Requirements 1

Group 1, Cohort 2

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Requirements Elicitation

Requirements for this project were elicited through a structured, research-informed interview with the customer. Guided by the pre-established engineering requirements, the team developed a set of open-ended, targeted interview questions to identify the customer's objectives, desired system features and constraints. The interview was recorded to later systematically analyse responses.

During customer response analysis, the team extracted explicit requirements directly mentioned by the customer and determined implicit requirements where design or implementation decisions were left to the team's discretion. To organise these findings clearly and ensure traceability, the team documented all requirements in structured tables. Each requirement was assigned a unique identifier (ID) allowing for clear referencing between related requirements and helping simplify later validation and testing processes.

To ensure accuracy and completeness, the team validated the derived requirements by cross-checking them against the customer's goals and the engineering specification. Each user requirement was then prioritised based on its importance to core functionality and user experience, forming the foundation for subsequent design and development decisions.

User Requirements Table

ID	**Description**	**Priority**
UR_TUTORIAL	The system will provide a tutorial to teach the player the basics of the game.	Shall
UR_START_GAME	The system shall load onto a start screen.	
UR_UX	The system shall offer a pleasant, family friendly experience.	Shall
UR_SETTINGS	The system shall include a pause game/settings menu with options to adjust volume, restart or exit.	Shall
UR_OFFLINE	The system should be fully operational without a network connection available.	Shall
UR_USER_TIME	The user should be able to see how long they have been playing for.	Should
UR_GAME_COMPLETION	The game should take the user about 5 minutes to complete.	Shall
UR_END_SCORE	The user shall find out their final score at the end of the game.	Should
UR_ACCESSIBILITY	The system shall provide accessibility options in the settings menu with features such as subtitles and a colourblind mode.	Should
UR_PROTAGONIST	The system shall make the main character a student at the University Of York.	May
UR_MOVEMENT	The system shall let the user move their character around the maze.	Should
UR_PLAYER_DEATH	The system shall allow players to restart the game once their character's health is depleted.	Should
UR_EVENTS	The system should have exactly one each of a positive/negative/hidden event, alongside a counter showing how many of each event the user has encountered.	Should

UR_ANTAGONIST	The system shall have an antagonist that follows the player around the maze	Shall

System Requirements:

Functional Requirements Table

ID	Description	User Requirements
FR_USER_TIMER	The system shall display a timer to the user which displays how long they have been playing for	1. UR_USER_TIME
FR_USER_TIME_FINAL	The system shall display the user's final time once they have completed the game	1. UR_USER_TIME
FR_USER_TIME_RESTART	The system shall display the user's final time if they select to restart before resetting the user's game	1. UR_USER_TIME
FR_EXIT_GAME	The system shall allow the user to exit the game at any time of their choosing	1. UR_SETTINGS
FR_END_SCORE_TOTAL	System shall display the user's total final score on an ending screen	1. UR_END_SCORE
FR_END_SCORE_BREAKDOWN	System shall display a breakdown of the user's points (e.g. quick completion bonus +2 points)	1. UR_END_SCORE
FR_PLAYABILITY_INCLUSIVITY	The system shall accommodate for diverse users by having subtitles and features distinguishable by not just colours	1. UR_ACCESSIBILITY
FR_DEFAULT_CHARACTER	The system shall display a default character as a sprite which the user has control over	1. UR_PROTAGONIST
FR_MOVEMENT	The system shall allow keyboard and mouse inputs to allow the user to have control over the sprite and interact with the maze	1. UR_MOVEMENT
FR_TUTORIAL_PAUSING	The system shall allow the player to pause the tutorial at any given time from settings	1. UR_TUTORIAL 2. UR_SETTINGS
FR_UX_MUSIC	The system shall use appropriate music and sound effects that contain no lyrics	1. UR_UX
FR_UX_DESIGN	The maze map shall contain family friendly themes only	1. UR_UX
FR_UX_PLAYABILITY	The game's difficulty will be kept to a lower level to maintain a pleasant experience and welcome users with limited gaming experience	1. UR_UX 2. UR_ACCESSIBILITY
FR_OFFLINE	The system and all its features shall not require any connection to a network	1. UR_OFFLINE
FR_SETTINGS_OPTION	The system shall include a settings option for the user where they can pause the game and adjust sound controls. The setting shall also present the user the options to exit the game	1. UR_SETTINGS

	alongside restarting the game. The user can also select the tutorial too.	
FR_END_SCORE	The system shall display the user's end score when they complete the game, fail the game, exit or restart	1. UR_END_SCORE 2. UR_SETTINGS
FR_POSITIVE_EVENT	The system shall present a positive event in which the player finds a chest, opens it and gains a speed boost advantage	1. UR_EVENTS
FR_NEGATIVE_EVENT	The system shall present a negative event of the player not being able to get on the bus without their bus pass - meaning the player cannot progress without finding their bus pass	1. UR_EVENTS
FR_HIDDEN_EVENT	The system shall contain a hidden event of the player's bus pass being hidden in a bush which, until triggered, the bus pass will remain uncovered to the user	1. UR_EVENTS
FR_ANTAGONIST	The system shall include an antagonist, the dean, who follows the player round the map and if they catch the player the player must start again	1. UR_ANTAGONIST

Non-functional Requirements Table

ID	**Description**	**User Requirements**	**Fit Criteria**
NFR_GAME_COMPLETION	The game should not last too long	1. UR_GAME_COMPLETION	90% of users complete the game within 5 minutes
NFR_RESTART_GAME	The system shall allow the user to restart the game at any time by taking them back to the tutorial page to start over	1. UR_SETTINGS	Game should restart in < 6 seconds
NFR_PLAYABILITY_DIFFICULTY	The system shall not require any prior gaming experience to interact with	1. UR_SETTINGS	70% of users achieve a perfect total score
NFR_STABILITY	The system shall work reliably for those on supported setups / OSes.	1. UR_UX 2. UR_OFFLINE	95% of users should not experience any crashes on supported hardware when playing the game for at least half an hour.
NFR_ACCURATE_INPUT	The system should have inputs work as intended, with minimal lag.	1. UR_MOVEMENT 2. UR_SETTINGS 3. UR_UX	The player should respond to any valid input on the keyboard within 3 frames.
NFR_TUTORIAL_LOADING	Upon clicking start game, the system should present the user with a tutorial sequence to demonstrate how to play the game	1. UR_TUTORIAL	The system should load the tutorial sequence in < 6 seconds

NFR_TUTORIAL_PROGRESSION	The system shall give the user an appropriate amount of time to read each slide of the tutorial before progressing to the next	1. UR_TUTORIAL	The slides will be displayed for 10-15 seconds depending on their length
NFR_PAUSING	The system shall allow the user to pause at any time	1. UR_SETTINGS	The system should respond to a user pausing within 3 seconds
NFR_MUSIC_CONTROL	The system shall respond to the user muting the music as well as adjusting the volume of the music	1. UR_SETTINGS	The system shall respond in < 4 seconds
NFR_SOUND_EFFECTS_CONTROL	The system shall respond to the user muting as well as adjusting the volume of the sound effects	1. UR_SETTINGS	The system shall respond in < 4 seconds
NFR_EXIT_GAME	The system shall allow the user to exit the game at any time	1. UR_SETTINGS	The system shall take < 6 seconds to close
NFR_EXIT_GAME_SCREEN	The system shall display an exit game screen to the user which displays their current statistics and a farewell message	1. UR_SETTINGS	The system shall display the exit game screen for 15-20 seconds before the game closes
NFR_RESTART_GAME	If the user selects to restart the game in setting the system shall allow the user to start the game over again from scratch	1. UR_SETTINGS	The system shall take < 6 seconds to restart
NFR_RESTART_GAME_SCREEN	The system shall display an exit game screen to the user which displays their current statistics	1. UR_SETTINGS	The system shall display the restart game screen for 12-20 seconds before restarting the game in < 6 seconds
NFR_PLAYER_DEATH	If a player has lost all their health the system shall restart their game via the same process of a normal game restart	1. UR_SETTINGS 2. UR_PLAYER_DEATH	The system shall display the restart game screen for 12-20 seconds before restarting the game in < 6 seconds
NFR_START_GAME	The system shall open up onto a start screen	1. UR_START_GAME	The system should load the screen in < 6 seconds

Constraints Requirements Table

Project Constraints	Development Process Constraints	Design & Technical Constraints
Game Scope Constraint: - The game should be designed as a 'one-shot' experience without implementing account systems or local data saving.	**Asset & Legal Constraint:** - All third party assets utilised in the game's development must be appropriately licensed, or self-developed to respect IP rights.	**Technology Constraint:** - The game shall be built to run on a standard computer/desktop.
Financial and Resource Constraint: - The project should be developed with a £0 budget, by utilising already licensed tools, software engines and assets.	**Gameplay Constraint:** - The game shall not exceed a single player game-play format.	**Gameplay Constraint:** - The game shall not implement more than one positive, negative and hidden event, respectively.
Game Scope Constraint: - The game shall be limited to a single, finite maze. No infinite runners or selectable maze levels should be implemented.	**Gameplay Constraint:** - The game's progression must be static, player decisions should not deviate from the game's narrative nor alter the core maze layout during gameplay.	**Gameplay Constraint:** - The user's game session must have a maximum real world duration of five minutes tracked by an in-game timer.
	Development Life Cycle Methodology: - Git shall be solely used to manage all source code and design documents to document changes and enable collaboration.	**Gameplay Constraint:** - The game should be designed with a single, standard difficulty level to make the game accessible to a wider audience of players.
	Development Life Cycle Methodology: - The game shall be built using an incremental development process (scrum/agile-based sprints) to facilitate regular testing and refinement of code.	**Event Constraint:** - The game shall be a functional prototype including at least one type of event. - The game must include a counter to track how many of each event type the user has interacted with.
	Coding Standards: - The code must be written with clear naming conventions and sufficient comments to ensure it is fit for cross-collaboration. - Core game design decisions (event list, scoring mechanisms) must be collated in a single documentation prior to implementation.	**Accessibility Constraint:** - The game must provide an option to mute/disable all music and sound effects. **User-interface Constraint:** - The game must provide a pause/exit option allowing the user to quit or restart their session.