

Requirements

"Mathochist Studios" Cohort 4, Team 11

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Introduction

User requirements were first gathered from the product brief, this was then followed by a client meeting. During the client meeting we aimed to:

- 1) Elicit any other user requirements the client has that have not been stated in the product brief
- 2) Clarify all user requirements listed in the product brief, to avoid any misinterpretation, as we felt that they were slightly cursory.
- 3) Attain and clarify the SSON (Single statement of need) stated in the product brief

Overall our aim was to make sure we had a firm and comprehensive understanding of all user requirements.

In planning for the client meeting, our team had brainstormed important potential requirements that were not stated in the product brief. An example of which would be: "Does the game have to be compatible with multiple operating systems?".

We felt that the user requirements listed in the product brief were quite broad and cursory. For example, we were unsure what constitutes an "Event" in the game. So we felt it essential to clarify what some of these requirements meant, so that both our team and the clients' expectations were on the same page.

Single Statement of Need: "Build a single-player game that allows the player to escape from a maze that represents university life, its complexity and annoyances."

The requirements are organised into three separate tables: User Requirements, Functional Requirements, and Non-Functional Requirements.

- Each table contains unique IDs and descriptions for every requirement.
- The Functional and Non-Functional requirement tables include a "User Requirement" column that indicates which User Requirement the System Requirement caters towards
- Every User Requirement is assigned a priority level:
 - Shall - Must be implemented
 - Should - Recommended to be implemented, but not required
 - May - Optional, only if we have extra time

User Requirements are written to avoid any kind of technical jargon, this is so any non-technical group member can understand

- Each Non-Functional Requirement includes a fit criterion used to gauge whether the requirement has been fulfilled.

User Requirements

ID	Description	Priority
UR_SCREEN_SCALABILITY	The game must be playable and legible on varied screen sizes and shapes (e.g. Larger screens for university open days).	Shall
UR_FAMILY_FRIENDLY	The game must not contain any graphic and/or disturbing content not fit for children.	Shall
UR_UNIVERSITY_ACCURATE	The game must be generally accurate to a university, however some liberties are allowed. Overall, the user must feel like they are traversing a university campus.	Shall
UR_ASSESSMENT1_EVENTS	The game must contain at least one type of each event (positive, negative, hidden)	Shall
UR_TIME_TRACKER	The game must contain an in-game tracker to track how long each playthrough has lasted.	Shall
UR_MAXIMUM_TIME_LIMIT	The game must not last longer than 5 minutes.	Shall
UR_EVENT_COUNTER	The game must contain a simple counter showing how many of each event has been encountered.	Shall
UR_COLOURBLIND_FRIENDLY	The game must be easily legible and clear to people that experience common forms of colour blindness	Shall
UR_MULTI_OPERATING_SYSTEM_COMPATIBLE	The game must be compatible with MacOS, Linux and Windows.	Shall
UR_PAUSE_TIMER	The game must be able to pause at any time	Shall
UR_BEGINNER_DIFFICULTY	The game should not be too challenging, and not too frustrating to play.	Should
UR_LEGIBLE_TEXT	The game should have text that is always legible, even on different resolutions.	Should
UR_FILE_SIZE	The game should be as lightweight as possible	May

Functional Requirements

ID	Description	User Requirements
FR_EVENTS	The system shall have at least one hidden, one negative, and one positive event implemented for assessment 1.	UR_ASSESSMENT1_EVENTS
FR_TIME_TRACKER	The system shall contain an in-game time tracker that tracks the amount of time lapsed from the start of the playthrough.	UR_TIME_TRACKER
FR_EVENT_COUNTER	The system shall contain an in-game counter for how many of each event the player has encountered.	UR_EVENT_COUNTER
FR_PAUSE_SCREEN	The game will have a pause screen that can be pressed at any time and will pause the timer.	UR_PAUSE_TIMER

Non-Functional Requirements

ID	Description	User Requirements		Fit Criteria
NFR_SCREEN_SCALABILITY	The game window shall support resizing and maintain legibility by resizing the game content to preserve the aspect ratio.	UR_SCREEN_COMPATIBILITY		The game must not have any overlapping or distorted elements when up/down sized to different sizes/shapes.
NFR_NO_GRAPHIC_CONTENT	The game's content cannot contain any elements not suitable for young children.	UR_FAMILY_FRIENDLY		The game must adhere to the BBFC PG rating guidelines stated on their website. ^[1]
NFR_UNIVERSITY_STUDENT_RELATABLE	The game must have a university-like "feel".	UR_UNIVERSITY_ACCURATE		80% of users must rate the game as at least 7/10 in a question gauging the "reliability to university" in our feedback

				questionnaire
NFR_MAXIMUM_TIME_LIMIT	Each playthrough of the game shall not exceed a total length of 5 minutes.	UR_MAXIMUM_TIME_LIMIT		During testing all playthroughs shall last at most 5 minutes. No gameplay will occur after this.
NFR_COLOURBLIND_FRIENDLY	The game's visual design must be distinct and legible to users with common forms of colour blindness.	UR_COLOURBLIND_FRIENDLY		The game's colour palette must adhere to the NCEAS colour blind safe colour schemes page.
NFR_CROSS_OS_COMPATIBILITY	The game must be able to run correctly on macOS, Linux, and Windows.	UR_MULTI_OPERATING_SYSTEM_COMPATIBLE		During testing the game must be tested on all three operating systems, and have no issues.
NFR_BEGINNER_DIFFICULTY	The game shall be designed so that the difficulty is enjoyable and not overly frustrating for casual players, whilst also providing a challenge.	UR_BEGINNER_DIFFICULTY		At least 70% of users must rate the game as "Balanced" in a question gauging the difficulty of the game in our feedback questionnaire.
NFR_LEGIBLE_TEXT	The game's text elements must use clear and high-contrast fonts, maintaining sufficient size and spacing to ensure legibility on all common resolutions.	UR_LEGIBLE_TEXT		At least 95% must report that they had no legibility issues whilst playing the game in our feedback questionnaire.
NFR_FILE_SIZE	The game shall be optimised to minimise file size.	UR_FILE_SIZE		The game will aim to be under 30Mb

Feedback Questionnaire Results on <https://mathochiststudios.com/>

Bibliography

[1] BBFC, "BFC Parental Guidance," 2025. [Online]. Available: <https://www.bbfc.co.uk/rating/PG>

[2] NCEAS, "Colourblind Safe Colour Scheme," 2025. [Online]. Available: <https://www.nceas.ucsb.edu/sites/default/files/2022-06/Colorblind%20Safe%20Color%20Schemes.pdf>