Name\_Alex Senst\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Mark \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_/50

[**Instructions**: Remove everything that is not a heading below and fill in with your own diagrams, etc.]

1. **Brief introduction \_\_/3**

[Describe your feature briefly]

My feature for this project is the minimum viable product to create the game as well as the level design for the game.

My job is to create a level or map with some designed obstacles and objects that a player object is able to interact with. I also need to ensure that a player object is created and capable of moving around the map and properly reacts to other environment objects created to impede or redirect the player. Essentially, I am responsible for creating a base foundational map with environmental objects and boundaries and then creating a player object capable of moving around this map/level I design to move through the story.

Additionally, I’m responsible for ensuring objects properly interact with features of the map and trigger proper events or other features when needed.

1. **Use case diagram with scenario \_\_14**

[Use the lecture notes in class.

Ensure you have at least one exception case, and that the <<extend>> matches up with the Exceptions in your scenario, and the Exception step matches your Basic Sequence step.

Also include an <<include>> that is a suitable candidate for dynamic binding]

Example:

**Use Case Diagrams**

A diagram of a number

Description automatically generated

**Scenarios**

**[You will need a scenario for each use case]**

**Name:** Add Numbers

**Summary:** The accountant uses the machine to calculate the sum of two numbers.

**Actors:** Accountant.

**Preconditions:** Calculator has been initialized.

**Basic sequence:**

**Step 1:** Accept input of first number.

**Step 2:** Continue to accept numbers until [calculate] is entered.

**Step 3:** Accept calculate command.

**Step 4:** Calculate and show result.

**Exceptions:**

**Step 1:** [calculate] is pressed before any input: Display 0.

**Step 2:** A button other than [calculate] or a number input is pressed: ignore input.

**Post conditions:** Calculated value is displayed.

**Priority:** 2\*

**ID:** C01

\*The priorities are 1 = must have, 2 = essential, 3 = nice to have.

Includes – have an external class that the NPCs draw dialogue from

**Name:** A player moves through a locked passageway

**Summary:** The player unlocks a previously locked passageway and moves through to a different level

**Actors:** Player

**Preconditions:** Player has interacted with required NPC to achieve the unlock condition for the passageway

**Basic sequence:**

**Step 1:** Player completes interaction with NPC to trigger the unlocked variable for the passageway to be set to true

**Step 2:** A function is called which unsets the lockedPassageway canvas group making the passageway visible and able to be interacted with by the player.

**Step 3:** Player moves through the passageway

**Step 4:** The player is moved to that scene via a scene manager

**Exceptions:**

**Step 1.1:** The player chooses not to continue interaction with NPC. Player does not unlock the passageway and cannot move through it.(Extends)

**Step 1.2:** The player dies in the interaction without completing the interaction. Player does not unlock the passageway and cannot move through it.(Extends)

**Step 3.1:** The player does not move through the passageway. Player stays in current map and does not move to new scene.(Extends)

**Post conditions:** Player’s position on new level is set according to level they came from

**Priority:** 2\*

**ID:** L02

\*The priorities are 1 = must have, 2 = essential, 3 = nice to have.

1. **Data Flow diagram(s) from Level 0 to process description for your feature \_\_\_\_\_\_\_14**

[Get the Level 0 from your team. Highlight the path to your feature]

Example:

**Data Flow Diagrams**

A diagram of course and course

Description automatically generated

**Process Descriptions**

Assign rooms\*:

WHILE teacher in two places at once OR two classes in the same room

Randomly redistribute classes

END WHILE

**\*Notes**: Yours should be much longer. You could use a decision tree or decision table instead if it is more appropriate.

**Process Descriptions**

Assign rooms\*:

WHILE teacher in two places at once OR two classes in the same room

Randomly redistribute classes

END WHILE

**\*Notes**: Yours should be much longer. You could use a decision tree or decision table instead if it is more appropriate.

1. **Acceptance Tests \_\_\_\_\_\_\_\_9**

[Describe the inputs and outputs of the tests you will run. Ensure you cover all the boundary cases.]

**Example for random number generator feature**

Run feature 1000 times sending output to a file.

The output file will have the following characteristics:

* Max number: 9
* Min number: 0
* Each digit between 0 and 9 appears at least 50 times
* No digit between 0 and 9 appears more than 300 times
* Consider each set of 10 consecutive outputs as a substring of the entire output. No substring may appear more than 3 times.

**Example for divide feature**

|  |  |  |  |
| --- | --- | --- | --- |
| Output | Numerator  (int) | Denominator  (int) | Notes |
| 0.5 | 1 | 2 |  |
| 0.5 | 2 | 3 | We only have 1 bit precision for outputs. Round all values to the nearest .5 |
| 0.0 | 1 | 4 | At the 0.25 mark always round to the nearest whole integer |
| 1.0 | 3 | 4 | At the 0.75 mark always round to the nearest whole integer |
| 255.5 | 5 | 0 | On divide by 0, do not flag an error. Simply return our MAX\_VAL which is 255.5. |

1. **Timeline \_\_\_\_\_\_\_\_\_/10**

**Work items**

|  |  |  |
| --- | --- | --- |
| Task | Duration (Hours) | Predecessor Task(s) |
| 1. Requirements and constraints for levels and movement | 4 | - |
| 2. Level and terrainObject Data Structures Programming | 6 | 1 |
| 3. Environmental objects that are stagnant | 4 | 2 |
| 4. Movable player object that interacts with environmental objects | 10 | 2 |
| 5. Moving platforms between terrain areas on the same level | 4 | 3 |
| 6. Event for falling off the map or impacting deadly environmental objects | 3 | 4, 5 |
| 7. Passageways for additional levels or map areas | 3 | 6 |
| 8. Locked passageways hiding and preventing movement through passageways | 4 | 7 |
| 9. Documentation | 3 | 8 |
| 10. Testing | 3 | 8 |
| 11. Installation | 2 | 10 |

Pert Chart

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | | |
|  |  |  |

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | | |
|  |  |  |

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | | |
|  |  |  |

**Gantt timeline**