Requirements

Group Number: 4
Group Name: THEEMD
Members: Mikaella Loppnow, Tom Daly, Harriet Kirby, Ethan Buss, Dillon Pandya, Ereife Odusi

Requirements Elicitation and Specification

SSON

“The game will be a single-player game lasting 5 - 10 mins, where the goal is to make the main character, a second-year computer science student, pass their exams whilst managing daily tasks.”

In the development of our 2D RPG game, the elicitation and negotiation of requirements were conducted through a structured process to ensure that the final game would meet the expectations of both the team and the client.

Initially, a thorough analysis of the client's brief was supplemented with brainstorming sessions that included talking about features we would want from a 2D game ourselves and how we could incorporate ideas from the brief into the game. This approach ensured a diverse range of needs and desires were captured from the start and meant we all had a clear understanding of what we wanted the game to include and how it was going to function overall.

Subsequently, we conducted an interview with our client where we delved deeper into specific user preferences and functional requirements by asking them a wide variety of questions categorised by the question type and touching upon both general and specific aspects of game functionality. We recorded this interview, and felt that we asked a lot of good questions and got a wider understanding of the brief and the game. By recording it we were able to have subsequent reviews of the interview and refine the requirements even more than previously.

The information gathered was then documented using user stories and use cases, which allowed us to prioritise features effectively.

The negotiation phase, where we made final tables of the requirements and made sure everyone had the same idea of what we needed to do, involved reconciling conflicting requirements. This phase was critical, as it involved weighing various stakeholder interests against technical feasibility and project constraints. Through iterative discussions, we achieved an overall agreement by discussing potential implementations and how they would impact on the game experience.

The requirements are presented in their current structured format of tables as shown to be effective in the lectures provided and suggests an organised presentation for clarity and comprehensiveness. This approach facilitates ongoing review and validation, ensuring the requirements remain aligned with the project's objectives and constraints and if they do need to be changed, that can be easily done. This dynamic approach to requirements specification is echoed in the Agile software development cycle which we, as a group, have chosen to follow and is critical for the adaptive development process in our game design.

User and Systems Requirements

User Requirements table

ID	Description	Priority
UR_CHAR_CONTROL	Users shall control a character and be able to interact with map locations.	Shall
UR_CHAR_SELECTION	Users shall be able to pick their character avatar before the game starts.	Shall
UR_UX	The game shall offer a pleasant user experience	Shall
UR_GAME_TIME	Users shall be able to control their characters for “16 hours” of in-game time	Shall
UR_DEVICE	Users may be able to adjust the screen size to their device	May
UR_ACTIVITIES	Users shall be able to complete different activities in the map	Shall
UR_SCORE	Users shall be able to see their score.	Shall
UR_REPLAY	Users shall be able to replay game once they reach the end	Shall
UR_END_GAME	Users shall be able to quit the game once they are done.	Shall
UR_FEEDBACK	Users shall be acknowledged when they complete a task.	Shall
UR_TUTORIAL	Users shall receive a tutorial at the beginning of the game.	Shall

Functional Requirements table

ID	Description	User requirement
FR_DAY_END	The system shall never allow users to stay awake past the designated day hours of in-game time	UR_GAME_TIME
FR_CHAR_CONTROL	The system shall allow the user to control the character using WASD controls on the keyboard	UR_CHAR_CONTROL
FR_CHAR_BARS	The system shall display the character’s abilities bars	UR_ACTIVITIES
FR_AVATAR	The system shall display different character avatars for the user to choose from in the initial screen.	UR_CHAR_SELECTION

FR_COUNTER	The system shall display a counter of how many activities the user has completed.	UR_ACTIVITIES
FR_OBJ_INTERACT	The game shall have objects/locations around a map that the user can interact with	UR_ACTIVITIES
FR_USER_SCORE	The system shall display the user's score clearly on the screen.	UR_SCORE
FR_RESTART	The system shall restart the game upon user's request once the end is reached	UR_REPLAY
FR_FEEDBACK	The system shall display a pop-up when the user completes an activity.	UR_FEEDBACK
FR_TUTORIAL	The system shall display a tutorial for the user's first time playing the game.	UR_TUTORIAL

Non-Functional Requirements

ID	Description	User requirement	Fit Criteria
NFR_TERMINATION	The game shall terminate when the user quits the game.	UR_END_GAME	Reasonable time after clicking close game
NFR_ERROR_FEEDBACK	The system shall report back any errors to the user.	UR_UX	Upon required feedback

Use Cases

Player Character Sleeps
Primary Actor: Player Character
Supporting Actors: Accommodation Building
Precondition:
Trigger: Player Character interacts with Accommodation Building
Main Success Scenario

1. Night cutscene begins
2. Day *N* ends
3. Day *N+1* begins if *N* is less than 7
4. Night cutscene ends

Secondary Scenarios

1. It is the end of Day 7
2. The game ends

Success Postcondition: Player can begin playing the next day
Minimal Postcondition: Player is shown the score screen

Player Character Attempts to Study

Primary Actor: Player Character

Supporting Actors:

Precondition:

Trigger: Player Character interacts with Study Building

Main Success Scenario:

1. Time of day increases by X hours
2. Character's energy decreases by Y%
3. Player's score increases by Z points

Secondary Scenarios

1. Player Character does not have enough energy to study
    1. Player is shown a message informing them that they do not have enough energy to study right now.
2. Player has already studied today, but has not studied more than once on a previous day
    1. Time of day increases by X hours
    2. Student's energy decreases by Y%
    3. Player's score increases by Z points

3. Player has already studied today, and has studied more than once on a previous day
    1. Player is shown a message saying that they cannot study anymore today.

Success Postcondition: Player's score is updated and time is increased

Minimal Postcondition: Player Character cannot study if they have insufficient energy.

Player Chooses a Character

Primary Actor: Player

Supporting Actors: Character Selection Screen

Precondition: Player has loaded the Character Selection Screen

Trigger: Player clicks on a Character

Main Success Scenario:

1. The character the player clicks on is made to stand out
2. Player clicks 'Use this Character'
3. The Screen changes to the Game Map Screen
4. Player can begin playing the game as the selected character

Secondary Scenarios

1. The player selects one character and then changes to a different one
    1. The previously selected character no longer stands out
    2. The newly selected character stands out
    3. Player clicks 'Use this Character'
    4. The screen changes to the Game Map Screen
    5. Player can begin playing the Game as the selected Character

Success Postcondition: Player begins playing the game as their selected Character

Minimal Postcondition: Player cannot play the game if they have not selected a character