# Overall Description

## System Environment

Input Manager

(Keyboard/Mouse)

Game Logic

(Compiler)

Player

Renders

(Display)

## User Classes and Characteristics

There is only one user at a time in this software and the user interacts with the game (system)

in different manner.

So, Gamer is the only one who communicates with the system through playing the game. And

this gamer can be any person. The primary requirement is that, the gamer must read the

playing procedure provided by us (developers).

## Functional Requirements

**2.3.1. Game Launch**

|  |  |
| --- | --- |
| **FR1** | رمز العملية |
| Game Launch | العملية |
| Necessary for starting the game | المبرر |
| Player launches the exe file  The game loads | الوصف المبدئ للخطوات |
| Game must already be installed | شروط سابقة |
| none | المدخلات |
| Game goes to main menu | المخرجات |
| None | الاعتمادية |

**2.3.2. Display Start-Screen**

|  |  |
| --- | --- |
| FR2 | رمز العملية |
| Display Start-Screen | العملية |
| For player to select action from | المبرر |
| * Opening animation disappears * Options to start new game * Or continue old game if exist * Or shutdown game | الوصف المبدئ للخطوات |
| Game must be launched | شروط سابقة |
| none | المدخلات |
| Start Screen displayed | المخرجات |
| FR1 | الاعتمادية |

**2.3.3. Start Game**

|  |  |
| --- | --- |
| **FR3** | رمز العملية |
| Start Game | العملية |
| Necessary to play the game | المبرر |
| * Player chooses the new game option * The game creates a new profile * The game loads the first level | الوصف المبدئ للخطوات |
| Start screen must be displayed | شروط سابقة |
| Mouse or keyboard click | المدخلات |
| Level one starts, allows the player to move freely | المخرجات |
| FR2 | الاعتمادية |

**2.3.4. Continue Game**

|  |  |
| --- | --- |
| FR4 | رمز العملية |
| Continue Game | العملية |
| Finish previously started run | المبرر |
| * Player chooses the continue game option * The game loads old file profile * The game loads the reached level assets | الوصف المبدئ للخطوات |
| Old profile must be created | شروط سابقة |
| Mouse or keyboard click | المدخلات |
| Saved level starts, allows the player to move freely | المخرجات |
| FR2 | الاعتمادية |

**2.3.5. End Game**

|  |  |
| --- | --- |
| **FR5** | **رمز العملية** |
| Exit Game | العملية |
| Option to close game from main menu | المبرر |
| * Player chooses the end game option * The game unloads assets * The game is closed * User is put back on windows | الوصف المبدئ للخطوات |
| Start screen is displayed | شروط سابقة |
| Mouse or keyboard click | المدخلات |
| Game is shutdown | المخرجات |
| FR2. | الاعتمادية |

**2.3.6. Load level**

|  |  |
| --- | --- |
| FR6 | رمز العملية |
| Load level | العملية |
| Necessary to play the game | المبرر |
| * Environment data and textures are loaded * Images are rendered * Camera position and view are calculated | الوصف المبدئ للخطوات |
| Player chose to start game.  Assets must be available for loading, enough memory needs to be available to load into | شروط سابقة |
| none | المدخلات |
| Level is displayed, gameplay commences | المخرجات |
| None. | الاعتمادية |

**2.3.7. Open Option Menu**

|  |  |
| --- | --- |
| FR7 | رمز العملية |
| Open Option Menu | العملية |
| Gives player access to game control options | المبرر |
| * Player clicks on on-screen menu button * Game play is temporarily disabled * Control menu is displayed, allowing player to either: * Resume * Display level hint * Save and Exit to main menu * Exit to window | الوصف المبدئ للخطوات |
| Game must be in play | شروط سابقة |
| Mouse click | المدخلات |
| Game is paused, option menu is displayed | المخرجات |
| FR6 | الاعتمادية |

**2.3.8. Resume**

|  |  |
| --- | --- |
| FR8 | رمز العملية |
| Resume game | العملية |
| Allows player to resume gameplay | المبرر |
| * Player clicks on resume * Menu disappears * Game play is resumed | الوصف المبدئ للخطوات |
| Options menu must be open | شروط سابقة |
| Mouse click | المدخلات |
| Game is un-paused | المخرجات |
| FR7 | الاعتمادية |

**2.3.9. Display level hint**

|  |  |
| --- | --- |
| FR9 | رمز العملية |
| Display hint for current level | العملية |
| Gives player a tip to help solve level | المبرر |
| * Player clicks on ‘show hint’ option * A pop-up containing hint text appears if available * Else, ‘hint unavailable for this level’ text should display instead | الوصف المبدئ للخطوات |
| Options menu needs to be open, level must contain hint | شروط سابقة |
| Mouse click | المدخلات |
| Hint pop-up displays | المخرجات |
| FR7 | الاعتمادية |

**2.3.10. Save and exit**

|  |  |
| --- | --- |
| FR10 | رمز العملية |
| Save current progress and exit to main menu | العملية |
| If player wishes to stop playing | المبرر |
| * Player clicks on ‘save and exit’ * Game creates a save file containing relevant information * Player is put back on the start screen menu with the continue option enabled | الوصف المبدئ للخطوات |
| Game must have some progress   * Minimum: level 1 started | شروط سابقة |
| Mouse click | المدخلات |
| Start screen displayed, continue option enabled, save file created in local storage | المخرجات |
| FR7 | الاعتمادية |

**2.3.11. Exit to windows**

|  |  |
| --- | --- |
| FR11 | رمز العملية |
| Exit to windows | العملية |
| If player wishes to close down game | المبرر |
| * Player clicks on Exit to window option * A prompt with warning that progress will be lost if they continue * Two buttons giving the option to confirm or cancel | الوصف المبدئ للخطوات |
| Options menu needs to be open | شروط سابقة |
| Mouse click | المدخلات |
| Prompt menu | المخرجات |
| FR7 | الاعتمادية |

**2.3.12 Confirm Exit**

|  |  |
| --- | --- |
| FR12 | رمز العملية |
| Confirm exit to windows | العملية |
| Allows player to exit to windows | المبرر |
| * Player clicks on confirm button * Game is unloaded and shutdown * User is put back on previous folder | الوصف المبدئ للخطوات |
| Warning prompt must be displayed | شروط سابقة |
| Mouse click | المدخلات |
| Game is shutdown | المخرجات |
| FR11 | الاعتمادية |

**2.3.13 Cancel Exit**

|  |  |
| --- | --- |
| FR13 | رمز العملية |
| Cancel exit to windows | العملية |
| If player changes their mind and does not want to exit | المبرر |
| * Player clicks on cancel button * Prompt is closed * Player is put back on options menu | الوصف المبدئ للخطوات |
| Warning prompt must be open | شروط سابقة |
| Mouse click | المدخلات |
| Player is put back on options menu | المخرجات |
| FR11 | الاعتمادية |

**2.3.14. Move Character**

|  |  |
| --- | --- |
| **FR14** | رمز العملية |
| Move Character | العملية |
| In order to reach objectives in the game | المبرر |
| * Player presses the move button * The character moves in the direction the camera is facing | الوصف المبدئ للخطوات |
| Level must be started  Keyboard must be connected and working  Character can’t be blocked by an object | شروط سابقة |
| keypress | المدخلات |
| Character moves | المخرجات |
| FR6 | الاعتمادية |

**2.3.15. Rotate View**

|  |  |
| --- | --- |
| **FR15** | رمز العملية |
| Rotate view | العملية |
| Allows player to look around the game setting | المبرر |
| * Player moves mouse courser * The game logic calculates the angle * The camera faces in the new direction | الوصف المبدئ للخطوات |
| Level must be started  Mouse needs to be plugged in and working | شروط سابقة |
| Mouse movement | المدخلات |
| New view is rendered | المخرجات |
| FR6 | الاعتمادية |

**2.3.16. Interact with Object**

|  |  |
| --- | --- |
| **FR16** | رمز العملية |
| Interact with Object | العملية |
| Enables starting and solving puzzles, allows you to move onto the next level | المبرر |
| * Player clicks on intractable-object * The object reacts | الوصف المبدئ للخطوات |
| Object must be active  Character must be close enough to interact | شروط سابقة |
| Mouse click | المدخلات |
| Object state changes | المخرجات |
| FR6 | الاعتمادية |

**2.3.17. Change Puzzle-Object State**

|  |  |
| --- | --- |
| FR17 | رمز العملية |
| Change Puzzle-Object State | العملية |
| Enables starting and solving puzzles, allows you to move onto the next level | المبرر |
| * Player interacts with object correctly or incorrectly | الوصف المبدئ للخطوات |
| Object must be active | شروط سابقة |
| Mouse click | المدخلات |
| Object state changes | المخرجات |
| FR16 | الاعتمادية |

**2.3.18. Win Game**

|  |  |
| --- | --- |
| **FR18** | رمز العملية |
| Win Game | العملية |
| Necessary for completing the game | المبرر |
| * Player interacts with puzzle * Player solves puzzle as intended | الوصف المبدئ للخطوات |
| Puzzle needs to be activated | شروط سابقة |
| Mouse click, slide, or key press | المدخلات |
| Game loads credits | المخرجات |
| FR17 | الاعتمادية |

## Non-Functional Requirements

**Performance Requirements**

Upon sensory overload or crash, the game must prompt with a force-close window detailing the error that has occurred.

Players should be able to access all in-game function of the game.

**Safety Requirements**

Game should not overheat or otherwise harm the user’s device. It will not contain malware of any sort.

**Security Requirements**

The game does not require internet access, nor any of player’s personal information and may not access it thus no special security measures need to be taken.

However, the in-game profiles require no authentication so it is possible for unauthorized users to access them.

**Software Quality Attributes**

Upon starting the game it should not take more than 2 minutes for the GUI to load.

Players should be able to click multiple buttons sequentially without causing the game to crash.

Response time for the buttons should not exceed 3 seconds.

Loading time for the puzzle should not exceed 6 seconds.

Game should not crash spontaneously.

**Business Rules**

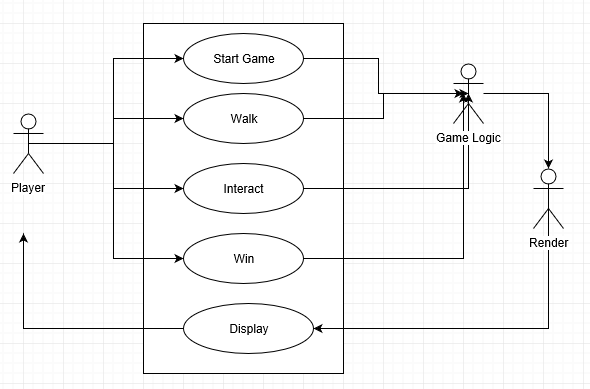
The game should not break any ethical, legislative, or copyright laws. Its content may not break with the conventions for the age-appropriate rating set.

# External Interface Requirements متطلبات الواجهات الخارجية

## Functional Requirements using UML

### System Operations

### Use Case for Operations



#### Scenario 1

|  |  |
| --- | --- |
| **Use Case Name** | Start Game |
| **Actors** | Player |
| **Precondition** | Game must be launched |
| **Basic Path** | * Player clicks on start game option * Game logic generates a new level * Level is rendered for view |
| **Alternative Paths** | * Level fails to generate or Render – Sends a crash report |
| **Postcondition** | Level is launched |
| **Other** |  |

#### Scenario 2

|  |  |
| --- | --- |
| **Use Case Name** | Walk |
| **Actors** | Player |
| **Precondition** | Level started successfully |
| **Basic Path** | * Player presses move button * Character moves in intended direction |
| **Alternative Paths** | * An object blocks movement path –nothing happens |
| **Postcondition** | Character position changes |
| **Other** |  |

* + - 1. ***Scenario 3***

|  |  |
| --- | --- |
| **Use Case Name** | Interact |
| **Actors** | Player |
| **Precondition** | Object available to interact |
| **Basic Path** | * Player clicks on object * Object changes state |
| **Alternative Paths** | * Object interaction failure –displays a notice |
| **Postcondition** | Object changes state |
| **Other** |  |

* + - 1. ***Scenario 4***

|  |  |
| --- | --- |
| **Use Case Name** | Win |
| **Actors** | Player |
| **Precondition** | Interacting with object |
| **Basic Path** | * Player interacts with object * The Object state is changed to the correct form * Game logic unlocks door |
| **Alternative Paths** | * Object state is not correct –Door remains locked |
| **Postcondition** | New level is generated |
| **Other** |  |

## Detailed of nonfunctional requirements

