

*Failed to Send: An Internet Aesthetic Visual Novel*

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*This report represents work of one or more WPI undergraduate students submitted to the faculty as evidence of a degree requirement. WPI routinely publishes these reports on its website without editorial or peer review.*

# Abstract

We developed a visual novel with a vast amount of technical exploration in Ren'Py. To do this, we repurposed Prof. Stewart's original MQP pitch of an Internet Aesthetic Visual Novel (with her permission). We focused on the aesthetics of websites rather than aesthetics popular with internet communities. *Failed To Send* demonstrates new ways of storytelling that push Ren'Py to its limits. The code developed in this project paves the way for future representations of the Internet in visual novels.

# Acknowledgments

The past MQP *Neurotype Cafe*, and their team's experience with creating a visual novel, was informative and impacted, among other things, our choice of the game engine Ren'Py for *Failed to Send*. Ren'Py's community provided us with overwhelming support throughout this project. They provided many examples, questions, and context for its libraries.

YouTube Channels Zeil Learnings, Visual Novel Design, and Game Developer Training sported strong resources hosted by trusted community members. Internet forums like Ren'Py on Reddit and Lemma Soft Forums were wellsprings of information and debugging help. Ren'Py developer Nighten showcased how to push Ren'Py in "Yet Another Phone for Ren'Py" and their code was the basis for *Failed to Send's* direct message screens. Their code also provided a complex development example of the Ren'Py library that was incredibly helpful.

Dave Gandy's Font Awesome packs were a strong UI aspect. We used it to communicate *Failed To Send's* visual identity. Their flexible licensing and art were boons to our development cycle.

The team would also like to thank Humberto Torres for his contributions during the project's formative stages. Our advisors, Professors Gillian Smith and Karen Stewart provided invaluable information and feedback throughout the development process. *Failed to Send: An Internet Aesthetic Visual Novel* would not exist in its current form without them.

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# PART 1: THEORY

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## 1: Introduction

Professor Karen Stewart pitched the "Internet Aesthetic Visual Novel" idea as "A visual novel video game project revolving around an internet aesthetic like Dark Academia, Cottage Core, Witch Core, or High School Dream. The goal is to create a rich, multi-sensory gaming experience with narrative-driven content." (2023) In the planning stages, we focused on the internet aesthetic and narrative components more than we thought about the examples of Internet aesthetics provided. We wanted to create a rich narrative experience without completely following visual novel traditions.

### 1.1: Concept

We became interested in a story setting on the Internet, with less distinction between online and offline. The Internet setting naturally progressed into a shifting of the definition of Internet Aesthetic in terms of the project's concept. Rather than using aesthetics popular *on* the Internet as a foundation, we decided to use the aesthetics *of* the Internet for this project.

In the initial planning stages, we were planning on setting the story around the year 2008 so we could utilize a retro internet aesthetic and have it make sense in the narrative. Setting the novel on the Internet meant that we had to decide what type of website(s) the story would take place on. We briefly toyed with the idea of having it take place on a fictional social media site but ultimately decided that setting the story on a forum would work better. We discarded the idea of setting the story in the past, but using a forum for the setting remained.

The online setting paved the way for our narrative choices. We decided to create a story centering on community and involvement in said community. We decided the overarching question was going to be whether or not one should stay in a community that is gradually becoming toxic and falling apart, and what consequences one's decision on the matter would have.

### 1.2: Goals

We ended up with several goals naturally developing as we fleshed out the concept behind *Failed to Send*. We wanted the game to be thought-provoking and appeal most to new adults (college-age adults). To accomplish this, we decided our protagonist would be Amelie, a

self-aware college student taking a leave of absence. Her introspection would make the players think through their decisions and the consequences of them, while her age and mindset would be most relatable for new adults and college students.

We wanted to evoke a sense of nostalgia for players while commenting on online communities. The usage of the forum as a setting and narrative tool would naturally make internet-savvy players feel nostalgic and, being an internet community would make it easy to comment on the nature of them.

Online communities can be incredibly positive experiences but also like any real-world community they could end up decaying and becoming negative, and we wanted to convey that. Joining a community, growing emotionally invested, and then seeing things start to fall apart would accomplish this goal and become our choice for *Failed to Send*.

Showing appreciation and respect for diverse communities and increasing relatability were also goals, so we planned on creating gameplay for three different communities. These were going to be communities centered on a video game, an anime/manga, and a rap group. We chose gaming, anime/manga, and music for our communities because of the overlap we saw in their users' interests (primarily through personal experience) and also because of their prominence online.

One of the main goals informing our design was that we wanted to be realistic and not completely follow the norms of visual novels. The forum idea perfectly nested with this and several other goals and so became foundational to *Failed to Send*.



## 2: Project Management

We knew that our project was ambitious and that we would have to manage our time wisely. From experience, we knew that having a firm work structure would be conducive to accomplishing our goals and tried to plan accordingly.

### 2.1: Work Structure

This MQP was originally scheduled to run for the first three of WPI's terms in the 2023-2024 academic year (A, B, and C-term) with the project running into D-term if necessary. We gave each term a unique work structure so we could realize our unique vision for *Failed to Send*.

We decided that A-term would be an exploratory stage so we could plan how our project would fit into the field of visual novels. During this time we tried to figure out what we wanted and what would be feasible and plan out the rest of the project. We attended ProtoFest, an event to show prototypes of games, in this term, and used the chance to informally gather information from students on what was most engaging.

We would use B-term to flesh out and build key parts of *Failed to Send*. AlphaFest happened in this term, an event in which early builds of games are shown to the public, and so gave us a concrete goal of getting a version of *Failed to Send* ready. We added work over Winter Break as and used that time for rebuilding the game and adding features (while using our AlphaFest feedback).

We modeled C-term's structure on Agile Scrum Development, which is frequently used in software and game development (Drumond, 2022). In our case, this meant we created goals for "sprints," which are shorter periods for dividing up development, to be carried out over the term (Rubin, 2013). This term ended up becoming our primary production phase, and the sprint schedule worked out to allow for rapid iterations of *Failed to Send* to be created.

Due to unforeseen issues in development, we ended up needing to utilize D-term for finishing a version of *Failed to Send* and preparing for Project Presentation Day. This paper was also written during the D-term. Originally we planned on using D-term solely for polishing our work, but narrative work needed to be carried out during this time.

## 3: Research

We predominantly researched how we would develop the mechanics, but performed research for game content and forum aesthetics. We took advantage of a previous MQP team, the creators of *Neurotype Cafe*, had done extensive research into the best game engine to use to build a nontraditional visual novel, and decided on using Ren'Py to make *Failed to Send* (Dias et al., 2023).

### 3.1: Developing Mechanics

*Failed to Send's* story shows Amelie's progression through a forum. Thus, our greatest challenge was determining what a gamified internet forum is and its implications. We researched Ren'Py and immediately decided to use it as our game engine. Ren'Py is an engine based on and used by visual novel developers (Ren'Py, 2004). We found the engine extremely customizable. Thanks to its popularity as a game engine, we found plenty of information for configuring Ren'Py (Ren'Py, 2004). *Neurotype Cafe* demonstrated ways to configure Ren'Py for a more modern story. They used mechanics to limit and control the player's pace (Dias et al., 2023). This mechanic was their energy system (Dias et al., 2023). Although we came up with a social battery mechanic separately, theirs was a notable example.

Our story's direction needed Ren'Py's customizability to blend forum and visual novel mechanics. Furthermore, we needed examples of complex storytelling in UI that evoked nostalgia. We sought forums from 2008 to 2024, and games with strong UI and internet mechanics when facing this challenge.

For games, we gathered examples from our library, advisor suggestions, and those that featured noteworthy ideas. We then engaged or played with the game's mechanics. Here we found games that relied only on internet storytelling, were unorthodox visual novels, or featured relevant ideas. Many games were not visual novels but feature mechanics with different forms of narrative interaction. The best material was the ways the UI allowed players to make choices. This was to be our cornerstone for understanding interactive UI storytelling. These games, along with other influences, are discussed more in section 3.2.

Game	Mechanics/Ideas	Importance
<i>va-11 hall-a</i>	Visual novel with drink mixing initially made in Ren'Py	Inspiration for nontraditional visual novel mechanics for novel storytelling

<i>.hack//G.U. Last Recode</i>	Included in-game forums for worldbuilding and story progression	Example of the idea of using forums
<i>Reigns Her Majesty</i>	Uses UI cards for players to make decisions	Influenced game mechanics and forum gamification
<i>Orwell: Keeping An Eye on You</i>	Utilized the internet for storytelling and gameplay	Helped determine how to gamify the internet
<i>emily is away</i>	Utilized the internet for storytelling and gameplay	Helped determine how to gamify the internet
<i>Valkyrie Profile</i>	Series of fantasy roleplaying games	Influenced aesthetics of forum/game forum discusses
<i>Sonic and the Black Knight</i>	Fantasy platformer	Influenced aesthetics of forum/game forum discusses

Figure 1: Table of games and their significance in our project

### 3.2: Influences

We did not create *Failed to Send* in a vacuum; other media that we consumed, and other visual novels, influenced its path. *.hack//G.U. Last Recode*, for instance, features a forum system that enhances the narrative and worldbuilding of the game (CyberConnect2, 2016). *Vall-halla* is a visual novel with a bartending mechanic that would not normally be in a visual novel and was started in Ren'Py (Sukeban Games, 2016). Those two were the most influential of the games.

*Serial Experiments Laine*, an anime, plays with the lines between the real world and the online and was a starting point to the non-traditional narrative path we decided we wanted *Failed to Send* to take. *emily is away* and *Reigns Her Majesty* both used unconventional storytelling mechanics that influenced how we felt we should execute *Failed to Send*. *Orwell: Keeping an Eye on You* utilized the internet in its storytelling in our research.

In Section 5, we go into the art of *Failed to Send*, and both *Sonic and the Black Knight* and *Valkyrie Profile* unquestionably had an influence there.

### 3.3: Developing Aesthetics

We researched the aesthetics of the internet, specifically forums to create a faithful in-game interpretation of them. We looked at a diverse range of forums to determine commonalities between forums over the past 15 years. We also looked at the aesthetics that portray the internet or past eras to flesh out the game's vision (Harrison, 2018).

### 3.3.1: Forum Commonalities

Our research revealed traits forums generally share. Some of these traits can be seen simply by looking at the home pages of various forums. Figures 2 and 3 below show forum homepages.

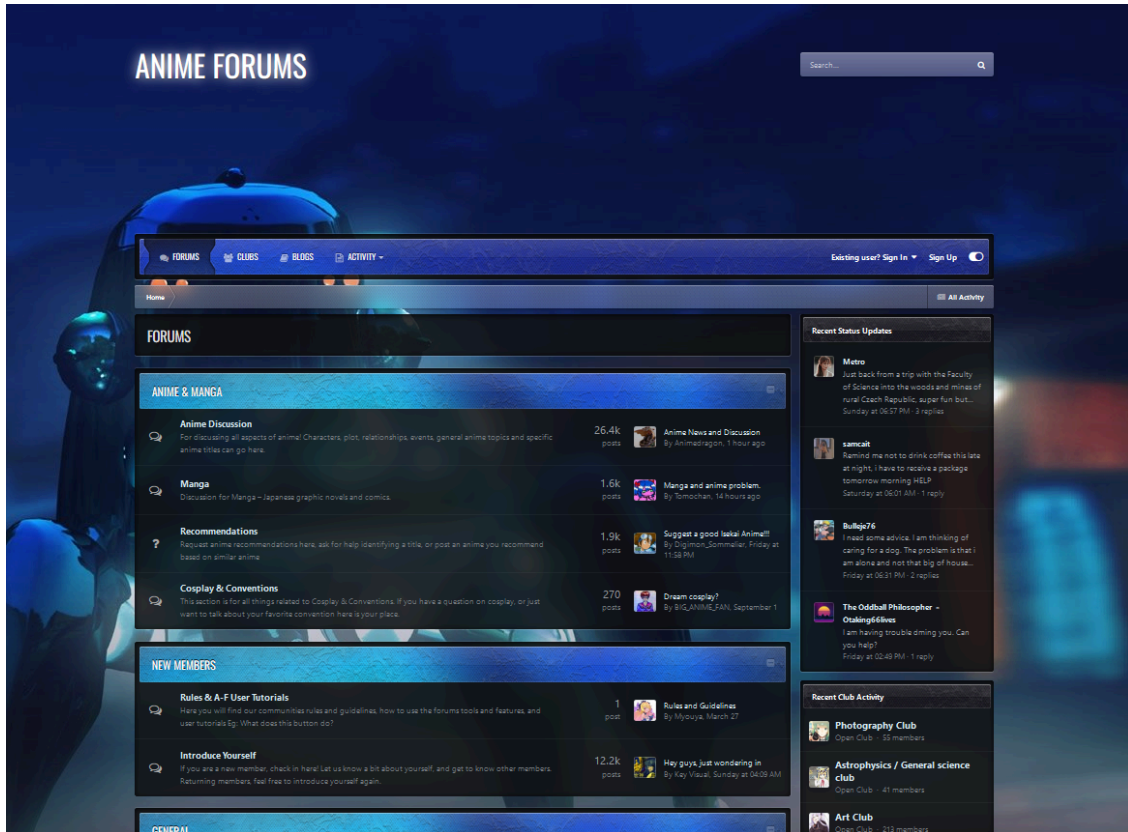


Figure 2: animeforums.net home page

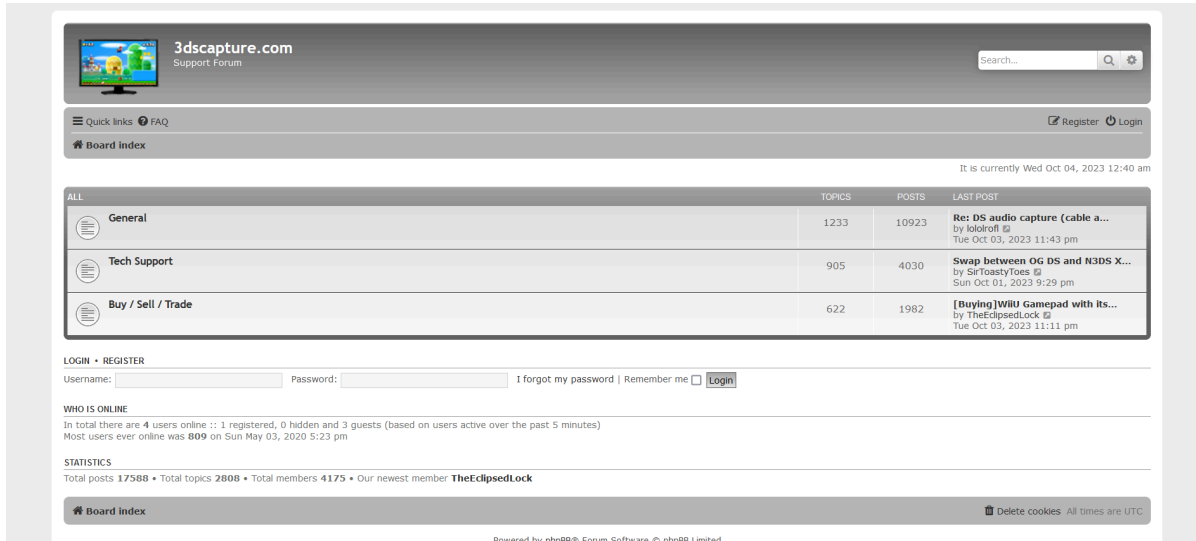


Figure 3: 3dscapture.com support forum homepage

Both forums have the title in the upper left corner and a search bar in the upper right. Below that are quick links, and below that are subcategories of the forum (featuring title information on the left and post details on the right). Both include login and sign-up buttons in the upper right bar a bit below the search box.

Even websites that break from tradition with forums have a similar format, as one can see in Figure 4, showing Gaia Online:

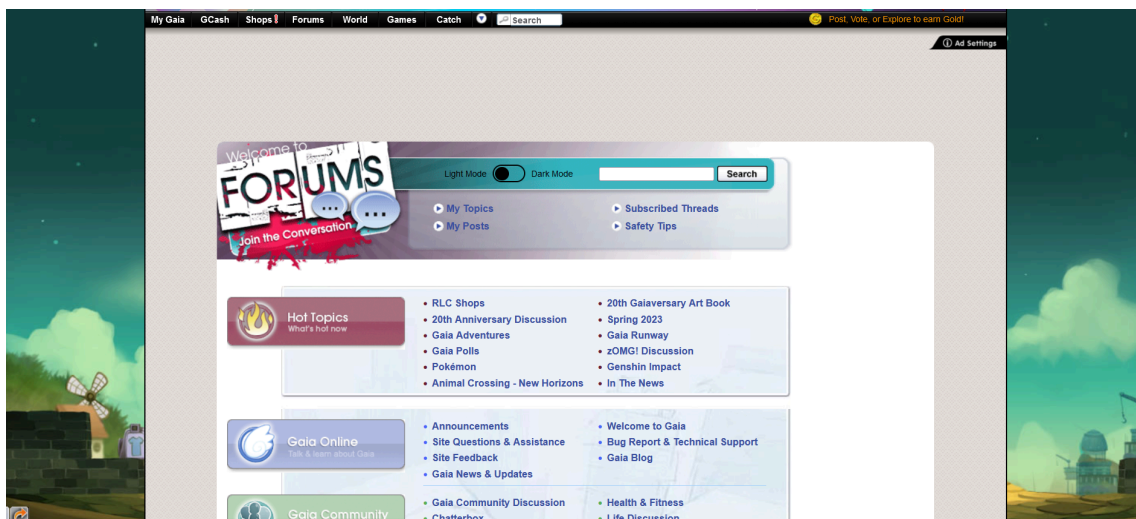


Figure 4: gaiaonline.com/forum/

Because Gaia Online is a multipurpose site with more features than just the forum, the login options are not shown in the forum itself. However, we still have a title in the upper left, a search bar in the upper right, quick links below, and a breakdown of the different categories of forums available to browse.

For *Failed to Send*, we did not plan on having quite as many categories and subcategories on the in-game forum, so we looked more at the thread lists and thread formats. Again, these all had certain similarities easy to see when comparing the sites.

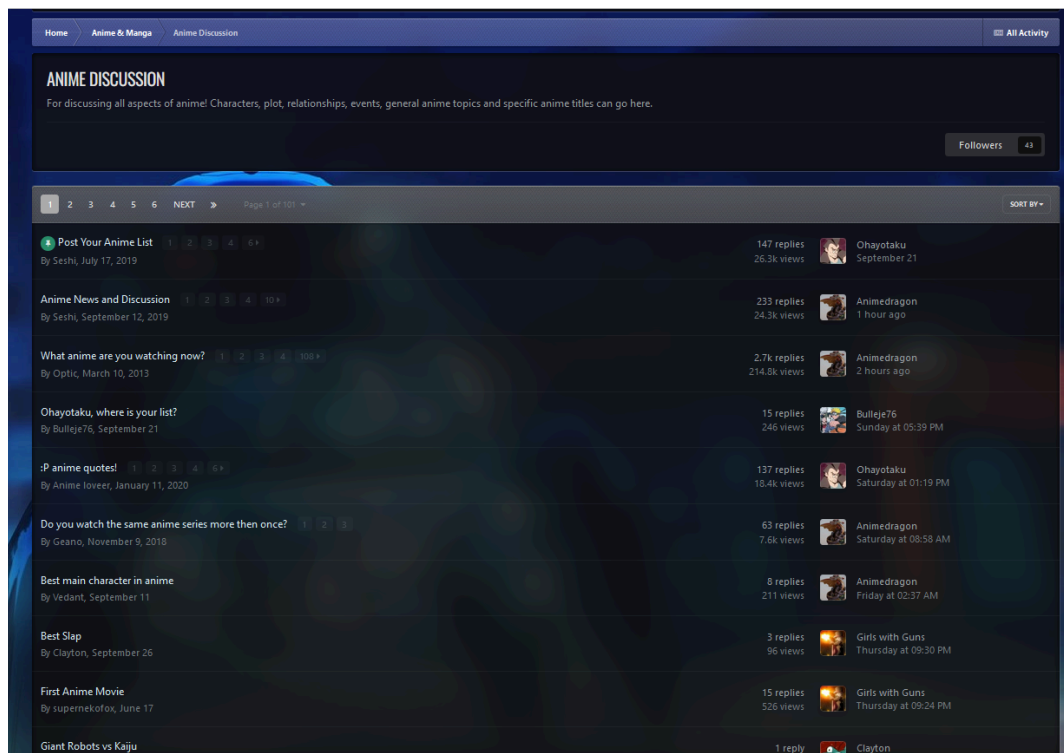


Figure 5: animeforums.net thread list

3dsapture.com  
Support Forum

Search...

Quick links FAQ Register Login

Board index

General

New Topic Search this forum... 1232 topics 1 2 3 4 5 ... 50

ANNOUNCEMENTS	REPLIES	VIEWS	LAST POST
<b>The updates / releases thread</b> by <b>loopy</b> » Fri Feb 04, 2022 12:57 am	4	1471351	by <b>loopy</b> » Thu May 18, 2023 8:41 pm

TOPICS	REPLIES	VIEWS	LAST POST
<b>Order status</b> by <b>loopy</b> » Sun Jul 02, 2023 3:02 am	78	14406	by Cruelhaus » Sun Oct 01, 2023 10:34 pm
<b>DS audio capture (cable aux to aux and aux to usb)</b> by mast3rblad3r » Wed Sep 27, 2023 9:01 pm	3	89	by lololrofl » Tue Oct 03, 2023 11:43 pm
<b>Jig for drilling USB-C hole</b> by Eondar » Sun Jun 18, 2023 5:24 pm	8	916	by Elysium » Fri Sep 29, 2023 5:43 pm
<b>Capturing 3D Videos</b> by TheAllStarsGuy » Sat Sep 23, 2023 1:06 am	1	379	by TownDarling » Mon Sep 25, 2023 3:53 pm
<b>Pixel Perfect Recording Advice?</b> by TheAllStarsGuy » Mon Sep 25, 2023 1:12 am	2	89	by TheAllStarsGuy » Mon Sep 25, 2023 3:59 am
<b>Charging through the USB-C</b> by TheChefBoo » Sat Aug 19, 2023 2:07 pm	4	508	by Solted » Sun Sep 17, 2023 9:14 pm
<b>Will dead pixels cast?</b> by TazNado » Thu Sep 14, 2023 1:11 am	2	209	by TazNado » Thu Sep 14, 2023 1:16 am
<b>Capture Software: Small Request</b>	2	243	by Chroma »

Figure 6: 3dsapture.com thread list

Threads are sorted by the last posted (with the most recently posted one being at the top) feature a topic name, and show who created the topic. Threads one should check out before visiting others are stuck to the top so that one sees them immediately. Example threads can be seen below.

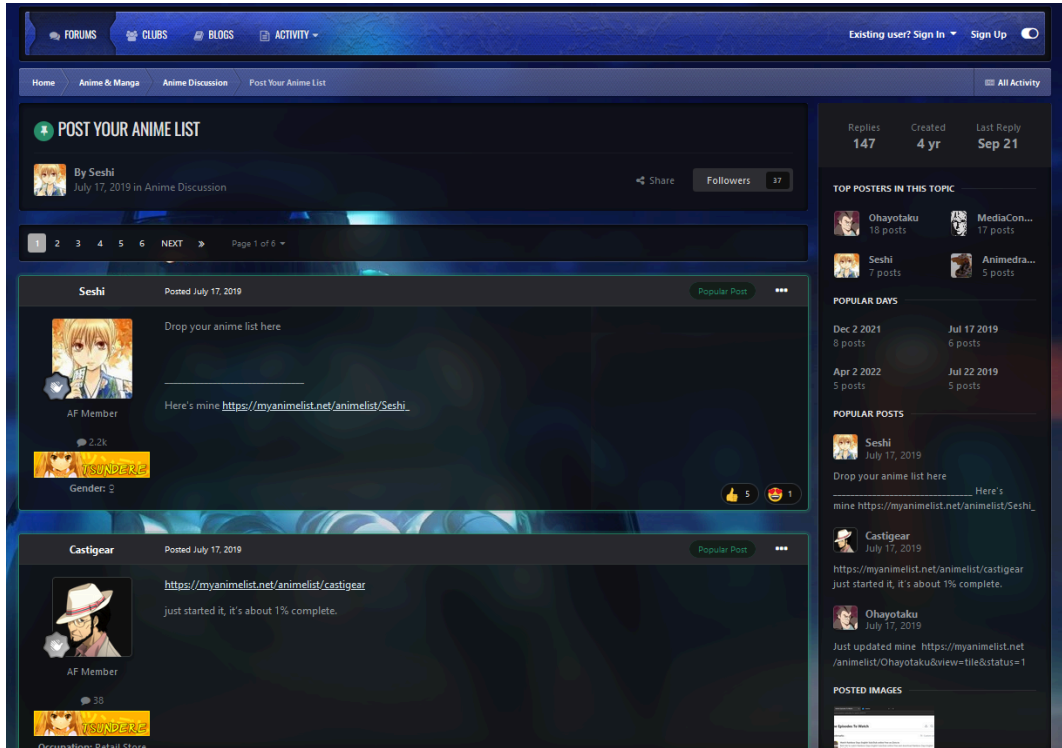


Figure 7: animeforums.net thread example

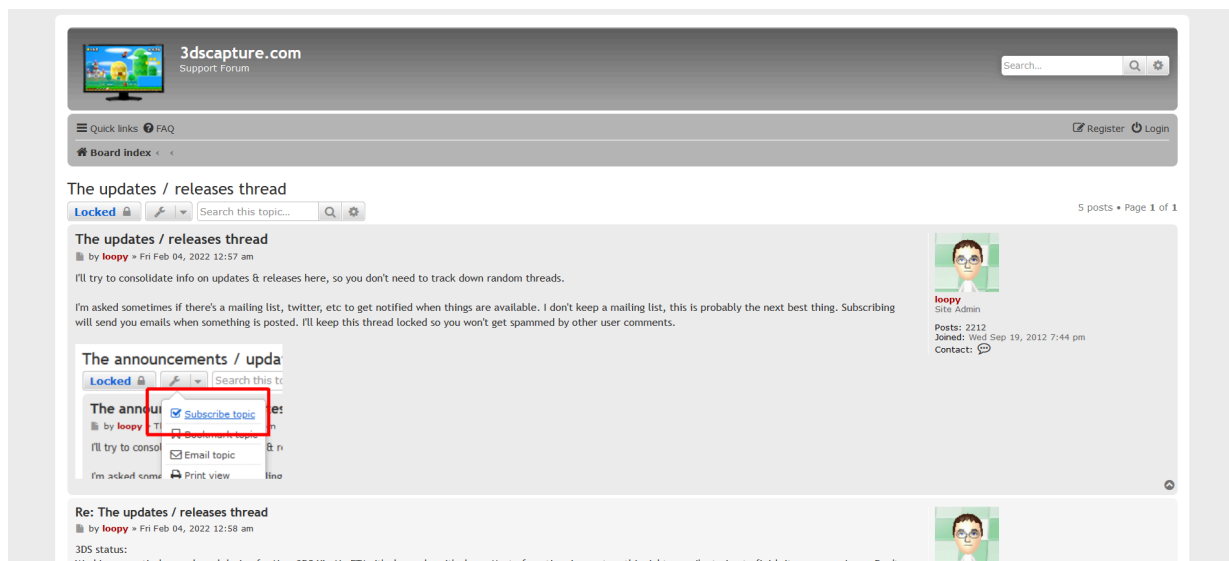


Figure 8: 3dscapture.com thread example



Figures 7 and 8 both show the thread topic at the top and then new posts in chronological order from oldest to newest. User avatars are shown with the username below them next to the post's content.

We considered and utilized these commonalities when designing the forum in *Failed to Send* so that it would be recognizable but also suitable for a game rather than just a website. Section 4 covers our choices based on this research.

### 3.3.2: Internet Aesthetics

The websites in 3.3.1 informed our opinion of what an internet aesthetic or forum aesthetic is, but portrayals of the internet also had an impact. Art by Gustavo Zambelli epitomizes the stylization of the internet that we most frequently saw, and the sort of colors and linework that we decided to utilize (example in Figure 9).

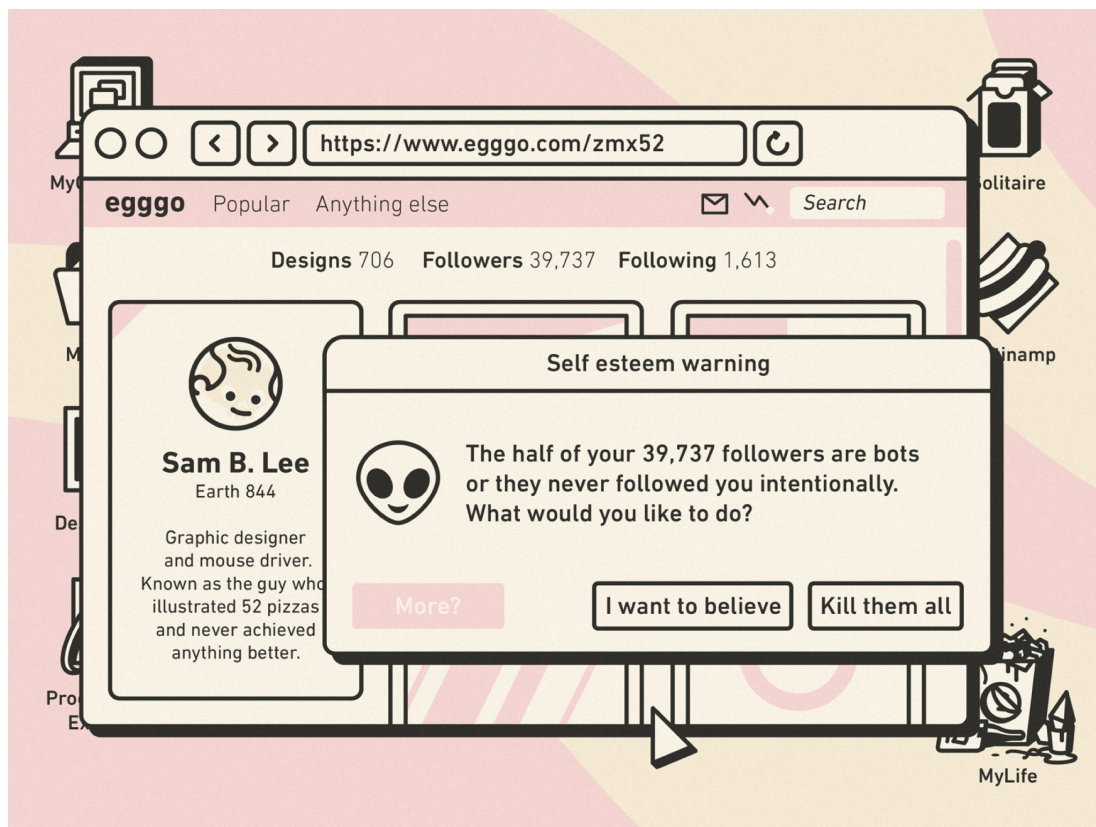


Figure 9: *I want to believe* 🤖 by Gustavo Zambelli  
(<https://dribbble.com/shots/6775182-I-want-to-believe>)

Here we have a pale color scheme that is easy to look at with clean lines and rounded corners, and an easy-to-read font. It feels modern in layout with callbacks to more traditional computer aesthetics through the windows and icons (Enchev, 2019).

See Section 4 for how this affected *Failed to Send's* forums.

### 3.4: Game Content

We wanted *Failed to Send* to realistically portray what a forum community can be and thus looked at what communities use forums and what forums usually contain. To this end, we looked at forums for specific types of communities upon which we had decided to focus. We earlier decided that we wanted to feature gaming, anime/manga, and music communities in *Failed to Send*, and so focused our searches on that. Some of this was simply googling things such as "Anime forum" or "Underground rap forum" while other forums we used as examples were ones that we'd been on before. Experience on forums informed our choices for forum content in *Failed to Send* more than other factors.

## 4: Narrative and Writing

In the beginning stages of *Failed to Send*, we were a team of three with Carolyn primarily handling art, Evans primarily handling programming, and Humberto Torres handling the writing. As this team, we discussed and developed the ideas going into *Failed to Send*. The narrative was altered somewhat after Humberto had to leave the group; this section will primarily discuss the ideas while section 9 goes into the details of what *Failed to Send* ultimately became.

### 4.1: Themes

Early on in the development process, our advisors asked us what themes we wanted to communicate in our game and what the point of this visual novel was going to be. This got us thinking, and ultimately we decided to focus on the community aspect of forums and create a game with a message on communities.

This took the form of trying to answer the question on what to do when a community you're in becomes toxic; should one try to fix things or cut one's losses by leaving the community? At what point is it healthier to leave? We wanted to communicate caring for oneself rather than making oneself miserable to make others comfortable.

As development progressed, the idea of the community falling apart and having to make a choice to stay persisted, but themes of balance and moderation snuck in as well. After all, caring exclusively for oneself is extreme, and socializing is generally good for people. Still, hurting oneself to hurt others is unhealthy.

### 4.2: Plot

At the beginning, the premise was that our main character, Amelie, would join one of three communities and have different experiences and interactions based on the choice of community. One community was a video game community, another an anime/manga, and the last a UK underground rap group. Each community would have two ends, but there also would be a route allowing the player to switch between the communities with its ending.

We decided that with the time allotted for this project it would be best to focus on creating one of the paths instead of splitting our time between three paths. We chose to focus on the video game community, putting the others aside to revisit if we had time. We fleshed out the protagonist to be a college student named Amelie taking a leave of absence due to a rough year worsening her mental health. She would join a forum out of loneliness from being away from her friends during the leave of absence and become a part of the community. Then, the community would start to

fall apart and she would have to choose between staying or going, and then deal with the consequences of that choice.

After a change in group size, *Failed to Send* evolved further, and the plot details became clearer. Amelie had established a club focused on the video game series the forum centered on, and said club had fallen apart because of multiple factors. One factor was Amelie trying to do everything herself and not trusting others to run anything, others not stepping up to help with anything, and the college administration dropping the ball on providing the club with resources (rooms).

The club disbanding and the stress that came with watching it fall apart left Amelie in a bad mental state, so she took a leave of absence from school to recover. Her friends graduated like she would have if not for the leave of absence, leaving her feeling awful and lonely. At this point she remembered that internet communities had helped with her mental health in the past and that joining one could help again.

Thus, she joins The Hot Dog Stand, a site hosting multiple forums and communities. In this version of *Failed to Send*, she joins the *Hallowed Winds* forum, a forum centered on the video game for which she had made a club. Joining this community gives her something new to focus on that isn't routine, and she ends up attached to the community. In her time on the forum, they host speedrunning competitions that she wants to participate in. The player chooses just how she participates in the *Hallowed Winds* community, leading her on different paths.

If the player focuses on the competitive side of the forum and Amelie, she gets closer to the mod and streamer Moment37 but doesn't form nearly as deep bonds with the rest of the forum. Suppose the player focuses on participating in the forum and not being as competitive. In that case, Amelie gets closer to the mod wicker-scarecrow but is more dependent on the opinions of others. Balancing these two gets her closer with LEGENDFORCE12, a mod who values independence and the state of the community.

After participating in the first speedrunning competition, another is announced, but news of the newest *Hallowed Winds* game comes out, dividing the community on whether its shift from the traditional game format is a good idea. Animosity grows between those who like the change and those who prefer the traditional, and the forum decides to vote on whether it should remain one forum or split into two based on the new and the traditional preferences. The player's past choices impact the weight of Amelie's opinion in the community, and depending on that and her choice, the forum either splits or sticks together, with some of the consequences becoming apparent at the end of the game.

For this to work, we knew we needed fleshed-out, likable characters to make Amelie's attachment make sense and to get the player to feel what Amelie feels throughout the game.

## 4.3: Characters

One can divide the characters in *Failed to Send* into 3 categories: the protagonist, the primary characters, and the side characters. We focused on creating the protagonist and the primary characters first.

### 4.3.1: Protagonist

Amelie, our protagonist, is normally pretty confident, but her mental state has made her anxiety far worse, which means she thinks about every consequence and deliberates on most of her interactions to determine which choice would be best. She has regrets about what led her to take the leave of absence, and so is trying to improve herself so that the same thing doesn't happen again. This means she is trying to trust people more and not take everything upon herself or let people take advantage of her. She's Puerto Rican, and she enjoys running, video games, anime and manga, and rap. She hates mice.

### 4.3.2: Primary Characters

The primary characters are the moderators of the forum; Amelie has private conversations with them through direct messages, so she sees more of them than the other users of the forum. hotdog\_man is the administrator of the site and the first person to message Amelie upon joining the site; Amelie normally does not have much interaction with him, but when she does, it's apparent that he wants to be well-liked and the center of attention. He is very socially awkward.

Moment37 is introduced next. She is a streamer who plays *Hallowed Winds* competitively, live-streaming her attempts at beating world records. She is kind but fiercely independent and competitive. She participates a lot in the forum and enjoys the community, but she could easily go without it as well since it's not her primary focus.

Another mod, wicker-scarecrow, is essentially her opposite. wicker-scarecrow is a people-pleaser who hates confrontation. She is extremely active in the forums (posting first on almost every thread) and it's her primary community. She feels that she needs this community, as she doesn't have it in real life.

LEGENDFORCE12, the third moderator, somewhat sits between the two extremes. He comes off as abrasive and doesn't understand jokes, but he doesn't hesitate to offer help or advice in the forums. He's skilled at the game, but not competitive about it at all. Usually, he doesn't seem to care much, but in reality, he cares deeply. However, he hates the new format for the newest *Hallowed Winds* game, uniquely placing him in favor of the forum splitting into two.

### 4.3.3: Side characters

Since *Failed to Send* features a forum, and forums tend to have more than six users, we had to create characters to make posts. We fleshed out each of these characters enough to ensure their syntax and diction would be consistent. At the time of writing, we had the side characters listed in Figure 10.

Username	Writing Characteristics	Facts	Traits
azure_winds	<ul style="list-style-type: none"> <li>• Proper grammar/punctuation</li> <li>• Occasional emoticons</li> </ul>	<ul style="list-style-type: none"> <li>• Obsessive fan, but can see flaws in games</li> <li>• Crazy cat person</li> <li>• Not too active in arguments</li> </ul>	<ul style="list-style-type: none"> <li>• Usually nice</li> <li>• Can joke around (but tends to take a serious approach to it)</li> <li>• Can be very sarcastic</li> </ul>
BingleBongle227	<ul style="list-style-type: none"> <li>• Proper grammar/punctuation</li> <li>• Odd turns of phrase</li> </ul>	<ul style="list-style-type: none"> <li>• Jokester</li> <li>• Hates LEGENDFORCE12 (too serious for him)</li> <li>• Loves all forms of Hallowed Winds</li> </ul>	<ul style="list-style-type: none"> <li>• Some sass</li> </ul>
FarenLove	<ul style="list-style-type: none"> <li>• Proper grammar/punctuation</li> <li>• Can be verbose</li> </ul>	<ul style="list-style-type: none"> <li>• Loves Faren</li> <li>• Can be found wherever Faren is mentioned</li> </ul>	<ul style="list-style-type: none"> <li>• Either kind or very unkind (depending on opinion of Faren expressed)</li> </ul>
hollowed	<ul style="list-style-type: none"> <li>• Capitalizes names/I only</li> <li>• Uses punctuation if question or multiple sentences</li> <li>• Autocorrect-style typos</li> </ul>	<ul style="list-style-type: none"> <li>• Doesn't realize it's hollowed and not hollowed in the context of the game's title</li> </ul>	<ul style="list-style-type: none"> <li>• Arrogant</li> <li>• Kind of a jerk (accidental?)</li> <li>• pretentious/condescending</li> </ul>
Pie-Herald	<ul style="list-style-type: none"> <li>• Proper grammar (mostly)</li> <li>• Frequently uses multiple punctuation marks</li> <li>• More frequent emoticon use</li> </ul>	<ul style="list-style-type: none"> <li>• Wants to be very good at Hallowed Winds</li> <li>• Is not good at Hallowed Winds</li> </ul>	<ul style="list-style-type: none"> <li>• Appreciative</li> <li>• Open-minded</li> </ul>

		<ul style="list-style-type: none"> <li>• Constantly asking questions about how to play well</li> <li>• Barret fan</li> </ul>	
rock-the-boat9	<ul style="list-style-type: none"> <li>• Yes to capitalization, no to punctuation</li> </ul>	<ul style="list-style-type: none"> <li>• Skilled at Hallowed Winds</li> <li>• Only posts to goad people during competitions</li> </ul>	<ul style="list-style-type: none"> <li>• Very competitive</li> <li>• Very rude</li> </ul>
teamtila	<ul style="list-style-type: none"> <li>• Shorter sentences</li> <li>• Proper grammar/punctuation</li> </ul>	<ul style="list-style-type: none"> <li>• On team Tila (in the Tila vs Tula argument in the game)</li> <li>• Takes Tila hate very seriously</li> <li>• teamtula's rival</li> </ul>	<ul style="list-style-type: none"> <li>• Likes jokes</li> </ul>
teamtula	<ul style="list-style-type: none"> <li>• Proper grammar/punctuation</li> <li>• Longer sentences</li> </ul>	<ul style="list-style-type: none"> <li>• On team Tula</li> <li>• Takes Tula hate very seriously</li> <li>• teamtila's rival</li> </ul>	<ul style="list-style-type: none"> <li>• Likes jokes</li> <li>• Would get along great with teamtila if they got past the whole rivalry</li> </ul>

Figure 10: Side characters' usernames, writing characteristics, facts, and traits

## 5: Art

Visual novels, generally speaking, have a minimum of three types of art: character art, setting art, and user interface. One could argue that *Failed to Send* generally has only two: character art and user interface (UI), since the bulk of the game's "setting" is the Internet and thus is heavily dependent on UI. Thus, here we will be splitting the art into two categories: forum art and character art. Stock images were used to supplement the art generated for *Failed to Send* that would not neatly fit into those categories.

Evans handled the forum art, as they had expressed interest in creating the UI for *Failed to Send*, while Carolyn handled the character art and consulted on getting the UI to match the narrative (detailed in Section 5). Both artistic aspects of *Failed to Send* were developed simultaneously, with each one informing and necessitating changes to the other. Since we started with developing some of the forum assets when working on the project, we will start by detailing them.

See section 9 for the final results of the creative process detailed here.

### 5.1: Forum Art

In Section 3, we showed the inspiration and information we found on forums and the aesthetics of them. Informal inquiries during ProtoFest showed that clean-looking forums were viewed more favorably and easier to read and that some simplification would be necessary to keep *Failed to Send* engaging.

#### 5.1.1: Forum Page

Evans began by creating several possible UIs with the thought that it was not completely decided that we were using forums for the game.

We used Figma for its ability to create UIs and vector images that would not need significant work to look good at different screen resolutions (Figma, 2024). It later turned out that Figma assets could be directly placed in Ren'Py without needing many alterations, so we kept using Figma throughout.



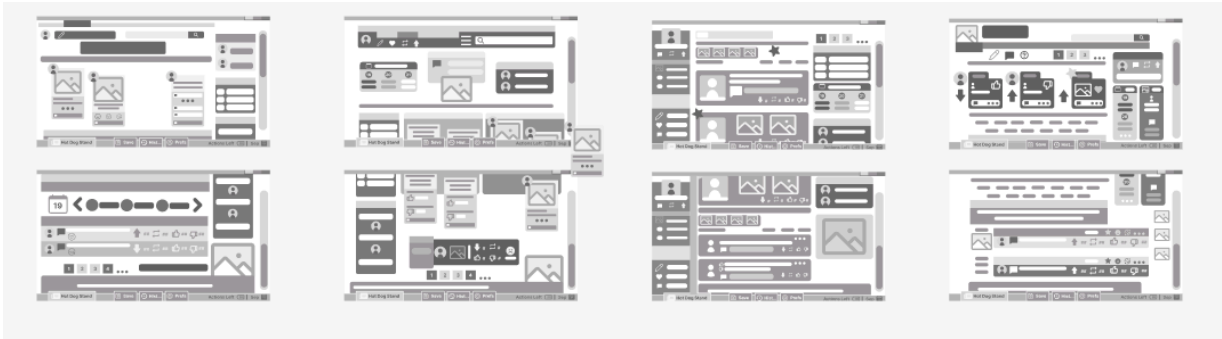


Figure 11: Initially proposed UIs

We determined with our advisors' input that the third option was the closest, but that we needed to simplify it significantly for it to work for a game. By AlphaFest, we had Figure 12.

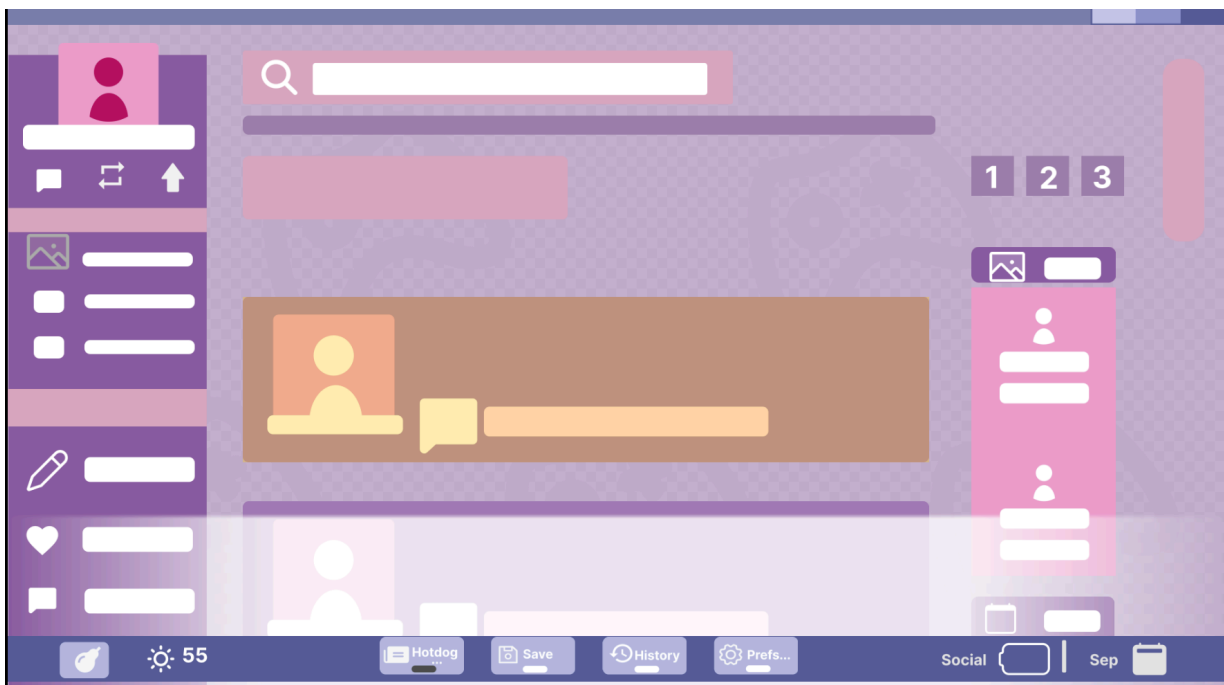


Figure 12: *Failed to Send*'s forum as shown in the AlphaFest build of the game.

Although positively reviewed, after witnessing how players interacted with the build, we determined that we needed it to be simpler. We felt that the forum needed more of a personality and less saturation for the color as well, and this perfectly coincided with a decision to overhaul the code to make it work better.

Figure 13 shows the next iteration of *Failed to Send's* forum:



Figure 13: *Failed to Send's* first new forum layout after AlphaFest

This version of the forum took the aesthetics of the (at this time fictional) game being discussed in the forums and used them to inform the appearance of the forum itself. The result had more personality than the AlphaFest version and needed less revision than that version.

We simultaneously worked on other pages necessary for the game, namely the home page.

### 5.1.2: Home Page

We wanted *Failed to Send* to begin with Amelie deciding to join the forum known as The Hot Dog Stand, which necessitated creating an account creation sequence. The AlphaFest build features the first version of this page.



Figure 14: Account creation and forum topic selection as it appears in the AlphaFest build

The lack of personality here, and it not matching the new forum layout, meant that we had to create a new screen. Rather than having the player progress through two screens during account creation, we used a single screen post-AlphaFest.

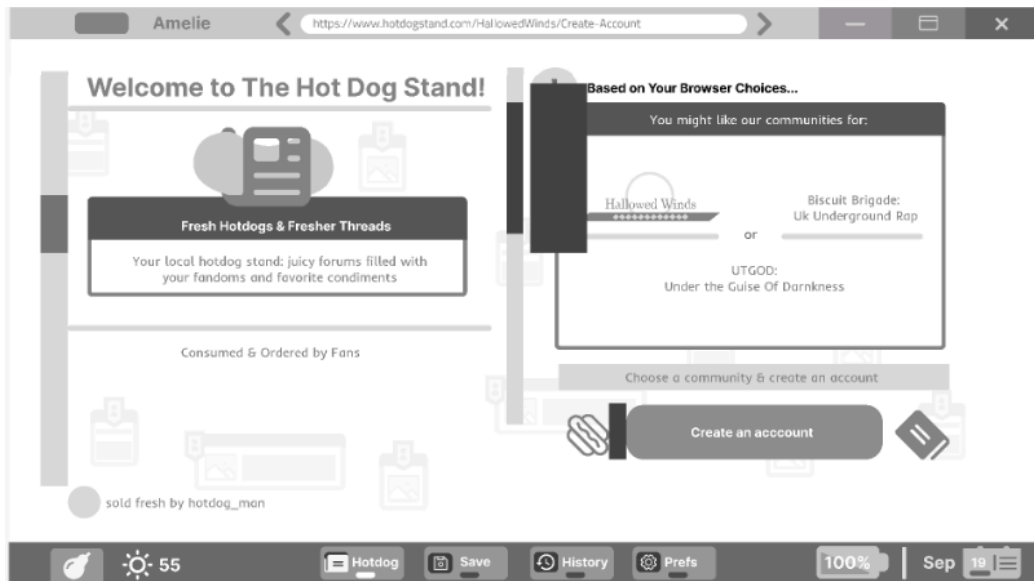


Figure 15: Account creation and forum topic selection in the revision after AlphaFest

This page required significantly fewer revisions to reach a point where we were happy with it.

### 5.1.3: Forum Assets

After AlphaFest, we decided that having certain shapes repeat throughout the forum would help with having a consistent look and make building the site easier. Additionally, we used a Creative Commons emoji pack available through Figma so that emojis could become part of the forum, allowing Amelie to react to posts. Figure 16 shows the assets created, while Figure 17 shows the emojis used.



Figure 16: Assets created for general use in the forum



Figure 17: Emojis from Figma

We incorporated colors later in development, the results of which are in section 9.

## 5.2: Character Art

At first we weren't sure what art style would work best for the characters of *Failed to Send*. We wanted everything to be cohesive, but also for the characters to be easily distinguishable from the forum. We realized that the forum itself had very clean lines, so it made sense for the character art to have less clean lines so that it would naturally stand out against the forum.

At first, Carolyn had been considering trying to emulate specific art styles, namely anime styles, to create art that matched the appearance of most characters in visual novels. However, realizing that completely clean linework would contrast less with the forum made Carolyn realize that emulating another style was unnecessary and that their default style could work extremely well.

After some sketching and experimentation, along with consulting Evans on who we imagined Amelie to be, we finished an iteration of character art. Because it stood out and suited our purposes, we used this iteration in the final game. Figure 18 shows the full-body art for Amelie, hotdog\_man, and Moment37 (in that order).



Figure 18: Full-body artwork for Amelie, hotdog\_man, and Moment37 (pictured left to right)

We used the waist-up and headshot versions of these characters in the final version of *Failed to Send*.

## PART 2: PRACTICE

### 6: Technical Implementation

Ren'Py's functionality is extensive. However, as an engine geared to non-programmers, its structure makes it an unorthodox coding environment (Ren'Py, 2004). Its quirks both necessitated and enabled many novel approaches in developing *Failed to Send*.

#### 6.1: Ren'Py's Core Functionality

Ren'Py provides, among other things, a dialogue system, state management, animations, player input (mouse and keyboard), and a suite of visual novel effects (Ren'Py, 2004). Additional base functionality in Ren'Py is detailed in Figure 19 below.

Base Functionality	Implications and Effects
Observer design pattern	Ease of updating and displaying data
Segmented file initialization	Ren'Py allows developers to set when files are read and generated for the game project-wide.
Global pointer-like initializations	References to variables have the same memory address.
Manual Python pickling/persistence	Ren'Py requires variables to be initialized with persistence, to retain data across different saves.
CSS/Html-like Screen Styling	Ren'Py's screen language is a similar coding paradigm to CSS & HTML. It implements both like that of JSX React.
Blending Python & Ren'Py Script	Ability to call Ren'Py and Python commands within each other. This provides immense flexibility at the cost of increased complexity.
State-Based UI	All screen elements will stay on until explicitly cleared off the screen. Ren'Py will constantly check for UI changes akin to a refresh rate. All UI elements also use a stack-layering system. This is highly configurable and factors in Ren'Py's state management.
Automatic File Loading	Ren'Py generates .rypc files to parse the entire project before playing. It also creates keywords for all images in the image

	folder. These keywords can be used to reference images in dialogue sections.
--	--

Figure 19: Table of base functionality & effects

### 6.1.1: Ren'Py Adventure and Novel Modes

Ren'Py has two dialogue modes: adventure mode and novel mode. Ren'Py can execute Python code between excerpts of the story's script. Scripts can branch off, loop, and be interrupted by several triggers (Ren'Py, 2004). Thanks to this, we reworked the dialogue modes and created a gameplay loop based on the idea of splitting the story into "days."

## 6.2: Internal Game Structure

*Failed to Send's* forum navigation is its core mechanic; it incorporates traits from several code paradigms and languages. These traits blurred the line between using Ren'Py as a game engine and a game framework in that we had to create a suite of tools to make *Failed to Send* work. We created these tools using Ren'Py's libraries and base functionality.

*Failed to Send's* root structure revolves around 3 singleton managers: the game manager, visual novel manager, and forum manager. Each manager holds tools to push Ren'Py and control the game's pacing. Delegating content between these three managers is *Failed to Send's* foundation. This delegation helped to differentiate the many forms of content in-game.

### 6.2.1: Major Design Patterns

We utilized Entity Controller Boundary (ECB), Observer, and Singleton design patterns. These patterns compartmentalized our project's many fields. ECB separates software between its data, functions, and users' control points (*Guideline: Entity-Control-Boundary Pattern*, 2015). We implemented ECB by creating data representative of the story and forum's elements. Our managers were Controllers split by the game, visual novel, and forum's functionality. Ren'Py's screen language was a natural Boundary to direct the player's inputs.

Name	Description
ForumProfile	A profile on the forum. This holds user variable attributes that define their presence on the forum. Forum profiles aren't exclusive to Amelie and serve as our personality/preference tracker. These profiles are strictly behind the scenes of <i>Failed To Send</i>
ResponsibleUserContent	This class represents any user content that can host and gather



	replies.
Thread	This class represents a thread and its information such as text, title, messages, replies, and more.
Replies	This class represents a reply which consists of a user, message, and/or sub-replies.
ReactableEmojis	A representation of an emoji that includes traits to modify forum profiles and threads. This includes traits like how many people used it, the emoji's name, and any plot-specific meanings
PictureThread	A thread that holds pictures and content to react to.
Character	A native Ren'Py-based definition to have characters use the adventure/default mode
NVL Characters	This is a native Ren'Py-based definition to have characters use the novel mode (the direct message system for <i>Failed To Send</i> )

Figure 20: Entities

### 6.2.2: Singleton Managers - Controllers

Managers are responsible for running core aspects of *Failed To Send*. As singletons, there is only one reference to the class across the program (George, 2020). This drastically helps to centralize important utilities (George, 2020). Each manager uniquely interacts with Ren'Py to operate *Failed To Send*, and each manager holds ground over a specific set of Ren'Py files. They assert control using a blending of Python and Ren'Py.

The Game Manager handles mechanics & Ren'Py's configuration. It handles *Failed To Send's* social battery and the context between the forum game mode and traditional visual novel modes. The Visual Novel Manager controls traditional visual novel sections and uses Ren'Py APIs to pause the story based on several conditions. It also acts as a communication bridge for the Forum Manager and the story's pace.

The Forum Manager controls elements related to simulating the Hot Dog Stand. This manager uses Ren'Py Screen API to load the UI and receive the player's input. Most notably, it contains information related to each day's threads and other relevant information. We wanted the forum to be a clear, reproducible area of player autonomy without breaking the story. On this note, the Forum Manager is subservient to the other managers.

### 6.2.3: Ren'Py Screen Language Boundaries

Ren'Py organizes its GUI elements similarly to JSX React's advantages (Ananya, 2021) . UI elements are made with HTML/CSS-like syntax but can be manipulated with Python. The structure is flexible and adaptable; we utilized this greatly to expand Ren'Py UI capabilities.

#### 6.2.4: Renpy Built-in Observer Patterns

Data portrayed on-screen needs to reflect changes across the program. This is especially true for visual novels, where variables determine what routes players explore. The observer pattern is a set of practices for displayed data to update and reflect internal changes (Kumar, 2016). Here is where Ren'Py provided our greatest development boon. Ren'Py keeps the same memory address for all references, unlike Python. These references include dictionary entries, displayed variables, and copies of variables. In essence, a built-in observer pattern across displayed data.

### 6.3: File Structure

Ren'Py automatically generates .rpy files and creates keywords for images in the dialogue script (Ren'Py, 2004). We divided our files with this and our game's content in mind. This, like our software, helped to organize and use different content. The game folder has 4 vital folders: images, custom\_gui, persistent code, and story. Each folder holds different internal directories to organize their needs. See Figure 21 for the structure we used.

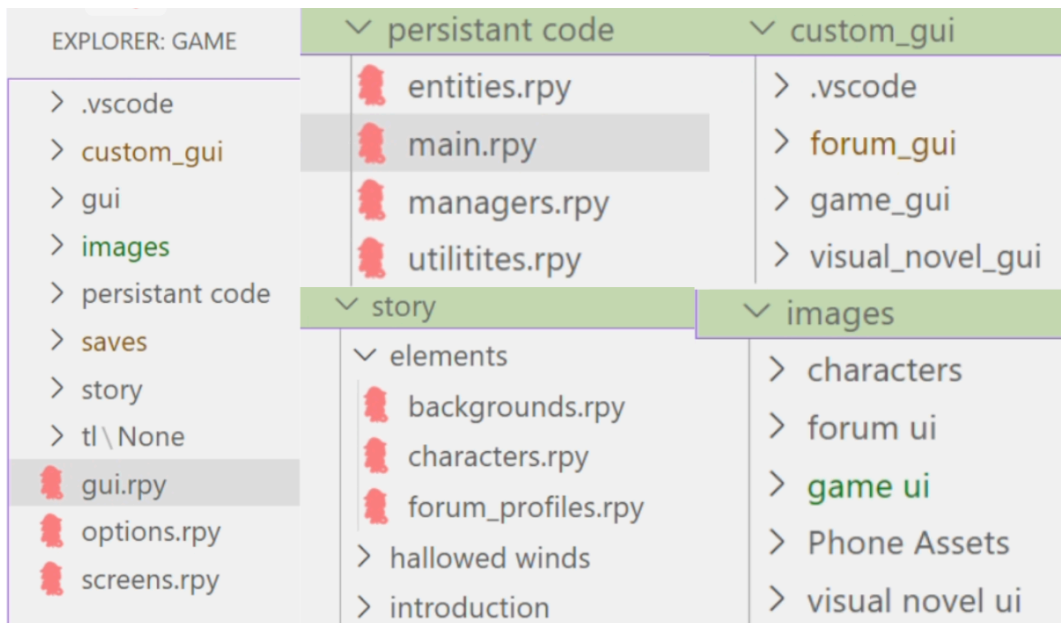


Figure 21: File Structure

## 6.4: RenPy as a Framework

Unlike game engines, game frameworks provide less structure but allow for far more configurations. We used configurations that balanced *Failed To Send*'s disciplines (UX, game, and software). We successfully pushed Ren'Py to its new limits to pursue innovation for internet storytelling. Doing this was a struggle, as it uncovered many bugs in Ren'Py, but it was a valuable learning experience.

## 7: Creative Implementation

We configured Ren'Py to use 4k resolution at the project's start thanks to a 4k monitor. The goal of this was to give players a clear image of the game and avoid scaling resolution loss. An unexpected benefit of this was that the process of importing assets became incredibly flexible. Figma allows one to directly import assets into Ren'Py's folders, and the Ren'Py 4k resolution option has almost 1:1 scaling with Figma.

Thanks to the (almost) 1:1 scaling, we were able to use Figma to preview how text would appear on the screen as well as see how our art assets came together. The results of our work are in section 7.3.

### 7.1: Implementing Art

The flexible import process from Figma to Ren'Py was integral to the creative side of *Failed to Send*. We utilized imports massively to create intricate pieces of art and combine pieces together using Ren'Py's vast screen language. Although Ren'Py offers numerous tools, Figma has far better graphical prowess. This was especially true for our design challenges: gamified forum.

#### 7.1.1: Implementing User Interface

*Failed to Send's* user interface is crucial to the game's storytelling and navigability. We built the UI based on industry standards of usability and usefulness (H Rex Hartson & Pyla, 2019). We mainly focused on usability as we wanted to ensure users could interact with and understand the forum. We used usefulness as a resource to add to the game's nuance (Chandra & Guntupalli, 2008). We limited what information users had access to; this added intrigue our game

We took advantage of Ren'Py's functionality to improve the UI and game's appearance beyond what Figma could do. Ren'Py, unlike Figma, has a frame function that allows images to be resized dynamically. Resizing can occur from the amount of content in an element (for example, the box in which a post appears becoming larger for longer posts) or from any other specific command (Ren'Py, 2004). With this imitated practices common on forums, even though they utilize CSS and/or HTML rather than Python.

As we mentioned in the Ren'Py Screen Language-Boundaries section, Ren'Py's screen language is incredibly similar to JSX React. Thanks to this unexpected similarity, we could implement parts of the gamified forum as if they were part of an actual online forum. However, we purposefully left out features real websites frequently incorporate to contribute to narrative progression. Direct messages are the most blatant example of this. Most websites let one see who

a message is from before clicking it. For *Failed to Send*, we wanted the player to be taking a risk in expending social battery to read a direct message and make it a conscious choice for players.

### 7.1.2: Implementing Character Art

Initially, when making *Failed to Send*, we thought that we should have character art for each primary character. After all, traditional visual novels show portraits of the characters with whom one is interacting. However, due to the emulation of a website, it ended up not making sense to display character art for anyone but Amelie. We did have to crop Amelie's character art in Figma before adding it into the game so that it would be simpler to implement. hotdog\_man's art ended up being used for his avatar.

There also was the question of whether art for the characters should be of them in real life, their online impression, or related to their avatar. The direct message system ended up not needing the character art to stand on its own. Any future iterations of *Failed to Send* will likely revisit this.

However, since this is a forum, it was essential to include avatars for every character. This was both to make it easier to tie a name to a personality and for realism. We used stock images from Morguefile.com as placeholders for individually drawn avatars due to time constraints. We rounded the corners of these avatars using Figma and then imported them just as we did for the user interface elements.

## 7.2: Implementing Writing

Initially, when implementing the writing into the game, we had to copy-paste text and then reformat it completely to work in Ren'Py. After we realized how tedious it was to add all of that formatting, Carolyn began typing out the script in the format it would need to be in the code to work. We still had to change indentations, as Python and thus Ren'Py are very particular about them, but it was significantly easier to do that when the whole script didn't need to be put into code.

### 7.2.1: Amelie Implementation

Adding Amelie's lines into *Failed to Send* was the easiest part to implement. Thanks to Ren'Py, all we had to do was type Amelie's name and follow it with the line in quotation marks (Ren'Py, 2004). Professor Stewart proposed using Ren'Py to change the flow of dialogue and add emphasis to certain words. Ren'Py has an incredibly simple system to use for specifying the speed at which text appears on the screen, and changing the color of certain words for emphasis was also incredibly easy (Ren'Py, 2004). With those basic changes, Amelie's personality began to shine and the game seemed more engaging.

### 7.2.2: Forum Implementation

Implementing threads and the forums was not nearly as easy as Amelie's lines. We had to consider which threads would appear in what sequence for each day, what order posts would be in, and what responses should be possible. It took longer to figure out a good format to use for planning the threads, and every post had to be manually added into the game. Thankfully, the managers we created made this easy.

### 7.2.3: Direct Message Implementation

Similarly, the managers were helpful for getting the DMs into the game. The technical side of *Failed to Send* allowed us to use Ren'Py's novel mode to easily insert the DMs into the game. Again, the challenge here was mainly deciding how to format things when writing so that it would be easy to add the message contents into the game.

## 7.3: The Results

Ultimately, *Failed to Send* utilized the game managers we made and the functionality in Ren'Py to pull together disparate visual elements rather easily. The development process and previous iterations of the visuals let us polish the game to have consistent visuals with personality.

The following figures show several of the game screens in the order in which the player would see them in-game. Figure 22 shows the homepage of the Hot Dog Stand before Amelie has created an account and picked a forum to join. Clicking any of the forums notifies the player that only the *Hallowed Winds* route is available in this iteration of *Failed to Send*.



Figure 22: Hot Dog Stand homepage (before creating account)

Figure 23 is the first screen one sees after clicking the "Create Account" button on the screen.

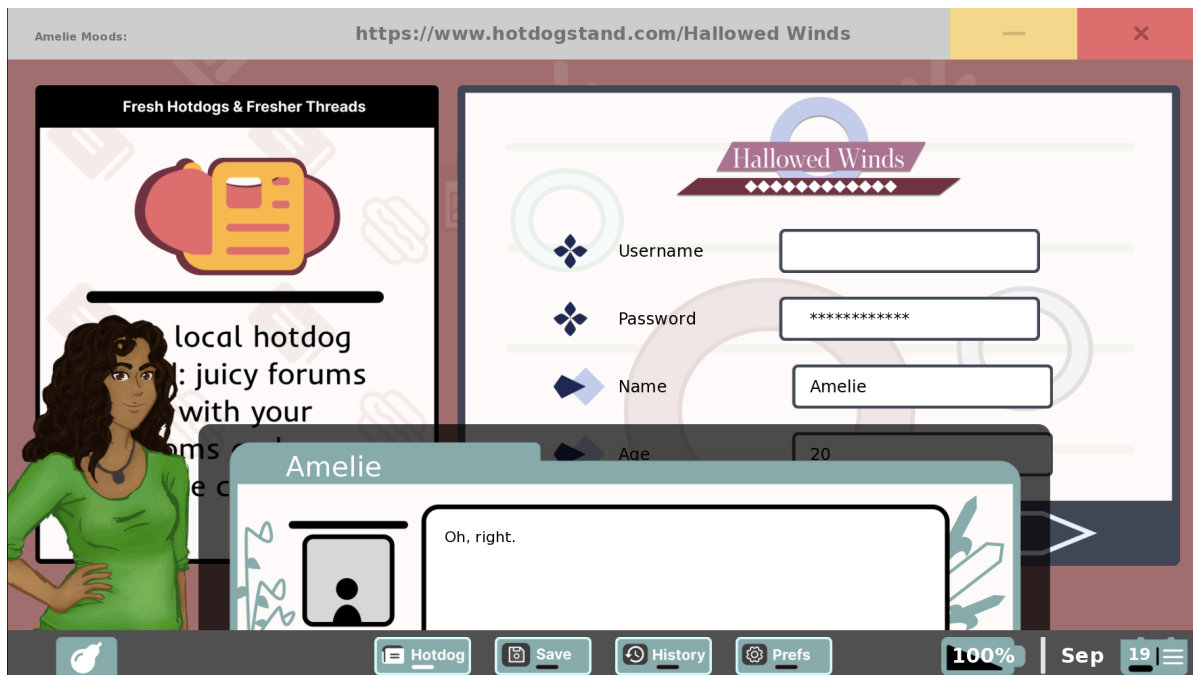


Figure 23: Create Account Screen

The player chooses which username Amelie uses for the forum; like with most choices in the game, Amelie realistically could have picked any of the choices, but the decision the player makes influences her path through the game. The username primarily influences what name or nickname other characters call Amelie.



Figure 24: Choice menu (username)

The player gets a unique choice menu after picking the username to choose an avatar. This is the only instance in this iteration of *Failed to Send* in which the player chooses from multiple image options.

Figure 25 shows the first screen one sees after finishing the account creation process with Amelie. We wanted to welcome the player and remind them which forum they had joined (especially helpful in future iterations for if the player is loading a save from the account creation screen).





Figure 25: Hallowed Winds Welcome Screen

After this, the player gets a chance to explore the forums. Both the aesthetic and navigation methods closely match what one would expect on a forum, while being streamlined enough for *Failed to Send* to still feel like a game.



Figure 26: Threads

If the player decides to expend energy to look at Amelie's direct messages, the area occupied by the threads in Figure 26 is replaced with what can be seen in Figure 27.

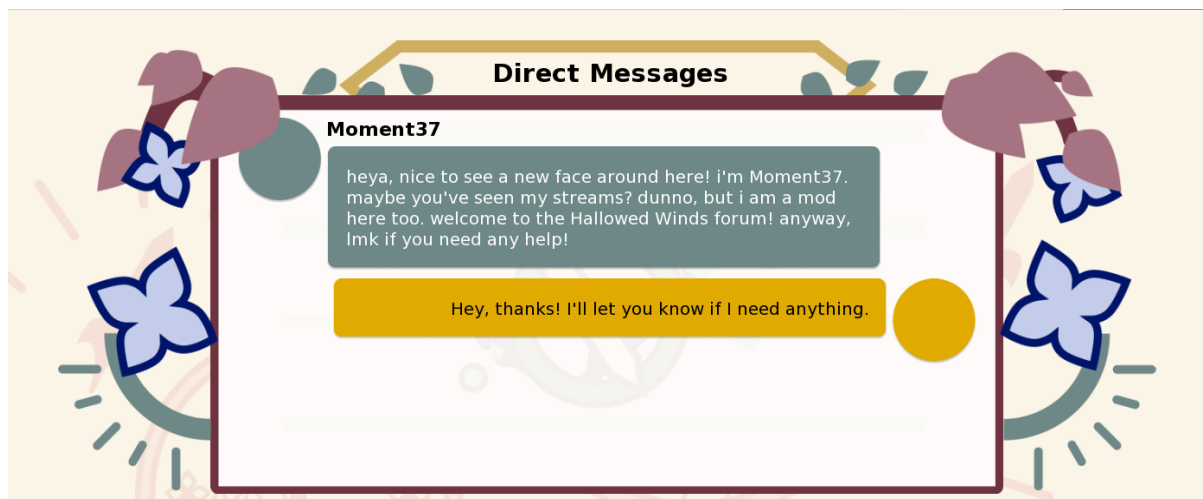


Figure 27: Direct messages

If the player selects the X button in the upper right of the screen at any time, they will get the popup in Figure 28. The value shown for the social battery varies depending on what the player has done before pressing the button. Selecting "No" brings the player back to the page they were on while hitting "Yes" advances the story to the next day.

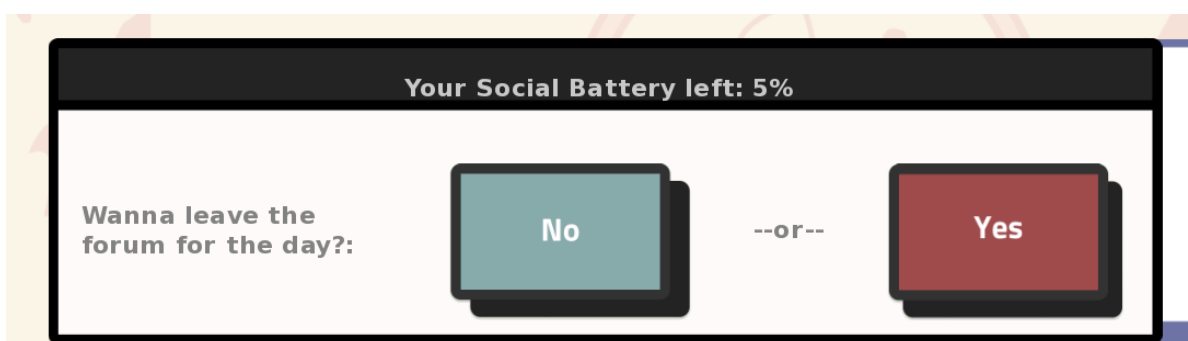


Figure 28: End day menu

The next section covers the mechanics in *Failed to Send*, providing further insight into these figures.

## 8: Finalized Game Mechanics

We had many aspirations for how *Failed to Send* would work as a game. Not every mechanic we had planned could be put into this iteration of *Failed to Send*, but we included everything that felt essential to the experience.

### 8.1: Finalized Game Loop

The story takes place in modular beats framed in days. Each day shows 2 to 4 threads on the forum alongside prior threads on past pages. The player can choose which threads to read and respond to with only some threads being required to advance the story. Players can react with emojis to the threads without reading them. *Failed to Send* forces the player to think about what to view and explore by having a mechanic called the social battery.

Each action in *Failed to Send* will cost some of the player's Social Battery when taken, and when Amelie's battery is out, the day ends. This also means that frivolously reacting to things or randomly choosing what to read can make it impossible to take other actions.

Thus, players must wisely choose what to explore. The game will aggregate the player's reactions and choices to impact the next day when Amelie ends the current one.

#### 8.1.1: Story Days

Each story day is a modular experience. They can contain traditional visual novel sections, new threads, new pages, and new direct messages. The player's choices the previous day impact what will appear the next day, so the story can branch each day. Story days do not have to be consecutive, nor do they have to cover the same amount of time. The choices the player makes over the course of the story days collectively form the path the narrative takes, and any choice can turn out to be significant to the next day's content.

#### 8.1.2: Social Battery in Action

Interacting with the community drains Amelie of her energy. One can only do so much on the internet in a day, and Amelie's social battery is representative of this. The battery is designed to add a realistic cap on the number of actions a player can take. Each reaction on a thread can be done once and costs a small amount of battery.

Threads have a cost that must be paid to access them for the day; once a thread is paid for, the player can explore them and reply to them at any point. Direct messages also cost social battery, but unlike threads, they aren't accessible after they have been viewed once. The social battery can recharge each day but the amount depends on Amelie's choices the day prior.

## 8.2: Traditional Mechanics

*Failed to Send* utilizes controls familiar to those experienced with visual novels. Its traditional mechanics include clicking to advance, the save menu, and choice menus. However, certain actions were completely removed to maintain *Failed To Send's* narrative pacing. This includes Ren'Py's ability to scroll to advance or rewind the game and the way Ren'Py forces screen changes.

### 8.2.1: Visual Novel Displays

Sections of *Failed to Send* utilize the traditional visual novel layout over the forum. In this way, the game maintains its identity as a visual novel and presents the narrative in a familiar format. Direct messages serve as a bridge between the forums and the expected visual novel display, helping to prevent stagnation in storytelling and bridge the gap between the two formats. Their format also utilizes traditional Ren'Py functionality.

## 8.3: Introspection through Emojis

Introspection is a significant part of most visual novels. *Failed to Send* allows the player to react to posts with emojis. Reacting with emojis will sometimes prompt Amelie to say what's on her mind and why she chose to react with that emoji. This occurs randomly while loading different pages in the game or spending social battery. The reactions the player chooses impact and reflect Amelie's relationship with the community.

## 8.4: Forum Interaction

*Failed to Send* takes place in a fictional internet forum for fans discussing an equally fictional game. Most websites feature multiple pages, and for realism, our fictional site hotdogstand.com is no exception. Figure 29 covers the different website page types in *Failed to Send*.

Page	Content & Purpose
Home	This page holds all populated threads for the day.
Full Thread	A full display of a thread and all its user's replies.
Pagination	These are prior populated days players can access from the home page
Event Thread	A dedicated thread for any events the forum has. It uses the same layout as a normal thread and its replies.

Hot Dog Stand	A dedicated thread for hotdog_mans threads. His threads are treated like site-wide announcements to the entire community.
Miscellaneous	These are pages that are outside the main game loop. They serve to flesh out the online world of Failed To Send and include varying amounts of content.

Figure 29: Forum Pages as a table

The thread previews in *Failed to Send* include the original poster, a title, who contributed to the thread, and a brief synopsis of the post. Players can interact with these threads without clicking to read them by reacting using the emoji system. However, replying to a thread after reading it has more impact on the story than reacting to them.

#### 8.4.1: Thread Interaction

Threads have different types of content to flesh out the game; they can be text or picture-based. They have certain aesthetic elements than most forums online to engage the player. A variety of characters post on the threads in *Failed to Send*, each of them having their own personality and thread preferences. Threads by nature draw the player in and strengthen the narrative. Choosing whether or not to interact with a thread noticeably impacts the story.

#### 8.4.2: Dynamic Forum

Our gamification of a forum included the decision to use dynamic forum elements. We used changes in the community to break up monotony and be representative of Amelie's growth and changing relationships with the other characters. We focused on the variation of interactions as our main design tool, varying thread types, pages' availability, and direct messages, for instance. We utilized Ren'Py's responsive UI systems to simulate an actual forum. Content that uses the social battery will show the energy cost while the mouse is hovered.

### 8.5: Abandoned Mechanics

We had to eliminate mechanics throughout *Failed to Send's* development as we re-scoped the project. These mechanics have potential and expand upon the mechanics that made it into the project, but would require more development time and design contemplation to implement. The mechanics, as well as our reason(s) for abandoning them, are detailed in Figure 30.

<b>Mechanic</b>	<b>Effect</b>	<b>Abandonment Reasons</b>
Poll Threads	Players can vote on certain topics to simulate arguments that are associated with the internet. This poll system could change over time, and feature new topics and different categories to react to.	<ul style="list-style-type: none"> <li>- Need for further story development</li> <li>- Rescoping &amp; Time</li> </ul>
Forum Necroing/Strikes	Players can react to prior days' content which is called necro-ing. If players necro a thread they can receive strikes. Strikes are akin to a curse mechanic that can unlock certain story branches & routes at risk of negative consequences	<ul style="list-style-type: none"> <li>- Rescoping &amp; Time Constraints</li> </ul>
Moderator Privileges/Responsibilities	A group of mechanics that give Amelie greater influence and control over the forum, resulting in a different type of story progression	<ul style="list-style-type: none"> <li>- Need for more UI</li> <li>- Need for further story development</li> </ul>
Phone Calls	Amelie outside of the forum can have phone calls with people from her life.	<ul style="list-style-type: none"> <li>- Need for further story development</li> <li>- Need for more UI</li> </ul>
IRL minigames	Players can navigate various parts of Amelie's life and play minigames. Depending on their performance/choices Amelie can regain varying amounts of social battery	<ul style="list-style-type: none"> <li>- Rescoping &amp; Time Constraints</li> <li>- Need for more Art</li> </ul>
The bar?!	A special UI element will show changes in any personality tracker-specific emotions. This temporarily allows for surprised & unique interactions to occur	<ul style="list-style-type: none"> <li>- Ambiguity and lack of development</li> <li>- Need to reconfigure the rest of the game</li> </ul>
Social energy-boosted reactions	Certain reactions can use more battery for access to different routes.	<ul style="list-style-type: none"> <li>- Rescoping &amp; Time Constraints</li> <li>- Need for further story development</li> </ul>
Community specific mechanics	Each community would have specific page styles and widgets.	<ul style="list-style-type: none"> <li>- Rescoping &amp; Time Constraints</li> </ul>

	The Biscuit Brigade forums would have an active performers list. UtGod could have MyAnimeList traits per profile.	- Ambiguity and lack of development
Laptop outside the forum	The minimize button would allow players to hide the forum. Players that hide the forum can catch reflections of Amelie from her monitor. They can see notes Amelie left for herself. And most importantly see what changes Amelie's desktop goes through.	- Rescoping & Time Constraints - Need for further story development
Animated Forum Elements	Animated elements would have presented an avenue for a more gamified forum. Elements like threads could shake when relevant. glow with importance, or shrink. The forum's functions still stand. The key point is to personify the internet. This was intended to creatively represent Amelie's feelings about the internet	- Rescoping & Time Constraints - Ambiguity and lack of development
Dynamic Thread Selection	We wanted to generate a pool of modular threads. These threads would be loaded and generated through .csv files attached to the game. This would enable faster production of modular threads that don't necessarily rely on the story but add to the community's presence.	- Rescoping & Time Constraints

Figure 30: Mechanics lost when re-scoping the project

## 9: Playtesting

Our advisors periodically tested *Failed to Send* throughout development, allowing us to gather informal feedback and make adjustments to improve the game. We only managed to conduct one proper playtest of *Failed to Send* with the target demographic. However, that playtest was extremely informative.

We conducted our playtest during AlphaFest, gathering feedback on the alpha version of *Failed to Send* so that we could determine if we were achieving our goals. We received generally good feedback that helped us determine that our concept and the start of our execution was good, but that there were plenty of bugs to iron out.

We used an anonymous Google form to survey our playtesters about their thoughts on the alpha. We used statements and had our playtesters select a number between 1 and 5 to indicate how much they agreed with the statement (1 being strongly disagreeing, 5 being strongly agreeing). See Figure 31 below for the statements in the survey.

1. I want to continue playing this game.
2. My decisions impacted the gameplay.
3. The game was easy to navigate.
4. The forum was easy to navigate.
5. The characters are relatable.
6. The game is aesthetically pleasing.
7. The visual elements felt like they belonged together.
8. The in-game forum felt familiar.
9. I liked the character art.
10. I like playing visual novels.

Figure 31: The statements in our AlphaFest playtest survey

Appendix A has graphs with the number and distribution of responses for each statement we posed to the playtesters.

Players mostly agreed with or were neutral on all statements besides 2 and 10, with both of those having a noticeable portion disagreeing with the statement. The results assured us that the



direction we were going in was correct and that the premise worked, but informal feedback during playtesting and the number of negative and neutral answers regarding ease of navigation made us realize that we needed to rework several key elements.

We unfortunately could not gather data after revising the aesthetics of *Failed to Send*, but our advisors' feedback helped us proof and improve the visuals, narrative, and mechanics of the game into their current form.

# 10: Conclusion

*Failed to Send* did not go as anticipated or end up in the form we anticipated, but that does not diminish the value of our work or project.

## 10.1: Challenges

We faced many challenges during *Failed to Send's* development, some anticipated and others unexpected. While they made developing *Failed to Send* difficult, they also enhanced the final result.

### 10.1.1: Anticipated Challenges

We knew beginning this project that we were being ambitious and likely would have to scale down *Failed to Send* in order to get a complete product in time. Knowing this, we prioritized developing the parts of *Failed to Send* that were essential to the experience over features that would be nice to have (as covered in section 8). Thanks to this planning, *Failed to Send* has each feature that we considered essential to the experience of playing it, even if the project is not in the form we thought it would be.

Additionally, we expected to have difficulties with Ren'Py and implementing something as novel as an in-game forum with it. To compensate, we thoroughly researched Ren'Py's capabilities before we began work on the project, resulting in a smoother development process.

### 10.1.2: Unexpected Challenges

Each member of the team had logistical issues throughout the academic year; while we anticipated some slight issues, we could not and did not anticipate the magnitude of these issues when planning *Failed to Send's* development. This meant that our plans could not be carried out as anticipated, and we had to adjust team member responsibilities and goals for *Failed to Send* accordingly and on the fly. The improvisation necessary in developing this project served as valuable preparation for our future beyond WPI.

## 10.2: Significance

*Failed to Send* is a Ren'Py visual novel that utilizes and elevates forum mechanics. This is significant both from a narrative and technical perspective.

The Internet is a significant part of our lives, and the lives of many others. Its impact on us was inspiration for us to propose a revision to the original pitch for this project to Professor Stewart. Developers are beginning to mention and utilize it as part of their games, but the significance and

impact of the Internet is frequently downplayed or used as something noncentral to the plot in these games. In *Failed to Send*, the Internet is the setting and is the main medium through which the story is told. We hope that *Failed to Send* will inspire developers to utilize this part of our lives in their narratives.

The technological side of *Failed to Send* makes it actually practical for others to make visual novels with forum mechanics in Ren'Py. Appendix B has the link to *Failed to Send*. Its code will be shared with the Ren'Py community after the conclusion of this project with its demonstration in ShowFest. Our work can pave the way for others' creations and potentially contribute to developing other novel systems for use in Ren'Py.

### 10.3: Future Development

Both Evans and Carolyn would like to continue development on *Failed to Send* after the conclusion of this project, as there are many avenues and original concepts unexplored in the current iteration of the game. Realistically, our careers post-graduation will interfere with our ability and energy to work on *Failed to Send*. We hope to release future iterations and further improve upon the game regardless.

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We'd like to note our use of ChatGPT in development. We used ChatGPT to search through Ren'Py and Python API and sometimes to provide clarification when Google search results failed to do so. The chat assistant greatly sped up the research process when we ran into development issues. Since there are many ethical issues in using the tool as of 2024, we would be remiss not to mention its (limited) usage for *Failed to Send*.

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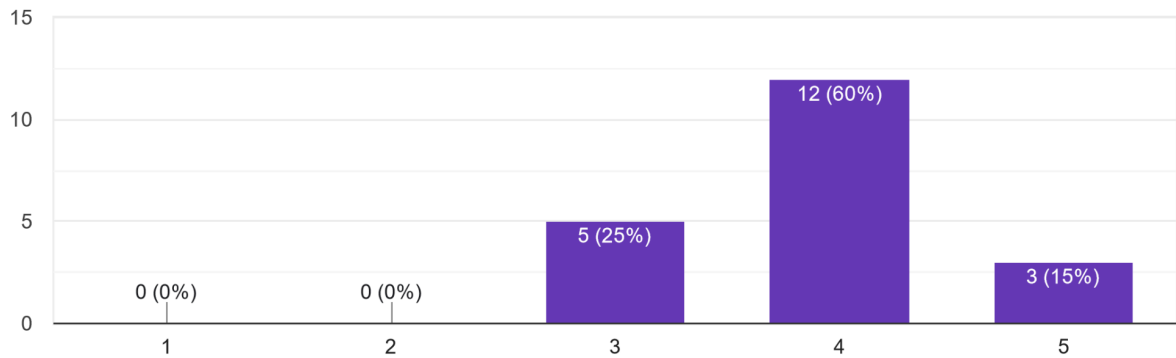
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# Appendix A: *Failed to Send* AlphaFest playtest results

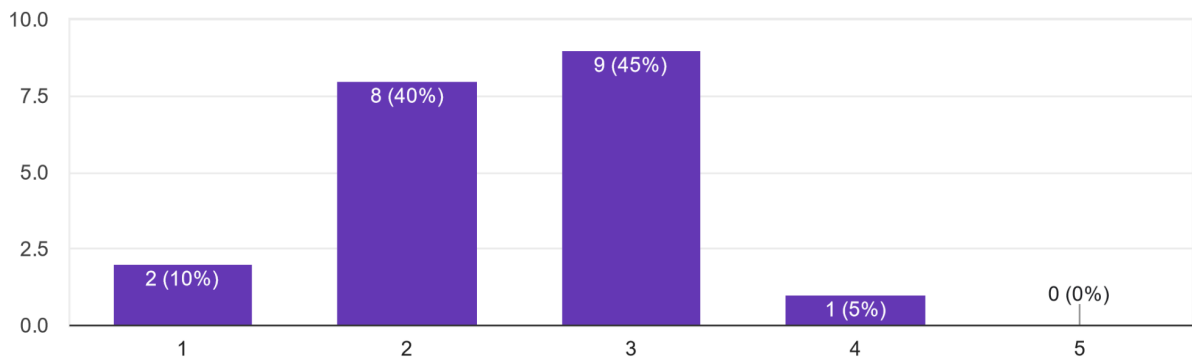
I want to continue playing this game.

20 responses



My decisions impacted the gameplay.

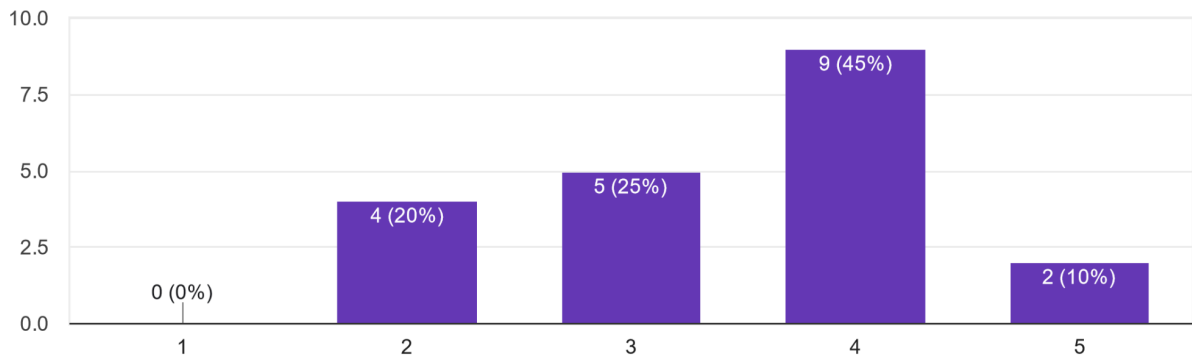
20 responses





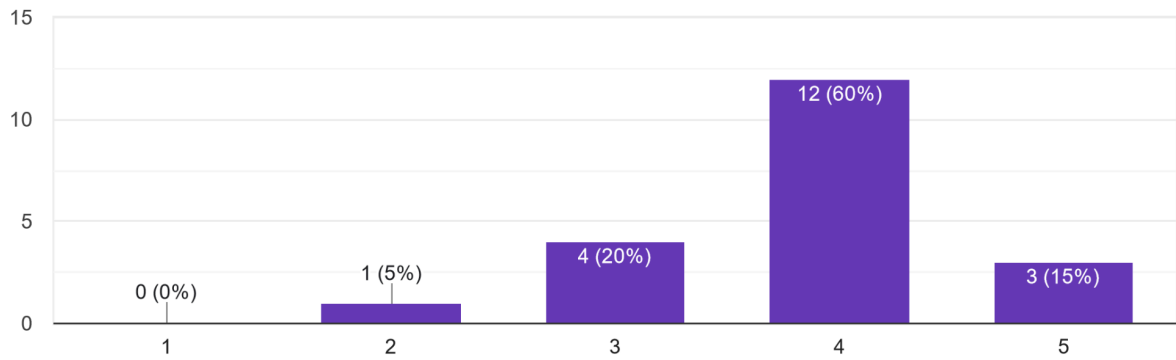
The game was easy to navigate.

20 responses



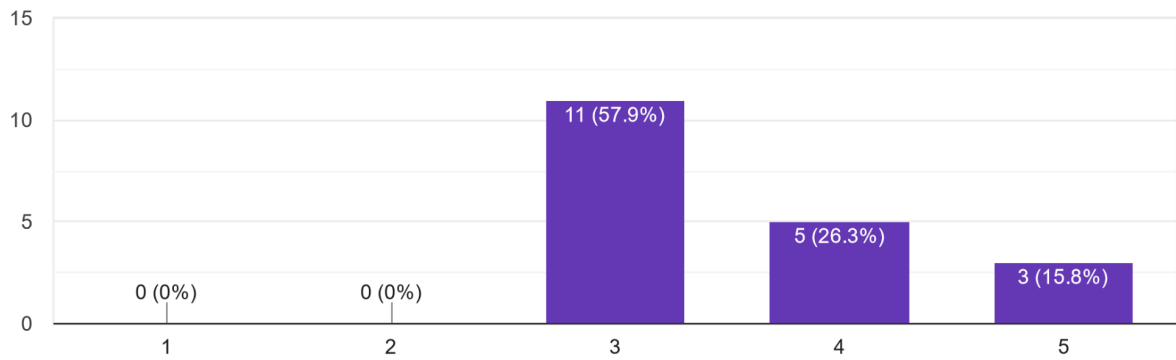
The forum was easy to navigate.

20 responses



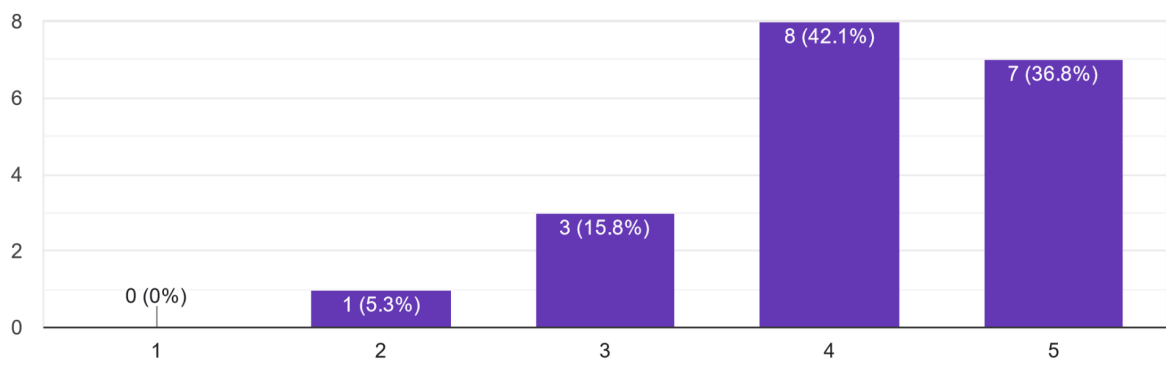
The characters are relatable.

19 responses



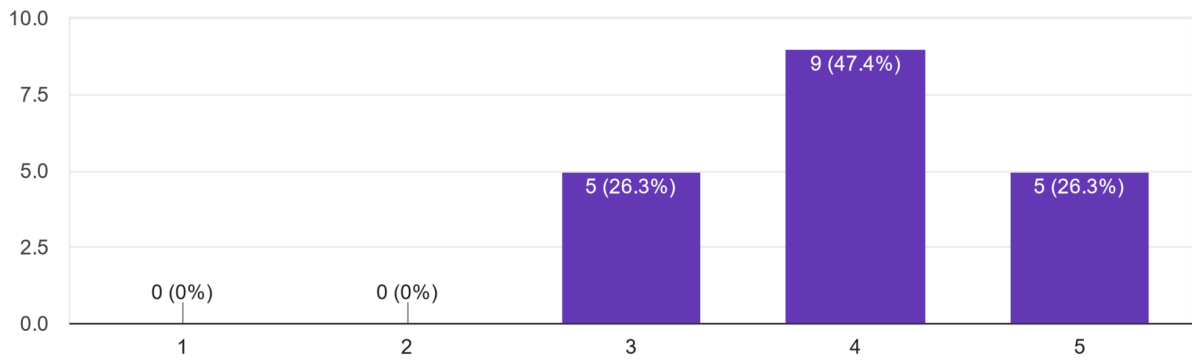
The game was aesthetically pleasing.

19 responses



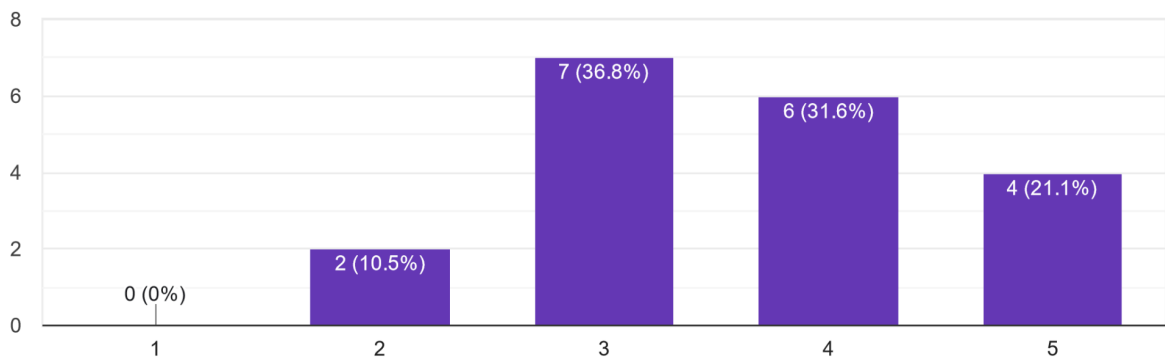
The visual elements felt like they belonged together.

19 responses



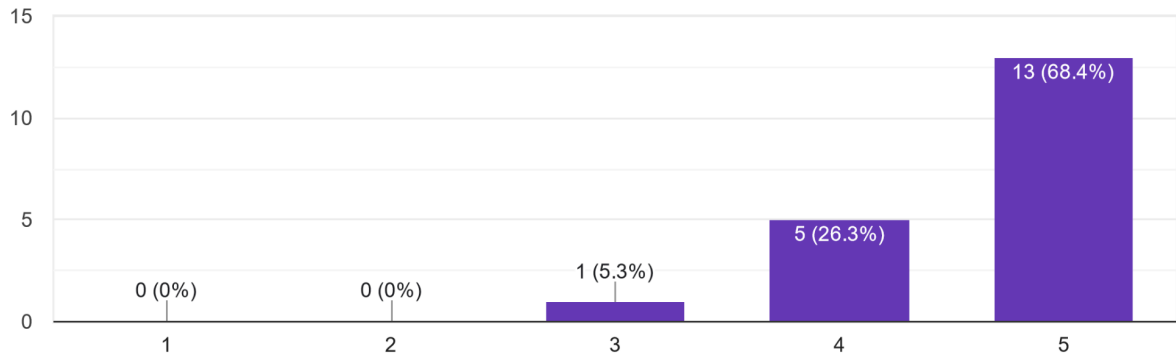
The in-game forum felt familiar.

19 responses



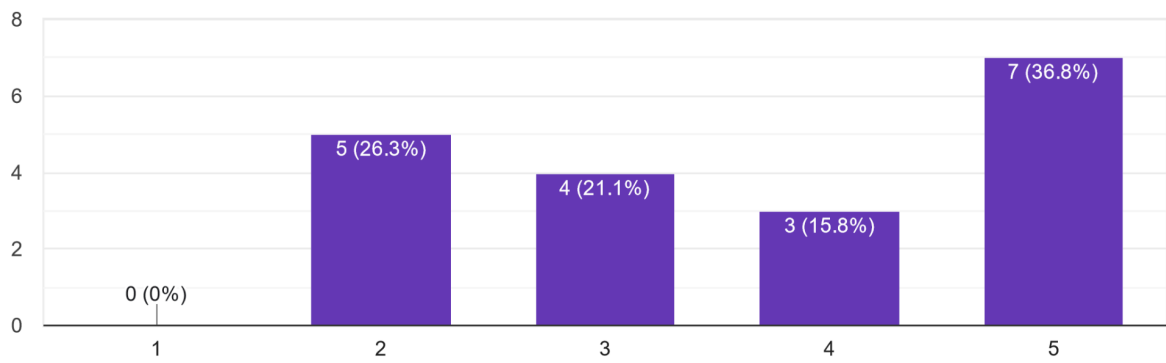
I liked the character art.

19 responses



I like playing visual novels.

19 responses



## **Appendix B: Link to *Failed to Send***

<https://evans-ao.itch.io/failed-to-send>

# Appendix C: Inspiration Board

