

FAITH SAVANTS: GAMIFIED LEARNING

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College of Information and Communication Technology of
First Asia Institute of Technology and Humanities
Tanauan City, Batangas

In Partial Fulfillment
of the Requirements for the Degree of
Bachelor of Science in Entertainment and Multimedia Computing

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Game Flow

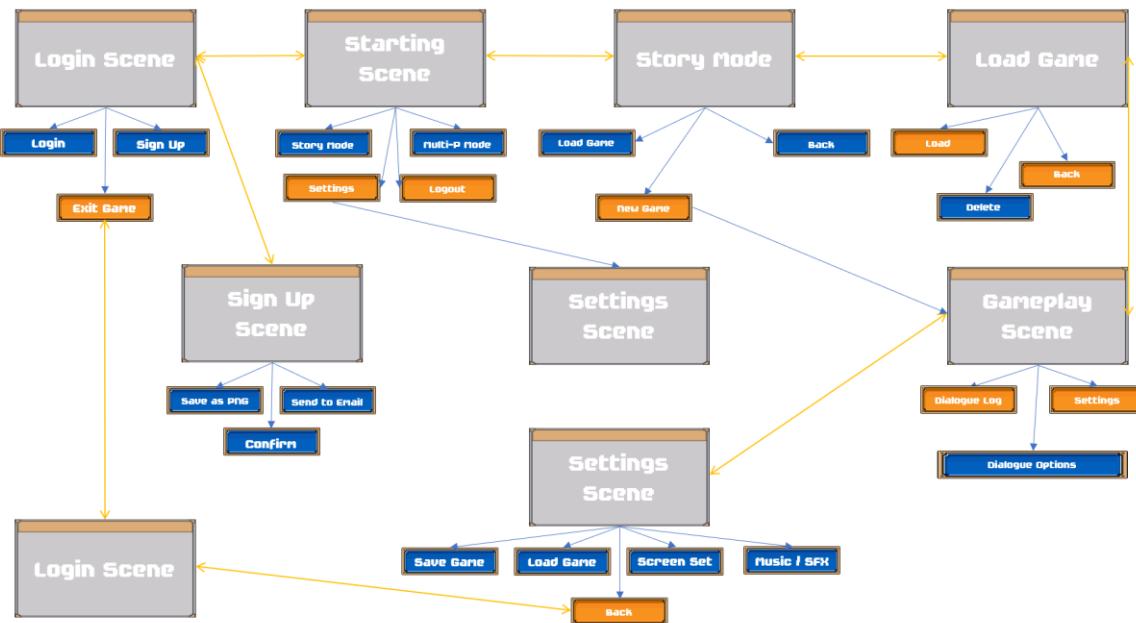


Figure 1.1: STORY MODE GAME FLOW

This figure represents the elements and directions where the user navigates through the functionality inside of the story mode.

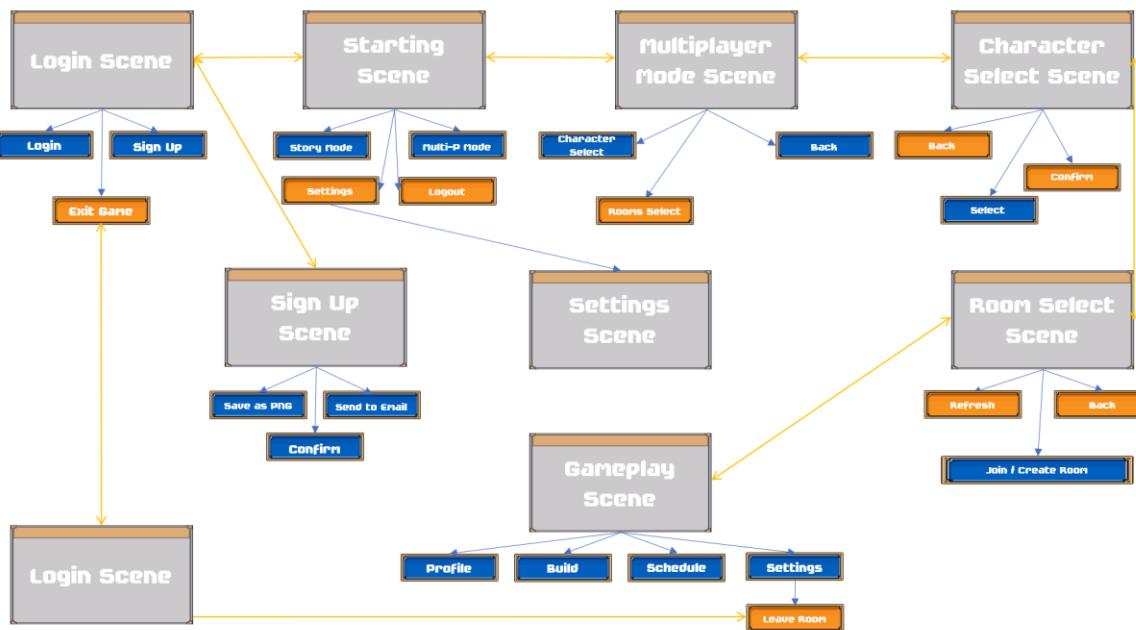


Figure 1.2: MULTIPLAYER MODE GAME FLOW

This figure represents the different set of elements and visuals that immerse the player with the other users in the game.

First of all, this is our game flow diagram of the game and the very structure of everything; on the moment, the user logged on in the game with their own data or creating and verifying an account when they don't have one, eventually going to the character selection; so that our users can go interact with their friends and classes on the room by accessing the multiplayer mode.

Users can also create, join, and search rooms for availability in the server which to maintain connectivity on the platform. In particular, the established gameplay by the user; he/she can access these nodes, such as the:

- **Profile Tab** - The user can see what level they're in, current ping of their net, their own statistics, and included a self-bio; users can write whatever they want in there etc.
- **Build Tab** - this is to give both parties access (limited access for students) to creation of rooms and things to make them familiarized on the game's environment.
- **Schedule Tab** - The user can also see what class is starting based on the schedule and representing the day/time on it.
- **Settings tab** - This is to give the user the authority to change some default options in the game depending on their preferences to be suited in game's UI.

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CHAPTER I

Game Overview

This chapter discusses the concept and short description of the key features of the game.

Game Concept

First of all, the specifications of the app are to have lightweight data consumption, the game will have minimal drive space usage that is similar lite versions of apps. Another is to have spatialized voice chat; Students will be able to hear other individuals in the game depending on where they are on the room and how close they are to the player. Next is to Interact with classmates or teachers in 2D; the teachers and students can interact/communicate in-game while using the share-screen or app-share feature.

On the other hand, users can freely choose between different types of maps/rooms implemented in the game; they can also make their own public or private rooms for their classes; As for the skin, students and teachers have default skins for male and female users to avoid in-game indecency issues etc.

Lastly, the story mode which is thoroughly a visual novel that can be accessed separately from the multiplayer mode and the content includes a straightforward perspective life of a student and his experiences during pandemic and can be aligned between fictional characters and non-fictional settings since the project is inclined on the school.

Target Audience

The target audience for the game are individuals who are present as a registered student and registered teachers inside of First Asia Institute of Technologies and Humanities either they are tertiary, FCS, FIDELIS students and/or teachers.

Genres

As for the game's genre we chose these as for our way to present the initial idea to focus more on the side of the user such as to improve, their way of building maps and handling communication with other users; and lastly, a simulative genre which is visual novel which imitates a situation/perspective of a person in the game

These genres are:

- **General and Role-Playing Game**

popular genre that which players take on the roles of imaginary characters who engage in adventures. Typically, we chose the genre, because we want our players advance through a story quest, and often many side quests (which will be discussed later), for which their character or party of characters gain experience that improves various attributes and such etc.

- **Visual Novel**

often abbreviated as VN, are games that consists of interactive fiction video game genre, an interactive genre that imitates a situation/perspective of a person in the game and can be associated on reading.

- **Building Simulator**

A genre of customizing maps and configuring a user's own room; by adding built-in sprites which are added by default.

Look and Feel Prototype

In this section, we reflected the game's design thoroughly by having a simple interface which comprises aspect of the design such as vectorized shapes, beginner-friendly UI and vibrant colors etc. Same goes for the interaction in it, on how the menus are arranged and the way functions are selected to show such information and statistics performed by our players.

We used the idea from our capstone adviser Bryan Briones about making a replica of FAITH in Minecraft, but we had a problem and needed to add extra features that we think the user need and that's why we created our own game prototype instead but keeping the idea from our adviser.



Figure 1.3: Character Selection area.

This figure represents what character to pick for both students and teachers based on their preferences.

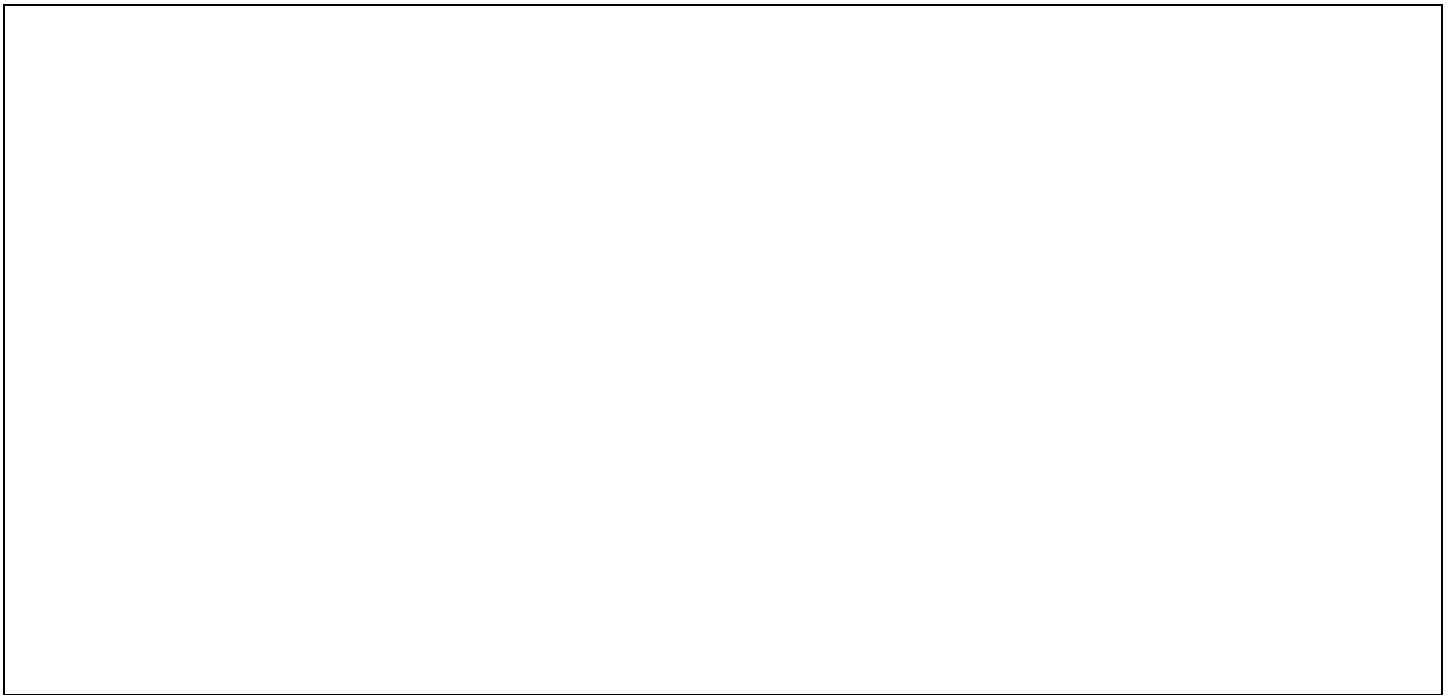
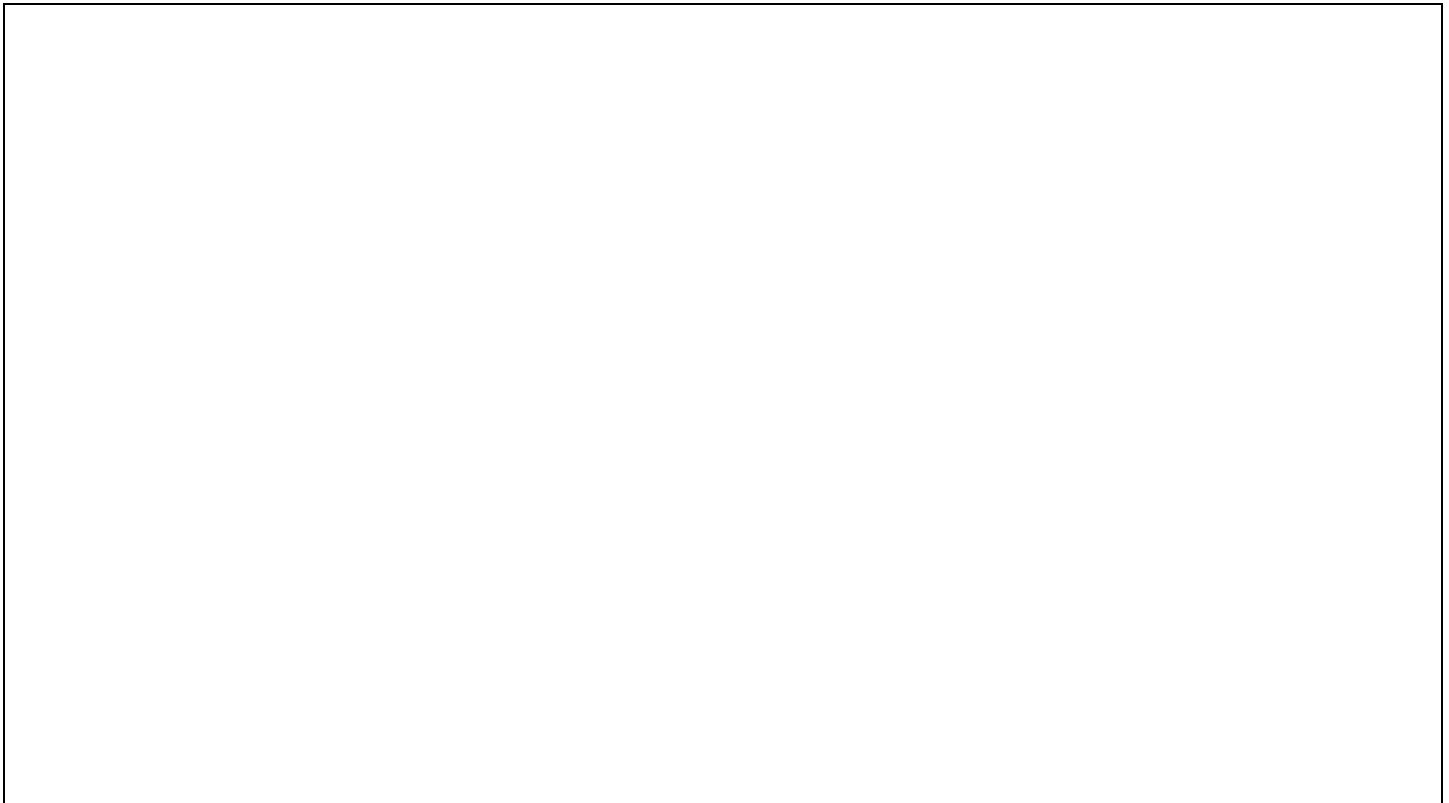


Figure 1.4: Character information and statistics.

This figure represents account data of a registered user in the game.



1.5: Room Creation for both students and teachers.

This figure represents to give both parties access (limited access to non-host members) inside of a room and elements to make users be familiarized on the building environment.

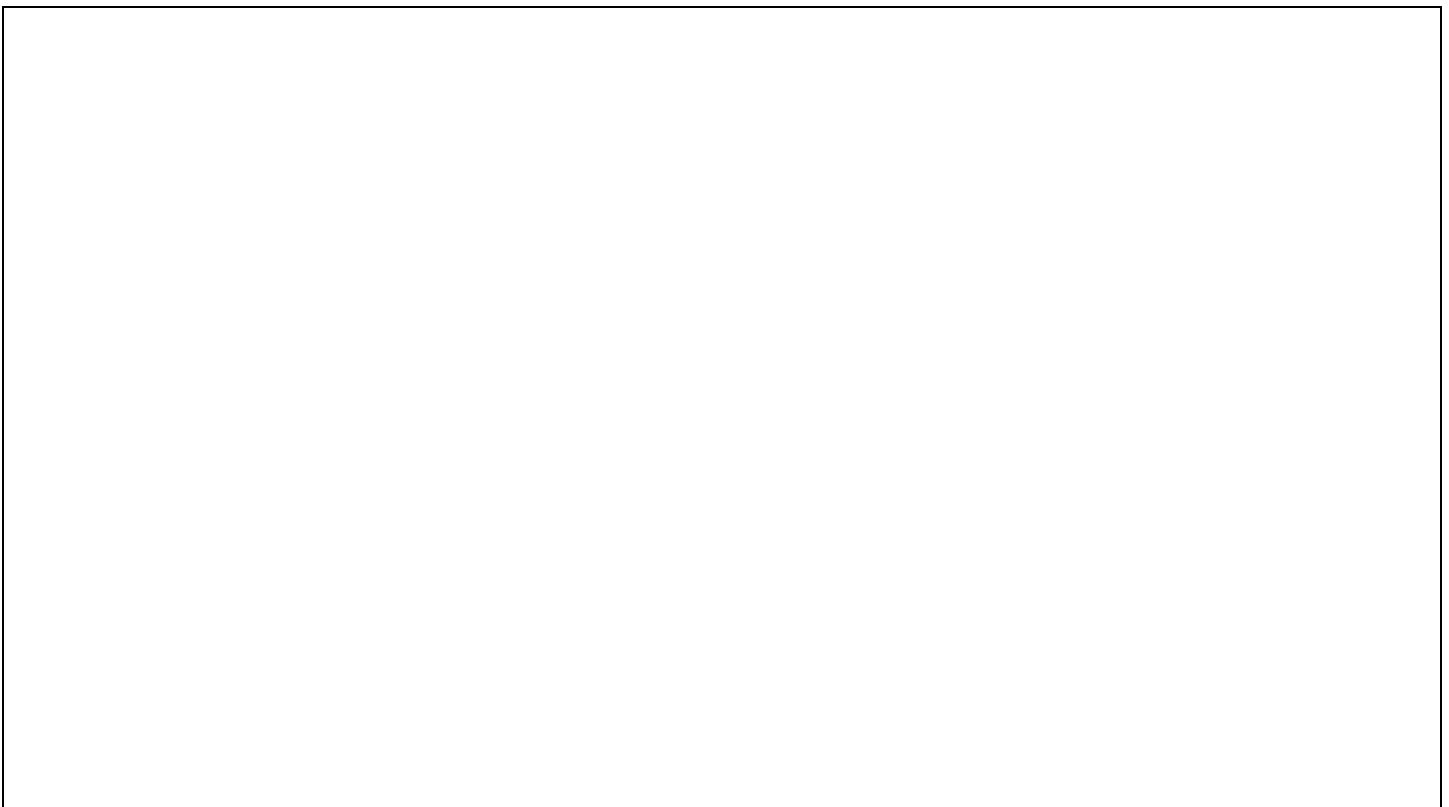


Figure 1.6: Schedule Display for teachers and students.

This figure represents a two-paged panel that shows multiple text fields for the user to type in the schedule details.

Additionals

We did mention about our game prototype idea instead but keeping the idea from our adviser, but here in this part, these are the current screenshots from the Actual Capstone Game and simplified things for the leisure and feel for every user.

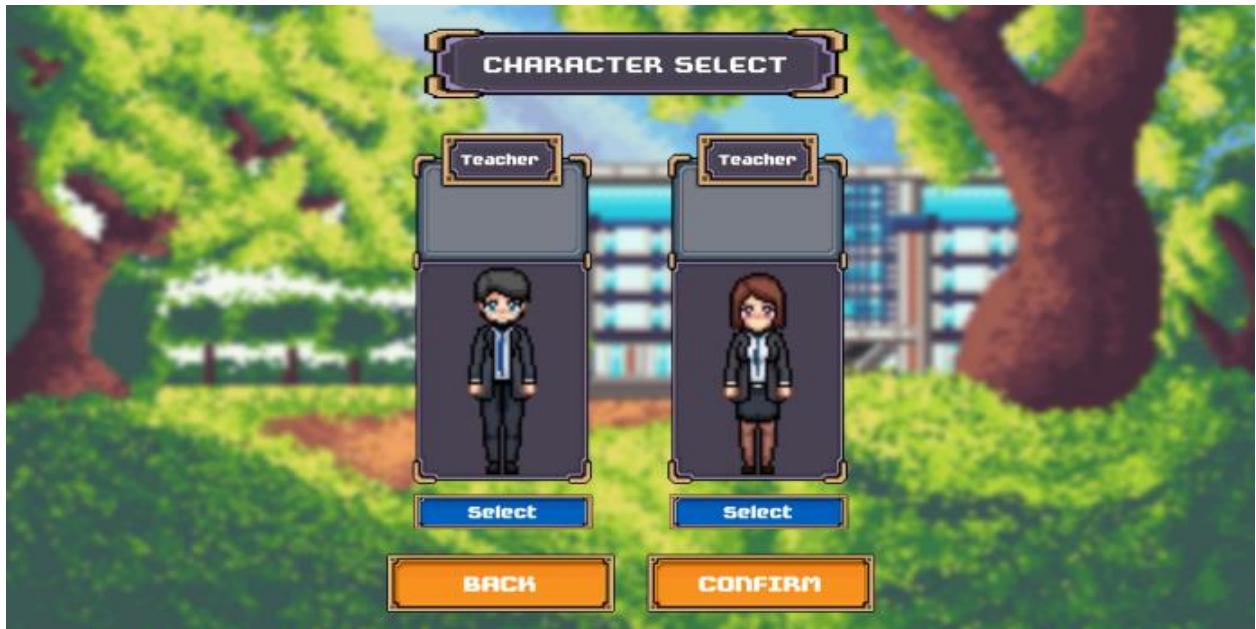


Figure 1.7: New Simplified Customized look for teachers

In this figure, we decided to simplify the UI, unlike from before (figure 1.3 pg.3) that will overwhelm the user and provide straightforward buttons

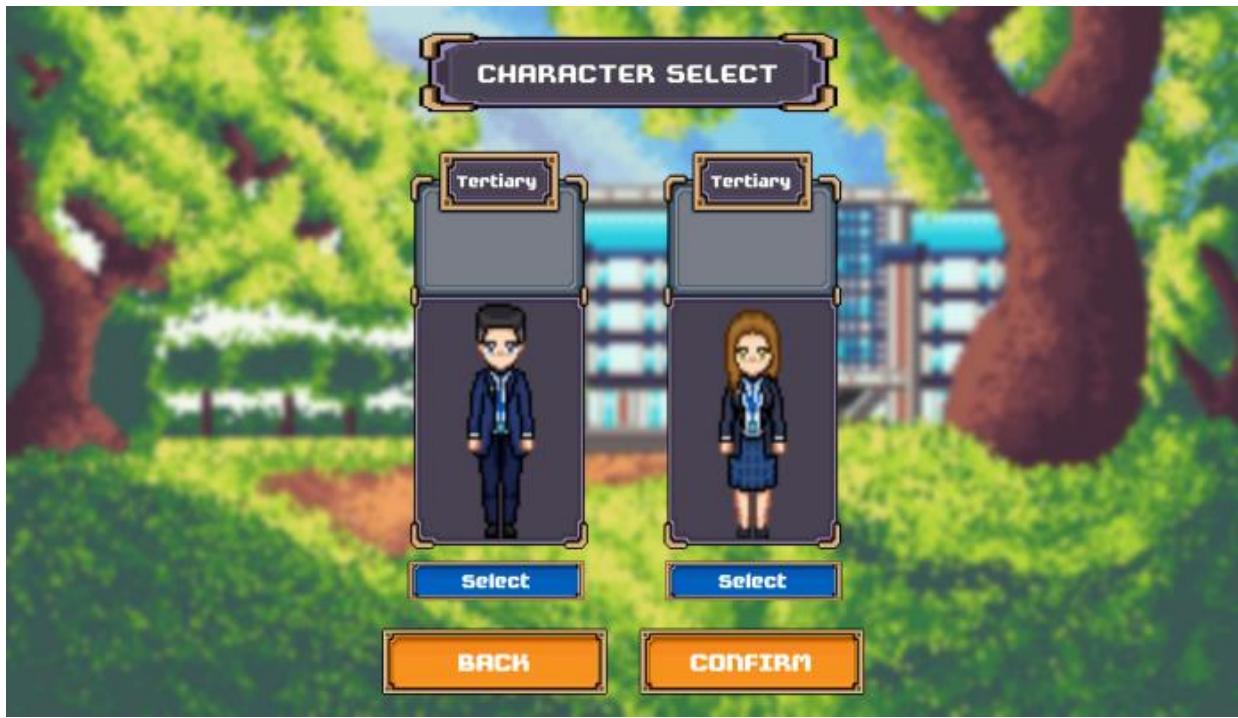


Figure 1.8: New Simplified look for Tertiary Students

In this figure, we implemented the same look and position of the sprites in this scene (Refer to Fig 1.3,

pg. 3)

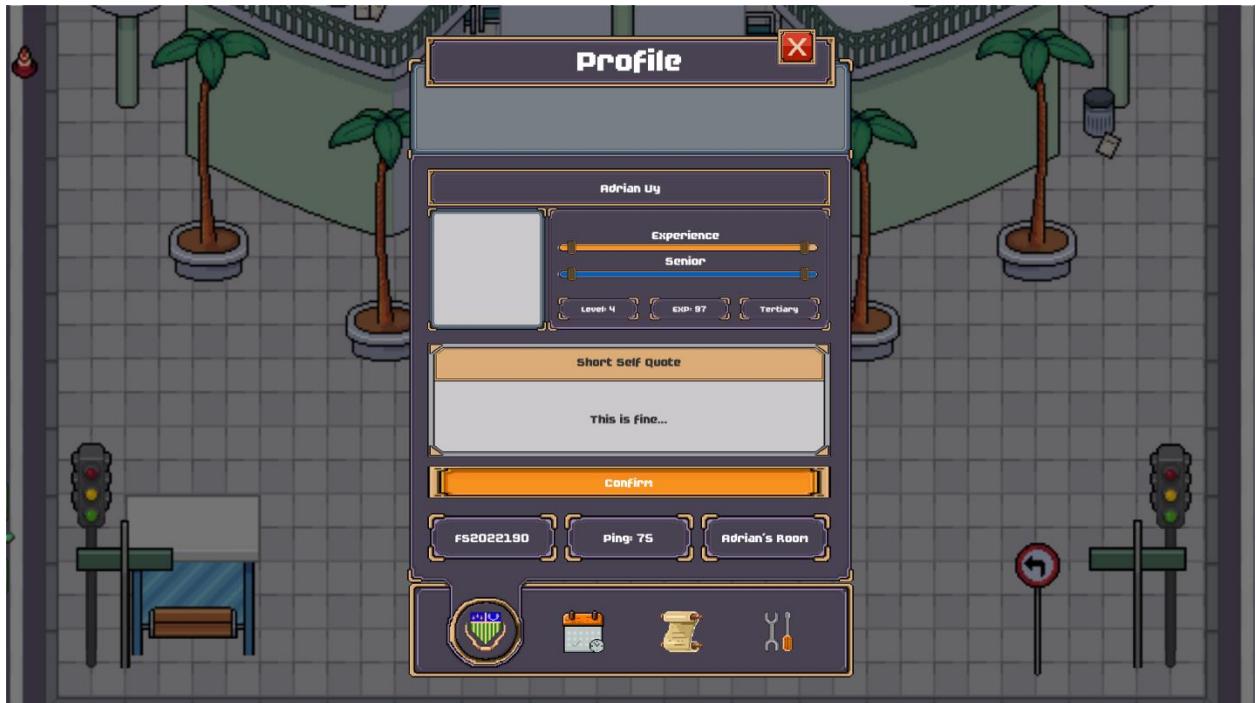


Figure 1.9: New Detailed look for the User Information and User Statistics

This figure represents, shows the interface presenting different icons that are interactable such as, the player statistics and they can arrange it based on their preferences etc.

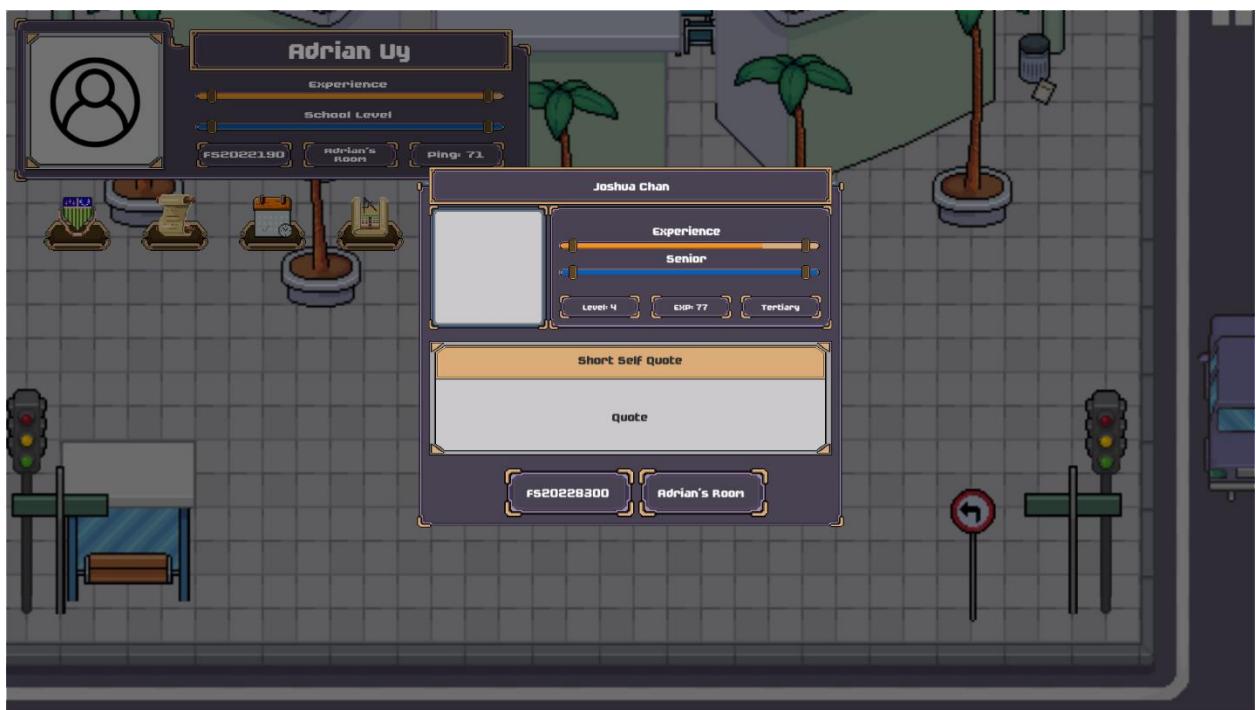


Figure 2.0: Multiplayer viewing for both parties

In this figure, users can view the other user's statistics and in-game quote about what they are currently having as a status.



Figure 2.1A: New improvised look for the Schedule Displayer for Teachers and Students

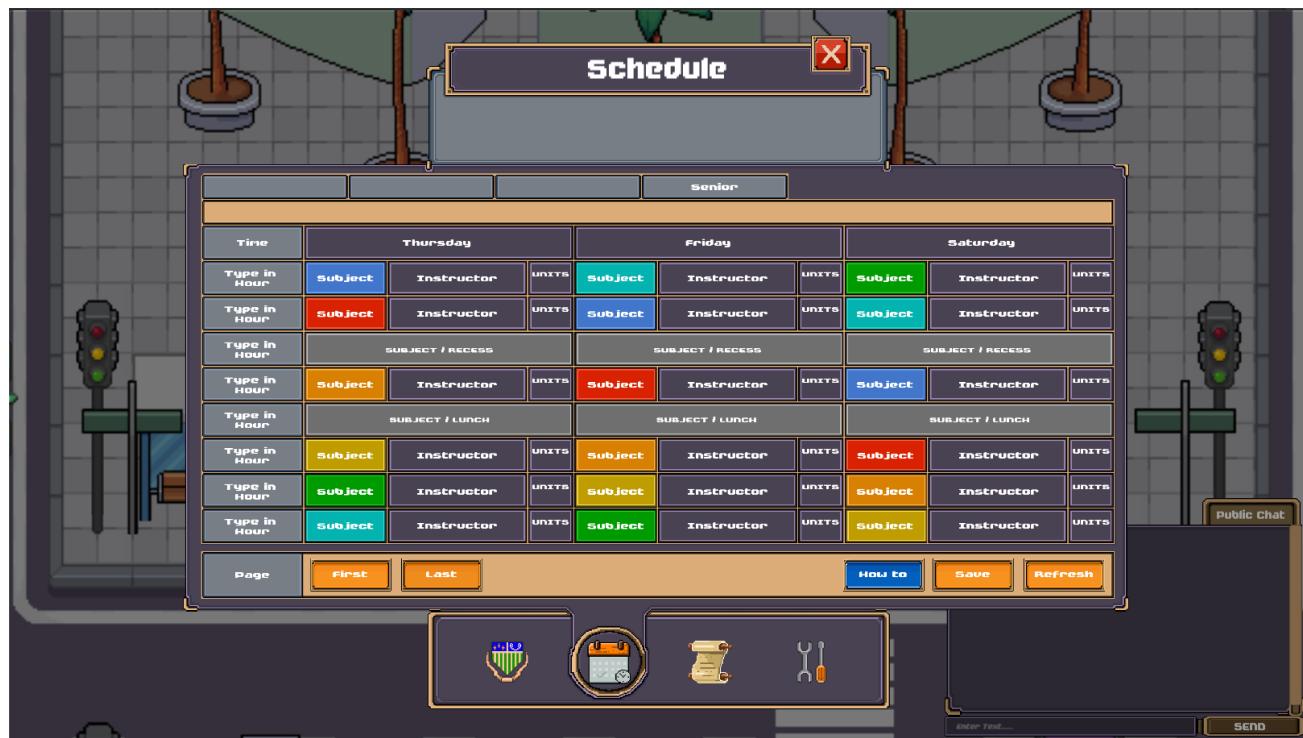


Figure 2.1B: New improvised look for the Schedule Displayer for Teachers and Students

On these two figures, we simplified the look for this one and kept the idea from the previous one (see Figure 1.6, pg. 4) and UI that comprises subject scheduling for the accounted time they are in. this also represents the second page of the schedule displayer.

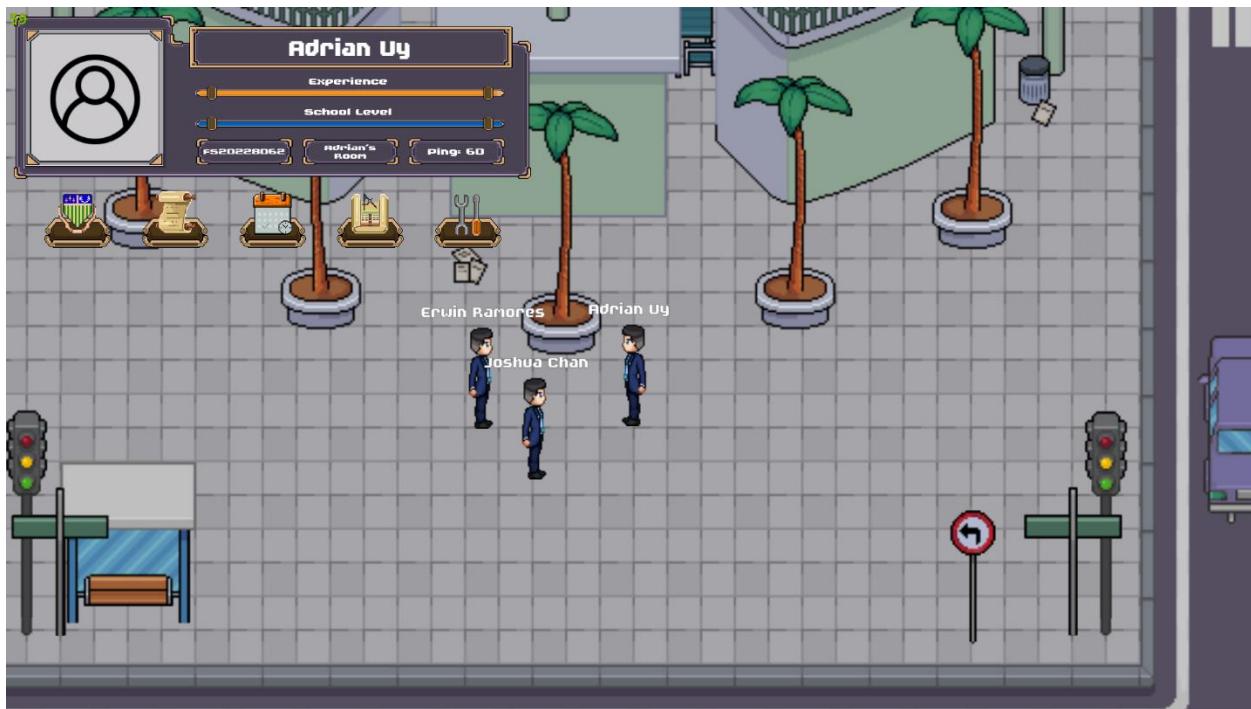


Figure 2.2: Multiplayer with friends in another User's world

This figure shows the multiplayer mode and how other users meet up by going in the user's room i.e., is Adrian being visited by his 2 friends in his world (refer to Fig 1.4, 1.5 pg.4).



Figure 2.3: Host Management and Building properties on multiplayer mode.

On this figure, this is to know that the owner of the room has the access to place objects in their room, destroy, and manage objects in their world. (Refer to Fig 1.5, pg.4).

CHAPTER II.

GAMEPLAY

This chapter presents the specific way in which players interact with a game, and in particular with video games such as its plot and the way it is played, as distinct from the graphics and making a connection between the player and the game.

Objectives

General

The very main objective of the game is to have 2D F2F (Face to Face in 2D). This is to help students function along with their teachers and classmates alike virtually in the comfort of their homes and which will have a long-term usability – that will have its own sustainable server to be able to give access to multiple users using game-generated accounts.

Specifics

Moving on to Specifics our game offers:

- To give students and teachers of FAITH access to 2D space.
- To limit the need to go outside for school classes/meetings and help avoid the virus.
- To assist students and teacher in connecting with each other online.

Game Progression

Play Flow

Firstly, every student will have a default generated appearance based on their account details, students and teachers have default skins for male and female users to avoid in-game indecency issues etc.

Next is the about constructing/building their rooms in a way of building maps and handling communication with other users which adding default built-in sprites which are added in the beginning, to make them familiarized on the game's environment.

Lastly, Visual Novel/story mode which an interactive genre featuring text-based story with narrative style of literature and interactivity aided by static or sprite-based visuals, that imitates a situation/perspective of a person in the game which visual novels today incites affection between the user and the character they are playing in etc.

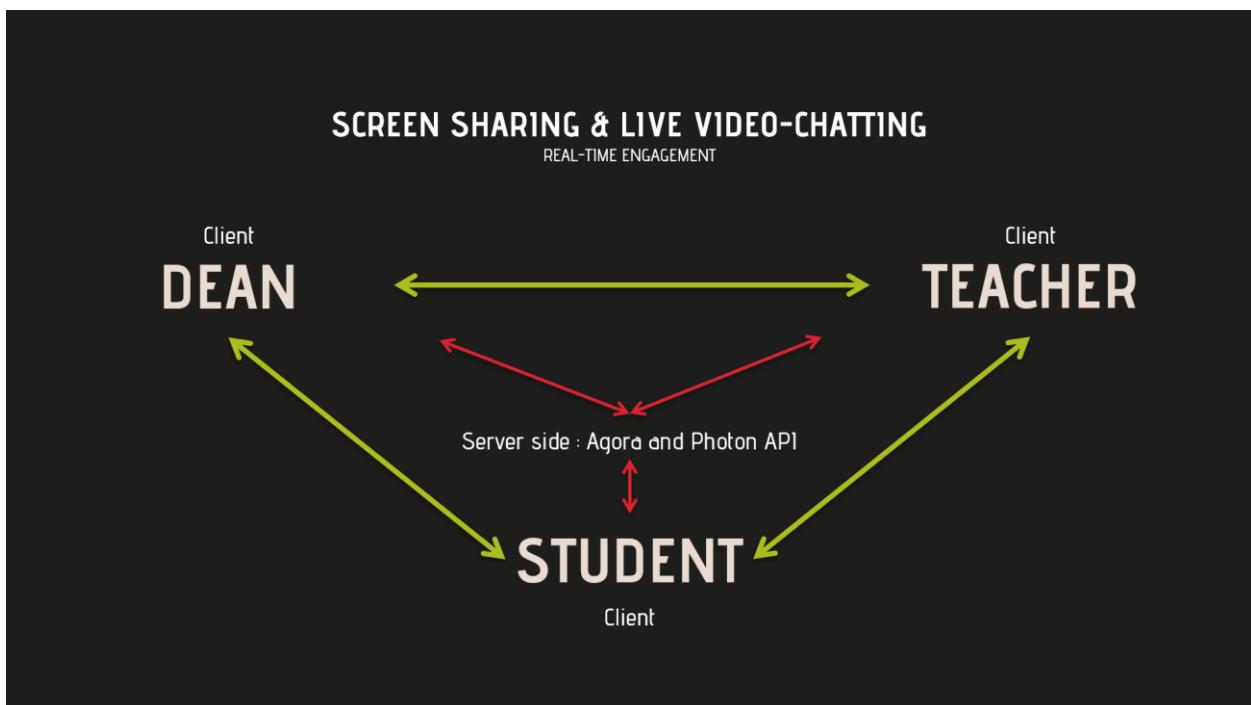


Figure 2.4: Screen Sharing, Online Meeting, and Game Chat.

On this figure, this represents that teachers and students can share the content inside of their screens, to show their faces in real-time, and to access their voice and text chat in-game.

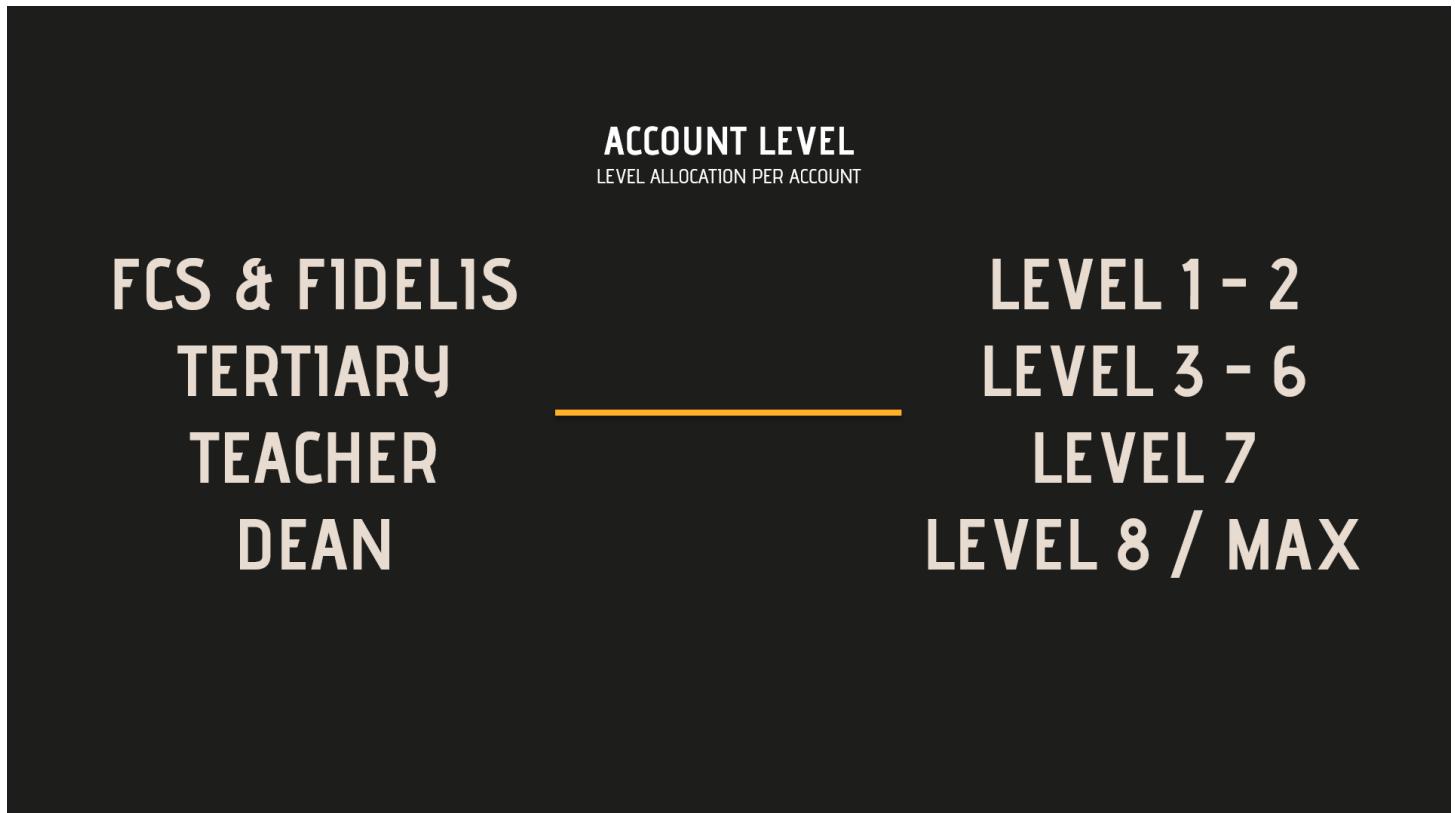


Figure 2.5A: Account level based on in-game classification.

In this figure, it represents the account level per user's registered classification i.e.

Academic Term	Classification	In-Game Level
FCS	G11	Min Level = 1
	G12	2
FIDELIS	G11	1
	G12	2
Tertiary	Freshman	3
	Sophomore	4
	Junior	5
	Senior	6
Teacher	Master	7
Dean	Doctorate	8 = Max Level

Figure 2.5B: Detailed representation of the level system.

On this figure, this shows the breakdown of how the game interprets levels correlated to the classification.

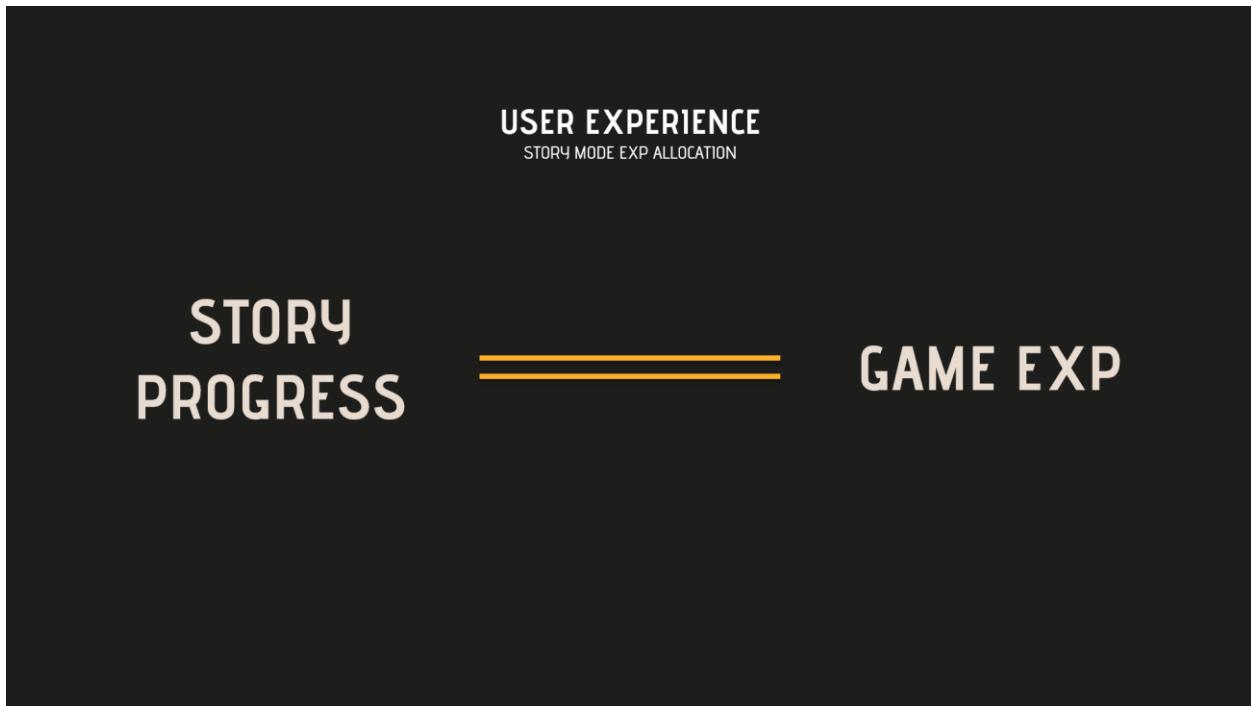


Figure 2.6: User Experience.

If the user progresses the story that will determine game experience points of the user.



Figure 2.7: Map/Room Access.

In this figure, this explains that if there is one user present at the created room, the user will have access to variety of objects/sprites.

Mission/Challenge Structure

In this part, this will be inclined in the game's story mode, which will revolve around the user's responses/choices of what he/she will choose as the story progress and that will harmonize between the character and the setting, they're in; there will be choices that affects the characters mood and personality.

CHAPTER III

Mechanics

This chapter presents the rules that govern and guide the player's actions, as well as the game's response to them and help provide gameplay by providing a construct of methods or rules designed for the player to interact with.

Rules

There are two modes available for the user to play along; The multiplayer mode allows build the room based on the user's preferences, while the story mode is the traditional visual novel game mode where the users imitate a situation/perspective of a person while playing in-game. Both modes have their different rules these are:

- **Multiplayer Mode Rules**

- Limited Sprites per category (Building, Tiles, Environment, Pre-built and Miscellaneous).
- Rooms can only support up to 50 users at a time.
- Users that is not the host of a room have limited access to the building features.

- **Story mode**

- The User's rule is to finish the story.
- Interact properly with the characters associated in the story.

Model of the Game Universe

In the game, every student will have a default generated appearance based on their account details etc. and about the very interface of constructing/building their rooms in a way of building maps.

Also, handling communication with other users which will also associate with the game's story mode (Visual Novel) which an interactive genre featuring text-based story with narrative style of literature and aided by static or sprite-based visuals, which imitates a situation/perspective that which visual novels today incites affection between the user and the character they are playing in etc.

Physics

There will be no in-game physics in the game FAITH Savants and this is a 2d inclined-reality platform pixel game which enables player to walk in things, interact with the others etc. and depending on the user's perspective be it teacher/student and facility member etc.

Economy

There is no in-game economy that will be used in the game. Only items that is given to the character at the start, during, and ending of the game.

Character Movement in the Game

- WASD keys to move the character or navigate through the map or room
- Spacebar to interact
- Mouse to scroll or navigate through the UI and to choose choices (story mode)
- LMB to interact with the UI or place sprites
- RMB to open side settings
- ESC key to go to settings

Objects

- Spacebar to interact with objects.
- There will be interactable content in some areas, tasks, and room.

These are the objects that are included in the game:

- Building sprites

- Environment sprites
- Tile sprites
- Pre-built sprites
- Miscellaneous sprites

Combat

There will be no existing combat in the game.

Screen Flow

The screen flow will be as what is show below:

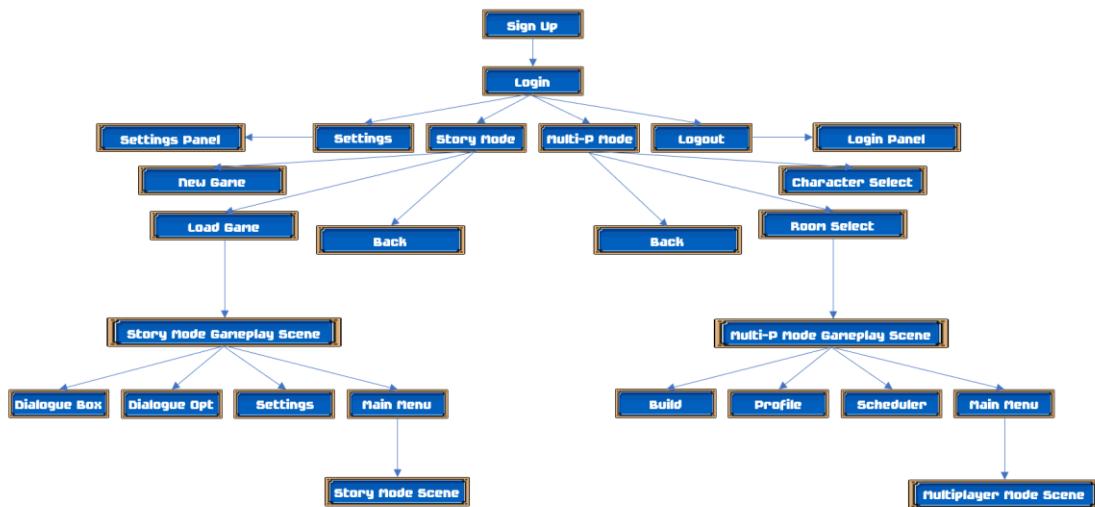


Figure 2.8: Screen Flow of the Game

In this figure, this shows the game screen flow is an overall flow of the game that shows everything the player can do in the game from start to finish.

Replaying and Saving

On this part which is partly on the story mode, there will be save and load feature that will enable the user to save his/her progress with time and date included.

Cheats and Easter Eggs

There will be no cheats in this game and easter eggs and will not be also implemented.

CHAPTER IV

Story and Narrative

This chapter focuses on the aspects of a game that contributes to it. It helps the player feel more involved and more immersed in the game. It gives everything in the game and helps the player understand what they need to do. Although in this part, this chapter is divided into two parts such as the:

IV-A. Story Mode / Single player Mode

- **Story**

The main story development starts off quite bright and hopeful then gains a deeper meaning as we explore how the characters may have taken their contact learning and overall social interaction for granted. They have conversations with each other where they discuss the difficulties in learning at home, perhaps volatile home lives or not being able to be alone. Then that is contrasted by the tranquility and convenience of their campus. It also discussed the schools' catholic origins and history and show how each character has their own beliefs and how those translate into their work and connections.

- **Back Story**

The storyline follows the main male character through his first day back on campus. We follow him as he gets ready for school and what he does throughout the day. He has conversations with his friends in class, in the school cafeteria, in the gym and online, which are a little nostalgic as they look at what it was like to do remote learning vs contact learning, the things they missed out on. There's also contemplative moments when he's alone that flash back to time spent alone during lockdown, and the impact it had on his marks and friendships.

- **Story Elements**

Settings

- Jacob's House Scene
- Inside a Jeepney Scene
- Front Gate of the School Scene
- Hallway Scene ~ Classroom Scene
- School Bathroom Scene
- School Gym Scene
- School Canteen Scene
- School Lobby Scene
- Gym Scene
- School Library
- School Science Lab

Characters

- Main Character – Jacob (Male)
- Supporting Character – Althea (Female)
- Supporting Character – Aaron (Male)
- School Professor – Professor Martina Dela Cruz (Female)
- School Dean – Dean Ramoto (Male)

- **Plot Elements**

Exposition

The plot starts in a Filipino student and his friends return to campus for the first time following a lengthy time in lockdown, through his first day back on campus we follow him as he gets ready for

school and what he does throughout the day and then gains a deeper meaning as we explore how the characters may have taken their contact learning and overall social interaction for granted.

Rising Action

The 3 of them (Jacob, Althea and Aaron) are finally reminiscing/contemplate moments of the difference between online and actual f2f learning, as they went through the school, they settled into seats close to the middle, and watch as the class fills up.

Climax / Turning Point

As the three friends walk to different lecture halls, they're both fulfilling their duties/quest on the school, being accustomed to such places on how things changed for them and talk other topics aside from the lockdown.

Another is, when Jacob was summoned in the dean's office to sort things out, having the dean something to say to him about transitioning in remote learning and about his marks dropped on a constant whim and as he leaves the office with his head hung in shame.

Falling Action

After Jacob learns about the truth of his grades, he was shunned and silently trained together with Aaron, Aaron ask the thing about it; but sensed he isn't on a talkative mood and comforted him on his usual doing.

Resolution / Denouement

Happens at Jacob hesitated on telling althea but vented finally about his marks dropping and the reason why it dropped it on a constant whim and althea proposed that she'll help him acquire the usual grade he wants again; and Jacob thanking both of them for cherishing this moment and having such friends that are willing to help him in this state of hardships etc.

IV-B. Multiplayer Mode

- **Story**

The story will be based on the students' and teachers' personal experiences (teacher and student relationship) the very interaction in the game. In short, they can create their own story based on their gameplay. but we had a problem and needed to add extra features that we think the users need and that's why we created our own game prototype instead but still keeping the idea; and thus, we came on a pixel(ated) feel, look and ease; also having them feel that they're in school too and became its debut, FAITH SAVANTS.

- **Back Story.**

Back then, we used the idea from our adviser about making a replica of FAITH in Minecraft and instead still keeping the idea. Though, in some sorts we had problems and needed to add extra features that we think the users need and by the descent of the covid-19 in our country, we decided to think of something that can cope on the impending plague that will engulf us and so that's why we created our own game prototype; by fusing 2 elements by playing on pixelated feel and the feel of being in school too.

- **Plot Elements.**

Exposition

In FAITH Savants, the game begins with the players who will role-play as a student/school faculty character as he/she discover various maps throughout the game. While exploring the diversified places of each map, the player can peacefully interact with friends, classmates, or school faculty. Several characters classes are introduced and interactable NPCs that give different lines/dialogues.

Rising Action

The student/school faculty is trying to do his/her best to live life to the fullest and be a proper character while accompanying others with their task at hand.

Climax / Turning Point

In FAITH Savants, the climax begins when the character fulfills his/her duty and while roaming different places a new system is introduced to him/her.

Falling Action

The student/school faculty feels relieved after finishing the task at hand (ex. activities, assignments, projects) and prepares for his/her graduation.

Resolution / Denouement

The student/school faculty graduates/gets promoted and is given a reward for fetching up everything.

- **Game story Progression.**

- In this part, we can correlate this part on what was mentioned in chapter 2: gameplay (progression) since story can remain identical too as the user is progressing the game. As for the story progression, this can vary depending on what his/her grade level/year and will still be based on his/her student account. On the Teacher-student relationship, we planned to establish a positive spark that will play a large role to help the students feel more comfortable and safer in their classroom environments; also, in their academic success and social development. There will be reputations/views of the teacher on the student that will be based on how one student is complying to his/her activities.

- **Cutscenes.**

- As for the game's cutscenes, we chose the scenes are interactive, and by interactive; the user will be given choices when talking to NPC'S, whether they read the dialogues said by the NPC or given an option to skip the scene they're in or vice versa etc. There'll be scenes that will be conveyed to show conversations between characters, set the mood, rewarding the users, introduction to things and gameplay elements, create emotional connections etc.



Figure 2.9: Front Gate Scene

In this figure, shows a cutscene including a side female character in the game (story mode).

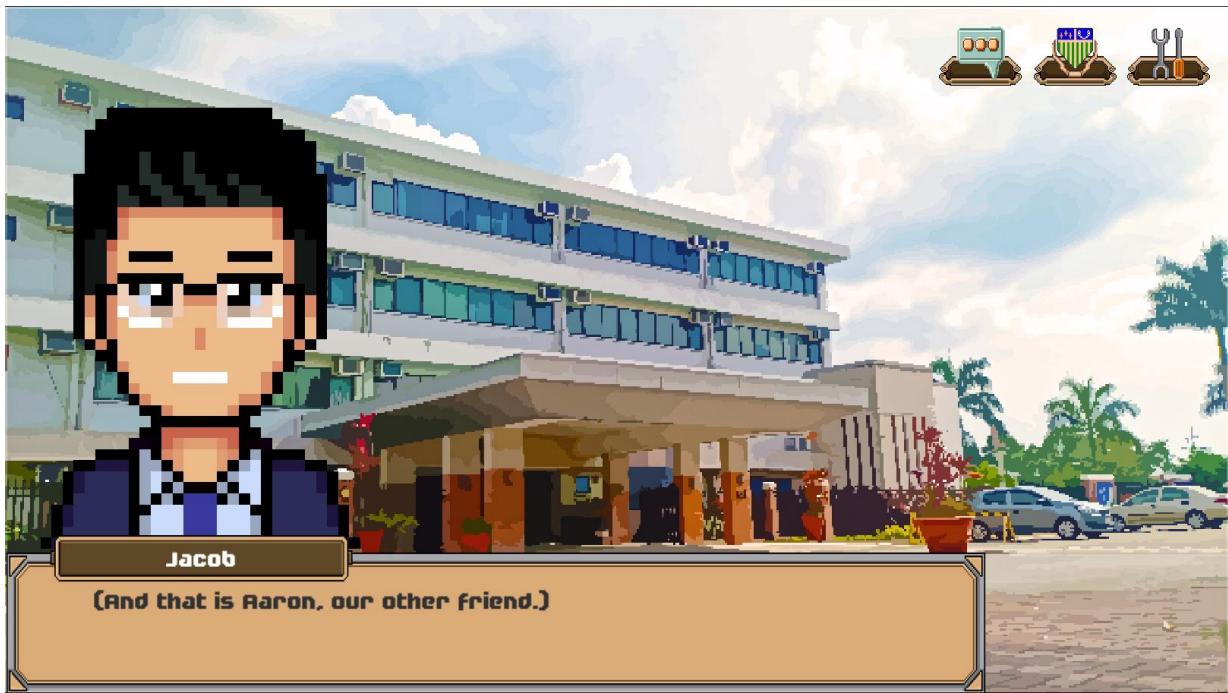


Figure 3.0: Mabini Building Scene

In this figure, shows a cutscene including a main male character in the game (story mode).



Figure 3.1: Space Lounge Scene

In this figure, shows a cutscene including a side male character in the game (story mode).

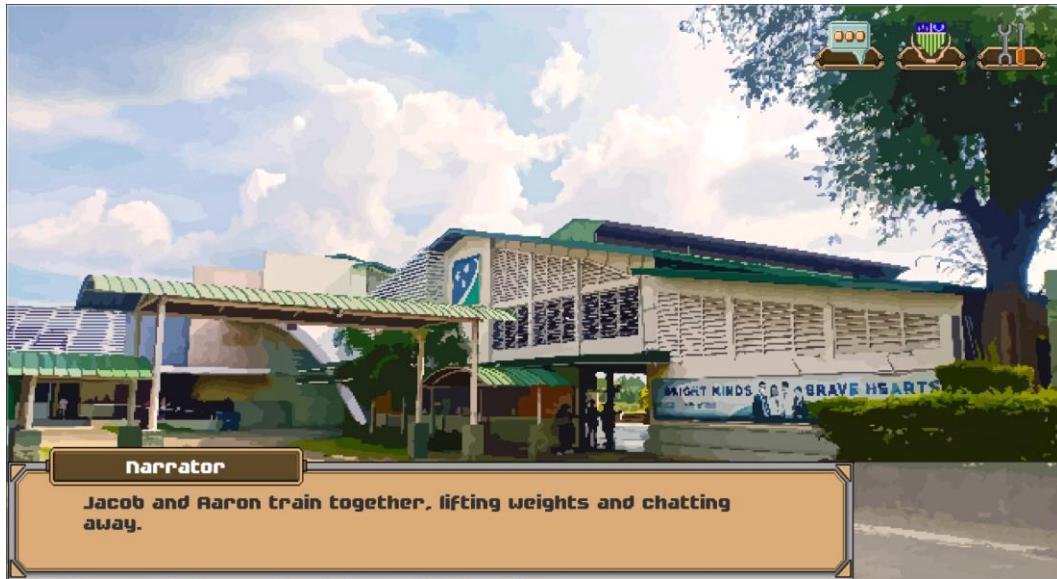


Figure 3.2: Gym Scene

In this figure, shows a cutscene including the scenery of the school gym in the game (story mode).

CHAPTER V

Game World

In this chapter, this emphasizes the variety of maps that is usually placed in an alternate fictional universe and its aim is to immerse the player and between the game to make them as if they are in control of this game world with their decisions and actions affecting everything around them.

General look of the World

In this part, we based the scenery and setting of FAITH Colleges. since we're coping on the pandemic, we're also aiming is to immerse the player and make them feel as if they are in control of this game world with their decisions and actions affecting everything around them. i.e being a student.



FIGURE 3.3: One of the main map in the game.

On this figure, provides a zoomed-out view of the whole map.

Areas

As for the areas, we again based it on the school's landscape and made samples on some buildings such as the "Space Lounge", "NU Space building", and "Mabini building". Also, all Map sprite characteristics were made on Photoshop, Pixlr, and Aseprite.

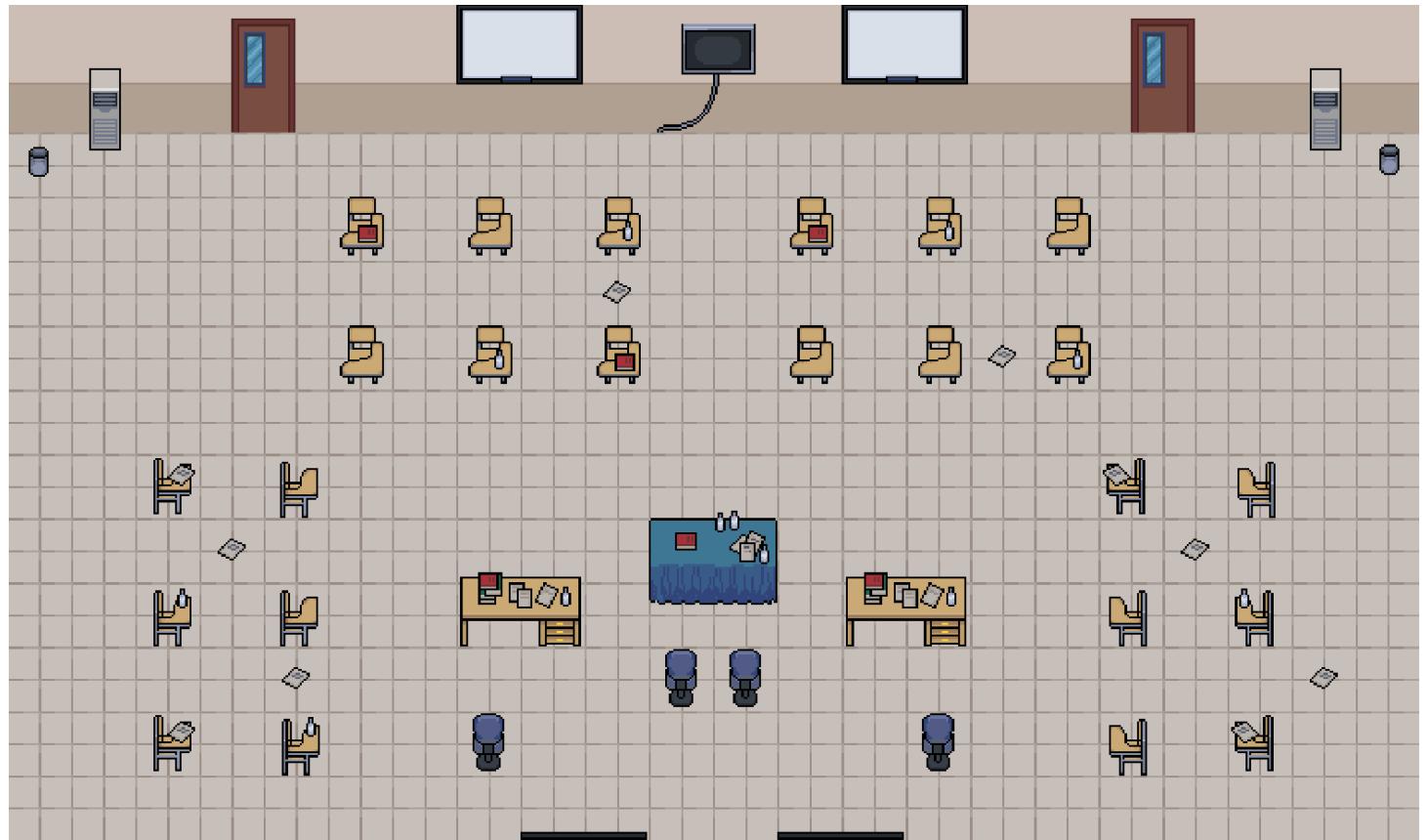


FIGURE 3.4: Map Area (Room)

In this figure, this shows a school room which is based on the Mabini Building interior.



FIGURE 3.5: Mabini Building (exterior).

In this figure, this presents the design of the Mabini Building and which is the exterior one.

Relations

The overall images of the areas shown above can correlate in what school building they are in; be it interaction and communication. In a way, that we based the structure of some areas of the school it will have connections such as, interaction on students on any grade level college, Senior high school etc.

CHAPTER VI

CHARACTERS

This chapter presents various character sprite assets that appear in the game and represent the user with their position, power and etc. while immersing themselves in the game.

For each character

For the characters, since we're varying this project in a school atmosphere; we did some sprites that are made on the software such as, Photoshop, Pixlr, and Aseprite.

these are the sprites we've made along the way for our project:

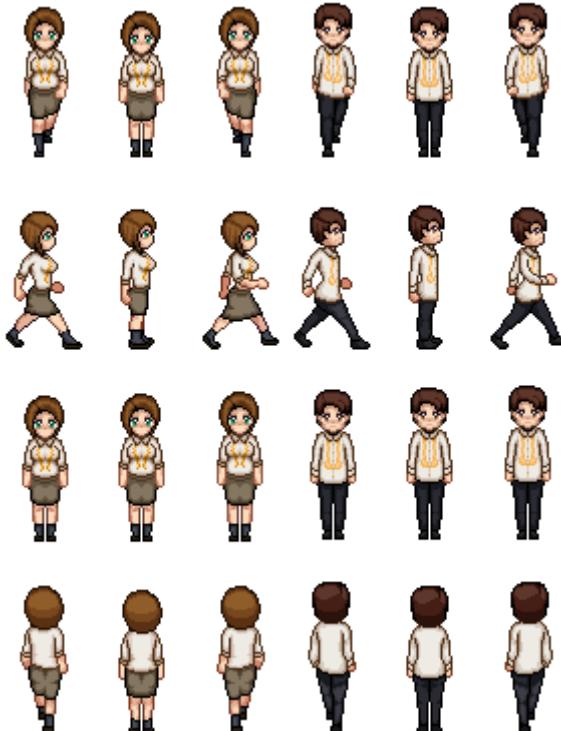


FIGURE 3.6: Sprite sheet for Deans (Male and Female)

In this figure, this presents the sprite sheet for the Deans and which shows how the animation is made by each frame.

Dean

As for this sprite, we based their appearances on how they are admired by students and teachers by being known for leadership, decision-making, empathy and innovation etc. The Female Dean sprite wears modern filipiñiana and brown skirt, while the male dean wears Barong Tagalog and black pants.

Since they're important and can be able to play the game to the course/college, they're known too that they're the head of a division, faculty, college, or school of a university. They're known for being responsible for recruitment, appointment and retention of academic administrators, faculty and staff for their college or school.

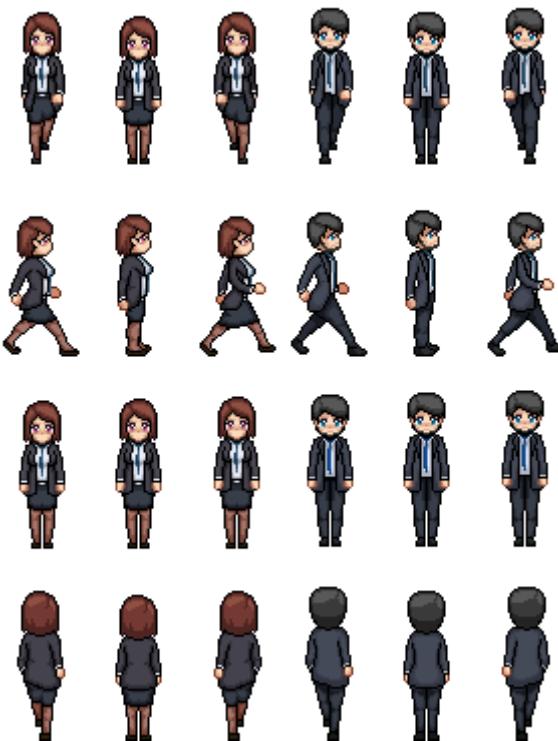


FIGURE 3.7: Sprite sheet for Teachers/Professors (Male and Female)

On this figure, this shows the sprite sheet for the Teachers/Professors, and which shows how the animation is made by each frame.

Teachers/Professors

On this one, they're another society of admiration of the students that disseminate and impart basic or applied knowledge to students and assist students with the learning process and applying the knowledge.

The female teacher sprite wears black coat and black below-the-knee skirt, while the male teacher sprite wears black coat and black pants. Again, they're another significant player in the game too which can guide and teach their dear students keep them in track of their career/path of their choice in the future.

Students

the very player of the game, the one who'll take the spotlight etc. and we will be having categories of students which are:



FIGURE 3.8: Sprite Sheet for Tertiary Students (Male and Female)

In this figure, this presents the sprite sheet for the Tertiary students, and which shows how the animation is made by each frame.

- **Tertiary** - They're ones that'll be immersed in this 2d world of learning with help on everything around them and they'll be the one who're creating their own stories themselves and to shape their own future.



FIGURE 3.9: Sprite Sheet for FCS and Fidelis (Male and Female)

In this figure, this presents the sprite sheet for the FCS and Fidelis students, and which shows how the animation is made by each frame.

- **FCS and Fidelis** - We decided to combine both parties, because both are extra/featured characters to make our pool variations to be vast and etc.

Artificial Intelligence Use in Opponent and Enemy.

For starters, the game does not have any AI combat related things and such etc. The AI system in the game will not implement such violence and combat in the game.

Non-combat and Friendly characters

Particularly, just because a game has no combat does not mean it does not require an immense amount of skill, either. There will be no NPCs in the game but there will be side characters that will

nurture/help in the story later, and same goes on the multiplayer where they freely chat and play with their friends etc.

CHAPTER VII

LEVELS

This chapter shows implemented levels/chapters in a game, the player must decide how he/she can proceed with the levels. As the game progresses, the player must understand how the characters and settings differ and relate to each other to perceive a part of the game.

For Each Level

Level design is necessary for two primary purposes: providing players with a goal and providing players with enjoyable play experience. Good level design strives to produce quality gameplay, provide an immersive experience, and sometimes, especially in story-based games, to advance the storyline and for the choices, this will be the user's decision on what choice they will take and what they will choose will influence the character growth etc.

Overall, we only implemented the levels on the story game mode which 3 different chapters of the main story.

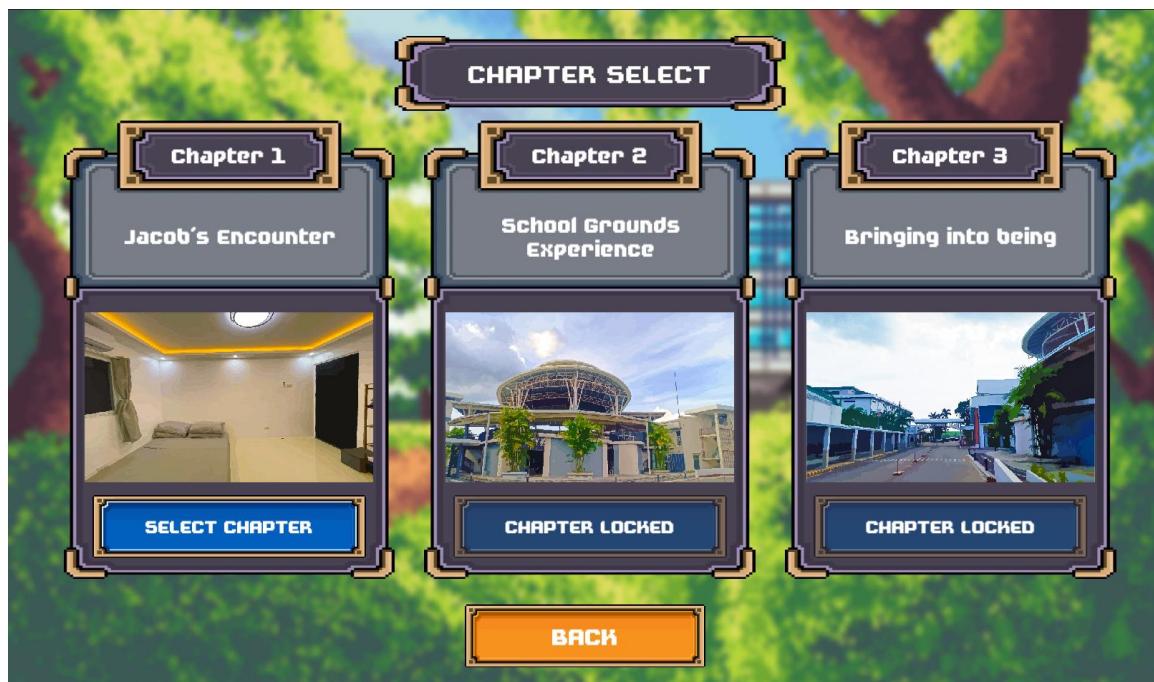


FIGURE 4.0: Chapter selection on the story game mode with other chapters being locked.

This figure presents that chapter 1 is unlocked then chapter 2 and 3 is locked and needs story progression.

Chapter 1.

Synopsis

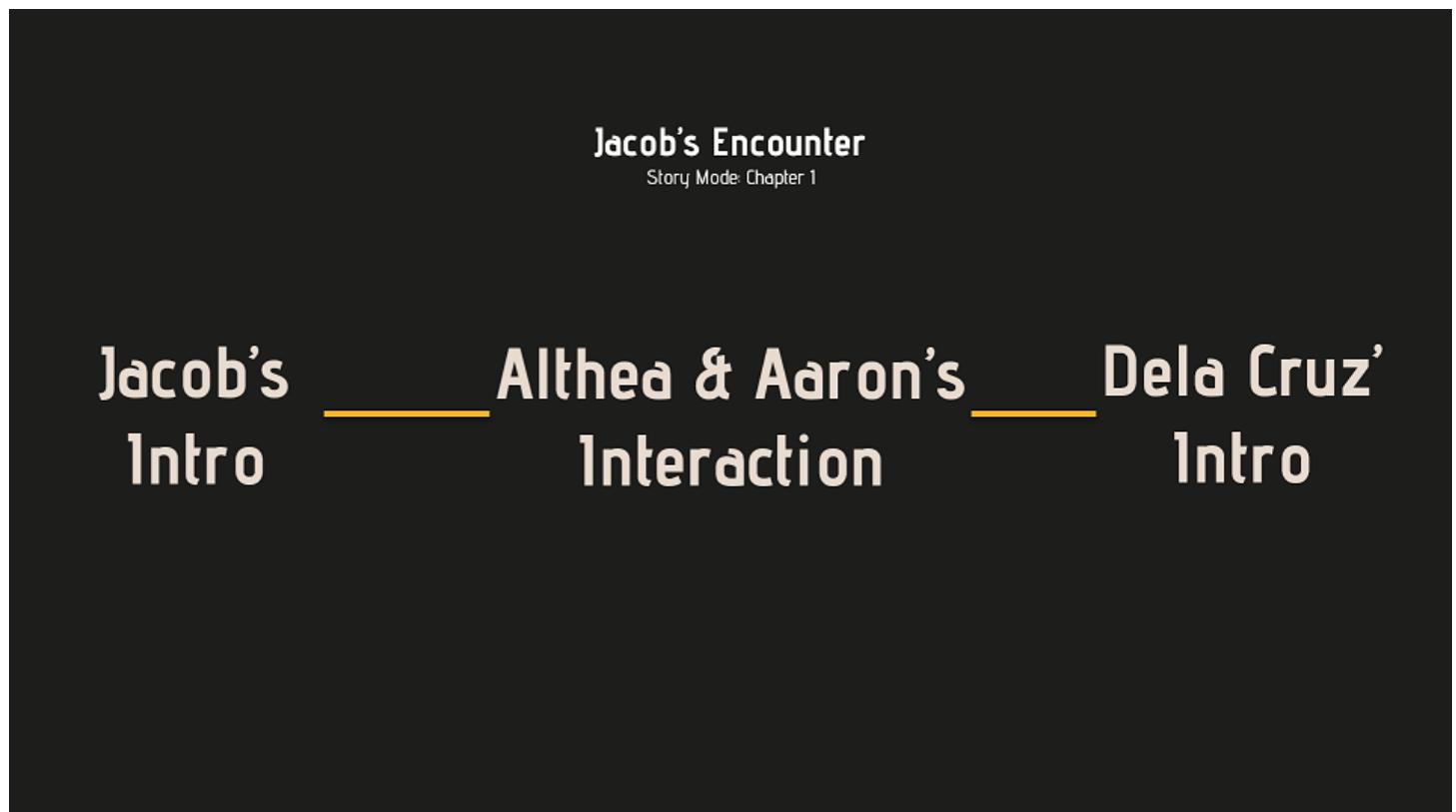


FIGURE 4.1A: Chapter 1 summary.

In this figure, this shows the title of the chapter as Jacob's encounter; this chapter refers to the introduction of the characters in the beginning and follows the main male character (Jacob) and through his first day back on campus.

Choices



Figure 4.1B: Scene where the player gets to pick what he will be wearing to school.

On this figure, this presents the choices on chapter 1, and which takes place on the Jacob's home.

Since many visual novels often revolve almost entirely around character interactions and dialogue choices usually featuring complex branching dialogues and we implemented choices in the player's possible responses word-for-word as the player character and the route that they are going for.

Each path only reveals certain aspects of the overall storyline, and it is only after uncovering all the possible different paths and outcomes, through multiple playthroughs, that every component comes together to form a coherent, well-written story.

Chapter 2.

Synopsis

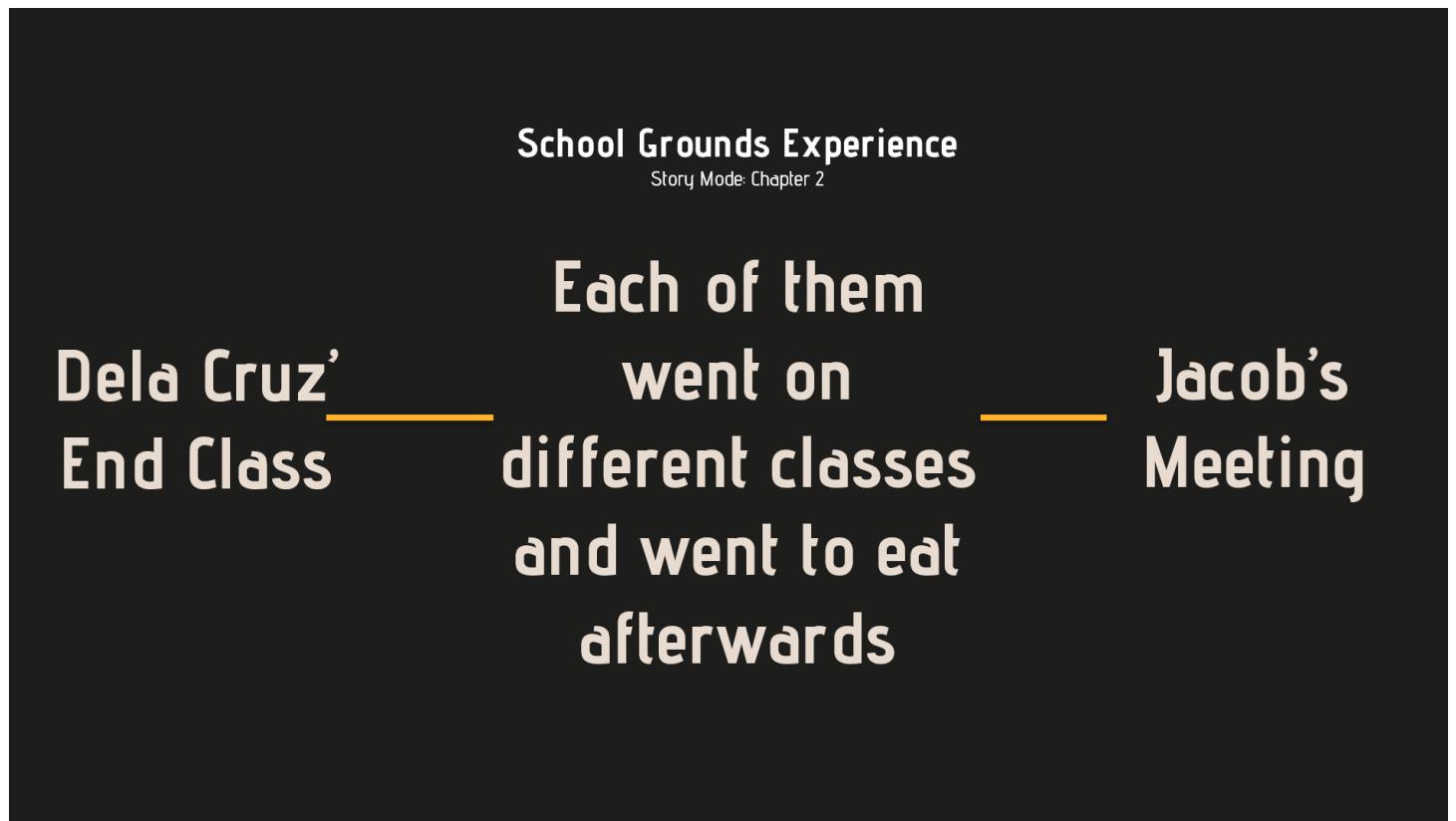


FIGURE 4.2A: Chapter 2 summary.

In this figure, this shows the chapter titled as School Grounds Experience; this chapter refers to the interaction between the new characters, talked about stuff of how they got through in the pandemic and an important scene that will happen to the main character.

Choices



FIGURE 4.2B: Chapter 2 scene, the interaction between other characters in the story.

On this figure, this presents the choices on chapter 2 which takes place in the space lounge and shows the affection/interaction between characters in the story.

On chapter 2, this often revolve almost entirely around Jacob and the interaction of some characters. In the meantime, there will be a significant incident that will occur to a specific character, as well as decisions that will have a significant impact on his life dependent on the user's choices.

Chapter 3.

Synopsis



FIGURE 4.3A: Chapter 3 summary.

In chapter 3, we learn about another significant player in the plot, Jacob, and how he was summoned and why. Finally, a noteworthy scene is almost certain to occur here.

Choices



FIGURE 4.3B: An important scene with the new character and takes place in the office.

The situation depicted in this picture depicts the choices made in Chapter 3, which takes place in the office and depicts Jacob's affection/interaction with a new crucial character in the plot.

The scene will feature an important character (Jacob) and the interaction of some characters about what happened in or the reason for how he was summoned to the office, as well as a noteworthy scene that will occur to a specific character and choices that will largely influence the route based on the user's choices.

CHAPTER VIII

INTERFACE

This whole chapter presents the series of screens, pages, and visual elements—like buttons and icons to the connection between one system and another and this covers the very visual components that allows players to interact with the game within.

Visual System

In every game visual system, they are forms of graphic presentation governed by rules. Graphic mediums that inherent qualities that we endeavor to explore and ultimately seek to exploit. The computer, as a graphic medium and tool, offers 3 things such as the:

- **HUD**

the HUD (Heads-Up Display) or status bar is the method by which information is visually relayed to the player as part of a game's user interface.

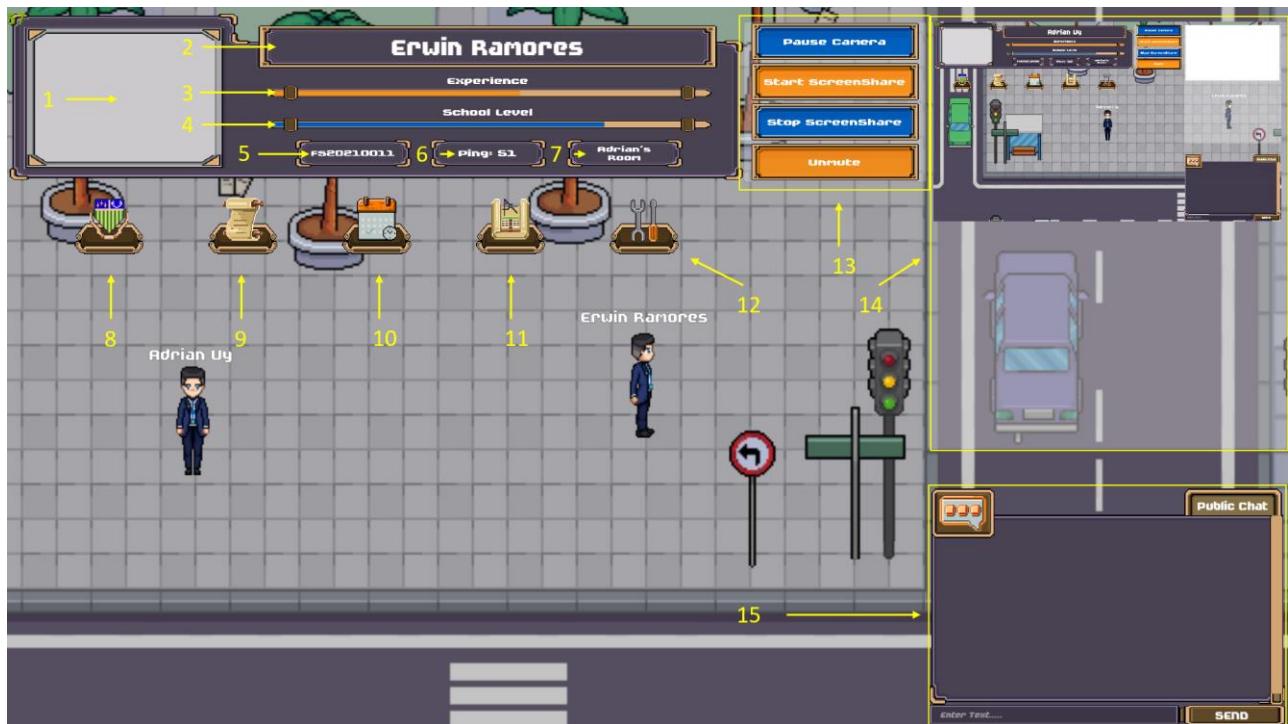


Figure 4.4: Main HUD on Multiplayer mode.

On this Figure that is displayed here, there are many features that are shown; most of them are static onscreen and they stay visible during gameplay. Common features include:

1. Video Profile

- Displays what is shared from the camera or screen of the player.

2. Player Name

- Displays player name registered from the database.

3. Experience Gauge

- Displays experience bar and initial experience value the player acquired from the story mode.

4. School Level Gauge

- Displays In-game level based on school year level.

5. Student Number

- Displays game generated student number.

6. Ping indicator

- Displays current ping (Packet Internet or Inter-Network Groper) of the player.

7. Host Room ID

- Displays room ID made by the room creator/host.

8. Profile Button

- Displays a panel where the profile and status of the player is shown.

9. Tutorial Button

- Displays a panel where the tips and tutorials are shown.

10. Schedule Displayer

- Displays a panel where the player can type in his/her schedule in-game.

11. Build Options button

- Displays a panel where the building options for the sprites is generated.

12. Settings button

- Displays a panel where the in-game settings (screen settings, music settings, sound settings, etc.) is shown.

13. Streaming controls

- Displays a panel of buttons to set and share the player's camera or screen in-game

14. View meeting participants panel

- Displays the rendered video streams from another player's camera and screen.
- Each shared video streams are clickable, maximizable, and minimizable.

15. Text chat panel

- Displays a panel where a player can text chat with other players.

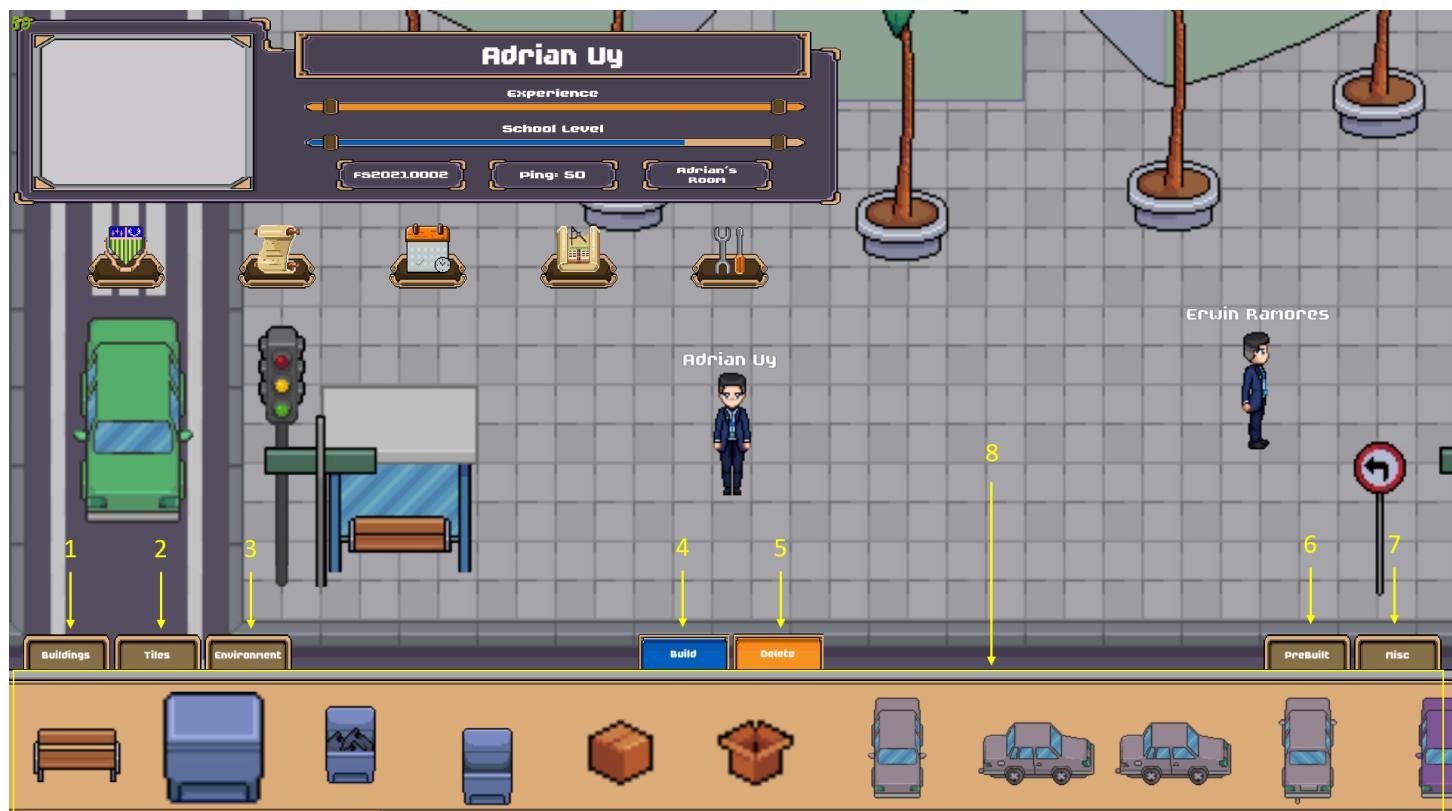


Figure 4.5: Building HUD on Multiplayer Mode.

On this Figure that is displayed here, there are many features that are shown which is same as the previous one, but on showing some features on building options mode. Common features include:

1. Building Sprite Button

- Displays various sprites (restaurants, cars, seats, etc.) that can be placed throughout the map.

2. Tiles Sprite Button

- Displays a set of tiles sprites (road tile, street tile, grass tile, etc.) that can be placed throughout the map.

3. Environment Sprite Button

- Displays a set of environment sprites (trees, plants, leaves, etc.) that can be placed throughout the map.

4. Build option button

- Displays a button that enables the player to place the sprites

5. Delete option button

- Displays a button that enables the player to remove the sprites

6. PreBuilt Sprites Button

- Displays a set of sprites (prebuilt roads, streets, etc.) that can be placed throughout the map

7. Miscellaneous Sprites Button

- Displays a miscellaneous set of sprites (posters, garbage, road cones, etc.) that can be placed throughout the map

8. Sprite panel

- Displays the rendered sprites attached to each sprite button.

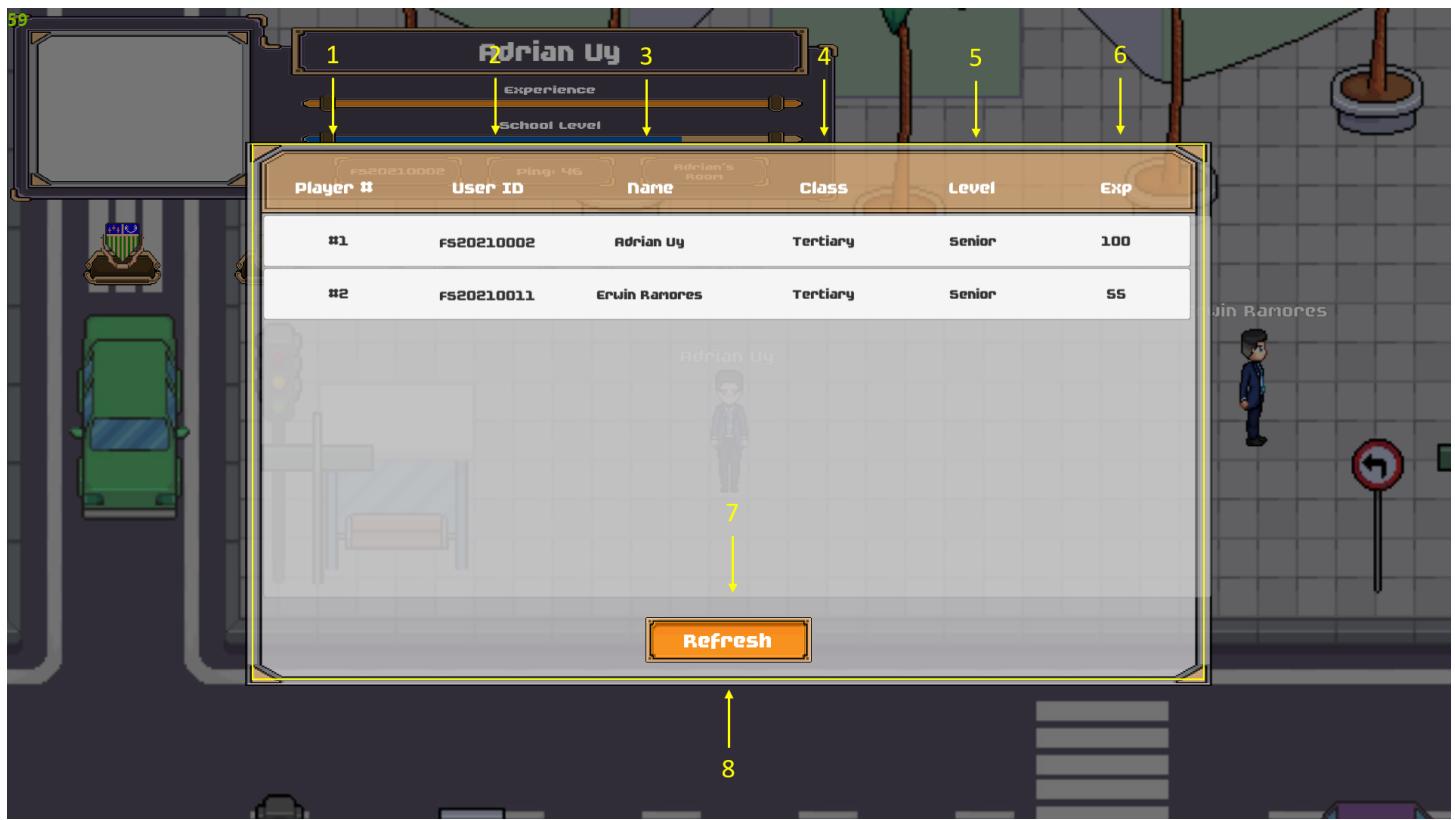


Figure 4.6: Player List on Multiplayer Mode.

1. Player Number Label

- Displays the current number in the list when a certain player joins in the lobby.

2. User ID

- Displays the user ID or student ID of a player.

3. Player Name

- Displays the in-game name of a player.

4. Account Classification

- Displays the in-game class based on the registered year level of a player.

5. Account Level

- Displays the current level value of a player.

6. Account Experience

- Displays the current experience value of a player.

7. Refresh Button

- Refreshes the data panel when clicked.

8. Data Panel

- Renders the data from the database and servers according to the player joined in the room.

- **Menus**

On this part, every menu is a fundamental part of a game which comprises as an integral part of the game as its plot, gameplay, graphics, and game mechanics. These are the menus that implemented inside the game.

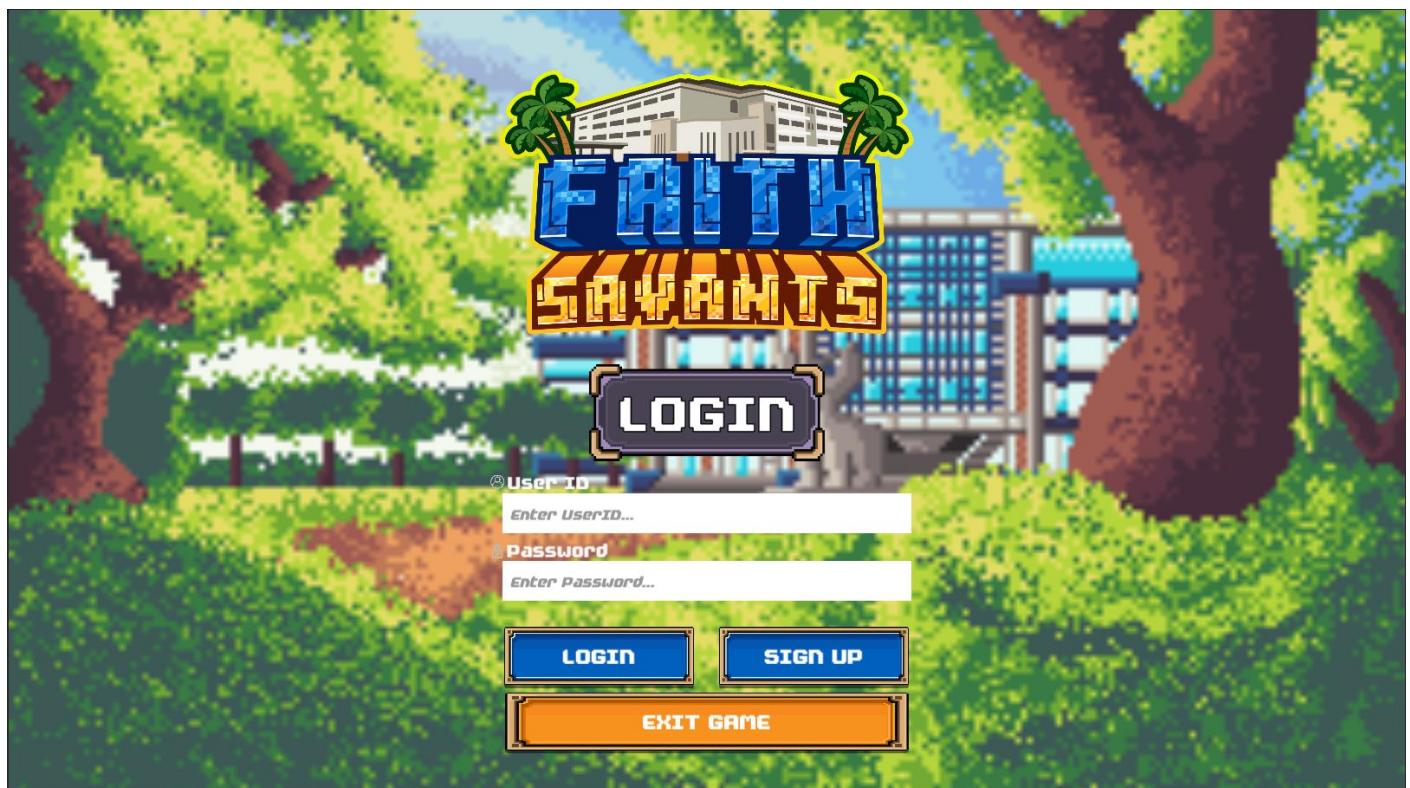


Figure 4.7: Login Screen

In this figure, this presents the front-end interface for the game where the user can input his/her credentials, where he/she can also create the data in the sign-up page.

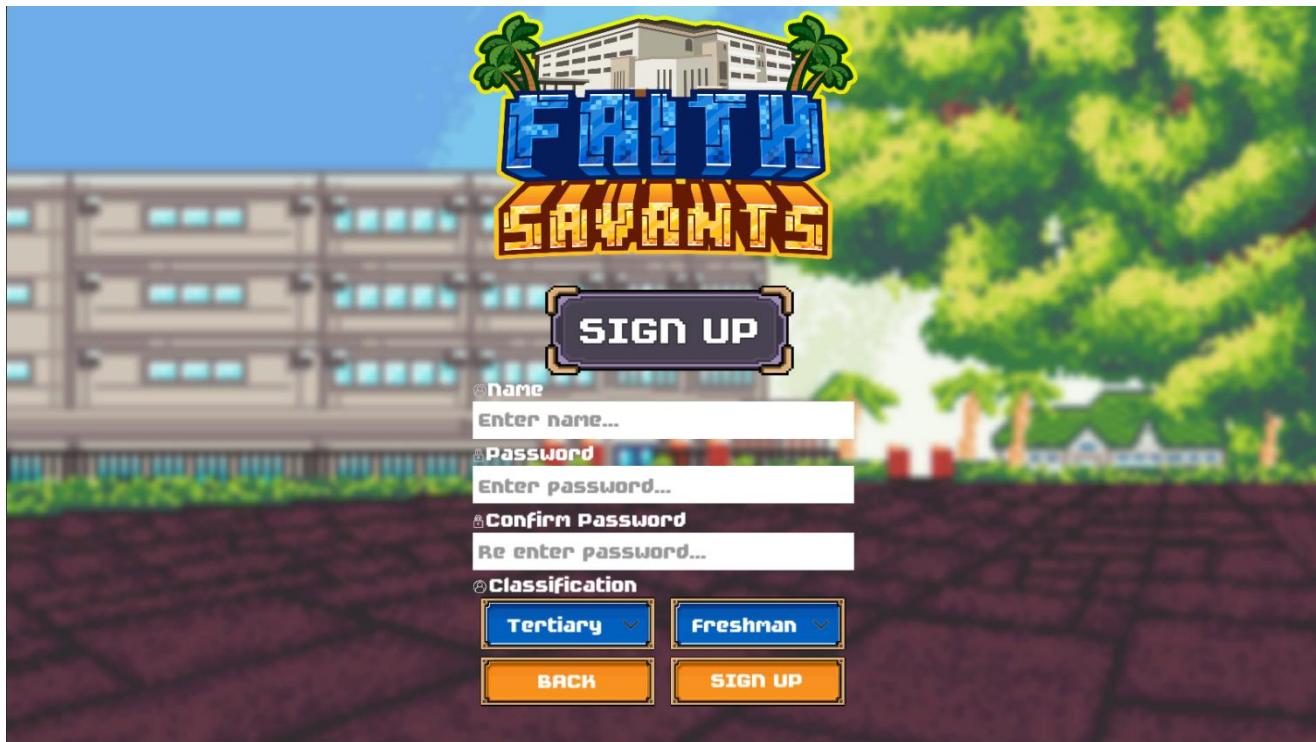


Figure 4.8: Sign Up Page

On this figure, this shows where the user he/she can create the data in this page, and they can also qualify their account type as tertiary, FCS and Fidelis; same goes for deans and teachers.

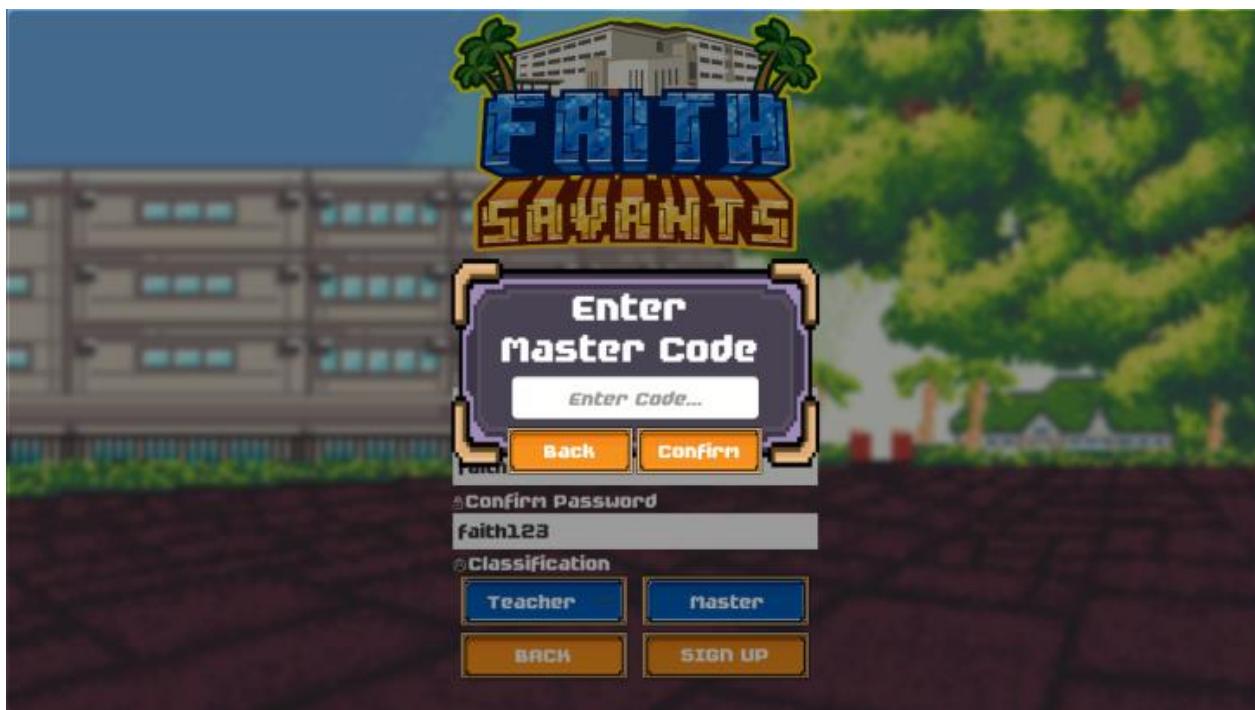


Figure 4.8A: Offering of Master Codes for special accounts

On this figure, as we mentioned from fig. 4.8 pg. 51, we implemented some special creation of accounts that which is the distribution of master codes for admin access for teachers and dean, which they will contact the developer for their special code to create their account.

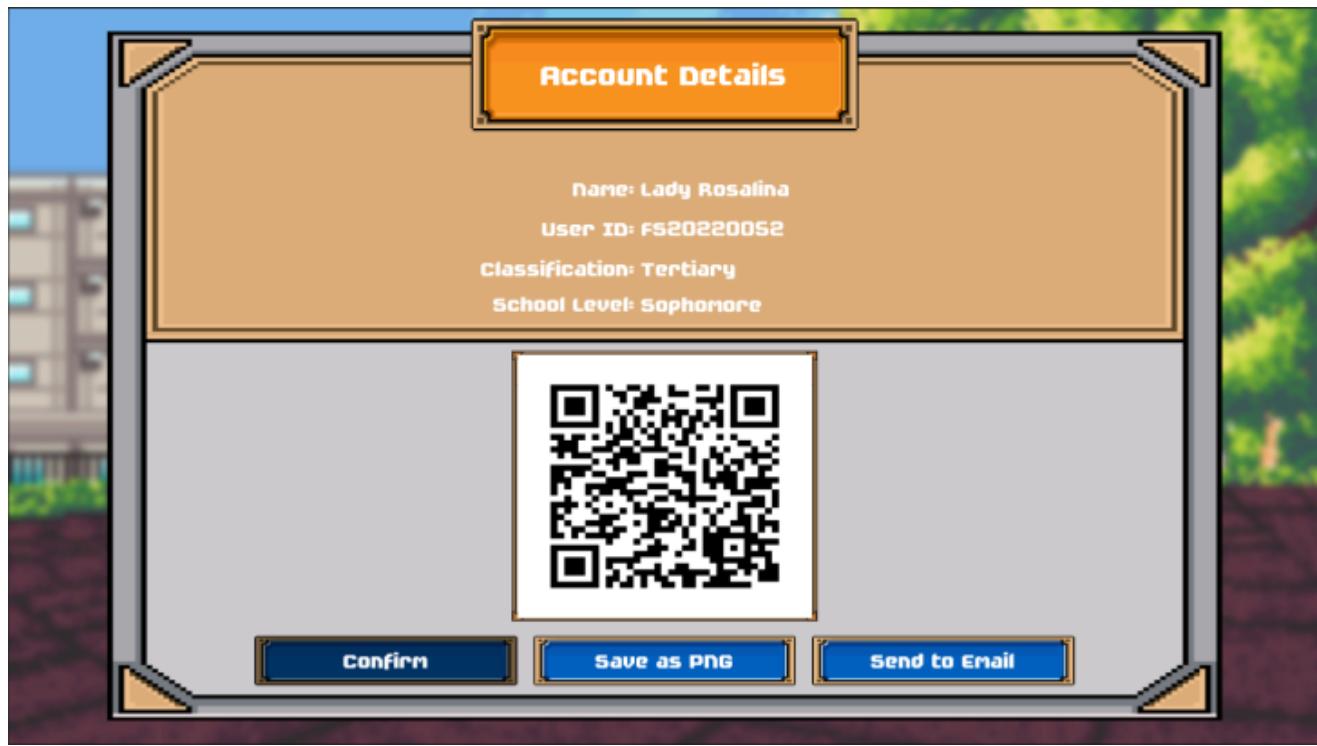


Figure 4.8B: Account Creation page

In this figure, this presents the account creation which the user inputted on the text fields as in Figure 4.8.

the page also contains:

- QR code which will be used in the application
- Saving the QR Code, which will be saved in a directory.

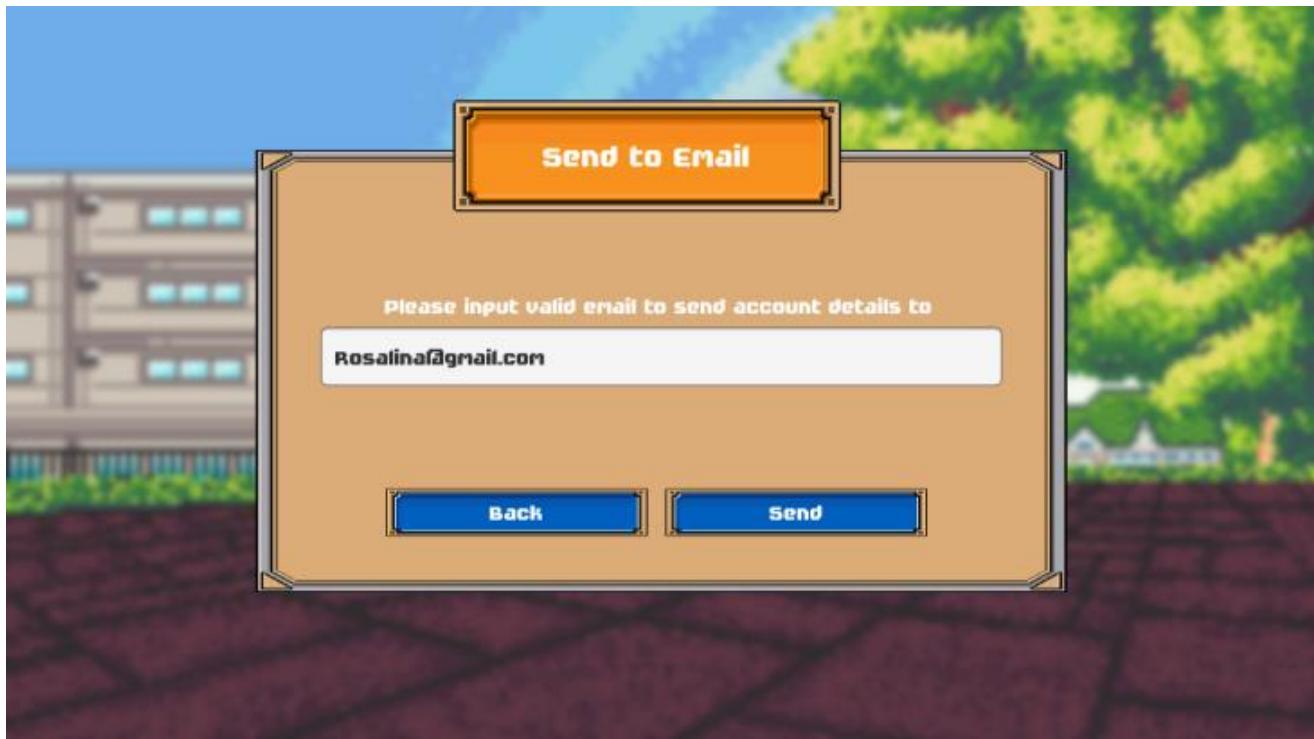


Figure 4.8C: Email Account Credentials

- Sending the credentials to email to prevent account loss and the system will not accept invalid emails and will continue to ask for a valid email to send the credentials.

After the account is created, then the user will be redirected back again in the login interface to input the credentials he/she created and received. Refer to Figure 4.7 pg. 50

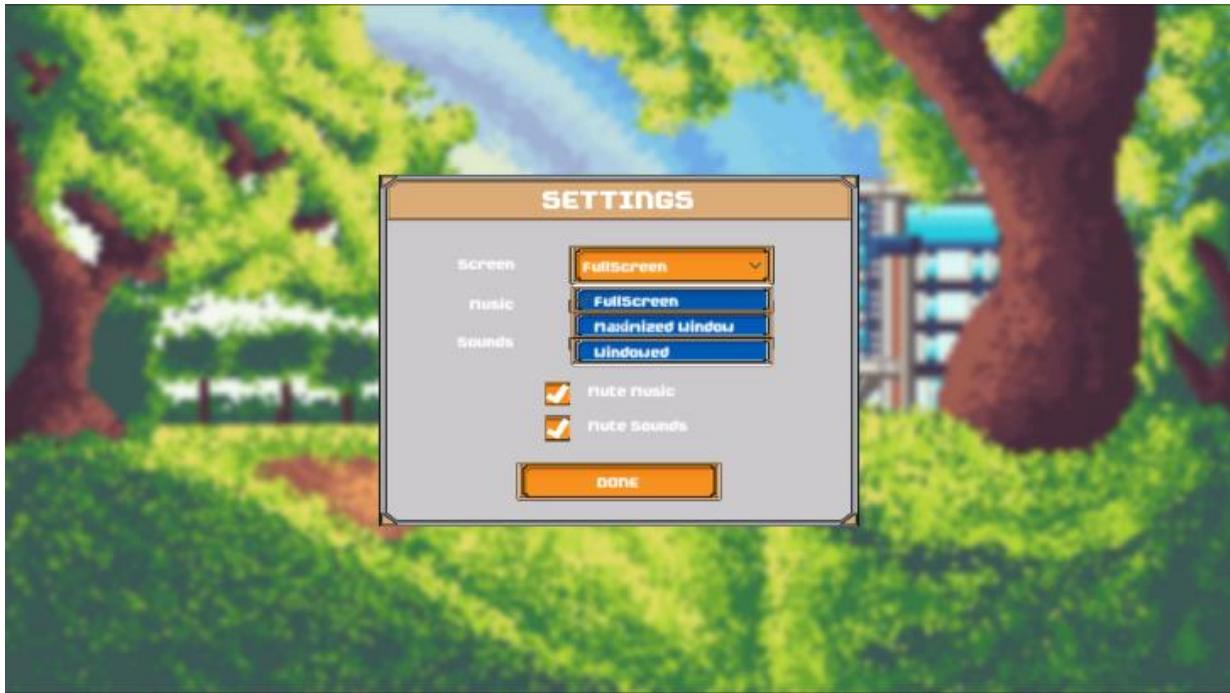


Figure 4.9: Configuration of Settings

In this Figure, this represents the screen for the settings which the user can customize for his/her own leisure which includes the screen type whether Fullscreen, Maximized Window, and Windowed. Also, same goes for the sounds and volume of the application.



Figure 5.0: Main Menu Interface

On this figure, this interface shows up after picking the new game button, it is up to the user whether they pick up on what game mode they want between story mode and multiplayer modes.



Figure 5.1: Story Mode Interface

On this figure, this shows interface for the story mode in the game which comes up with a greeting, the new game, and load game (embedded with save and load system) which are interactable.

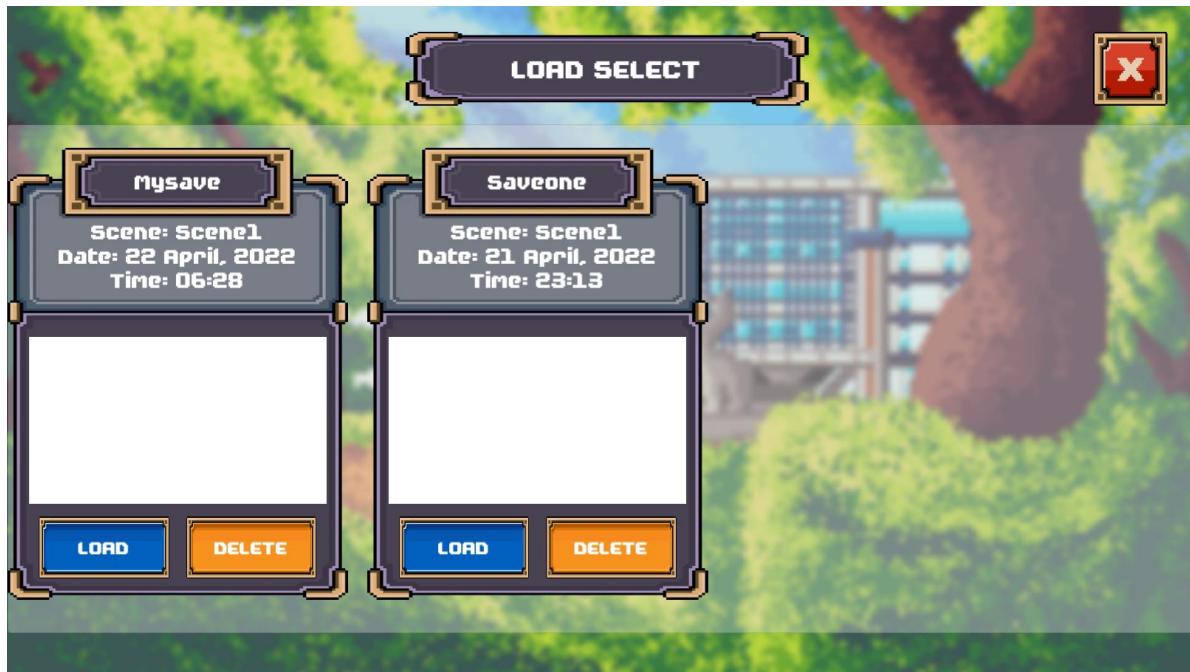


Figure 5.2: Save and Load Directory for story mode

this shows the page of the progresses the player has made in the story mode. If they come to like some scene, they can just return to it any time by accessing the load game on story mode interface.

- **New Game**

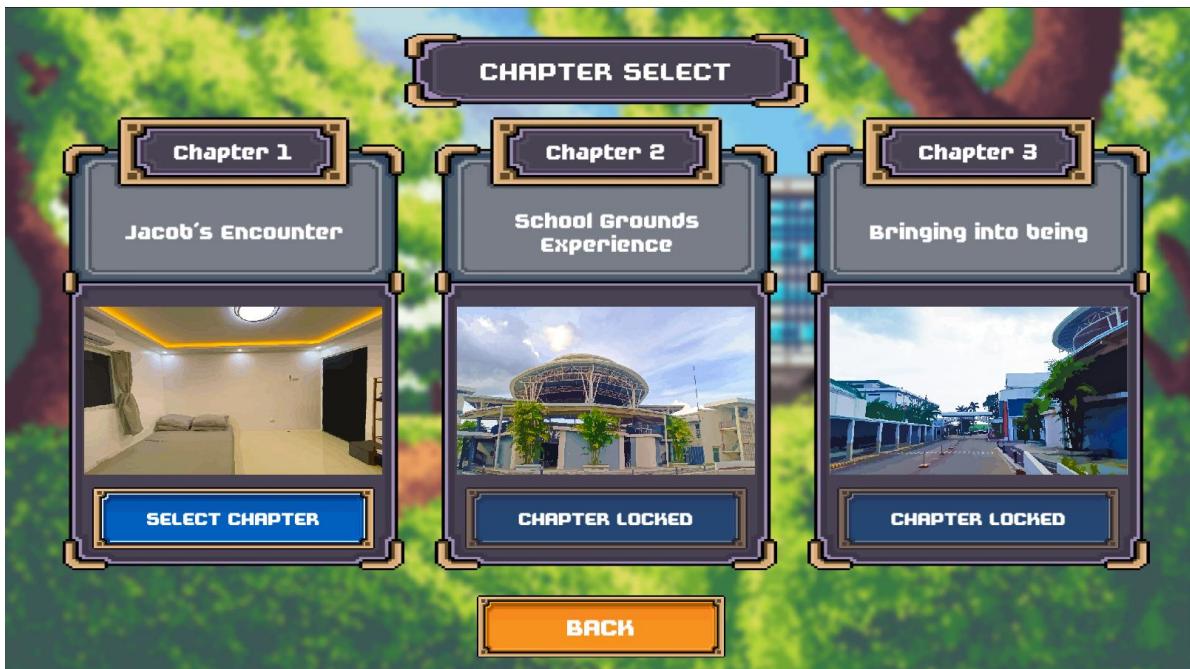


Figure 5.2A: Chapter Selection

In this figure, if the user picks the new game button they will be sent in this interface, the chapter selection for starting the story mode. Refer to Figure 4.0 pg. 39



Figure 5.3: Multiplayer Mode Interface

In this figure, this interface shows up when the user chooses to play in the multiplayer mode and the interface contains of selecting a character and a room.

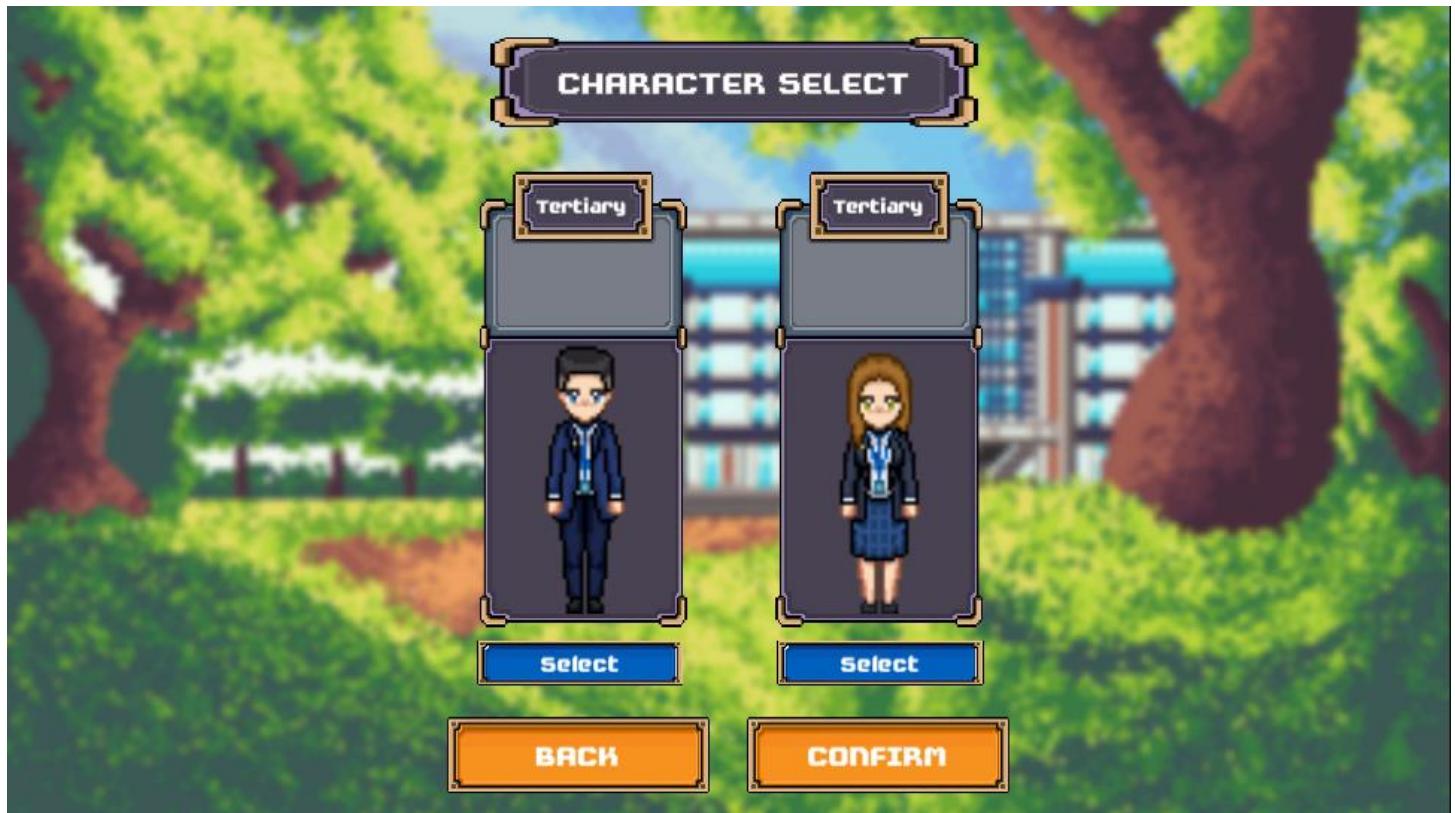


Figure 5.3A: Character Selection

On this figure, this represents the interface for the character selection based on the credentials created and an important part before going in multiplayer mode; the system will not allow the user to go to the lobby interface without a character selected.



Figure 5.3B: Lobby Interface

In this figure, after the user selects his/her own character he/she will be able to create rooms and join rooms of other users.

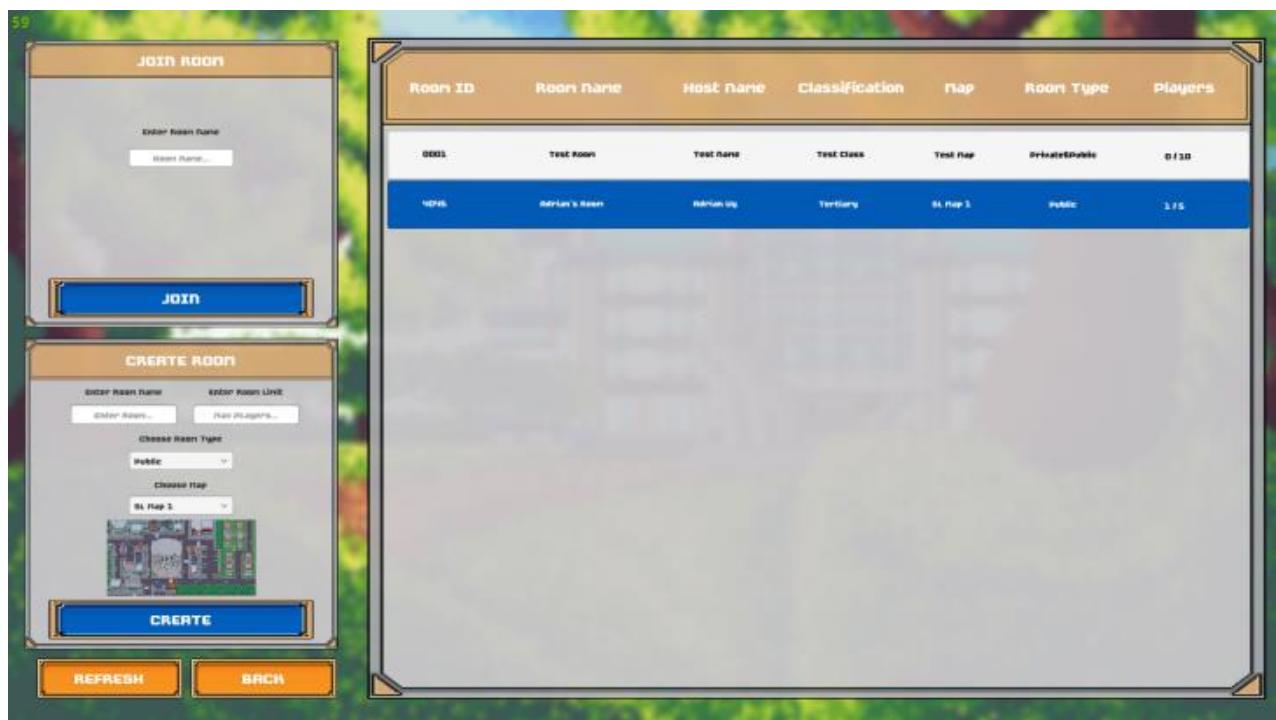


Figure 5.3C: Lobby Interface – Taking part in other user's room

On this figure, this shows that there is an available room where the user can join in and leave, the user needs to enter the room name/code to be able to take part in other player's room.

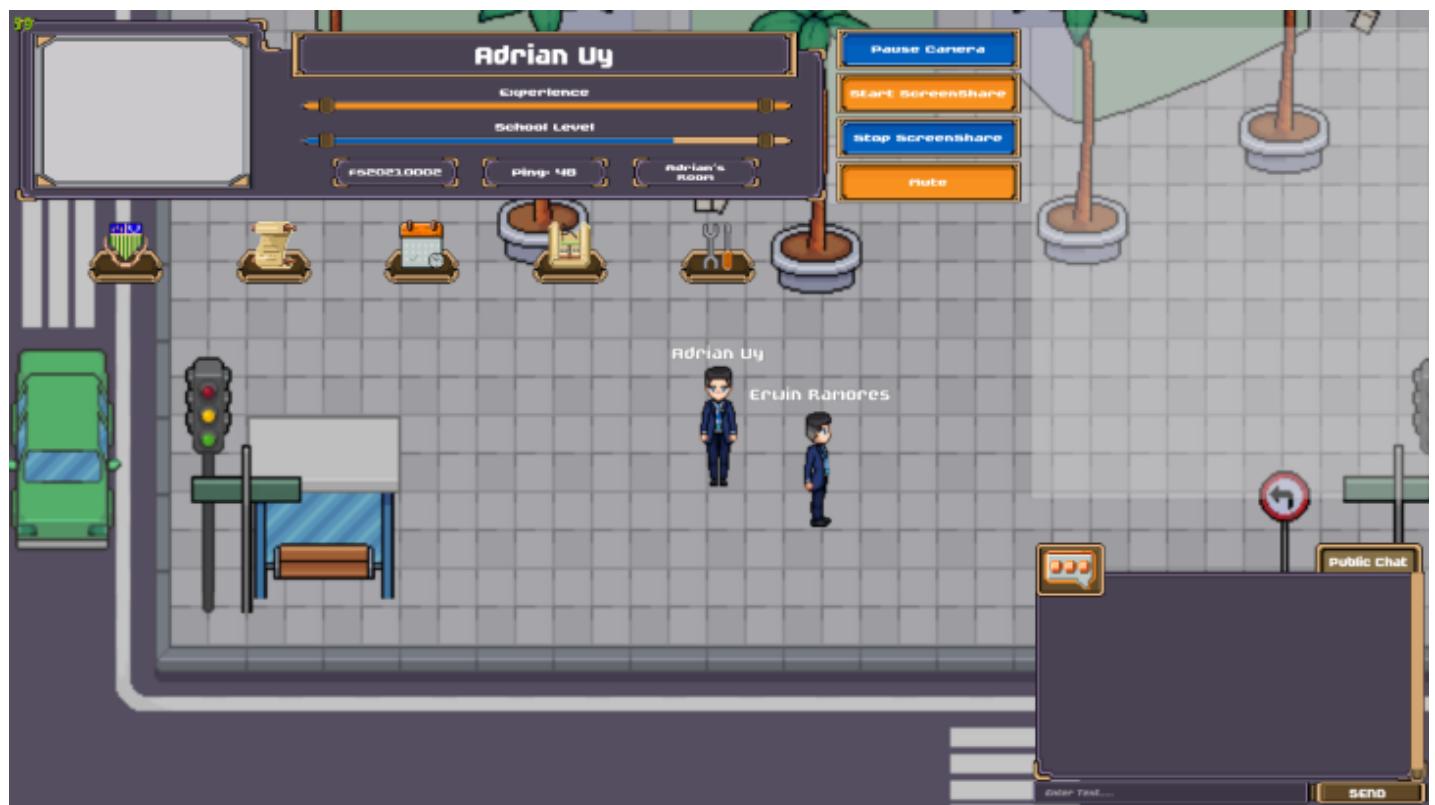


Figure 5.4: Multiplayer

In this figure, this shows that user has entered the room successfully and can interact with other users who are taking part of it too.



Figure 5.5: Settings panel

On this figure, this shows another system configuration which takes place inside the multiplayer room interface where the user can adjust things based on their preferences they want. Refer to figure 4.9

pg. 54

- **Camera Model**

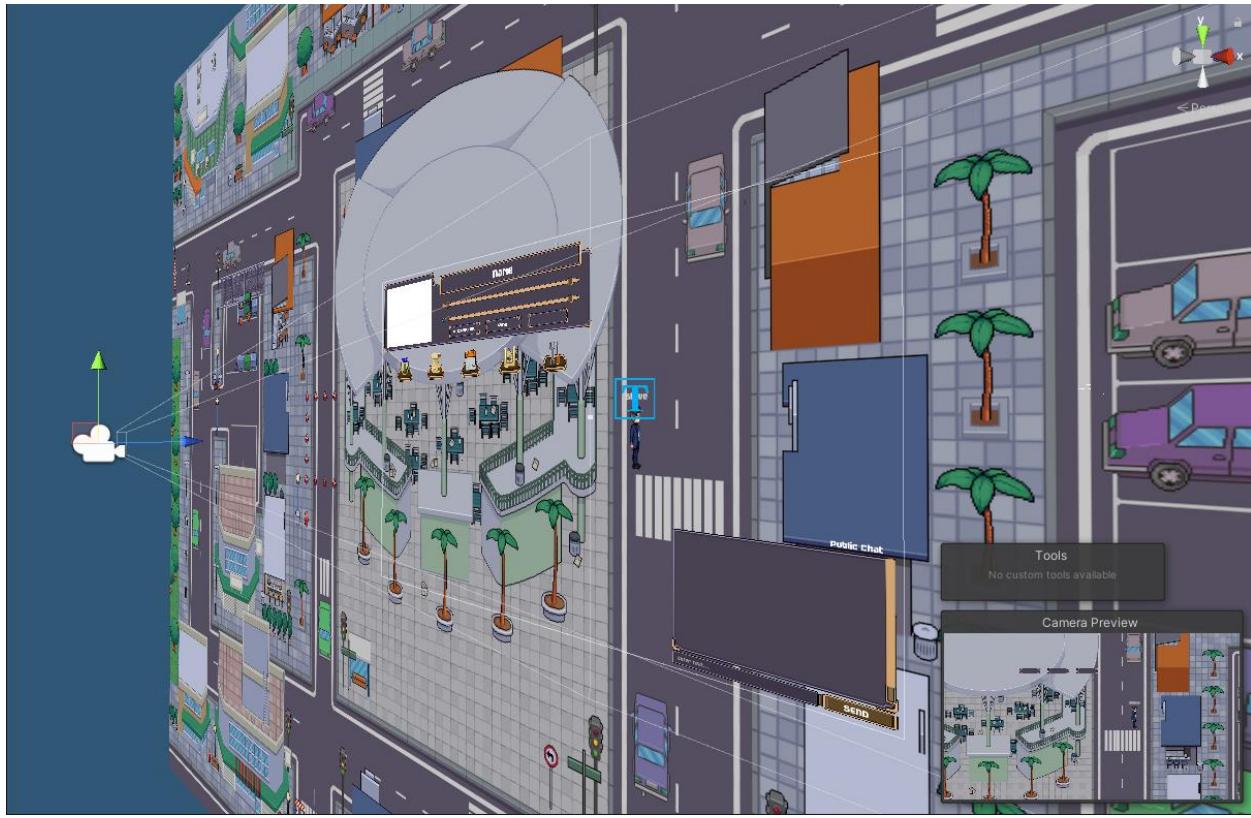


Figure 5.6: 2D Camera Model of Faith Savants

In this figure, this presents the 2d game camera model will be modular and expandable based on the room's map. It features a basic core made up of many components that assure basic functionality, as well as different components and effects that can be applied depending on the situation inside of multiplayer mode and story mode.

Control System

In the game, there are existing controls on the game which comprises things on how they are moving, and function based on the commands that are executed, below is the commands inside the game.

- **Story Mode**

- Mouse = to scroll or navigate through the UI and to choose choices (story mode)

- Spacebar = to interact

Since it's a visual novel and to take note of important parts in some scenes and saving.

- **Multiplayer Mode**

On this part, as for the player movement this is also the same as the in the character movements discussed on pg. 18

But we also implemented, below are the keyboard shortcuts on the room for host and users to make their lives at ease on using the application.

Keyboard Shortcuts

- WASD keys = to move the character or navigate through the map or room
- Tab key = Showing players in current room list
- T = Toggle/remove chat panel
- Y = Toggle Video panel

Audio, Music, and Sound Effects

The following background audio are edited and rendered using the music editor software called Reaper.

Background Music

Story Mode BGM

- Chapter 1 BGM – Sweet Memories.wav
- Chapter 2 BGM – Journey.wav
- Final Chapter BGM – Forgotten Memories.wav

Multiplayer Mode BGM (looped and randomized when played)

- Music of Something.wav
- Beautiful Obsession.wav

- A Day.wav
- I Think I like you.wav
- Lose His Touch.wav
- Remember Your Place.wav
- First Memories.wav
- With My Name.wav
- Home Power.wav
- Your Tomorrow.wav
- So Do I.wav
- World of Nowhere.wav

Sound FX

UI Panels and Buttons

- Cancel.mp3
- Close Menu.mp3
- Confirm.mp3
- Equip.mp3
- Exit.mp3
- Menu Selection.mp3
- Open Menu.mp3
- Pause.mp3
- Resume.mp3
- Saved.mp3

Footsteps

- Concrete 1.wav
- Concrete 2.wav
- Forest 1.wav
- Forest 2.wav
- Grass 1.wav
- Grass Running.wav
- Gravel 1.wav
- Sand.wav

Game art

The 2D element in pixel art stands for 2-dimensional, which the team created and used throughout the entire game (FAITH Savants), is generally associated with flat shapes and objects. The two dimensions in this case are width and height, while depth/length is the additional dimension used in 3D objects.

To put it into perspective, you can imagine a triangle on paper. This is a 2D shape with three sides and nothing else. However, if additional sides and depth are added to the triangle, it becomes a pyramid and a 3D shape. Though 2D designs are quite flat in appearance, more characteristics and uniqueness can be added to such objects through color, line saturation, style, and creativity.

Help System



Figure 5.7: Help System in Multiplayer Mode

This figure represents the panel where the user checks for the shortcut keys and navigation options inside of the game.

CHAPTER IX

SUMMARY, FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the synopsis of the research, focusing on some of the most important parts of the study. The results of the developer survey, as well as the study's conclusions, were used to come up with the findings.

Summary

FAITH Savants: Gamified Learning gave credence to aid the students and teachers of FAITH (i.e. tertiary (year 1-4), fcs (g11-g12), fidelis (g11-12)) in online interaction. Specifically, it aimed to:

1. Integrate a signup and login system for the students and teacher which:

- 1.1 Can upload and download data user credentials.
- 1.2 Can register email and password to the system.
- 1.3 Can sign in and enter the game software.
- 1.4 Can select two (2) different game modes to play.

2. Allocate content for the students and teacher which:

- 2.1. Can share the screen of a specific user in-game.
- 2.2. Can share the camera of a specific user in-game.
- 2.3. Can access audio chat for any user in-game.
- 2.4. Can access text chat for any user in-game.

Findings

Based on the data that the developers had gathered through observations, survey questionnaires, system analysis, design process and debugging, the following are the findings

Game Development for FAITH Savants: Gamified Learning

- A. Graphics Design and User Interface** - The developers created 2D pixelated assets and used different types of graphical tools specifically: Photoshop, Illustrator, Aseprite, TileD. It ensures the clarity and interactability for the students and teachers to make it more user friendly.
- B. Sounds and Music** - The tool used to create the sound effects and background music was from a system generated sound editor application is called Reaper.
- C. Programming Language and APIs** - The tools used to develop the game software and system namely: C# Programming, PHP Programming, Photon Pun 2, and Agora.
- D. Software and Target Platform** - The tool used to develop the whole game is Unity and Windows for the specific platform.
- E. Database** - The tool used to develop the back-end structure of the game is MySQL Database.

Conclusion

Based on the findings, the following conclusions are made:

1. The game successfully meets the smart objectives for software and hardware requirements.
2. The login and sign-up system can be easily accessed by the users.
3. The servers can support up to 30+ individuals per lobby.

4. The developer's knowledge and experience in the software and hardware used was enhanced and adapted.
5. The beta testers concluded that more maps, levels, and sounds was needed to be implemented.
6. The beta testers gave decent positive feedback on the whole game system and development.

Recommendations

The developer of the game system forwards the following recommendations:

1. To finalize the layout of the overall design of the front-end and back-end features as soon as the game had been endorsed.
2. To plan of time and implementation every key feature in a scheduled manner.
3. The developers recommend that the users must have the knowledge for maintaining and navigating through the software code and graphical user interface of the game.

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How to Embed Group Video Chat in your Unity Games: <https://www.agora.io/en/blog/how-to-embed-group-video-chat-in-your-unity-games/>

Designing a menu in computer games: <https://medium.com/@alexstargame/designing-a-menu-in-computer-games-c8fbaf7a3d9a>

APPENDICES

Appendix A: Survey and Result

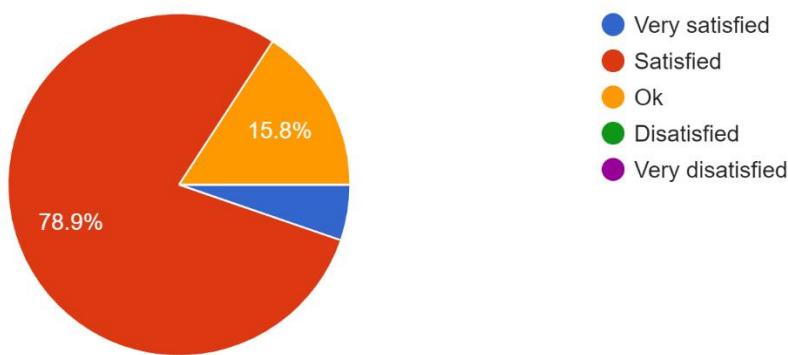
FAITH Savants: Gamified Learning - Survey

Google Form Survey Responses

Let us know what you think about our game by answering the questions down below:

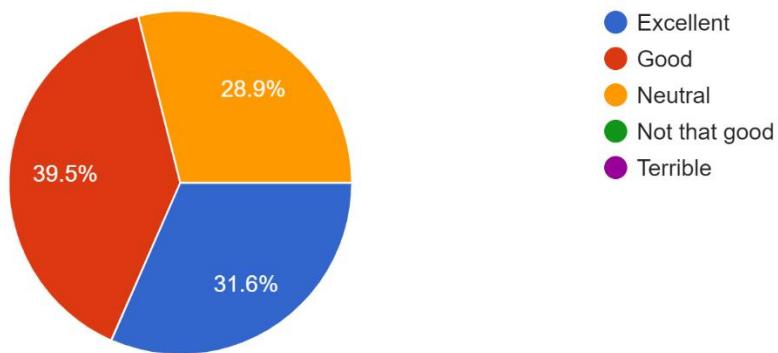
How was the game system experience?

38 responses



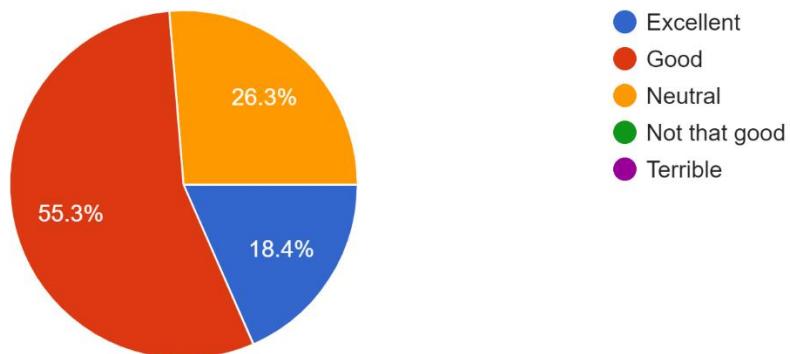
Rate the user interface of the game

38 responses



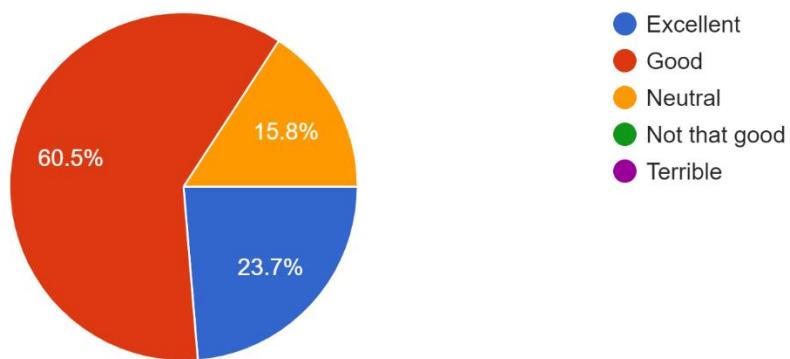
Rate the sprites and maps of the game

38 responses



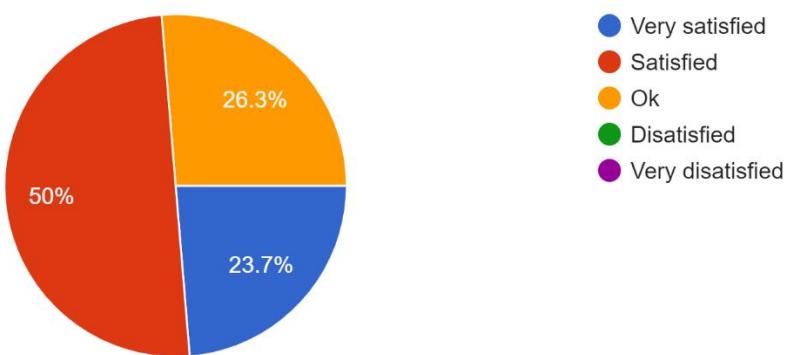
Rate the functionality of the game

38 responses



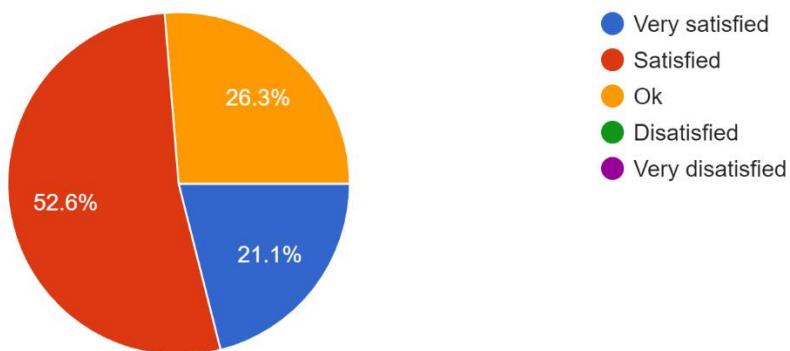
Pick your satisfaction rate for the story mode of the game.

38 responses



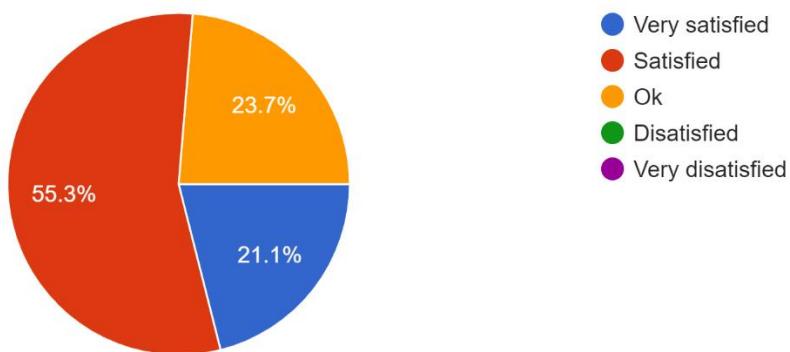
Pick your satisfaction rate for the multiplayer mode of the game.

38 responses



Pick your satisfaction rate for the overall design of the whole game.

38 responses



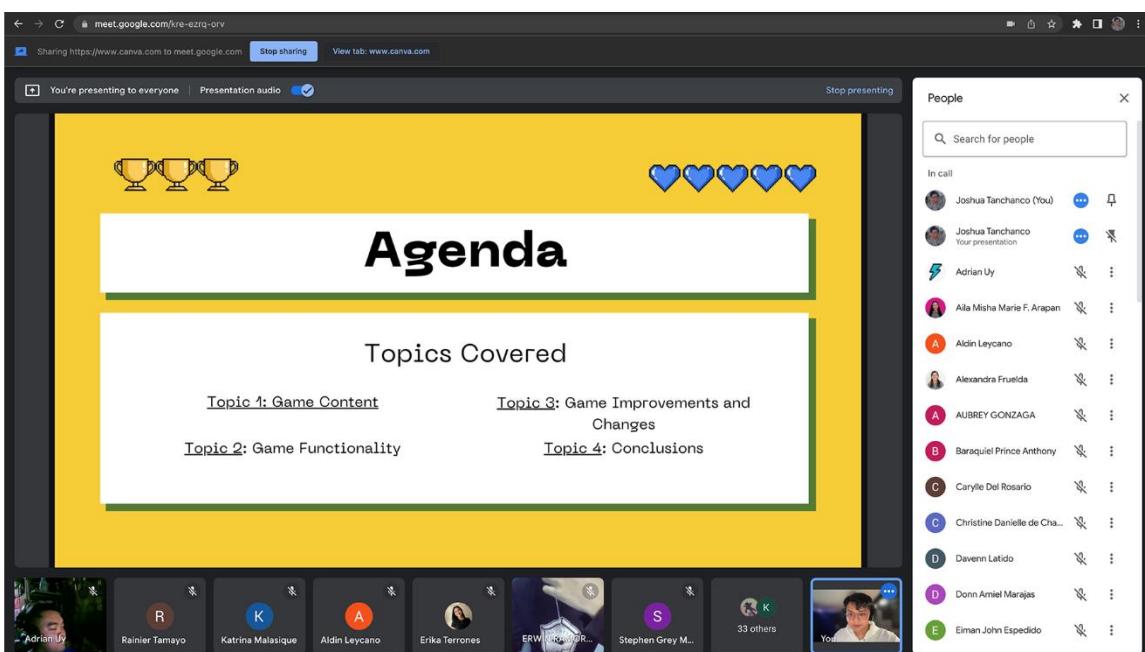
Appendix B: Testing

FAITH Savants: Gamified Learning – Game Testing



The screenshot shows the FAITH Savants game running inside a Google Meet session. At the top, there are sharing and presentation audio controls. The main area is the same classroom scene as the first screenshot. At the bottom, there is a participant list showing various users and a public chat window. The public chat window contains the same Tagalog messages as the previous screenshot.

Appendix C: Proof



A screenshot of a Google Meet session. At the top, it says "Sharing https://www.canva.com to meet.google.com". There are buttons for "Stop sharing" and "View tab: www.canva.com". Below this, the slide content is displayed:

You're presenting to everyone | Presentation audio Stop presenting

Thank you!
That is all, thank you for your participation

The participant list shows 35 people, including the host and several others whose names are partially visible.

A screenshot of a Google Meet session, identical to the one above, sharing the same Canva presentation. The slide content is identical:

You're presenting to everyone | Presentation audio Stop presenting

Thank you!
That is all, thank you for your participation

The participant list shows 35 people, including the host and several others whose names are partially visible.

Appendix D: Hardware and Software Requirements

FAITH Savants Hardware Requirements (Minimum)

- **CPU:** Intel i3 8th-gen processors
- **CPU SPEED:** 2.0 Ghz
- **RAM:** 2.5 GB
- **OS:** Windows Xp, Vista, 7, 8/8.1, 10
- **VIDEO CARD:** 128mb Video Memory, capable of Shader Model 2.0+
- **PIXEL SHADER:** 2.0
- **VERTEX SHADER:** 2.0
- **FREE DISK SPACE:** 100 MB
- **DEDICATED VIDEO RAM:** 128 MB

FAITH Savants Hardware Requirements (Recommended)

- **CPU:** Intel i3 10th-gen processors
- **CPU SPEED:** Dual Core 3.0 Ghz
- **RAM:** 4GB
- **OS:** Windows 7, 8/8.1, 10
- **VIDEO CARD:** 256mb Video Memory, capable of Shader Model 2.0+
- **PIXEL SHADER:** 2.0
- **VERTEX SHADER:** 2.0
- **FREE DISK SPACE:** 200 MB
- **DEDICATED VIDEO RAM:** 256 MB

End of Documentation