and uses it to find good practice in all aspects of game design. He begins by identifying problems and provides a large number of pattern examples to solve problems in his Pattern Library, and even discusses the process of deviating from the pattern and how to do so properly (Barney, 2021).

While this analysis tool is very valuable for game designers, it does not work quite as well for categorizing games. While these patterns and languages can be applied universally, the end product often deviates from the initial patterns, and sometimes quite significantly, making it difficult to place those games into pattern-based categories. Also, the pattern library has less than 50 patterns, which makes it not comprehensive. There is a possibility that the patterns identified can be used as tags in the Game Analysis Wiki.

2.4.5 Steam Tags (Valve)

Steam, the popular PC video game distribution platform, uses a user-generated tagging system to categorize games on its storefront. Anyone with an account can go to the store page of a game, and add their own arbitrary tags to any game, and the twenty most common tags are displayed on the game's store page. While this system has an effectively infinite number of potential tags, the number of tags that actually show up on games is only around 500. This is due to the sheer number of active users on Steam; With 132 million monthly active users as of 2024, there are millions of players adding tags to the most popular games, and due to the sheer volume

of tags, the ones that actually end up becoming part of the top 20 are actually relevant ones. Even if hundreds of people are adding totally nonsense and unrelated tags, they get completely drowned out by the number of users adding relevant tags.

For a platform as large as Steam, this system is very effective at putting games together in useful categories, as games that are similar in certain ways will share the relevant tags, allowing players that enjoy one of those games to easily find other similar games. However, due to the democratic nature of the system, the specific meaning of many of the tags can become muddled. For example, the two genres “rogue-like” and “rogue-lite”, while extremely similar, are in fact mutually exclusive to each other, and yet many of the most popular games in these genres actually possess both tags. In the context of our wiki, this tagging system can be useful for finding games to add, but we also have to be careful not to simply copy over the tags and their related games, as we want to also specifically define each tag, and so we will have to make sure that each game actually matches the more specific definition of each tag.

2.4.6 Player Motivation Model (Quantic Foundry)

One method of categorizing games is through the lens of Player Motivations, as created by the company Quantic Foundry. Quantic Foundry lists a set of six genres: Action, Social, Mastery, Achievement, Immersion, and Creativity. Within these six genres are a total of twelve motivations, with each genre containing two motivations. Within Action are the motivations “Destruction” and “Excitement”. Within Social are the motivations “Competition” and “Community”. Within Mastery are the motivations “Challenge” and “Strategy”. Within Achievement are “Completion” and “Power”. Within Immersion are “Fantasy” and “Story”. And within Creativity is “Design” and “Discovery”. Any game may call on many, or even all, of these motivations, but it will always call on a few as its most primary motivations. For example, an

extremely difficult player vs. player Real-Time-Strategy game will call on Competition, Power, Excitement, Challenge, and Strategy, but Strategy and Competition will be the two motivations it would focus on most strongly. Using these twelve motivations, Quantic Foundry has created nine archetypes of gamer, each with a specific spread of the ways in which they focus on each motivation, so that games may be sorted by what type of player they are most attractive to and best suited for. Quantic Foundry even offers a profiling tool on their website, where you can take a survey to determine which archetype of gamer you are more aligned with, which it then uses to suggest games you are likely to enjoy based on that. For game designers, this method of categorization is very valuable, as it enables them to better know and understand the market that their game is suited for, and can fine-tune it to appeal more closely to that group of gamers. It is also very useful for gamers themselves, as they can use their archetype and favorite motivations to determine what games they would enjoy most. However, categorizing games is really a secondary result of this system, as its primary purpose is to categorize the players. As a marketing company, it is most valuable for Quantic Foundry to understand the markets that exist within the community of gamers, so they can better market the right games to the right groups of people. The organization of games is merely a result of this system. This system of organization could be incorporated into our system of tagging in the future as well. It would be useful to identify whether a given tag indulges in one of these motivations. Doing this would offer new insight to both a player who enjoys games with that tag, as well as help a game designer seeking to focus on one of these motivations within their game.

2.4.7 Logical/Mathematical

Another way of understanding and categorizing games is through the logical and mathematical systems present in the games. Examples of this include systems like health bars,

stamina, mana, ammunition, damage values, experience points, and many other similar systems. Every video game has to have at least some mathematical systems, whether or not they are directly visible to the player. However, because of the fact that every game must have some of these systems, it quickly becomes far too difficult to categorize games based on these systems.

Because of how necessary it is to even the most basic functions of any game, there are an incredible number of already existing systems, and every new game introduces a new system or a new variation of an existing system. As a result, using these mathematical systems to categorize games, such as in the Game Analysis Wiki, would be an incredibly difficult and time-consuming task, and would result in most games sitting alone in their own categories. Moreover, the existence of similar logical or mathematical systems may have little effect on the overall gameplay and so be of limited use to a gamer. It is possible that the Game Analysis Wiki creates tags that describe or relate to common logical/mathematical elements and so we can subsume this categorization method and merge it into the Game Analysis Wiki.

2.4.8 Narrative/experiential

Another system that could be used to categorize games is with the narrative and experiential systems in place, and the experience that the player receives from the game. The story, the characters, and the environment all contribute to this, as well as the way in which these elements interact to create the full experience for the player. For instance, Professor Gordon Calleja, the founder of the Institute of Digital Games at the University of Malta who focuses his research on player experience, has proposed focusing on experiential narrative to understand games. He uses the example of the work of game designer Ceclia Pearce, who describes six narrative elements, or “operators” (Calleja, 2009). The first is a component of every game and the other five which may be present - Experiential, Performative, Augmentary, Descriptive,

Metastory and Story System. With a focus on the narrative, the author Elle McFadzean, describes four types of narratives that occur in video games - embedded narrative, emergent narrative, evocative narrative and enacted narrative, so it is possible to use these, and other narrative types to categorize games (McFadzean, 2019).

While it is an interesting angle to analyze and understand games from, it is not useful to categorize games solely in this way. Due to the open-ended nature of story writing, there are potentially an infinite number of different experiences possible within video games, and no two stories are the same. Moreover, the experiential or narrative type may have little to do with the actual gameplay and so a gamer would find similar types wildly different. So, while it is useful for understanding individual games, it is nearly impossible to create useful and functional categories to group games together with them.

2.4.9 Affective (Aubrey Anable, Playing with Feelings)

Another system of understanding and analyzing games is the Affective method, focusing on the player and how the game affects them and makes them feel, rather than just the computational methods and systems present within the game. Audrey Anable presents affect, which she defines as “the aspects of emotions, feelings, and bodily engagement that circulate through people and things but are often registered only at the interface—at the moment of transmission or contact—when affect gets called up into representation” (Anable, 2018). Audrey states that “much of game studies as a field fetishizes mechanics and computation as the distinguishing feature of gaming”, leaving them mostly or completely unable to discuss how games can affect the player thus causing struggles when discussing important topics such as representation in video games (Anable, 2018). Arguably, this wiki plays right into this, by breaking down games into their tags based on their computational and gameplay components.

However, we may be able to fight against that trend, as well as strengthen the categorizing ability of our system, by including tags based on the player's emotional experience and affect.

2.4.10 Embedded systems (Salen & Zimmerman, Rules of Play)

A schema is a method of organizing knowledge, and Salen & Zimmerman outline three important schemas in their work Rules of Play: Game design fundamentals (Salen, 2010). Rules are the formal systems within the game, the logical and mathematical components that make up the game that we play. Play is the experiential, social, and representational systems around player's participation in the game, as well as their interaction with other players. And Culture is the larger cultural contexts in which the game exists within and is influenced by. All three schemas are very important for both categorizing and understanding any game. They exist as three concentric circles, embedding rules inside play and lay inside culture.

These schemas are very useful for building and understanding the Game Analysis Wiki, as this methodology is a very effective place to start with categorization. Rather than being too vague or too specific, the concrete schemas give us a foothold to begin grouping games together, especially as with Culture, as there are only so many cultures that have existed in the right time to influence video games made within them. For example, we could create tags based on the time and place in which a game was made, to offer insight on the culture the game was made within.

3. Initial Design Proposal & Justification

3.1 Intended Audience

3.1.1 Primary Audience

One of the main focuses of this IQP was to create a way for game developers to be able to look and compare different aspects of games in an easily digestible format. The game wiki would be a tool for game developers to look at how a gameplay aspect was implemented in a wide variety of games to help them brainstorm ideas of how they may want to implement it in their own game. This way game developers could spend more time developing than researching a gameplay element as all the information would be visible on one page. If a developer liked how a gameplay mechanic was developed in one game they could also easily navigate to that games page to see all of the other mechanics in that game. This is especially helpful when looking at games that may have a similar genre or gameplay style to the one a game developer could be currently making.

3.1.2 Secondary/General Audience

We also hope to cater to a more casual audience, people who do not necessarily consider themselves game developers, but rather people who are interested in exploring ideas present in game analisis out of leisure or intrest. This population of users largely consists of individuals who actively play video games, who are interested in learning more about specific games they enjoy, or possibly as a gateway to learning about game development as a whole.

So the wiki itself not only needs to be easily digestible for developers, but accessible to a general population of individuals who may not understand high-level concepts of game design. But this may easily end up being conflicting itself, as a balance needs to be struck of providing meaningful and detailed analysis, while not ending up tailored toward a very small population of users.

3.2 Experimental Phase

At the very start of our IQP there was not yet a set in stone way of how games were to be analyzed, leading to the first big objective of our IQP: determining a clear and consistent way of analyzing games. The majority of our first term working on the IQP was spent experimenting on different ways of analyzing games and eventually landing on a set method of game analysis to be used moving forward. The end result of this experimental phase was the creation of the tag system which will later be explained in detail. This first phase of our IQP was vital for laying the groundwork for how we were to analyze, compare, and compile the data collected from game analyses for the rest of the Project.

3.2.1 Various analysis experimentations

There were various methods of analysis utilized throughout the experimental phase. Firstly, we decided to, as a group, analyze a single game (*Dr. Langeskov, The Tiger, and The Terribly Cursed Emerald: A Whirlwind Heist*) and each write an individual game analysis on it using the verbs and objects lens. We then transitioned into separating everyone into three small groups which each analyzed different games (*Portal*, *Terraria*, and *Cave Story*) using different lenses (Narrative, Abstract and Numerical Mechanics, and Arcs & Loops respectively). We

finally went on to each create mockups of wiki pages in which a tag system was first used in order to allow comparison across games.

3.2.1.1 Analyzing Dr. Langeskov using the verbs and objects lens

Our first analysis was done as a whole group focused on a single game (*Dr. Langeskov, The Tiger, and The Terribly Cursed Emerald: A Whirlwind Heist*) using a specific lens (verbs and objects lens). We chose this method of analysis first because it allowed everyone to practice analyzing games and also to compare analyses with each other in order to see our different perspectives of analysis. *Dr. Langeskov, The Tiger, and The Terribly Cursed Emerald: A Whirlwind Heist* was our chosen game of analysis mainly because of its simplicity and its accessibility, that is, the game was simple to analyze and free to download. We used the verbs and objects lens because it made for a good starting point for the type of analysis that this project was trying to achieve. Unfortunately, this lens was not well suited for this type of game, as it was essentially a walking simulator with very few interactions occurring throughout the game. After using this method of analysis we decided to transition into our next method of analysis, separating into three small groups, with each group assigned a different game and lens in which to analyze the game.

3.2.1.2 Small groups using three different lenses

In this second method of analysis we decided as a group to split up into three smaller groups where each group would use a different lens to analyze a separate game. We decided to use this method of analysis because it was much more efficient, as we were now analyzing three games at once and also testing out three different lenses at the same time. The games analyzed were *Portal*, *Terraria*, and *Cave Story* using the Narrative, Abstract and Numerical Mechanics,

and Arcs & Loops lenses respectively. This method of analysis proved to be a great way for us to better understand through what lens we should be analyzing games and how we should gather data moving forward.

3.2.1.2a Analyzing Portal using the narrative lens

Valve's game *Portal* was chosen to use the Narrative Lens due to its high emphasis on storytelling through gameplay. *Portal* is a game whereby the player wakes up in what appears to be a fully functioning science facility; participating in various tests that consist of escape rooms that can only be solved using a special device that is capable of creating portals. The entire game, the player is accompanied by a mysterious narrator who seems to be coordinating these tests. The player slowly learns the truth of the facility being abandoned and run by a rogue artificial intelligence with very little care for human safety.

The focus of using the lens shifted onto exploring exactly how *Portal* conveyed these themes to the player through gameplay storytelling. *Portal* was a strong choice for this, being rich with environmental storytelling, player experience driven narrative and witty writing. Diving into some examples of this: the player may find openings in the walls of the facility that lead to dens clearly that were inhabited by humans with graffiti telling the truth of the facade. The act of the player progressing through the game's test-chambers assists the narrative as the narrator doubts the player's ability to escape situations, and is increasingly surprised when the player escapes and continues beyond their expectations.

3.2.1.2b Analyzing Terraria using the Abstract and Numerical Mechanics lens

Terraria was chosen to be analyzed under the Abstract and Numerical Mechanics lens. *Terraria* was a great fit for this lens because of its many character stats, stat modifying

mechanisms, and in-game progression changes. This lens specifically looked at the logical and mathematical systems present in *Terraria*, including: item drop rates, character spawn rates, behavior of characters, character stats, character stat buffs, accessories, armor, armor set bonuses, tool power, weapon/accessory modifiers, status effects, luck, fishing, world generation, events, and in-game progression changes. Though this list looks to be quite extensive, there is still more that can be added to this list and some systems can be subdivided into smaller systems. For example, the system "character stats" can be subdivided into all the different stats that a character has: health, mana, defense, damage, attack speed, critical hit chance, knockback, speed, acceleration, jump height, luck, etc. With this in mind it became apparent to us that using the Abstract and Numerical Mechanics lens would require a lot more time and effort to analyze and distinguish each logical and mathematical system that a game might have, making the use of this lens impractical for our objective.

3.2.1.2c Analyzing Cave Story using the Arcs & Loops lens

Under the pretenses established by Daniel Cook, "Cave Story" was analyzed under the lens of Arcs and Loops. This is a pixel art 2D platformer that tasks the player with exploring the underground of a floating island and saving its inhabitants from an evil doctor. Regarding the concept of arcs and loops inhabiting this game, it felt much harder to analyze what aspects could be classified as a loop versus an arc. Among the noted objectives that could've been considered as "arcs", there were: character introductions (backgrounds (race), name, relationships), the various boss fights you encounter throughout the game, and tasks asked by non-playable characters, also known as NPCs, for the player to fulfill. Among those that leaned towards "loops" instead: area exploration for key items or NPCs, clues littered around the areas you're exploring, and fighting enemies to reach the first item in this list. The difference between the two

ideas is the level of involvement these involve from the player (as both arcs and loop still require player interaction to begin). Those of which are listed in “arcs” require the player to do very little in regards to when and how the system responds when the time is right. Character introductions required very little player input or interaction as they played through cutscenes for the player to watch and read. Exploring each zone in the game on the other hand is all heavily reliant on the player’s skill and input in order to function.

3.2.2 Individual mockups of a wiki page(s)

Following our small group analyses we decided to create individual mockups of wiki pages based on our assigned lens. Each person’s mockup of a wiki page provided a rough outline describing how an example wiki page for that person’s lens would look like. Most of the wiki page mockups were composed in Google Docs but there was one that was made in Google Sites. One of the wiki page mockups that was created in Google Docs was created with a “fill in the blank” style in order to make it easier to write up on other games. This wiki page mockup was created for the Narrative lens and it features a summary section and an analysis section. The summary section would briefly summarize the plot and list and describe the major in-game concepts, characters, and locations. The analysis section would provide a brief analysis for each individual character and location and an overall analysis for the game as a whole. While this mockup of a wiki page was detailed and easy to implement, it was too content heavy and would be difficult for readers to digest. The wiki page that was created in Google Sites was more so created as a template. This wiki page mockup was created for the Pillars lens with the example page simply having each pillar sectioned with text talking about that pillar in that particular example game. While this mockup of a wiki page provided a unique format of a website, it didn’t

provide that much detail in terms of its content. Overall, the individual mockups of wiki pages provided a good starting point for us in the development of our wiki page design.

3.3 How we could apply the tag system to the wiki

The tag system allows the easy comparison between games by looking at similar aspects in each game. This is applicable to the wiki as it can be formatted in the form of tables that allow the user to cross analyze a specific aspect of a game across many different games. Specific tags could also be searched to bring up a list of game pages where they are present. This would allow the user to easily be able to look at and find analysis of a specific part of a game associated with its game tag. Each game can also be individually viewed with a list of the game tags representing elements of that game in a table. This would allow the user to use our tag system to look at specific analyzed aspects of a game individually so that they can see a streamlined analysis of the exact information they are looking for on the wiki instead of an overall analysis of the game.

4. Design Process

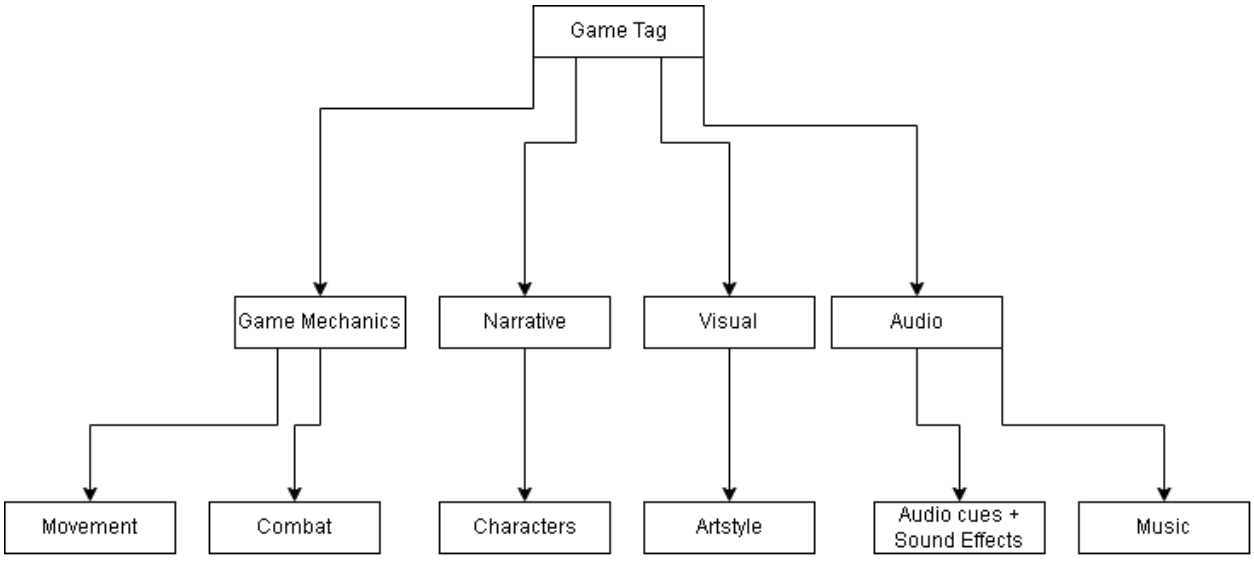
4.1 The game tag system

4.1.1 What is a game tag?

The game tag system is used in order to split games into different subcategories called game tags. These game tags are able to cover broad areas of design elements. Examples of these different categories include:

1. Game mechanics

2. Narrative
3. Visual
4. Audio



These main categories are used to be separated into game tags which are able to categorize games. Under the “Game Mechanics” category are movement and combat tags. These deal with how the play moves and fights in the game. Under the “Narrative” category is the characters tag. This deals with any aspect of the game which is related to the characters. This can include both the characters themselves or interactions between/around them. Under the “Visual” category is the artstyle tag. This deals with the stylized aspect of a game’s art. Under the “Audio” category are the audio cues and music tags. These deal with the auditory details that give the player information and the game’s musical style.

4.1.2 Differentiation between game genres and game tags

When designing the wiki’s layout and subsequent research dedicated to its pages, it was important that we made a distinction between what separates a game’s tag from its genre. A

platformer, for example, is a type of game genre. In this genre, the player's actions which inhabit the world (such as run, jump, or walk/forms of movement) also exist outside this genre. The usage of those mechanics, that work outside the scope of just a singular game, are what game tags are. Game tags organize actions such as walk, run, and jump into different contexts, and highlight the variations present in each game that was chosen to be analyzed under this tag. Some jump actions deal damage to an enemy (so it could in turn also be classified as a form of "attack"). In other games it's simple just a jump (a form of vertical movement that puts the player in the air), or they may not exist at all. Tags serve the purpose of pinning which games include these mechanics, and which games don't include them (similar to console virtual stores). Much like how a genre generalizes the base concepts of the type of games they're associated with, game tags generalize a wide variety of game mechanics as well. Not every game whose main gameplay loop revolves around jumping from platform to platform to reach an end goal is categorized as a "Mario Game". These games fall under the "Platformer" genre of games, a type of game which heavily revolves around the player jumping from place to place to reach a goal. With that in mind, we classified "Movement" as our first tag after numerous attempts to analyze and recontextualize its name to fit a variety of associated actions across different games. Movement as a tag covers the basics of walking, running and jumping, with other actions covered outside of those three game mechanics possibly being swimming, flying, wall jumping, sliding, and so much more. Creating the tag "Movement" allowed us to categorize these game mechanics under a lens that can be easily comparable between different games, and create a structure in which to organize them for each game

4.1.3 Initial approaches towards analyzing game tags

The first step in determining a game tag was to think of terms that would cover a general array of different game mechanics. A padlet dedicated to figuring out the logistics of these systems was created in A term, and this rough outline was the crux to the analysis. Come B term was when we needed to decide how that information was to be researched and implemented into the wiki. Long text drafts/bulleted lists were common for our main methods of creating a written analysis, eventually however we found that a simple table structure outlining: the game, the classification of the mechanic, and its utilities laid out in cell column tables worked best for organization and implementation.

4.1.3.1 Long written analysis

When starting this IQP, there was no structure or formula as to how a game analysis was to be written. Since most of us had no prior experience writing game analyses, we wrote our first few analyses in whatever way felt the most intuitive to us. This was usually in the form of a long written analysis, which is essentially a game analysis in the form of long text or bulleted lists. In this form of analysis, there would first usually be some background information about the game being analyzed, then the main portion of the analysis would go over the core mechanics and plot points of the game. While this form of analysis was very descriptive and intuitive to create, it wasn't a good fit for what our project was aiming for, the analysis needed to be quicker and easier to read and digest.

4.1.3.2 Padlet

While searching for a way to more easily organize and build the tags system, we landed on using an online software called "Padlet". This program allows multiple people to work on a

digital bulletin board, creating bubbles that can then be linked to others in an open plane with clear visual color coding and labeling. This was helpful as we brainstormed how the system of tags works, as well as zoning in on what a tag really is. It allowed us to create a clear visual for creating subsections of tags. For example, movement breaks down into things like, jumping, sprinting, crouching, which would then break down into more specific subsections such as, double jump, dash, and many more. It was all very helpful when we started, but as we moved forwards we realized our analysis was too complex to have things laid out on a bulletin board style system, and eventually transferred over to a spreadsheet system and a more specific lens.

4.1.3.3 Developing a criteria system for "Is this a game tag?"

One approach that was developed during the early stages of the project was to create a set of criteria that could help determine what was a game tag and what wasn't. The initial plan by the big picture team was to formalize assumptions on what people thought a game tag was, such as whether or not a game tag was a genre, and what kinds of game mechanics seemed like game tags. The purpose for doing so would have been to solidify some of those assumptions and put them into a system that everybody could reference as a tool for understanding game tags.

However, this system was undermined in both its conceptualization and its execution. As the core concept of a game tag had not reached a state of consensus yet, there were few assumptions to actually make about a game tag at this stage. An attempt was made to come up with possible criteria by trying to deduce how tags could relate to each other, but this was deemed too out of scope for the project. Furthermore, a lack of criteria meant that the domain for what could be considered a game tag was far too broad: when it was time to present this system, it was made glaringly obvious that trying to accommodate for future tags resulted in allowing in objects that had little to nothing to do with game design. In the end, a game tag is an ever

evolving thought of human construct, and trying to capture all its qualities that succinctly proved to be a task of insanity. Ultimately this system was stripped of its criteria metrics and refactored into a list of categories that would be used as a suggestion for analyzing games instead.

4.1.3.4 Categorical/tabled analysis

Given the empirical nature of collecting data, we decided the best method of organization for our finding would be a categorical/tabled analysis method, enabled through the use of a shared google sheets document. Here is a short excerpt of what this document looked like:

General Description of Tag	An action that inflicts some type of damage(can also provide some type of utility).	An action that allows the player to move out of the way of an attack.	An action that causes the player curl into a ball to move quickly or provide utility.
Number of games the tag is found in	15	6	5
Movement Tags (right) Game name (below)	Attacking	Dodging	Rolling
Forager	Used to defeat enemies and bosses. Multiple types of attacks include the use of swords, bow and arrows, and different magical rods.	Used as a way of dodging enemy attacks and projectiles. It is typically triggered automatically and can be increased through	Used as a way of quickly moving to another area and can be used as a movement speed boost compared
Batman: Arkham Knight		Used as a way to avoid enemy attacks to allow you to give yourself time to attack.	

The *"General Description of Tag"* row allowed us to provide a broad description of what the tag was and would remain inclusive for all the games related. As the magnitude of games

increased, the layout shown above is the best overall format we came up with that allowed us to view the relationship between each game in a comprehensible manner.

4.2 Organization of analysis data

The organization, maintenance, and presentation of analysis data is necessary when working with a volume of data that frequently updates with new information. For our purposes, we required a system or structure that would be effective at both providing readable comparisons of analysis data from games and robustly handling the variety of different tags that were to come over the course of the project. In this section, we will discuss the methods we developed to address those needs, which were the spreadsheets, mockups, and analysis pipeline we eventually incorporated into the project.

4.2.1 Spreadsheets

4.2.1.1 Consolidating related tags

Initially when we started gathering data we maintained a google spreadsheet that had different tabs/pages for each game's analysis as a table. However, this method did not allow us to see the similarities between different games so we consolidated every game's analysis into a collective form, as seen in the image in the *"Categorical/tabled analysis"* section above. This spreadsheet allowed us to not only make the data more readable but also showed the intersections between different games and their similar mechanics. In order to dictate what exactly would be a related tag, we digested the similar mechanics of different games and even though it may or may not be portrayed in the same way, its functionality remained the same across the board. For example a jump in the *Batman: Arkham Knight* is going to look different

than a jump in *Forager* but the function of vertical movement between both games is almost indistinguishable. These methods of determining similarities were continued for each movement mechanic we considered, and for each game we analyzed.

4.2.1.2 Niche tags

The process of extracting mechanics from analysis often created an example for a game tag that didn't exist yet. To resolve this, the example's name was given its own tag in the table as a niche tag, which was stored for later revision whenever new analysis was available to review. Occasionally, there was another example from a different game that was related to the niche tag's example which made the tag more complete. More often than not, though, games would frequently contain unique mechanics that no other games in the sheet could match, which means the list of niche tags in the table tended to increase over time. Despite this, very few niche tags were ever deleted, as the possibility remained that there was another unexplored game with the characteristics defined by the niche tags.

4.2.2 Initial Wiki Page Mockups

During the planning of how the wiki content would appear on the website, the big picture team created mockup pages of the game tag pages and also of the video game pages. The game tag pages had a paragraph description of the definition of the game tag at the top. It was then followed on the page by a table split into two sections: the video game and the description of the tags usage. The video game section was where the name of each video game that had that game tag would be displayed. Alongside each game name, in the description of the tag usage section, would be a description of how the tag was used in a specific game. It was formatted this way to allow the user to easily compare how a game tag was used across multiple games. This would

allow them to easily see the similarities and differences between how it was implemented in each of the games as well. The video game page had a paragraph at the top with a brief synopsis of the game. Alongside this was a picture of the game cover. Below the brief synopsis was a table split into two sections: the game tag and the description of the tag's usage. The game tag section was where the name of each game tag found in the game would be located. The description of the tag's usage was where it would be described how that tag was used specifically for that game. This would allow users to see all the game tags in a video game alongside the description of that tag's usage in the game in an organized fashion where they could alphabetically scroll to find the game tag they were looking for. Overall the parts of these mockups that found their way into the wiki were the tables as they were integral for allowing the user to quickly gather the information that they had been looking for. The text descriptions at the top of the page ended up being scrapped with the game tag pages still getting a short description.

4.2.3 Finalizing the analysis pipeline

The analysis pipeline, or the pipeline that would allow games to be turned into information about game tags, was largely finalized in the latter half of the project. After much deliberation in meetings, the project adopted a sequential workflow where data would be processed and passed along the three subteams. As a simple overview, the pipeline worked as follows: analysis from the data analysis team would be sent over to the big picture team for review, who would produce a list of game tags for the web development team to put up on the website. This was perhaps not too dissimilar to how raw materials are processed in an assembly line at a factory.

The pipeline starts whenever data analysis reviews a game, which can happen at the request of the big picture team to review specific games, or when data analysis does so out of

their own volition. Once the game is reviewed by one or several members of the group, a list of observed mechanics in the game are recorded, detailing a suggested name for each mechanic and use of that mechanic in the game. This list is sent to the big picture team, who keeps the lists together in a buffer. Once the buffer reaches several game lists in size, the big picture team reviews each list to assess how these mechanics should be fit into the table of game tags established so far. Some of these mechanics are added as examples to existing game tags, others may be set aside as niche tags for later review. Once all games are added onto the game tag table, the big picture team notifies the web development team of any new examples and tags that were added, who then gets to work on adding this new information onto the site's pages for tags and games. The pipeline ends at this stage when all the new information is updated onto the website.

Over the course of the latter half of the project, this pipeline had changed a bit. For one, conducting game analysis was no longer restricted to the data analysis group; anybody in the project was allowed to conduct an analysis of their game of choice. Additionally, several advancements in website scripting enabled the direct transfer of data from the big picture team's tag table to the website's pages, meaning that web development required less manual labor overall to keep the website updated with information. Despite these changes, the general idea of turning games into game tags has largely remained the same across the board, and this pipeline enabled efficient modularization of work to be done.

4.3 Challenges with pursuing the vision:

There were a significant amount of difficulties experienced by the team in pursuing the vision goals defined by the project. In fact, there were three types of issues that occurred throughout the development of the project: scope, teamwork, and technical limitations. These

three issues occurred the most frequently out of others, and they were difficult to find a solution for.

First, scope-related issues ranged from broad goals to scope creep. The initial goal of analyzing all games was rather big, resulting in tasks that eventually focused too much time on a single objective, causing the project to slow down. Additionally, team conflicts that arose in the latter stages of the project typically involved whether or not certain features could be added within the time constraints of the project. More often than not, the scope had to be reduced.

Second, teamwork challenges stemmed from difficulty in communicating objectives amongst team members. Because this IQP project has nine student members, well above the average for most IQP projects, this meant that schedules were more likely to conflict, resulting in a lack of common meeting times. Consequently, not everybody could meet together outside of advisor meetings. This was partially resolved by splitting members into smaller teams to meet in their own groups, but there still was a struggle to communicate between groups when deciding on issues that affected the entire group.

Third, there were substantial technical limitations in the project that made it difficult to implement certain features set by the vision goals. As the project's product involved a website, this necessitated people who were familiar with CS to work on web development, but there were only a couple people on the team who had significant experience with web development. Furthermore, nobody on the team had prior experience with Wiki.js, which proved to be an unforeseen challenge. This posed an obstacle for mockups and ideas for possible wiki page implementations as up until late in the project, nobody knew how to work around those technical limitations.

4.3.1 Scope

The scope we choose to reside in is incredibly important for the completion and quality of this project. Building a clear base to work off of allows us to show thorough work that can be easily replicated later on. If the scope is too large our analysis will be far too surface level, and in the end give us nothing of real value to the user, and if the scope is too small there will not be enough versatility in the website to be properly useful. As we began our journey into the world of video game wiki design, this was a topic of great debate and thought.

4.3.1.1 From general analysis to only “Movement” Mechanics

Originally, our idea of how to analyze games was very broad and we had various general categories that encompassed all the different aspects of what makes a game fun, playable, stimulating, etc. Upon realization that our categorical methods were too broad for the scope of this project, we settled on the concentration of “movement” mechanics within a game. Continuing with this shift in focus, part of our realization was due to the considerable amount of time we spent on the distinction of what exactly we would consider the mechanic of a “double jump” to be. It seems like a niche element that would have a relatively straight forward answer but as we looked deeper into various games, the answer was not so black and white. Some games would have a clear mechanic that would be two consecutive vertical jumps while others might have a singular jump that could be followed with an uppercut or something of the nature that provides not only a jump but some other additional utility. Due to our dwelling in this gray area of what we would consider a concrete mechanic(double jump in this case), we shifted our project analysis focus towards that of encompassing all the aspects of movement within a game. In order to include a wide view of movement mechanics within a game we included anything and everything that involved “movement” as a theological term. For example, in games that would be

turn based or grid based which might not include the conventional idea of movement(i.e. walking or jumping), we still considered the trading of turns between players to be movements and new placements on a grid to be such as well. In regards to other “non conventional” movement mechanics, we also included mechanics of attacking nature that would provide the player with the utility of movement in some form. For example, an uppercut could be used as both an attack and a means of movement as it sends the user vertically into the air. Using the general criteria of “movement” mechanics we continued and considered any form of motion towards our analyses.

4.3.1.2 The “What is a Double Jump” Form

During early attempts in B term to define movement in games, a problem emerged within our project group during discussion of double jumps in video games. When comparing examples of double jumps in various games, there was disagreement for exactly what examples were double jumps; that there were some arbitrary criteria predefined in a player and/or designer’s mind of what can classify. This was exemplified when one group member brought up an example in *Pizza Tower*. The game features an attack where the player performs an uppercut to gain vertical height. The majority of group members were conflicted if this action was not a double jump, yet clearly behaved as one, and a need to capture double jumps as abstractly and un-arbitrarily as possible arose.

We started this exploration with recording various clips of actions in games that give the player some form of vertical height for a wide variety of games and genres. We ended up with over 25 unique clips across 13 different games and started discussion amongst ourselves. Although the results of this were highly biased, we wanted to be able to identify which of these, by some majority of individuals, are more double-jump than others. So the idea to survey

individuals came to light, if they believed if a clip was a double jump or not and to possibly explain why as well.

As per standard of any IQP performing research on campus, this would mean we would need to apply for IRB approval. First, this required that we created the survey itself, which was done on Google Forms and with the clips we gathered across various games, spliced to keep them as short and obvious as to what we were showing as possible. In addition, the application itself needed to be filled out, which took a notable amount of time that was divided across a small portion of the team, as this was largely intended to be an experiment to determine the direction of the project.

We received a lot of positive feedback from our advisors with this direction for the project, however, there was a large amount of disagreement among group members to continue work going in this direction. Group members cited that this would be too time consuming to collect the data, and then create a system to represent on the wiki as opposed to defining what movement was arbitrarily by the user instead. Because of this disagreement, all future work was halted and almost none of the work done for this experiment made its way into the final product, not even including a *Double Jump* tag on the wiki itself.

4.3.2 Teamwork

Teamwork among the group as well as our subgroups was very effective, but not without a few bumps along the way. We experienced first hand how difficult it can be to have clear communication between subgroups despite all working towards the same final product. With a project as large as this, it was essential to split up to cover more ground and work with everyone's individual strengths in order to create the highest quality work we can. These groups need to be linked together to be sure everyone is on the same page. This initially is why we

created a ‘Big Picture” group to be sure the project as a whole fits together nicely. This was an effective strategy, but it was often necessary for that group to work on organization, and definition, of all of the tags we created from the games played. Having group meetings as a whole as well as subsection meetings was a good way to keep everyone on the same page as we moved further into the project. With this in mind we broke up into three teams: web-development, data-analysis, and big-picture. This was no easy task considering we have such a large group and many pieces that needed to fall into place. In order for the project to run smoothly there had to be clear communication between the groups to ensure the creation of a complete and functioning wiki.

4.3.2.1 Schedule conflicts

Our project group consisted of 9 full time students and 2 faculty, with that came the need to coordinate a system that we would be able to meet and discuss the project properly.

This started out with traditional meeting patterns in A term for 30 minutes to an hour every Wednesday to be able meet with our project advisors and each other. As a starting point, this worked well for the first half of the term, allowing us to gradually escalate the pace of work on the project. However, as soon coordinated group work became mandated to progress in the project, we realized that we would need to have meetings outside of this time as well. With our groups of 3 for the lens analysis block of the project, we had those groups coordinate meeting times independent of the rest of the project group, which worked well for that time period.

In B term, we continued with 1 hour meetings every Thursday with our advisors. During the term, we continued to have a few spontaneous meetings outside of this time period for more ambitious project sprints. In both of these however, there was a dip in group member attendance compared to A term, only managing around half of the group and very rarely close to everyone

was able to meet. When we split off into our 3 speciality project groups for developing the wiki, those groups continued the practice of having meetings independent of the group similar to how it was handled toward the end of A term. Different groups had different success with this pattern this time, as the decrease in attendance overall had this take a hit as well. When we attempted to organize meetings with the SWEET center, we ran into even more difficulties, and only managed a brief introductory meeting on behalf of some members missing class in order to attend. The effectiveness of this meeting was severely undermined by this difficulty, and after that we were unable for the rest of the project period to continue work with the SWEET center because of these meeting issues.

After the shared difficulties of A and B term, and being unable to coordinate a single time in C term, with the advice of our advisors, we opted to go asynchronous for the last push of the project. Of course, we still needed to try and have some group communication and productivity during this time as we wrapped up the website and started the paper, so several impromptu online meetings were held over the span of the term. Although with these still came attendance issues, some even delayed specific components of project progress as the team did not want to make certain pushes without full consent of the entire team.

These difficulties did play a major role in the scope reduction of the project as a whole, as if we were able to meet more constantly and organized may have led to pipeline optimization to allow for the project scope to expand.

4.3.2.2 Communication of expectations and definitive goals

Since we had an abnormally large IQP team consisting of nine members, it was difficult to communicate project expectations to the whole team. Communication difficulties were especially prevalent throughout the early stages of our project. We all had valuable ideas that

would sometimes clash with one another. Although it caused some animosity at first, our differing ideas allowed for us to dial in on a wide range of specific goals. We took a little bit from everyone's perspective. During A-Term our advisors set our goals as mostly data collection and brainstorming of what exactly our deliverable would look like but the focus was not on the deliverable at this time. Moreso what we wanted to get out of this project which was an outlet of analyzing games that differed from other resources currently on the interwebs. Transitioning to B-Term is really when we started to materialize our vision. Throughout A-Term the communication of what everyone was responsible for was not exactly clear so in B-Term we divided our group in 3 key subgroups: Big-Picture group being responsible for overseeing the main vision of the project, Data-Analysis group which was responsible for digesting and managing all the information we gathered, and Web-Development group which held the torch for the creation of our main deliverable(being the website for our wiki). With our goals/expectations more defined through the formation of these subgroups, communication of our project ideas was much more fluid as compared to A-Term. Moving on to C-Term we realized that our original expectations of what we could complete within the scope of our project was much more than what was realistic given that we were on the third and final leg of our project. This is where we concentrated our efforts into creating a solid base for movement mechanics and transferring such onto the website in a comprehensible manner that would be valuable and enjoyable for whomever is interested in our website. From this point it was just a matter of refining the website/data we had developed.

4.3.3 Technical Limitations

Before the formation of the Game Analysis Wiki IQP group the basis upon which the game analysis wiki was to be built upon was established. A website hosted on WPI servers was

set up using a website software called Wiki.js. Throughout the course of the web development side of the project, the team ran into problems using Wiki.js as well as with the web development teams preexisting web development skills.

4.3.3.1 Initial WikiJS struggles

Wiki.js is a software that is designed to make wiki creations easy. While it manages to allow the user to easily set up basic pages using a variety of methods such as a visual builder, a markdown editor, and Hypertext Markup Language (HTML) it lacked many out of the box features that we wanted to use to customize the wiki. One such feature was an image gallery. We wanted to create an image gallery that allowed the user to scroll through a list of video game covers that they could click on to navigate to a page with information on that game. The problem was that when placing images next to each other in Wiki.js the images would change sizes based on someone's computer window's size. They would also have each image sized differently which caused the whole thing to look like a mess as every game cover should be the same size as each other and should also be aligned on the screen with each other. We attempted to solve this by placing the images in a table but due to the way that Wiki.js auto size table contents we ended up with the same problem. This caused us to temporarily scrap the idea of looking for a game through an image gallery and instead revert to an alphabetically sorted list of the names of the analyzed games. Another problem that we encountered with Wiki.js was the inability to change the navigation sidebar to a header. The navigation sidebar which only stores links to the three main pages (home, list of video games, and list of game tags), takes a large amount of screen space on the website. We had initially wanted to change this to a header that would be located at the top of the page so that less screen space was taken up. We discovered quickly however that the sidebar could not be disabled. This meant that even if we added a header individually to each

page the amount of space taken up by the navigation bar would not be reduced. Due to the lack of this feature in Wiki.js we decided to scrap the idea of having a header and instead used the sidebar for our navigation links.

4.3.3.2 Web design skills

We were also limited by our preexisting web development skills. Going into the IQP project most people in the IQP group did not know the most commonly used web development languages: Hypertext Markup Language (HTML), Cascading Style Sheets (CSS), and JavaScript. Due to our lack of experience in those languages most of us had never done web development before. This restricted us by forcing us to have to stick with Wiki.js. This is because while Wiki.js may be difficult to customize, it does have an easy to use built in editor that requires little to no coding skills. This allowed us to still be able to create a wiki even though we were unable to program some of the features and customizability that we would have liked. As a team we decided that our efforts would be best spent creating the wiki using Wiki.js instead of learning multiple coding languages to build it from scratch. We based our decision on how long we had to work on the final product.

5. Final design

5.1 Movement tag lens

For terms B and C, we decided on analyzing at least 20 different games under the “Movement Tag” lens. This tag encompassed types of actions as simple as running or jumping, to even forms of combative actions that result in the player’s position being shifted inside the

game. The movement tag serves to classify types of movement present in a game, what impact it has on the player's experience, the utilities it presents to the player, and how it's used (either in an intentional or unintentional way); in addition to a cross analysis of its presence in other games (i.e. jumping in a platformer game versus jumping in an first person shooter). Much like how genres generalize the aspects of what makes a platformer, fighter, or open-world game, there were many stopping points at the tag's beginning that required better clarification in order for proper analysis to begin. The movement tag lens was an evolution from an original tag that was analyzed in B term: double jump. In attempting to analyze what did and didn't encompass double jumps, we realized there were too many factors to take into consideration from button input, in-game utility, to even the action's name at times. So instead of limiting ourselves to a singular game mechanic, "movement" covered a broader list of different game mechanics which involved the player's position being shifted, in addition to any changes that the game presented once the mechanic was executed. For this reason, some mechanics that would be classified as a type of attack were included into the tag as they served a dual purpose to the player (hence why there was an additional context of in-game use added to each movement type analyzed). Some of these included were projectile based movements such as rocket and sticky jumping where the primary activation of these requires the player to initiate an attack; projectile attacks that enabled specific movement types to occur from their activation such as dashes or teleports; and projectile attacks that restrain or hinder the player's ability to move in any form such as *Mario Kart's* red shells or lightning. While it could be argued these shouldn't be included in the wiki as these are all forms of attacks, at the same time these forms of attack also affect the ways you're able to move in each game analyzed. Depending on its in-game use, attacks can be classified under the movement tag so long as it affects or is related to the player's ability to move. But we too

included the standard forms of moving such as running, jumping, swimming, or flying. Some of these too could be defined under multiple tags, for example, jumping in the *Kirby* games can be attributed to a double or multi jump, but most refer to it as a form of flight in most cases, but for the sake of simplicity we chose to analyze them under the type that was best to describe and in addition to comparing it to what had already existed in the spreadsheets we created. Inside the master doc for the movement tag, you can find an entire daily update log for the game analyses that were added, what analysis types were merged with existing types, and what new types of movement were analyzed. What you find here is a comprehensive list of the different games that were analyzed, and the mechanics we found in each of the 20 games. For movement types that appeared in less games, they were the least priority to be included into the wiki's final structure, but for movement types that were present in nearly every game analyzed, we ensured that their pages were created swiftly.

5.2 Wiki Structure

The wiki is split up between two main types of pages: game pages, and movement tag pages. These two types of pages have their own individual navigation lists to allow the user to easily pick to travel to a page on a video game or a page on a movement tag. The home page is used as a way to direct the user to one of these two pages based on whether they are looking for a video game or a movement tag. The home page also provides a brief overview of the wiki's purpose and what a movement tag is.

5.2.1 Game pages

Each video game that had been analyzed in the wiki got their own page. Each of these pages were mainly navigable via the “List of Video Games” page where an alphabetized image gallery of each game page would be auto generated. The images used for each game is that associated game’s cover. Hovering over one of the game cover’s would display the name of that specific game which could then be clicked to navigate to that game’s page. Each game page stored a table that was auto generated to display each movement game tag in that game alongside a description of how it was specifically used in that game. This allowed the user to be able to easily and quickly see how each movement game tag was used in the game along which each one was in the game. The user friendliness of the game pages was integral to our final design as we wanted to make sure our game pages would allow the user to easily gather information.

5.2.2 Movement tag pages

Each movement tag used to analyze games in the wiki has its own page. Each of these pages were mainly navigable via the “Tags and Definitions” page where an alphabetized table of each movement tag would be alongside its definition would be auto generated. The definitions for each of the movement tags were created by the big picture team. Clicking on the name of the movement tag would bring you to that movement tag’s page. The top of each movement tag page stored the definition of that movement tag. Each page also stored a table that was auto generated to display each game with that movement game tag in it, alongside a description of how it was specifically used in that game. This allowed the user to be able to easily and quickly see how the movement game tag was used across all the games in which it was in, allowing the user to compare the differences between its implementation in each game. The movement tag’s use in

game description was also the same description as found on each of the game pages. This allowed for a way to view movement tags, tag by tag, instead of, game by game. The user friendliness of the movement tag pages was integral to our final design as we wanted to make sure our movement tag pages would allow the user to easily gather information.

5.2.3 Automation to generate pages

One of the major features that was added in the late stages of the wiki was the scripting to automatically generate tables for every game and tags' page. As the tags, games, and examples in the spreadsheet were organized to form a relational matrix, scripts were created on each page to take advantage of this layout by pulling the relevant data from specific rows or columns. This data is then formatted into Hypertext Markup Language on the page, which creates a table containing the information about the specific game or tag for the reader. As this feature pulls the data from the spreadsheet when the page loads, this means that updates to the spreadsheet are reflected automatically to the website, greatly reducing the need for page maintenance.

Furthermore, the scripts on the pages were changed to instead pull from a content delivery network (CDN) to load the table generation script, which had a couple of advantages. First, as all the pages now referenced a single source, this meant that changes to the table generation script would be updated for all pages on the wiki, simplifying the effort needed in customizing the tables. Second, the scripting required to pull from the CDN is extremely short, and this enabled team members with less proficiency in coding to copy those scripts over to new pages.

Overall, these automation features resulted in a substantial reduction in maintaining content, and improved the extensibility of adding more data into the wiki.

6. Analysis

In initial drafts for types of analysis, narrative and audio were other proposed types of tags, but were ultimately scrapped due to time constraints. This left the wiki to mainly revolve around analyzing movement related game mechanics as the focus. Each page structured on the wiki site contained the correct, linked, navigation. The hyperlinks present allowed for users to navigate between all pages published to the wiki, with no dead end links present. The chosen variety of different games picked for the IQP's Game Wiki exemplified a wide range of diversity in the movement types analyzed under this tag.

6.1 Differences between initial to final design

Our initial vision for the design of the project was much more ambitious than what ended up becoming our deliverable final design. In the beginning we had planned for an all-encompassing wiki that would prove to be a powerful tool for game designers and any others interested in the resource. We wanted to have in-depth analyses of each differing aspect of a game that would vastly expand the reader's knowledge of said game. Starting from a user-end perspective, we envisioned a visually pleasing and highly interactive interface that would stimulate the users interest. In the end the most visually interactive/aesthetic component we were able to produce is a gallery of analyzed games where a popular cover for the game was displayed and expanded to show emphasis when hovered over with the cursor. The individual pages for analysis of said games were a bit more blockish and less original/innovative than we had initially imagined. Nonetheless, they are functional and get the job done.

6.2 How well our movement tag lens worked

Our system of using the movement tags as our lens, narrowing the scope, was a very effective strategy to uphold a high quality of work while displaying enough information to be useful. The beauty of using movement as the lens comes from the balance found in the display of variety and creativity, and the technical side of what makes a game work. The large majority of video games have movement as a main overarching mechanic. This allowed us to find a lens that we used to analyze completely different types of games. This unique comparison gives us insight on how games are related and how many games share the same mechanical inputs all while having the action play out and be used in totally different ways. As we moved further into the analysis process we found this idea to be increasingly apparent.

The clear display of different ways to use the same action is a powerful tool for game designers and game lovers too. This lens opens our eyes to the creative possibilities not so easily observed by one person alone. Seeing firsthand how something as simple as a jump can be the basis of the entire game, something as simple as how to get on top of an object ahead, or even an attack to smite your enemies on the journey ahead.

As we continued populating the movement tags we found that there were many essential aspects missing from the analysis. This led to a slight increase to the scope we were working with to include additional actions to our originally strictly movement based analysis. These actions include things such as attacks, dodges, abilities and more. This expansion was necessary as we found overlap in places we initially did not think of. For example, something like a dodge or a dash attack can have a double use as a helpful tool for the player to move around the terrain ahead. This goes to show how much more space there is for future improvement to the wiki. The

depth of possibility reaches as far as our imagination into what makes the gaming experience something we all love so much.

6.3 How our wiki compares to other wikis and lenses

In comparison to some other popular wikis such as *TVTropes*, *Fandom*, *Gamepedia*, etc., our wiki is a bit more esoteric. With the implementation of the lenses function as our main method of categorization, we focused on the specific lens of movement which dissected how the various movement mechanics of a game and how those factors affect gameplay. This distinction is the main differentiator that separates our wiki from others on the web. Additionally, there were other lenses we would have liked to implement into our wiki such as narrative, music/sound design, aesthetics/world building, and much more but the focus on the single lens of movement ended up being the most realistic deliverable within our scope. Given that we had limited time to consolidate information on our website, naturally the extent of games covered on our final deliverable is not as vast compared to the previously mentioned wikis and others that have had more time to develop their catalog with a larger workforce generating results.

6.4 What kinds of games did we include and *why*

In the context of games, movement is a change in position. Therefore any form of action that allows the player character to change their position in a gameworld would be valid under this tag. Naturally, platformers would be one of the simpler types of games to analyze as these games typically revolve around the player moving horizontally and vertically throughout the game world. However, movement is not just limited to platformers as most games feature some form of interaction with the game space through movement. For the purposes of the wiki, we

looked outside to multiplayer online battle arenas, role playing games, asymmetrical survival games, cart racers, and action adventure games to analyze their movement components, what's similar, how are they used, and for which purposes would the player be using them for. No two games will use a type of movement the same. For example, a jump in most Mario games culminates in a form of attack and vertical movement, but in a first person shooter such as *Team Fortress 2*, jumping can be used as a form of launching the player character or dodging, as well as allowing the player to traverse elevated pieces of terrain.

7. Individual Reflections

7.1 Reflection (Ethan)

I joined an IQP with the intent of understanding what it means to be in a group project as big as this, and I think I've learned that a meaningful contribution takes a great deal of perseverance, perception, and perhaps a willingness to challenge the status quo. I feel like writing the scripts to automate the generation of the site's wiki pages has been my best achievement in this project yet.

Despite this, I still think there are ways I could've better contributed to this team. In particular, I feel like I should've tried reaching out to people more often. There were times where I was afraid of doing so because I thought it would make people uncomfortable, but I see now that sometimes it's necessary to do so in order to move a project forward. There also was a large difference in technical web development skill that was not made evident until much later in the project. If I had known earlier, I would've focused on solving the wiki's web development problems from the start.

7.2 Reflection (Henry)

Going into this IQP I didn't really know what I was getting myself into, I mainly chose this IQP because my options were limited and this related to my major, Computer Science. Nonetheless, my time working on this IQP was certainly interesting to me and provided me with much-needed experience working in a team. Unfortunately, I can't say that I was as personally invested in this IQP as some of my other team members were and I should've treated some objectives/assignments with a greater sense of urgency and responsibility. At least I can say with sincerity that I contributed some amount to the final product by providing data and working on the website itself and that I am pleased with what we managed to accomplish together as a team, a large one at that. As for those team members who are greatly invested in this wiki and wish to continue working and building upon it in the future, I can't wait to see what additions and improvements you will make to it! Know that I am praying for you. God bless.

7.3 Reflection (Brittany)

I found the three terms spent on this IQP to be a rocky and often painstakingly difficult process. This was due to some of the main communication struggles encountered: individual work expectations and being able to get in contact with other members of the group. During mainly A and B terms of the project there were communication problems around what exactly each person was expected to have done by the next meeting which resulted in those terms, from my point of view, to be not as productive as they would have been otherwise. Also mainly during A and B terms of the project I often found myself unable to get in touch with other members of the IQP for extended periods of time, for scheduling meetings as well as forming plans of what we would be doing each week. I do feel like both of these problems got better in C Term as by

then we had a clear list of action needed to be taken to push our project over the finish line as provided by the advisors. However even with this I still found that our team still, more often than not, struggled to get their individual tasks done despite the communication of clear expectations. Despite the communication problems we encountered, I am proud of the fact that we managed to work together in a larger than normal IQP group (9 people) and produce a finished product. Overall I am happy and satisfied with our final project and hope that it will be useful for game developers.

7.4 Reflection (Najum)

Going into this project I was not in the best mental space. I was overall feeling the trials and tribulations of WPI going into my third year. However, stumbling across this project I had high spirits given its open-ended nature and was excited to work with such a large team because I had never done so to this extent before.

Having an abnormally large team for an IQP(9 people), we inevitably ran into some communication issues but working through this struggle I think was a valuable learning experience. It showed me how to respectfully value everyone's opinions while forming a collective final thought when there are ideas clashing and power dynamics at play. Additionally, I do believe our ability to effectively communicate with each other vastly improved from the beginning of this project.

Overall I believe I could have done way more. My contributions were very lackluster and oftentimes the bare minimum. I wish I could have been more motivated and invested into the innovation of our project but I ended up mostly just completing grunt work. Personally there’s no intellectual ideas or anything set in stone that I can say I am proud to have been responsible for

and that is a shame. However, I do hope at least I was good at assisting others' ideas and pushing forward on the lead of their basis.

All in all I would say that this project did not materialize in the way I thought it would but that’s not necessarily a bad thing and I’m not too pressed on the matter. It was nice working with everyone and I hope our wiki can be a valuable resource to anyone interested.

7.5 Reflection (Bashar)

I went into this project overwhelmingly excited to write analysis about various games and attempt to the best of my ability to understand games at a more complex level. Throughout the early weeks of A term, I was ecstatic to share my ideas to begin this process, as personally, I had always been looking for a space to share my passion at a high level. But however, as time went on in the project, it became increasingly obvious that my ambition was not shared at the same level among the group.

I would describe my complete experience of this particular run of the project as personally demoralizing, through the myriad of communication issues, the lack of a clear direction to take the project in and several other inhibiting factors leading to a potluck of problems that slowly withered away my personal ambitions of the project. I felt like every time I wanted to explore an idea in the project, I was not held back directly by my advisors, but rather a mix of confusion that my groupmates exhibited in response. Over the span of the project’s timeline, I saw my personal work quality sharply decrease with lack of motivation and support, with the occasional (and increasingly more frequent) backlash some of my attempts to push any ideas forward, even if I would be solely responsible to do all the work for it and had nothing

better to contribute at the time. I can't speak on behalf of my peers as to why this treatment was given, but regardless, it was very demotivating.

Because of this, I am left very unsatisfied with the project's end state and how much I was able to contribute. The overall reduction of scope of the project I would say went to a fault, and I feel like the group shunned any and all experimentation with certainty nothing good would come out. Fears of discarded work and broken features roamed discussion constantly with minimal touchback with our advisors if that work would truly matter in the grand scope of learning in the project.

Yes, knowing how to *"scope"* the project is very important, but that does not necessarily mean reducing a product to something extremely barebones; which we just barely achieved according to our advisors (now I'm not pointing this out to undermine the work we have done, but rather to make a point about our process). It's knowing how to do more with less; optimizing work gains in the application. There were many instances in this project when I believe we chose to do more to do less without stopping for a moment to consider how we can achieve more by doing less. This can not be more clear in the later half of the project when many group members became more concerned about hours of work logged V.S. what the work they actually were outputting was. I was also afraid of being judged for the lack of time I was putting into the project sometimes until I remembered what I was doing was more important than how long I was doing it for, and I think that for me, is most certainly a key takeaway.

As for now, I would take this much more as a learning experience rather than an end product that is "portfolio worthy". I do feel like I put a lot of hard work into the project, that reaches far beyond simply having an end product as this project leads me down many other avenues of learning. None of them were easy, as they all came with the reality of the current state

of the project, but acknowledging it is key and knowing that I did everything I could with the time I had. And I think that is the real success of this project.

7.6 Reflection (Elijah)

Throughout the three terms I was able to work on the IQP, I still felt like I contributed little to the actual outcome of the project as it mainly focused around the actual wiki's website. Granted I was part of a smaller subsection that was researching various games and their tag relations that were to be incorporated into the wiki, but it definitely felt as though most of the contributable work I could've done was locked behind an area I actually switched my major over from: computer science. Not to say I wasn't satisfied working on the project either, just that because *this* was the target product of the project, the ending for this IQP feels very hollow to me. Through my best efforts I did contribute to the success of the wiki by improving my analysis and writing to avoid any misinformation from being put onto the wiki (best explaining each aspect of what type of movement each game I analyzed encompassed from the "movement" tag). Overall I did enjoy getting to learn and research games I've played before (or even new ones) for the purposes of analysis. You can always say why you like a game, but now I feel confident in explaining the exact aspects (whether that be movement, audio design, narrative) that make this game special to me, how that's demonstrated in comparison to other games outside or inside its genre, and whether it's a valid/strong representation in my eyes.

7.7 Reflection (Adrian)

These past three terms working on this IQP have been both informative as well as difficult. In order for us to reach the point where our project is now we had to learn many new things such as

the different lenses through which we are able to categorize various games. We learnt that with large scale projects such as this one that we have to be more flexible and able to change our approach. We learnt this because of how we had to shift from using the lenses to focusing on movement in games.

7.8 Reflection (Davis)

These past three terms have been a very valuable lesson in many ways. I certainly am happy to see all the work coming to fruition despite the initial shift in direction leaving the team a bit all over the place. I feel I could have communicated my situations better through the term, and wished I had the freedom to work on this project with everyone everyday with full focus and energy. Sadly this was not totally possible for me as I have been struggling to maintain my academic standing in other classes. Given this was a multiple term project it was hard to manage my time and prioritize while catching up on things for classes only meeting for one term. I learned valuable lessons through working with the group as a whole and observing what makes the project run smoothly, and what we do that could get in our way. I hold a great respect for the team members' patience they gave me during some of the hardest times I have seen in a while. Everyone was kind and forgiving, while also being able to clearly state to me what was needed in order for the project to move forward. In a perfect world I would have had everything under control and would not need this kind of support from my peers and mentors, but I cannot express how much I appreciated it all. I am very excited to see what this wiki can grow into as time marches on.

7.9 Reflection (Josh)

I initially applied for this IQP because the concept was very interesting to me, and not only would it be a very valuable project to put on my resume, but it could also be an invaluable tool for myself and many other game designers in the future. While our final product is, understandably, not as grandiose I first imagined, I do believe that I have learned some very important things from this project. I am disappointed with my quantity and quality of work during the tail end of A term and most of B term, and over winter break I set to addressing the mental health struggles that caused it. This paid off in C term, and I contributed significantly to the final paper, through writing as well as editing.

While I am not particularly satisfied with the total amount and quality of my work over all three terms, I do believe that I myself have improved my work ethic, mental health, and habits significantly, and I do still believe that this wiki can become a valuable tool for all game developers. I also feel confident that I can continue working and developing the wiki in the future, adding more tags and definitions.

Over the course of the three terms, me and the whole team alike had to wrestle with many issues and roadblocks, ranging from the scope of our minimum viable product to interpersonal conflicts within the team. But despite this, we managed to deliver our minimum viable product by the end of B term, which allowed us to properly focus our effort on this final report. Ultimately, I am proud of our final product, and I hope to continue working on and expanding the wiki in the future.

8. Conclusions & Future Work

8.1 Beyond movement tags

Considering the thorough analysis of movement tags, there exists a clear path forwards expanding into new major tags. The narrow scope of movement gives a clear outline on how tags will be implemented in the future. We see possibility for expansion into new lenses expressing all the parts that make up the player's experience beyond actions that can be performed. Lenses shining light onto the story and the visual experience for example. These are more examples of parts of a game that are shared among many different games, yet can come to reality in a great variety of ways. Future work on topics like these would be a powerful expansion onto the wiki we have created. In order to achieve our goal of creating a space where all aspects of a game can be analyzed it is essential that the wiki is expanded as time moves forwards.

8.2 Wiki Administration

This expansion can come about in many different ways. The most obvious would be an extension of the IQP returning for new students to add their perspectives on different game tags in later school years. Seeing as the wiki set up has been completed the future work would focus more on improvements to the web design, and expanding the scope, leaving room for many new possibilities. We also see an opportunity for a more in depth game analysis class that could teach much of what we have learned through the readings presented in the beginning stages of the IQP project, as well as bringing a focus to populating the wiki with more games and tags to be explored! Just like any other set of information, the conclusions drawn are only as strong as the

data collected. Expanding the wiki will bring about new comparisons and perspectives into what makes the games we love such a powerful and encompassing experience, sharing our passion for video games with the world around us.

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