

# Assessment 1: Greenfield Development

## Requirements

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## Introduction

The requirements for the game were gathered through a structured elicitation process involving the customer and development team. The process began with analysis of the product brief by the development team allowing us to develop a list of interview questions to ask the customer to clarify ambiguities and understand the context of the brief as well as defining the scope of the project. This interview was crucial for capturing the goals and constraints directly from the customer to effectively deliver on the brief and ensure the requirements we would be working towards were accurate and reflected the customers expectations.

During the interview the client established broad objectives such as the target audience and the need for an immersive yet simple experience. He delegated specific design and aesthetic decisions to us, the development team, due to our expertise on the matter. The negotiation allowed us to pre-empt any potential disputes and align expectations between us and the customer. The customer also agreed to follow up with us and validate our requirements to ensure they reflect his needs ahead of the development process.

The requirements themselves are presented in a structured format to ensure clarity for the customer. They are sorted into user and system requirements with the system requirements further split into functional and non-functional requirements. The user requirements detail the goals and tasks from the user's perspective and the system requirements are essentially how we will deliver on said user requirements. Each requirement has a unique identifier to support traceability from design to testing. This presentation of requirements allows the project goals to be clearly documented and verifiable with the customer.

The system shall be a short, single-player game that provides a family-friendly and broadly accessible experience of escaping a university themed environment, targeting a university aged audience in order to test the market for future refinements/releases.

## User Requirements

ID	Description	Priority
UR_Play_Game	The user will be able to play through the game on the desktop.	Shall
UR_Events	The user will encounter events that affect the player.	Shall
UR_Play_Tutorial	The user will be able to play through a tutorial before the game.	Shall
UR_Player_Control	The user can move their character.	Shall
UR_Score	The system will display the score of the player.	Shall
UR_UI	The user-interface should be clear and easy to navigate for the user.	Should

## Functional Requirements

ID	Description	User Requirement
FR_Countdown	The game will have a 5-minute countdown timer.	UR_Play_Game
FR_Display	The system should show the game clearly.	UR_UI
FR_Pause	The system shall allow the user to pause the game at any time.	UR_Play_Game
FR_Positive_Events	The game will have at least 1 event that will benefit the player.	UR_Events
FR_Negative_Events	The game will have at least 1 event that will hinder the player.	UR_Events
FR_Hidden_Events	The game will have at least 1 event that will be invisible until triggered.	UR_Events
FR_Event_Count	The game will keep track of which events have been encountered.	UR_Events
FR_Score_Update	The system will update the score as needed and then calculate the score of the player at the end by taking their base score from how fast they are completing the game and increasing/decreasing it depending on events triggered.	UR_Score
FR_Intro_Screen	The system will display an introductory screen upon opening, with the game name and a tutorial for how	UR_Play_Tutorial

	the game works that the user can play through. before the actual game.	
FR_Movement	The system will allow movement via WASD.	UR_Player_Control

## Non-Functional Requirements

ID	Description	User Requirements	Fit Criteria
NFR_PLATFORM_01	The system shall run on a standard desktop PC.	UR_UI	Game file executed and verified to work on Windows 10.
NFR_PLATFORM_02	The game shall require no specialized hardware to run.	UR_Player_Control	Runs successfully with required performance standards using a standard keyboard and mouse.
NFR_AVAILABILITY_01	The game shall be delivered as an always executable JAR file.	UR_UI	The executable file launches the game without disruptions.
NFR_AVAILABILITY_02	The game shall be available offline without internet connection.	UR_Play_Game	Tested offline and all functionality remains the same.
NFR_PERFORMANCE_01	The game shall launch and reach the introductory screen within 10 seconds.	UR_UI	Average load time of under 10 seconds on a standard desktop PC.
NFR_PERFORMANCE_02	The game shall maintain a minimum frame rate of 30 FPS.	UR_Play_Game	Playthrough the game with an average over 30 FPS.
NFR_USABILITY_01	Controls must be intuitive and simple to understand.	UR_Play_Tutorial	Over 90% of users complete the tutorial without issues.
NFR_USABILITY_02	The game shall use readable text and clear visuals.	UR_UI	Meets web content accessibility guidelines.
NFR_RELIABILITY	The game shall run consistently without crashes.	UR_Play_Game	5 minute test session completed without failure.
NFR_STORAGE	The system shall not store any personal data.	UR_Play_Game	Passed code inspection confirming no new data is

			created.
NFR_SIZE	The system file shall be small in size.	UR_Play_Game	The file must be under 200 MB and launch in under 10 seconds.
NFR_UPGRADE	The game shall be designed to allow for future scalability.	UR_Play_Game	Compatible architecture chosen and adhered to in development.

## Constraint Requirements

ID	Description	Fit criterion
CR_DEADLINE	There is a deadline for the project	Assessment 1 has to be finished by Mon 10th Nov.
CR_TIME_SPENT	The assessment requires a minimum amount of hours spent	Expected that a minimum of 1000 team-hours to be spent on the teamwork of the project.
CR_INTELLECTUAL_PROPERTY	There is a constraint on the assets and ideas we use	Most media and assets online can be used for educational purposes, however we need to check whether use is prohibited and reference when necessary. Copying a game too similarly could discredit the originality of our design.
CR_SYSTEM	Project will have to run on minimum specs	Shall run on a system of (minimum) specs: Intel(R) Core(TM) i5-14500, NVIDIA RTX A1000 (8GB VRAM), 32GB RAM, <100GB SSD
CR_MONEY	Money limitation	No money is to be expected to be invested into this due to it being a university team project.
CR_RESOURCES	Limited resource use	Due to no money being put in, resources would have to be either free to use or personally owned by team members.
CR_HEALTH	Ensuring the teams health	No team member should be overworked and breaks should be done to ensure that this project does not impede a person's wellbeing. The work environment should be appropriate, not sitting still for too long and a favourable posture. Rooms should be well ventilated.
CR_SAFETY	Keeping the working environment safe	Electrical equipment used should be checked regularly to prevent injury. Regulations such as no liquids near equipment should be upheld.