Requirements Specification Document
Escape Keck
Video Game

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5.1 Introduction

Escape Keck is a psychological thriller escape room game based on the Keck Lab at LMU. The name “Escape Keck” is a working title and will change in the future. The game has a fun twist on the generic escape room games where the player immediately knows they have to escape, in Escape Keck the player won’t know they are playing an escape room game until the trigger event takes place and leads them to get locked in. From that point on, the player must solve puzzles and piece the story together to make their escape.

The Minimum Viable Product (MVP) of the game will have the first level, the main Keck Lab level, where the player completes TA tasks and gets tricked by the narrator into locking the doors. If we have more time, we will continue onto the second level, the Annex which turns into an elevator where the player will have to solve one big puzzle with multiple subparts. The last level will be the 2nd Keck Lab which is located directly under the main one. This level will be the main horror level and the game will also switch to a first-person character controller to elevate the scary atmosphere. Since we won’t have time to make all three levels, we can have the player “escape” and end the game when they complete the first level to give a sense of completion.

The remainder of this document is structured as follows, Section 2 contains the functional requirements, Section 3 contains the performance requirements, and Section 4 contains the environment requirements.

5.2 Functional Requirements

5.2.1 Character Controller

The game will have a basic character controller. The character controller is how the player moves around the level and interacts with objects in the environment. Our chosen type of character controller for the first two levels is a top-down point-and-click, the specifics of this type of controller are explained below. Our chosen type of character controller for the last level is a first-person character controller, which is also explained below. The player speed is not controllable and there is no sprint option.

Top-down point-and-click character controller (for Levels 1 & 2):

5.2.1.1 The character shall move to the location on the current level that the player clicks with their left mouse button.

The character will move if the chosen location is a legal location that the player can move to on the current level map.

Once they click there will be a walking animation for the character to make their way over to this chosen location.

If the chosen location is not a legal location the player will move to the closest legal location.

5.2.1.2 The camera shall follow the player character from the top looking down at them as they move.

First-person character controller (for Level 3):

5.2.1.3 The player shall move forward by pressing the W key on the keyboard.

5.2.1.4 The player shall move left by pressing the A key on the keyboard.

5.2.1.5 The player shall move right by pressing the D key on the keyboard.

5.2.1.6 The player shall move backward by pressing the S key on the keyboard.

Once they start holding down the key the character will start the walking animation, and stop when they let go of the key.

If they are trying to enter an area that is not legal for the player, the character will just do the walking animation in place and not move further.

5.2.1.7 The camera shall show the level map from the eye level of the character.

In this point of view, only the character's hands will be visible to the player.

5.2.2 User Interface (UI)

The user interface refers to the UI elements that are permanently on the screen that the player can see and interact with anytime during the game.

5.2.2.1 There shall be a backpack icon on the top left corner of the screen that the character can click with the left mouse button to open the inventory view.

If clicked on the backpack icon, the inventory view will come up, and go away if they click the icon again.

5.2.2.2 The player shall also be able to use the Tab key on the keyboard to toggle the inventory view.

The inventory UI will come up when the Tab key is pressed, and go away when pressed again.

5.2.2.3 There shall be a drop-down menu on the top left corner of the screen with a gear icon for settings.

When you click on this gear icon or hit the Escape key on the keyboard, the settings menu will expand.

When the settings menu is open the game will pause and the player will see 3 options: controls, main menu, and exit game.

5.2.2.4 There shall be a drop-down menu on the top left corner of the screen with a magnifying glass icon for current-level tasks.

When you click on this magnifying glass icon or the T key on the keyboard the tasks list will expand.

Each completed task will have a line over the text to show that the task no longer needs to be worked on.

Only the current tasks that the narrator explained will show up on the task list, future tasks will be added as they are mentioned.

5.2.2.5 There shall be a currency indicator on the top right corner of the screen to let the player know how much currency they have accumulated from completing their tasks.

There will be no functionality associated with this currency as it only serves to keep the player engaged during the TA simulator part of the game before they get locked out and their objective changes to just escape.

5.2.3 Mechanics

The mechanics of the game define how the player interacts with the objects in the environment and uses the inspect mode from their inventory view. There are different types of mechanics that the player will be able to perform.

5.2.3.1 The player shall be able to pick things up and put them into their inventory by pressing the E key on their keyboard when standing on top of an object.

When the player clicks on an object icon from the inventory they will see two options: inspect and drop.

If they click “inspect” this will take them to the inspect mode.

If they click “drop” the item will be dropped where the character is currently standing on the level map.

If the player is not close enough to the item, it will not be picked up.

5.2.3.2 The player shall be able to inspect objects by choosing the inspect mode from the aforementioned menu.

Once this button is clicked, they will see the inspect mode UI that has the 3D object model in the middle of the screen, and an “x” button to the top left of the object.

When they click this “x” button, they will exit out of inspect mode/ the UI will disappear.

5.2.3.3 The player shall be able to rotate items in inspect mode by holding down their right mouse button to drag around the object.

The object will be able to be rotated to any angle in all directions.

5.2.3.4 The player shall be able to view the description for each item when they hover over the item icon with their cursor in the inventory view.

5.2.3.5 The player shall be able to view if an item is craftable when they hover over the item icon with their cursor in the inventory view right under the description.

The items that aren’t craftable will not have this tag.

5.2.3.6 The player shall be able to combine items to make new ones when an item specifies “craftable” by holding down the left mouse button to drag and drop/ let go of one item onto another in the inventory view.

5.2.3.7 The player shall be able to zoom in and out of objects in inspect mode by scrolling using the middle mouse button.

5.2.3.8 The player shall be able to drop items from their inventory by clicking on the drop option from the aforementioned menu.

5.2.4 Level Transitions

5.2.4.1 The transition between Level 1 (Main Keck Lab) and Level 2 (Annex) shall occur by passing through the Annex doors.

Once you enter the Annex, a cutscene will play showing the entire Annex lowering like an elevator.

5.2.4.2 The transition between Level 2 (Annex) and Level 3 (2nd Keck Lab Below) shall occur once you unlock the Annex doors and pass through.

This is when the player controller will switch from Top-down to First-person.

5.3 Performance Requirements

5.3.1 Character movement shall start instantaneously from the moment the player clicks with the left mouse button on the location they want the player to go to.

After the click, it will take the character 1-2 seconds to reach the chosen location.

5.3.2 Picking up items shall happen instantaneously.

5.3.3 Using the inventory shall happen instantaneously.

5.3.4 Opening the inspect mode shall happen instantaneously.

5.3.5 Using the mechanics in inspect mode shall happen instantaneously.

5.3.6 Dropping an object shall happen instantaneously.

5.3.7 The initial game loading time shall be no longer 30 seconds.

5.3.8 The level transitions shall happen instantaneously.

5.3.9 The Annex elevator cutscene shall take approximately 10 seconds.

5.4 Environment Requirements

The following are the **minimum** hardware and software requirements for running Escape Keck:

Category	Requirement
Operating System	**64-bit Windows 10**
Processor	**Intel Core i5/ AMD Ryzen 5**
RAM	**8 GB**
Storage	**10 GB**
Graphics Card	**Nvidia GTX 1060/ AMD Radeon RX 580**

Input	**Mouse and keyboard**

The following are the **minimum** hardware and software requirements for developing Escape Keck:

Category	Requirement
Operating System	**64-bit Windows 10**
Processor	**Quad-core Intel or AMD 2.5 GHz or superior**
RAM	**8 GB**
Storage	**10 GB**
Graphics Card	**Any DirectX 11 or 12 compatible card**
Input	**Mouse and keyboard**