

Introduction

In order to elicit our requirements we required input from both the product brief and our customer, to ensure that all needs were met. This allowed us to form a “Single Statement of Need”, which details what the system will provide, how it will be provided, and what a completed system will provide.

Single Statement of Need

The system shall enable customers to traverse and escape a maze, modelled on features from the University of York. The game should be user friendly and easy to play, limited by the time constraint of 5 minutes, with events in various locations around the maze.

Upon meeting with our customer and conducting an interview, we began to elicit additional functionality required by the system. The system shall enable the customer to use a keyboard and mouse to traverse the maze, and interact with any obstacles that they may encounter. To ensure that the game is easy to play, the maze layout will be fixed, with certain features being recognisable to customers as from the University of York, to help guide the customer. The difficulty will also be fixed, ensuring that anyone can play and complete the maze. Due to the casual nature of the game, the customer will be able to pause the game at any time, and return to the game when they like. Finally, the system shall produce a clear message to show when the game has finished, either from the customer completing the maze, running out of time, or not being able to overcome an obstacle. This will give the system clear start and end points.

Upon completion of the system, the customer will have a portable game that can be played on any platform, which allows them to traverse a maze based on the University of York and escape within 5 minutes. The system will contain obstacles which can both help or hinder the player, adding to gameplay, but maintaining a reasonably low difficulty level to ensure that the game is accessible to all.

Requirement structure

Using the single statement of need, we can form our basic requirements and detail how they can be met. To achieve this, we have split the requirements into two main sections: user requirements and system requirements.

User requirements are those from a customer's perspective, and describes how the system should interact with the users, and how the design brief and customer's wishes should be implemented. These were directly elicited from the customer and the system description in the design brief.

System requirements are used to implement the User requirements, and offer a more detailed and technical description of how the system will be implemented in line with the customer's requirements. There may be many system requirements for a single user requirement, due to the increased complexity.

User requirements

| ID | Description | Priority |
|---------------|---|----------|
| UR_AUDIENCE | The game shall be directed at a casual audience | Shall |
| UR_THEME | The game shall be university-themed & family-friendly | Shall |
| UR_SOUNDTRACK | The game could have a soundtrack | May |
| UR_SCORE | Players shall be able to score points and see their score | Shall |
| UR_EVENTS | The game shall have events with player interactions | Shall |
| UR_POSEVENT | The game shall have a positive event type: a minimum of one visible event which benefit the player if they pass through them | Shall |
| UR_NEGEVENT | The game shall have a negative event type: a minimum of one visible event which hinder the player from progression | Shall |
| UR_HIDEVENT | The game shall have a hidden event type: at least one event which is invisible until triggered by the player. These events also have interactions unique to the other two | Shall |
| UR_PAUSE | The user shall be able to pause the game at any time | Shall |
| UR_ITEMS | The game could allow the player to pick up items players can use to solve events | May |
| UR_END | The users shall be clearly informed when the game has ended, either with a win or loss | Shall |

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|-------------|---|-------|
| UR_PLATFORM | The game shall be playable on all platforms | Shall |
| UR_INPUT | The game shall be playable using keyboard and mouse | Shall |
| UR_HARDWARE | The game shall be playable on typical computer hardware | Shall |

System Requirements

| ID | Description | User Requirements |
|-------------|--|--|
| FR_SCORE | The game shall have a scoring system which updates after player events, and decreases as the player spends more time in the maze. This score shall be shown to players after the maze run ends | UR_SCORE |
| FR_HUD | The game should display the player's score and remaining time, both being updated in real time during gameplay | UR_SCORE |
| FR_UNLOCK | The game shall allow the player to remove an obstacle if they select the key in their inventory | UR_ITEMS |
| FR_EVENTS | The game shall have an event system with three distinct types | UR_EVENTS UR_POSEVENT UR_NEGEVENT UR_HIDEVENT |
| FR_POSEVENT | The game shall have at least three visible events which buff the player | UR_EVENTS UR_POSEVENT |
| FR_NEGEVENT | The game shall have at least five visible events which block player progression, or force them to take another route | UR_EVENTS UR_NEGEVENT |
| FR_HIDEVENT | The game shall have at least three hidden events with unique interactions | UR_EVENTS UR_HIDEVENT |

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|--------------|---|----------|
| FR_PAUSE | The game shall have a pause screen, triggered by pressing the escape button | UR_PAUSE |
| FR_ENDSCREEN | The game shall show a success screen if the player escapes, or game over if they fail | UR_END |
| FR_ITEMS | The game could have an item system and an inventory to store those | UR_ITEMS |
| FR_HOTBAR | The game could allow the player to select the item they want to use | UR_ITEMS |

| ID | Description | User Requirements | Fit Criteria |
|--------------|--|--|--|
| NFR_AUDIENCE | The game shall be playable by those with little experience in gaming | UR_AUDIENCE | New players shall be able to escape the maze within five tries |
| NFR_THEME | The game shall have a university theme | UR_THEME | The game's assets shall include various items, characters and landmarks which are clearly linked to the university theme |
| NFR_INPUT | The game shall be controllable with a keyboard and mouse | UR_INPUT UR_AUDIENCE | All of the intended gameplay features shall work with a keyboard and mouse |
| NFR_HARDWARE | The game shall run smoothly on modern laptops and computers; players are not required to have specialised hardware | UR_HARDWARE UR_INPUT UR_AUDIENCE | Players will have no problem using budget laptops/desktops released within the last five years |
| NFR_OS | The game shall be compatible with all mainstream OS' | UR_PLATFORM | All game features shall work the same way across Linux, MacOS and Windows 10 & 11 |

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| NFR_SOUNDTRACK | The game could have a soundtrack | UR_SOUNDTRACK | Players could be able to hear music suited to most player sequences (e.g. menus, time almost running out) |
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