CMPE 491

SENIOR PROJECT 1

Project Name

Astroni

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1. Introduction

The suggested "Astroni" systems are described in this study, along with functional, non-functional, and pseudo-requirements. It describes many of the project's key elements, including choices made on the scenario of the game, system models, and interface design. An overview of the project's technical implementation, including information on its non-functional and functional needs, is provided in the report. It describes the system models and interfaces that were utilized to construct the game and offers insights into the design and decision-making process of the project.

We provide a synopsis of "Astroni", including its gameplay components, storyline, and game design, in this study report. The goal of the adventure game "Astroni" is to provide the player a remarkable experience about the medieval world that we have imagined. We make sure that the technical parts of the project are easily understood by customers and stakeholders by providing thorough descriptions of the proposed systems and their underlying mechanics in our report. To delineate the coding portion of the project, we offer interfaces along with an Object and Class Model. These subjects provide explanations for the project's design, dynamic models, and object and class models in addition to providing answers to important queries about the technical execution of the project. Overall, "Astroni" is well-guided by this analysis report, which offers insights into the game's design, playability, and technical execution.

2.Proposed System

2.1. Overview

The functional and non-functional aspects of the game, together with the system models needed to implement them, are all included in the "Astroni" proposed system. This covers, among other pertinent topics, a thorough description of the game's characters, plot, gaming mechanics, and UI design. This proposed system explains the technical specifics and implementation details of "Astroni" while giving a summary of the game's functional and non-functional components. With its thorough examination of the several features and system models incorporated into the game, this suggested system, taken as a whole, provides insightful information on the technical and artistic aspects of "Astroni".

2.2. Functional Requirements

. **Character Controls:** Emelcuil's responsive mobility controls let players move between areas with ease. Controls for interacting with the environment, characters, and objects.

Quest System: A journal or quest log to record Emelcuil's efforts in locating Astroni.The player is guided through several tunnels and areas with the help of clear objectives and waypoints.

Dialogue System: A branching dialogue system influenced by the decisions made by the player that impacts interactions with other characters. Discussions with the wise man and other figures revealing details regarding the Astroni mythology.

Relationship Mechanics: Based on the player's interactions and decisions, the tale is influenced by the relationships between important characters. Dynamic character interactions that are influenced by the relationships between the players and the story.

Interactive Environments: These are settings that have riddles, challenges, and interactive components that need to be solved to advance. Players can find more lore or rewards by exploring hidden regions or secrets.

Stardust Mechanism: Provide a method for gamers to track Astroni by implementing a stardust mechanism.Emelcuil is guided through various areas and passageways by stardust.

Battle System: Create a system that gives Emelcuil a variety of skills if the game has battle. diversity of enemies and increasing difficulty as Emelcuil faces new obstacles.

Character Progression: Emelcuil's skills and qualities are mapped out using a skill tree or leveling system.Items and equipment that improve Emelcuil's performance.

User Interface (UI): An intuitive and user-friendly UI that shows character relationships, quest details, health, and stardust levels. Players can alter the music, visuals, and control settings with these options. Engaging visual design with a variety of characters, settings, and atmospheric effects is part of the audiovisual design. immersive sound design and soundtrack that improves the player experience and goes well with the game's story.

Save System: Players can go back and revisit important story sections with the regular autosave option and manual save slots.

Platform Compatibility: Verify that the game is compatible with as many gaming platforms as possible (PC, console, mobile).

Testing: Comprehensive testing to find and address any bugs, glitches, or performance problems is known as bug testing and quality assurance.

Use artificial intelligence (AI): To create non-player characters that have a range of responses and behaviors.AI foes that are adaptive to create difficult encounters.

2.3. Non-Functional Requirements

Performance: On most platforms, the game ought to load in a fair amount of time. The gameplay is fluid and responsive, with very no delay or lag. Smooth transition between sections and areas.

Dependability: Playing the game normally shouldn't cause it to crash or freeze. autosave feature to avoid losing progress in the event of an unplanned exit.

Adaptability: Compatibility with various operating systems and hardware requirements. Adherence to the industry's requirements for creating video games.

Utilization: Controls and UI are intuitive, making it simple for players to navigate. features that make games accessible to players with disabilities. Tutorials that are brief and easy to follow to assist players grasp game mechanics.

Dependability: The game ought to run smoothly and function uniformly on various gadgets and operating systems. Reduce the likelihood of crashes or bugs that break the game.

Reliability: Code that is clear and well-documented to make maintenance and changes easier. flexibility to make it easier to add new features or content.

Place-Based: Support for many languages and cultural factors for a worldwide viewership.

Replication and Backup: Backup your data and player progress often to avoid losing it in the event of a technical malfunction.

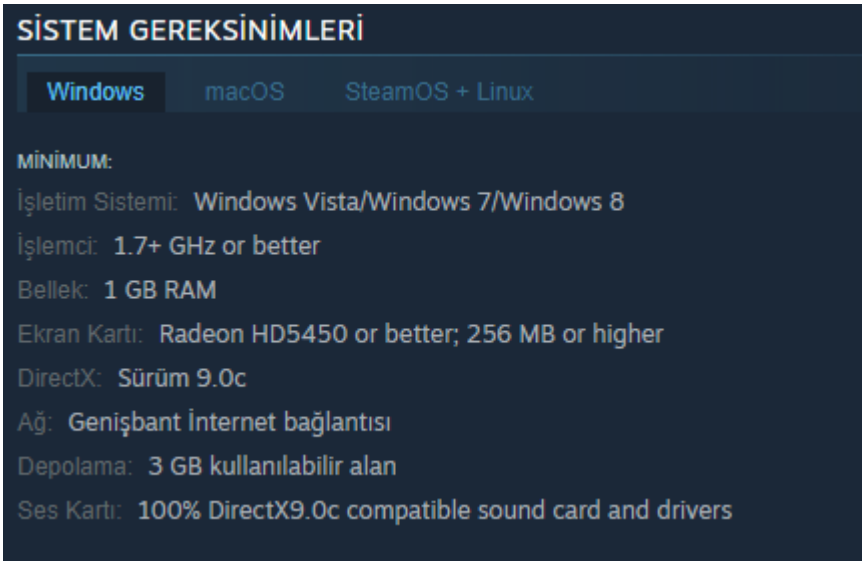


Figure 2.3.1: Don’t Starve Together

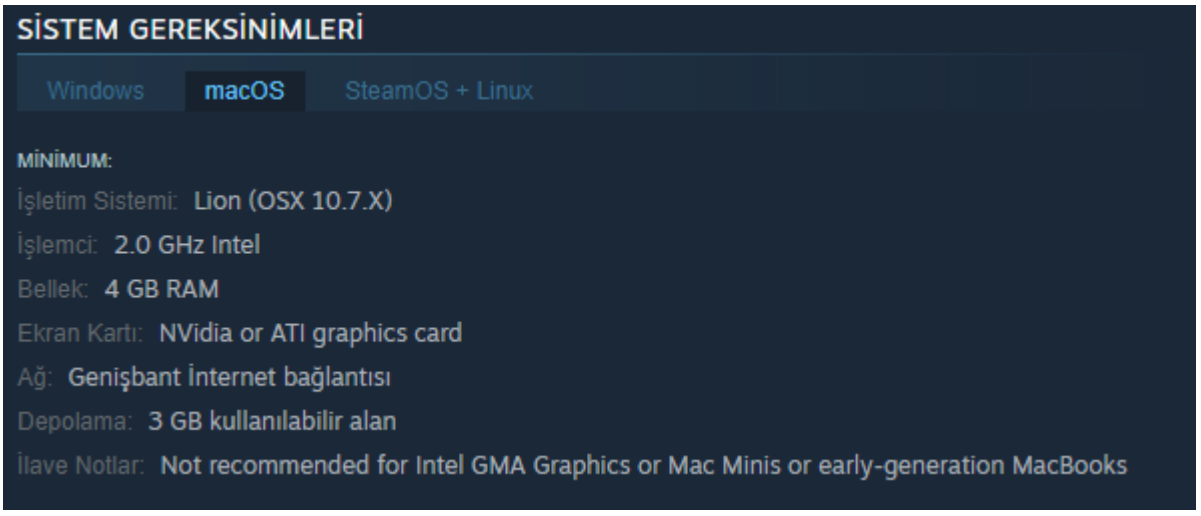


Figure 2.3.2: Don’t Starve Together

2.4. Pseudo Requirements

Captivating Storytelling: The game should enthrall players with a captivating story that pushes them to investigate Eldoria's universe.

Artistic Consistency: To improve immersion and visual appeal, keep the game's art style constant.

Emotional Impact: To make a game more memorable and profound, designers should incorporate plot and gameplay aspects that arouse a variety of emotions.

Balanced Difficulty: Make sure the difficulty curve is balanced so that players are challenged but not overly frustrated.

Player Agency: Provide players a sense of agency by letting them make significant decisions and experience the repercussions of those decisions.

Replay ability: Create a game that can be played again and again, with many options offering diverse results and experiences.

Audio: Compose a soundtrack that adds to the overall ambiance and heightens the game's emotional tone.

Visual Appeal: The game's graphics should be visually appealing and appealing to the intended audience. Since there isn't an artist on our team, we try to look through our sources for 2D models and identify sets that work well together aesthetically so that we can provide more detailed information.

Tutorial: To assist players in learning how to play and navigate the game, tutorials should be included.

2.5. System Models

2.5.1 Scenarios

Scenario: A player launches a fresh game.

Prerequisites:

• The game is accessible to the player.

• The player's device can run the game.

Stages:

1. The user initiates the game.

2. The user chooses "New Game."

3. Upon starting the game, a new level loads and a tutorial is shown.

4. The game loads the scenario from where the player left if they load an already-played game.

Scenario: Player pauses the game.

Prerequisites:

• The player has a gadget that can run the game.

• The player is within the game.

Stages:

1. The user presses the "Pause" button to put the game on hold.

2. The menu to pause opens.

3. The "Settings" option is tapped by the player.

4. The menu for settings appears.

5. The "Save Game" option is tapped by the player.

6. The player receives a confirmation notice and the game is saved.

7. The player selects "Resume" after leaving the "Settings" window. The game goes on.

Postconditions:

• The game picks up where it left off.

• The "Quit Game" option in the pause menu can be tapped by the player to end the game.

• By tapping the "Close" button, the player can end the pause menu.

Scenario: Player controls the main character.

Prerequisites:

• The game is open, and the player is there.

• The player's device can run the game.

Stages:

1. The main character is controlled by the player.

2. There is 2D movement for the main character.

3. The protagonist can run.

4. The protagonist can communicate with items

5. The main character has 2D object movement capabilities.

Postconditions:

• The player can move the main character wherever they choose.

• The protagonist took off running.

• The protagonist ducked.

• The user was able to interact with items.

• The object's location was altered by the player.

Scenario: Dialogue and Relationship Mechanics.

Preconditions:

• Emelcuil is in an area where an NPC of a different race is present in the running game. The NPC and the player have struck up a dialogue.

• Throughout the exchange, the player has access to the diplomatic discourse option.

Stages:

1. As Emelcuil gets closer to the NPC, a dialogue interface opens.

2. From the list of options, the player chooses the diplomatic dialogue option.

3.Emelcuil converses diplomatically with the NPC about subjects pertaining to the Astroni tale.

4. The NPC expresses agreement or gratitude in a positive manner in response to the diplomatic approach.

5. To represent the positive connection, the game changes the relationship meter between Emelcuil and the NPC, making it higher.

6.The NPC gives Emelcuil useful information regarding the Astroni mythology based on their favorable interaction, including hints and details that help him in his mission.

7. After gaining knowledge, the player receives a visual or aural prompt from Mellcuil acknowledging the information.

Postconditions:

•After the diplomatic exchange ends, Emelcuil and the NPC either split up or carry on depending on how the story unfolds.

•The relationship meter is updated for any upcoming interactions with the NPC and reflects the positive adjustment.

•The data gathered during the exchange is kept in the player's knowledge base or mission log for future use as the game progresses.

Scenario: Combats.

Preconditions:

•Emelcuil finds himself within a dimly lit cave while the game is going.

•A formidable foe confronts him, resulting in a fight confrontation.

•Emelcuil possesses both attacking and defensive skills.

•Prior to the encounter, the stardust levels are set to a typical level.

Stages:

1. A battle sequence begins as Emecuil meets a formidable foe in the dimly lit cave.

2. The player makes use of the assigned controls to combine their attacking and defensive skills.

3. Based on Emelcuil's activities, the game dynamically modifies the enemy's behavior, forcing it to strategically react to the player's movements.

4. The game assesses the efficiency of Emelcuil's moves and the enemy's countermoves, taking timing, precision, and strategy into account.

5. After the battle is over, the game switches back to the exploration mode with the modified stardust levels.

Postconditions:

• The difficulty of the opponent is either defeated or retreats, which affects the overall story and might affect future encounters in the dark cave or elsewhere.

• Emelcuil's health and status are updated based on the outcome of the combat.

Scenario: Stardust Guidance.

Preconditions:

•Emelcuil is in a vast area with numerous paths, and the game is currently running.

• The stardust navigation system is operational and has been initialized.

Stages:

1. When Elmelcuil enters a large, open space with multiple branching paths, the player is faced with a decision.

2. The stardust system activates, releasing luminous particles or visible particles to indicate that it is ready for direction.

3. The player watches the behavior of the stardust, noting its movement or focus in a particular direction.

4. The stardust moves or floats in the desired direction to gently direct the player toward the right path. It could group together or get stronger to indicate the best course.

5. The stardust system gives players freedom of exploration even as it guides them, allowing them to stray from the recommended path if they so want.

6.To promote exploration and interaction, the game may incorporate interactive features, puzzles, or sites of interest along the guided path.

Postconditions:

•The stardust guiding mechanism doesn't stop working until Emelcuil reaches a crucial decision point or milestone.

• Without giving clear instructions, the player is gently guided toward the appropriate route, promoting a sense of exploration and discovery.

•As Emelcuil advances, the stardust system deactivates or modifies, enabling fresh direction or indicating the area's successful navigation.

Scenario: Community Interaction.

Preconditions:

•Players are actively exploring the game environment while it is operating.

•There is a hidden lore item in the game that has to do with Astroni's location.

Stages:

1. As players explore the game world, they come upon a hidden lore object that offers hints or clues regarding Astroni's location. This object might be an inscription, book, or artifact.

2. An in-game popup alerts the player to the significance of the find and offers the choice to share it with the community when they uncover the lore item.

3. You can choose to share the finding on Twitter, Facebook, or in the game's community forums using the choices provided by the game.

4. The game creates a pre-populated message with a teaser or fascinating clip from the found lore piece to expedite the sharing process. The message is designed to pique other players' curiosity and promote interaction.

5. Before sharing, players can alter the message that is generated by adding personalized remarks or more context.

6. The pre-populated or personalized message and the player's shared finding are shared on the selected social media network, connecting with a larger gaming community.

7. By sharing their discoveries, gamers that actively support the community are acknowledged by the game. This might be accomplished through leaderboards, in-game achievements, or other means of acknowledgment.

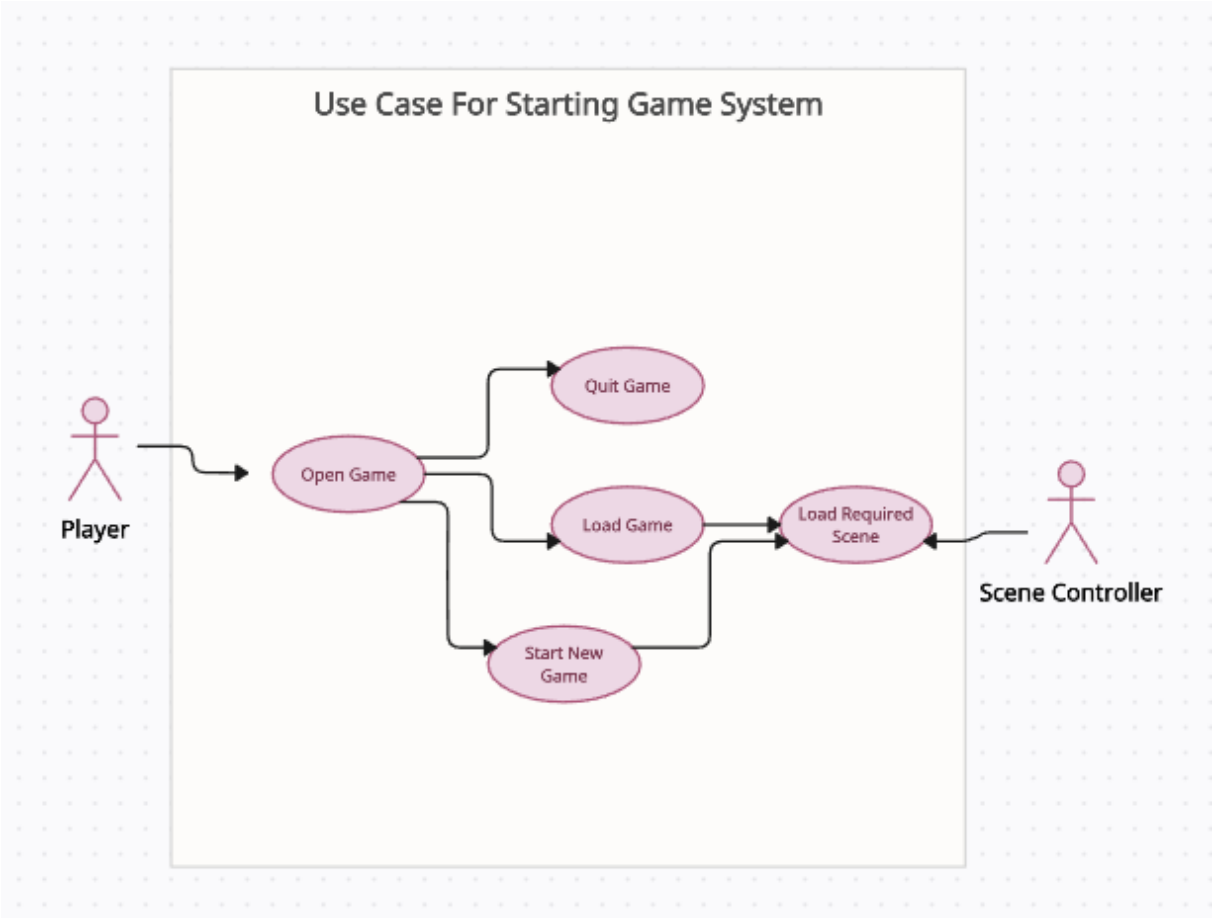
Postconditions:

• Other players may react to the shared discovery, fostering a sense of shared exploration and discussion within the community.

• The lore item discovery is posted on the selected social media channel, enhancing community engagement.

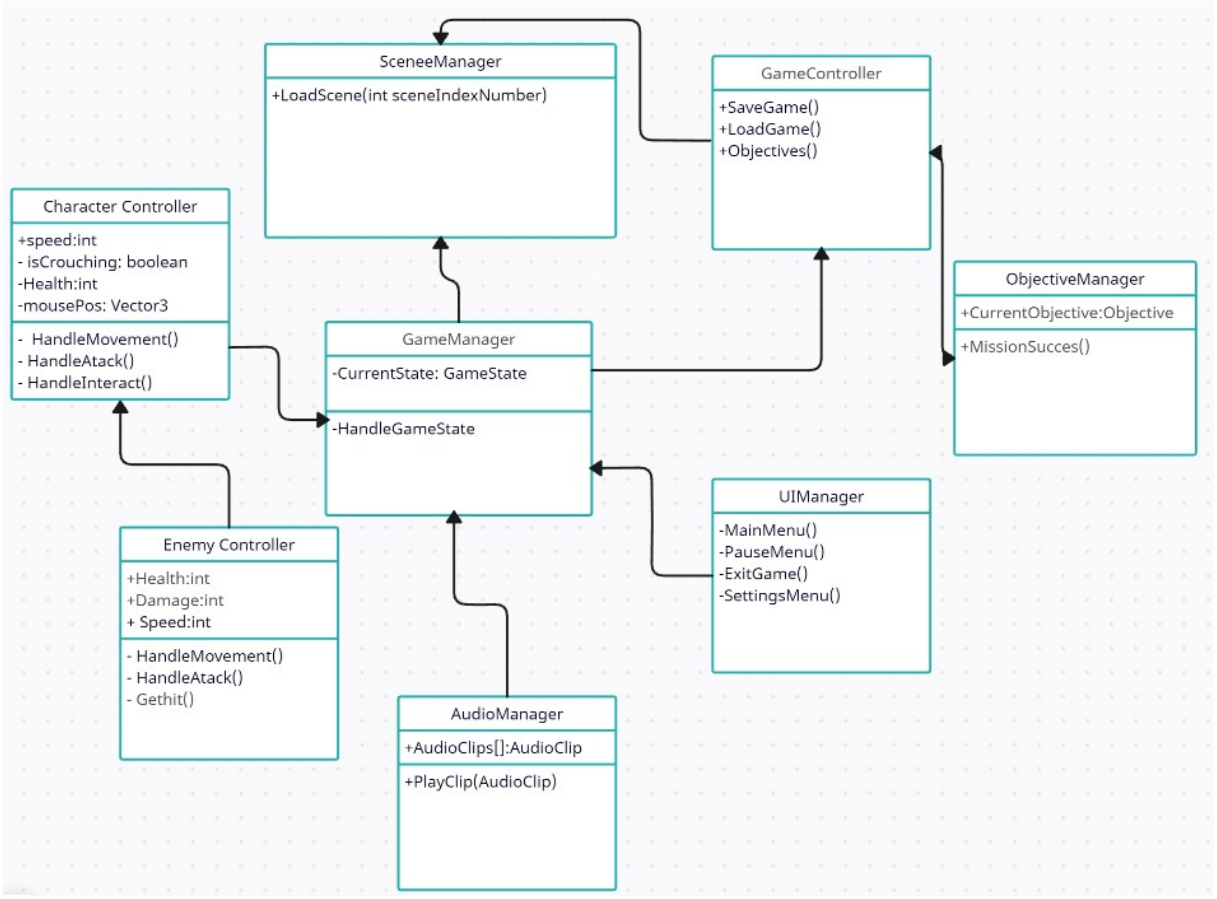
•The player's contribution to the community is reflected in the in-game community recognition system.

2.5.2 Use Case Model

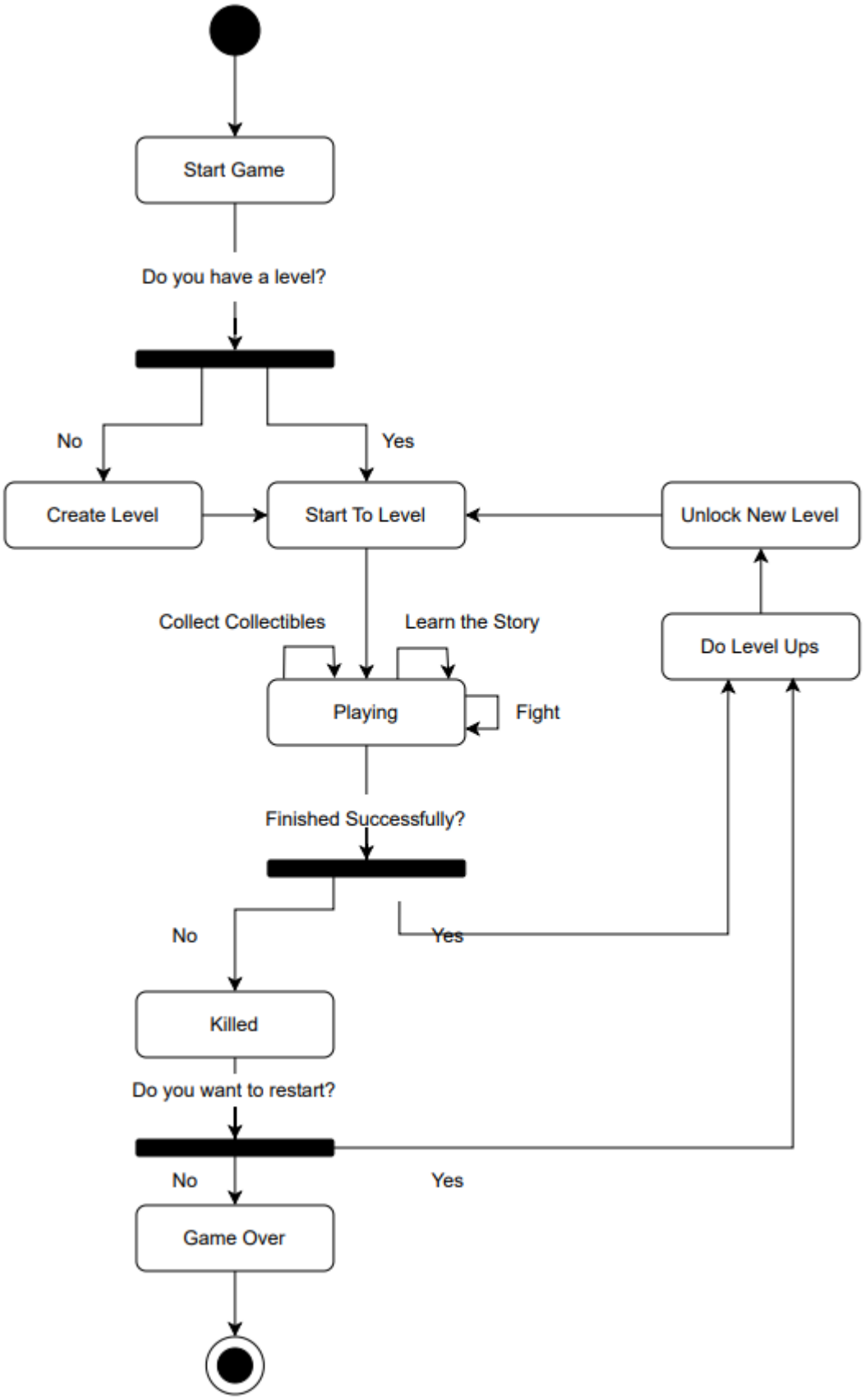


The player launches the game and activates the initial gaming system. The player can start a new game, load a saved game, and exit the current one. The scene controller loads the scene that the player needs.

2.5.3 Object And Class Model

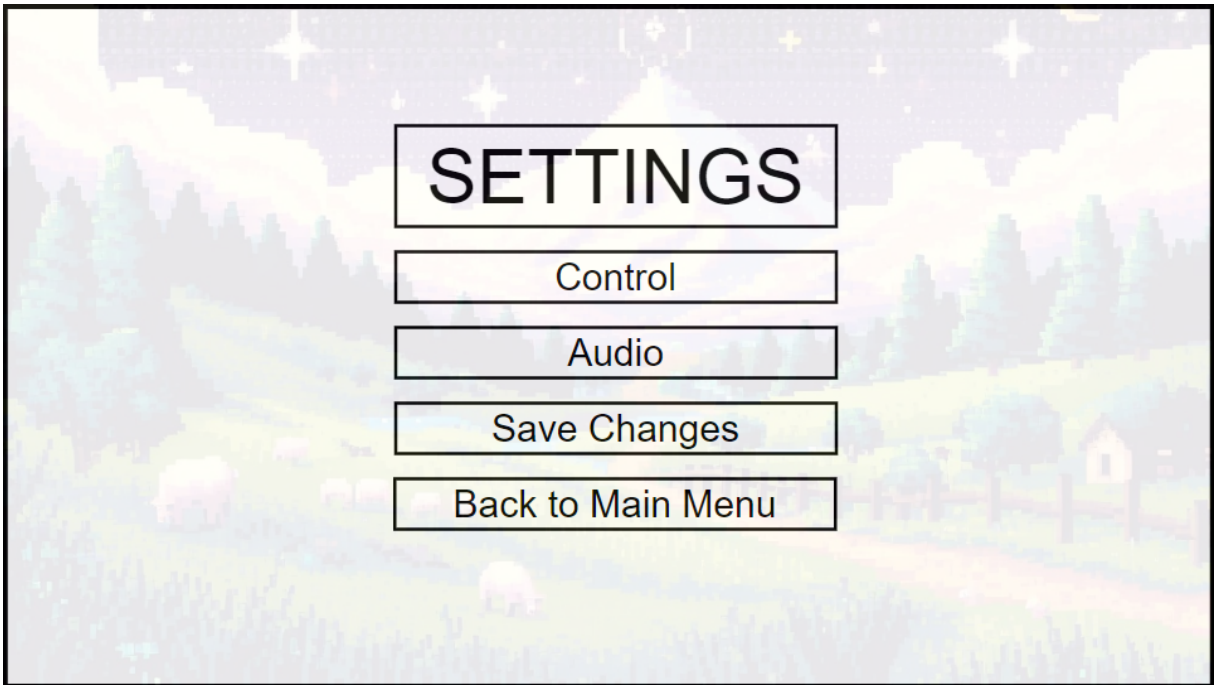


2.5.4 Dynamic Models



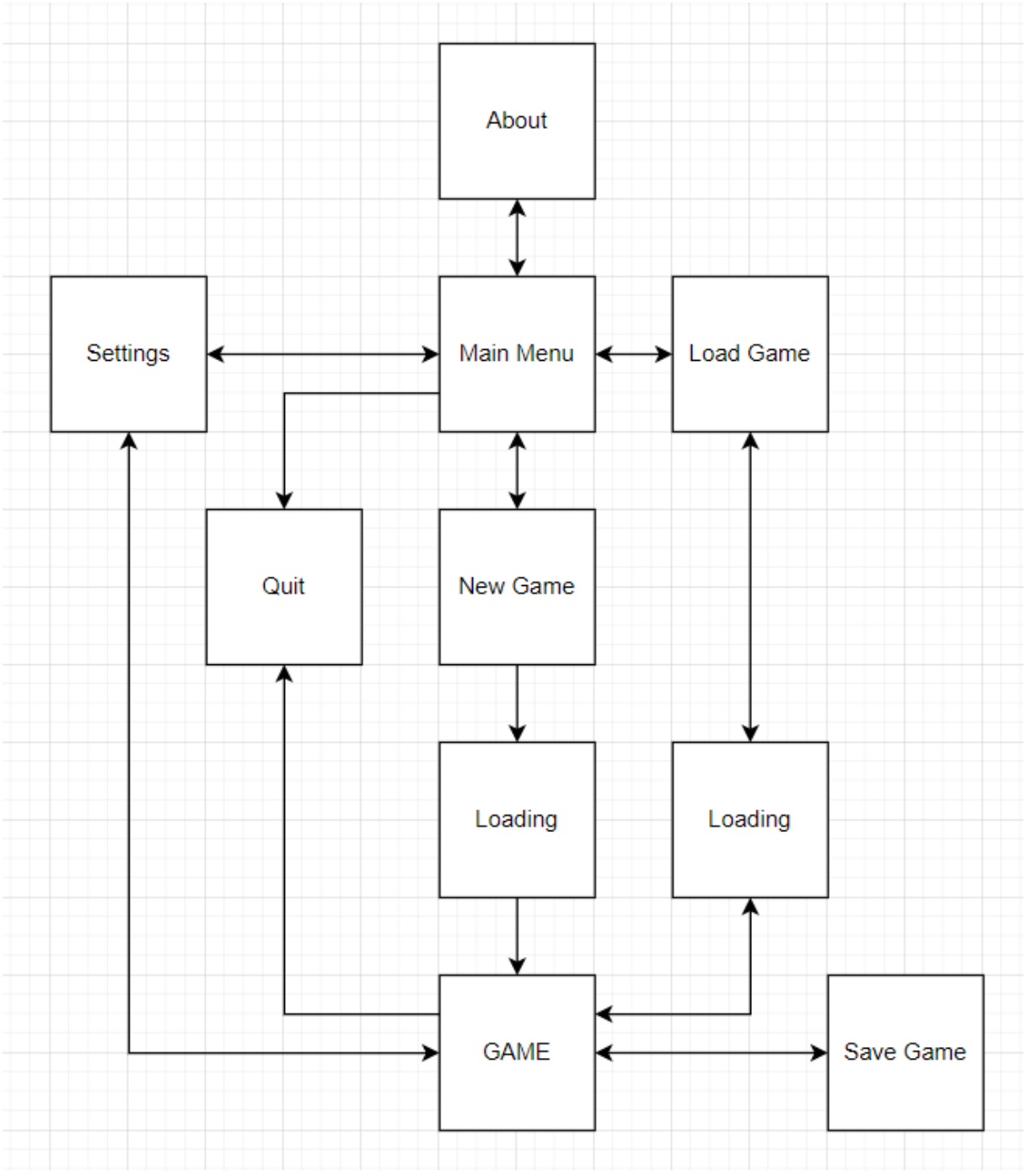
2.5.5 User Interface – Navigational Paths and Screen Mock-ups

FigureUI_1: The Main Menu that contains options that the player could choose. This image is created by using www.drawio.com.



FigureUI_2: Under the Settings option, here are the other options that the player could choose. This image is created by using www.drawio.com.

Navigational Path



3. Glossary

Astroni: The missing star that forms the core of the Eldoria tale. Emelcuil sets off on a quest to solve the secrets of Astroni.

Emelcuil: The game's main character is a young elf who is drawn to Astroni's mythology. Throughout the game, players take control of Emelcuil as he travels through several locales and faces a variety of obstacles.

Adventure Game: In order to advance through an engrossing plot, players in adventure games often traverse and interact with the game world through rich narratives, difficult puzzles, and exploration.

Player: The player is the real person playing the game.

Mission: A specific objective or task assigned to Emelcuil, the protagonist, to advance the game's storyline or achieve a particular goal.

Pause Screen: The Pause Screen is a menu that appears in-game and allows the player to alter settings, end a session, save their progress, or take a break from real-world gaming.

Vector2: Struct in Unity Engine. This structure is used throughout Unity to pass 2D positions and directions around. It also contains functions for doing common vector operations.

4. References

https://store.steampowered.com/app/322330/Dont_Starve_Together/

https://app.creately.com/d/kTbUcMy6k2b/edit

https://www.drawio.com/