

Graduation Gauntlet

Requirements

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Requirements

Introduction Paragraph

To begin, we first collectively studied the brief in detail and began to create a general context of our project so we were able to formulate relevant and useful questions to ask our stakeholder in an interview. We created a general outline of what our game could potentially look like based on the contents of the brief and using the created questions designed to probe and refine our initial idea to suit the user requirements elicited. We ensured the questions asked were focused primarily on the expected capability of the game rather than design choices to not limit our creativity in the process, that being said we did include some design/implementation questions that we deemed necessary to ensure the core theme of the game remains intact.

Using the elicited user requirements which we collected and recorded from the interview, we discussed and modified our initial plans by creating a complete list of technical system requirements. We devised them into user requirements that we further broke down into functional, non-functional and constraint requirements as appropriate. We presented each user requirement with a description of a general outline of what the intention of the requirement is and a priority of inclusion to quantify how imperative this feature is within our game. Each requirement was allocated an appropriate and useful unique ID to be referable in different contexts. We then linked each type of system requirement to the relevant user requirements they satisfy via the ID.

Statement of user and system requirements

User Requirements

| ID | Description | Priority |
|---------------------|---|----------|
| UR_TUTORIAL | The system will provide a tutorial to teach the user how to control the character | HIGH |
| UR_MAZE | The system shall have a fixed maze for the player to navigate through | HIGH |
| UR_LOSS_SCREEN | The game shall display a loss screen when the user loses the game | HIGH |
| UR_VICTORY_SCREEN | The game shall display a victory screen when the user successfully completes the game | HIGH |
| UR_HOME_SCREEN | There shall be a home screen when the game first starts and that the user returns to after finishing the game | HIGH |
| UR_SETTINGS | The system shall provide settings options for the user | MEDIUM |
| UR_PAUSE_MENU | The system shall allow the player to pause the game | MEDIUM |
| UR_SCORE | The user shall get higher score for finishing the game quicker | HIGH |
| UR_POSITIVE_EVENTS | There will be 3 visible events that affect the player in a positive way | HIGH |
| UR_NEGATIVE_EVENTS | There will be 5 visible events that affect the player in a negative way | HIGH |
| UR_HIDDEN_EVENTS | There will be 3 hidden events that affect the player in fun ways | HIGH |
| UR_HARDWARE | The game shall be able to be played on any laptop or PC | MEDIUM |
| UR_PLAYER_CHARACTER | There will be a player character that can be controlled by the user | HIGH |
| UR_FAMILY_FRIENDLY | The design of the game should be appropriate for all ages | HIGH |
| UR_PLAY_ONCE | The game shall be designed to only be played once per user | MEDIUM |
| UR_UNIVERSITY_THEME | The game shall have a university related design | HIGH |
| UR_DIFFICULTY | The game shall have a fixed difficulty | HIGH |
| UR_ACCESSIBILITY | The game shall be accessible to a wide audience of different players | LOW |

Functional Requirements

| ID | Description | User Requirements |
|----------------------|--|-------------------|
| FR_TUTORIAL_SCREEN | The tutorial will be displayed on the home screen | UR_TUTORIAL |
| FR_TUTORIAL_CONTENTS | The controls as well as the objective will be displayed | UR_TUTORIAL |
| FR_MAZE_LAYOUT | The game will have a consistent maze layout for each playthrough and it should all fit on the screen at once | UR_MAZE |
| FR_MAZE_FUNCTION | The maze shall have collision to stop players passing through the walls | UR_MAZE |

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|---------------------------|---|--------------------|
| FR_MAZE_PERSPECTIVE | The maze shall be viewed from a top down perspective and the maze will be shown to the player as they move through it | UR_MAZE |
| FR_MAZE_EXIT | There shall be an exit for the maze | UR_MAZE |
| FR_LOSS_TIMER | The player will lose the game if the 5 minute timer runs out or the player touches an enemy | UR_LOSE |
| FR_LOSS_SCREEN_CONTENTS | The loss screen shall have text displaying that the player has failed and a button to return to the home screen | UR_LOSS_SCREEN |
| FR_VICTORY_SCREEN_TEXT | The victory screen shall have text displaying that the player has won and their score | UR_VICTORY_SCREEN |
| FR_VICTORY_SCREEN_BUTTONS | The victory screen shall contain a button to take the user back to the home screen | UR_VICTORY_SCREEN |
| FR_HOME_SCREEN_CONTENTS | The game title shall be displayed on the home screen and it shall have a button to start game button | UR_HOME_SCREEN |
| FR_SETTINGS_TEXT | There will be settings options to allow the player to change the controls, which will be displayed on the home screen | UR_SETTINGS |
| FR_BUTTON_TO_PAUSE | The pause menu will be displayed when the spacebar is pressed | UR_PAUSE_MENU |
| FR_PAUSE_MENU_CONTENTS | The pause menu will say that the game is paused and there shall be a button to resume the game or return to the start screen | UR_PAUSE_MENU |
| FR_SCORE_SET | The players score will be equal to the time left when they complete the game | UR_SCORE |
| FR_LUCKY_TILE | When the event is triggered the player will get a random effect of revealing the maze, or giving increasing the players score | UR_POSITIVE_EVENTS |
| FR_CHATGPT | When the event is triggered the player will get an effect that allows them to skip the next quiz event | UR_POSITIVE_EVENTS |
| FR_STAFF_LANYARD | When the event is triggered the player will gain invincibility for 1 minute from all enemies | UR_POSITIVE_EVENTS |
| FR_CHECK_IN_CODE | When triggered the player has to type in the code that appears on the screen correctly within 10 seconds, or the player loses 30 score | UR_NEGATIVE_EVENTS |
| FR_DEAN_ENEMY | When triggered an enemy will be spawned to follow the player around the maze | UR_NEGATIVE_EVENTS |
| FR QUIZ | When triggered the game will be paused and an input screen will appear with a quiz question that needs to be answered for the player to continue playing, if answered incorrectly they will lose 50 score | UR_NEGATIVE_EVENTS |
| FR_GLASSES_ON_BOB | When triggered glasses will be spawned at the start of the maze and the player has to collect them | UR_NEGATIVE_EVENTS |
| FR_SOF1_RETAKE | When triggered the game will be paused and a screen will appear asking the player to answer a simple coding question which will allow the player to continue when answered correctly | UR_NEGATIVE_EVENTS |
| FR_BOB_JUMPSCARE | When triggered the screen will be covered with an image of bob for 5 seconds | UR_HIDDEN_EVENTS |

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|-----------------------|--|---------------------|
| FR_TUITION_FEES | When triggered the player will have to either lose 5 coins or 30 score if they don't have enough coins, which will be spawned at the start of the game around the maze | UR_HIDDEN_EVENTS |
| FR_TIMETABLE_CHANGE | When triggered the player will be randomly teleported to somewhere in the maze | UR_HIDDEN_EVENTS |
| FR_CHARACTER_SPRITE | The player character shall have a 2d pixel art sprite | UR_PLAYER_CHARACTER |
| FR_CHARACTER_CONTROLS | The player character will be controlled using the WASD or arrow keys | UR_PLAYER_CHARACTER |
| FR_PRE_GENERATED | The maze layout will be fixed with all the events and the exit being in the same place | UR_PLAY_ONCE |

Non-functional requirements

| ID | Description | User Requirements | Fit Criteria |
|----------------------|--|-------------------|---|
| NFR_COLOUR_BLINDNESS | There will be distinct colours for the different game elements | UR_ACCESSIBILITY | 90% of players with colourblindness were able to successfully play the game |

Constraint requirements

| ID | Description | User Requirements |
|-----------------------|---|--------------------|
| CR_OS | The game shall be playable on computers running MacOS, Windows and Linux | UR_HARDWARE |
| CR_DEVICE | The game shall be playable on any laptop or PC | UR_HARDWARE |
| CR_APPROPRIATE DESIGN | The visuals and gameplay shall be playable by users of any age | UR_FAMILY_FRIENDLY |
| CR_FIXED_DIFFICULTY | The game shall always be the same every time it is played and the score awarded for different events and times will be the same | UR_DIFFICULTY |