Name: Alex Johnson Mark _____/50

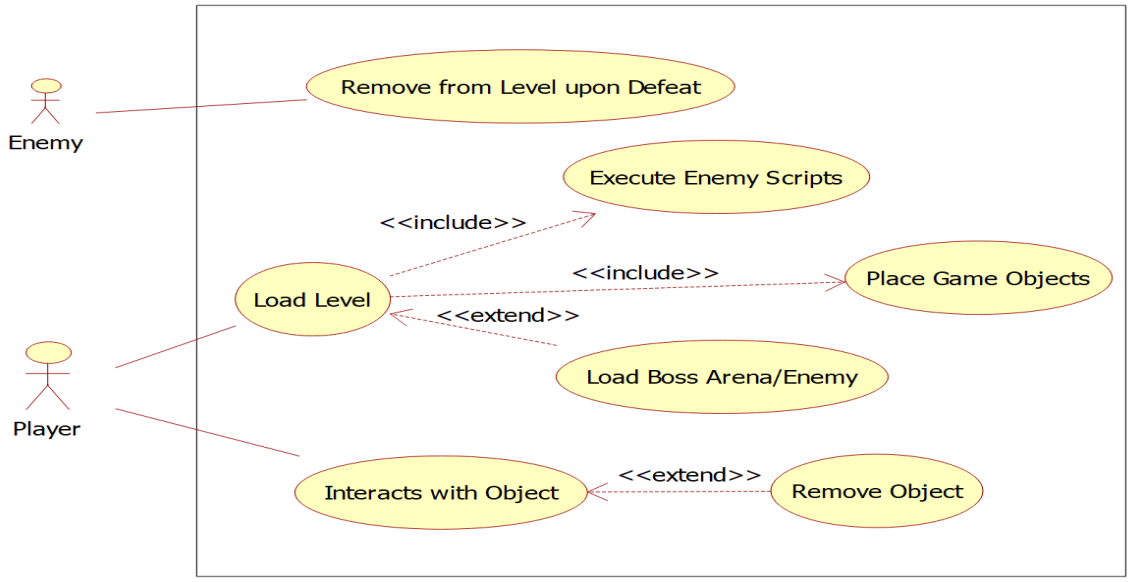
1. Brief introduction _/3

I will be designing and generating the levels and environment for the "Where's my Spaceship?" game.

My responsibilities will include creating/acquiring assets for the environment in each area, placing those assets, along with enemies, in an interesting way, and ensuring the player and enemies interact with the environment in the correct way. I also need to make sure the path forward through the game is intuitive while simultaneously creating challenges that are fun to overcome.

Additionally, I will need to make sure everything I've designed loads properly upon moving to a new area or loading a save.

2. Use case diagram with scenario _14



Scenarios

Name: Remove from Level upon Defeat

Summary: An enemy is removed from the level when it is defeated.

Actors: Enemy

Preconditions: Enemy health <= 0

Basic sequence:

Step 1: Player damages an enemy until its health reaches zero.

Step 2: Remove this instance of the enemy from the current level.

Exceptions:

None

Post conditions: The instance of the enemy is no longer in the current level.
Priority: 2*
ID: AE01

Name: Load Level
Summary: A player selects a level or loads a save, and the game loads the appropriate level.
Actors: Player
Preconditions: Player has selected a level or loaded a save
Basic sequence:

Step 1: The player starts the game and selects a level or loads a save.
Step 2: Load the scene containing the appropriate level, which includes the terrain, any intractable objects, enemies, and sounds. It also include the placement of and assets for those.
Step 3: Run the scripts for any enemies and objects in the area.

Exceptions:

Step 2: The area being loaded is a boss area, in which case the player will be transported to the next area upon victory.

Post conditions: The appropriate level is loaded and the player can interact appropriately with it.
Priority: 1*
ID: AE02

Name: Interacts with object
Summary: A player interacts with an object in the level and it changes something about the level.
Actors: Player
Preconditions: Level is loaded and running, player does something to the object (specific to each object)
Basic sequence:

Step 1: Player is in a level and performs some action on an interactable object.
Step 2: Run some script based ton the object to perform some specific action.

Exceptions:

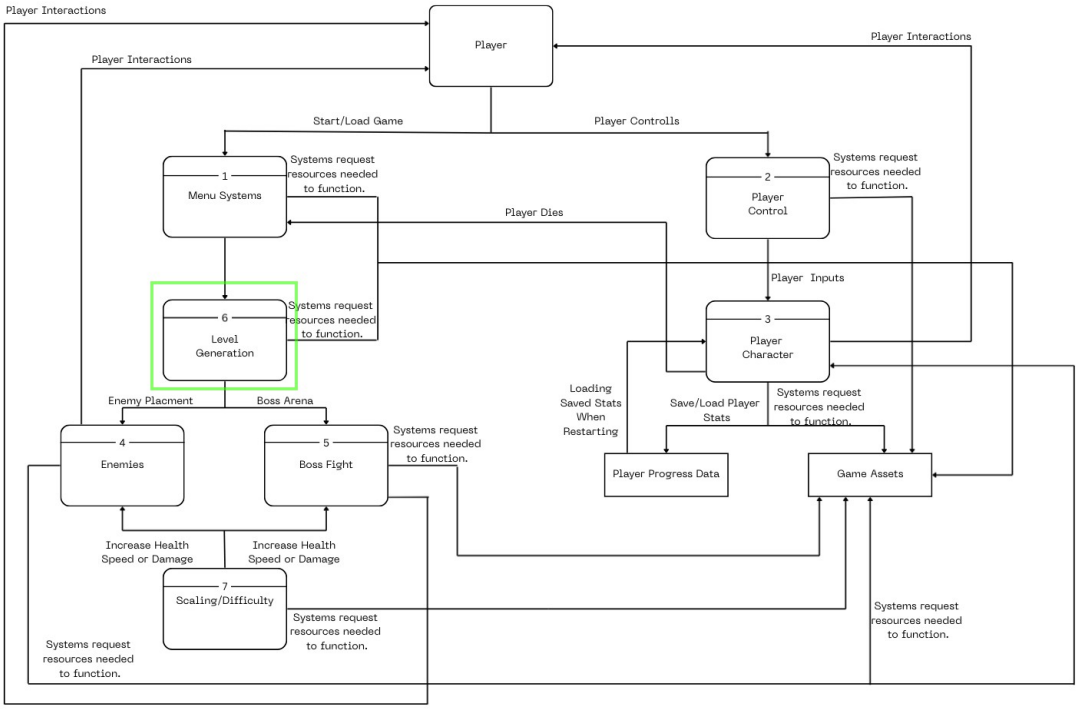
Step 1: If object is destroyed, remove it from the level.

Post conditions: The action of the specific object is executed.
Priority: 2*
ID: AE01

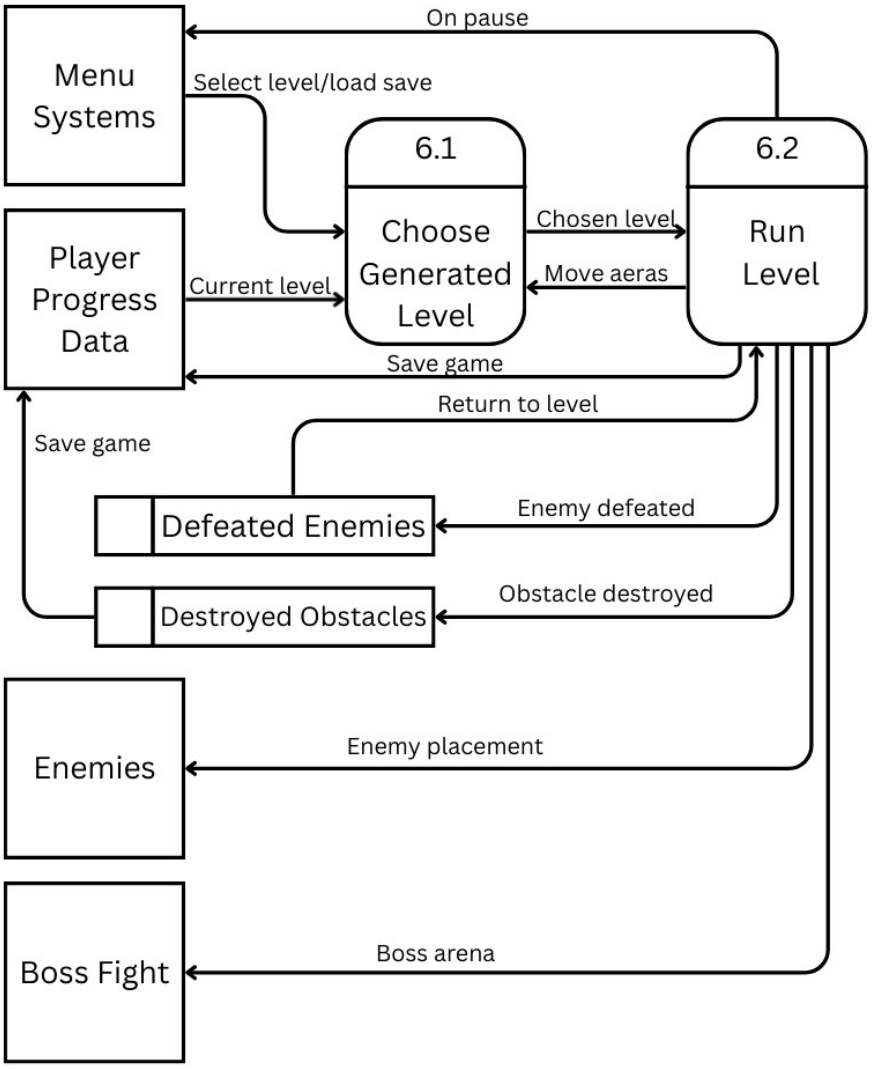
*The priorities are 1 = must have, 2 = essential, 3 = nice to have.

3. Data Flow diagram(s) from Level 0 to process description for your feature _____14

Data Flow Diagram (level 0)



Level Generation Data Flow Diagram (level 1)



Process Descriptions

1 Choose Generated Level:
- 1.1 If level loaded from level selection menu
  - 1.1.1 Get selected level from Menu System
- 1.2 If save data is loaded
  - 1.2.1 Get current level from save data

2 Run Level:
- 2.1 Switch scene to correct level
- 2.2 Remove any destroyed obstacles stored in Player Progress Data

2.3 Remove any enemies in Defeated Enemies
2.4 Place enemy instances
2.5 loop:
    2.5.1 Call enemy scripts
    2.5.2 If boss level
        2.5.2.1 Call Boss Fight scripts
    2.5.3 Call any object scripts
    2.5.4 On pause
        2.5.4.1 Open pause menu
    2.5.5 On save
        2.5.5.1 Record current level
        2.5.5.2 Record destroyed obstacles
    2.5.6 On enemy defeated
        2.5.6.1 Save specific enemy defeated
    2.5.7 On player enters level transition area
        2.5.7.1 Change scene to next level

4. Acceptance Tests _____9

Load Level:

Input	Procedure
Valid level	Load level normally
Invalid level	Go to main menu

Remove Defeated Enemies/Destroyed Obstacles:

Input	Procedure
Valid ID	Remove enemy/obstacle normally
Invalid ID (not in current level)	Skip over ID and remove it from Defeated Enemies/Destroyed Obstacles

Run Level:

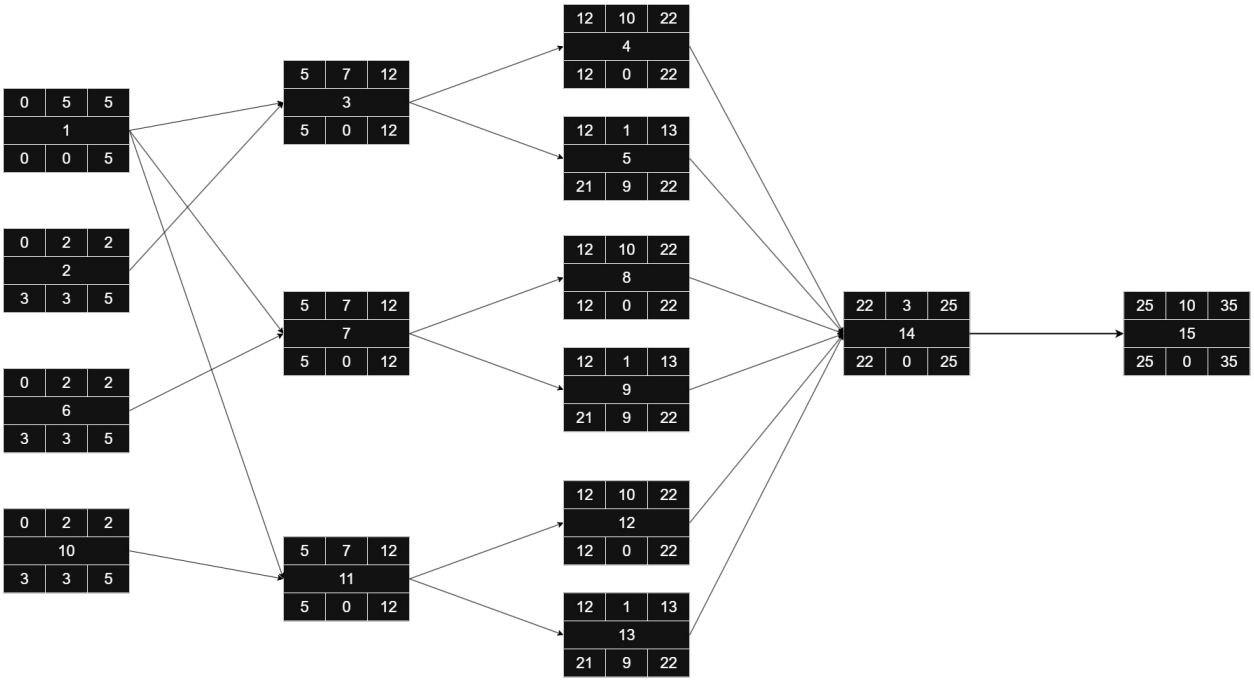
Special Case	Procedure
Player out of bounds	Teleport player to start of level
Enemy out of bounds	Remove enemy from level
Object out of bounds	Teleport object to correct location

5. Timeline _____/10

Work items

Task	Duration (hours)	Predecessor Task(s)
1. Level Switcher/Loader	5	-
2. Area 1 Asset Collection	2	-
3. Area 1 Terrain Layout	7	1,2
4. Area 1 Object Placement and Programming	10	3
5. Area 1 Enemy Placement	1	3
6. Area 2 Asset Collection	2	-
7. Area 2 Terrain Layout	7	1,6
8. Area 2 Object Placement and Programming	10	7
9. Area 2 Enemy Placement	1	7
10. Area 3 Asset Collection	2	-
11. Area 3 Terrain Layout	7	1,10
12. Area 3 Object Placement and Programming	10	11
13. Area 3 Enemy Placement	1	11
14. Testing	3	4,5,8,9,12,13
15. Final Polish	10	14

Pert diagram



Gantt timeline

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
1. Level Switcher/Loader																																			
2. Area 1 Asset Collection																																			
3. Area 1 Terrain Layout						1,2																													
4. Area 1 Object Placement and Programming													3																						
5. Area 1 Enemy Placement													3																						
6. Area 2 Asset Collection																																			
7. Area 2 Terrain Layout						1,6																													
8. Area 2 Object Placement and Programming													7																						
9. Area 2 Enemy Placement													7																						
10. Area 3 Asset Collection																																			
11. Area 3 Terrain Layout						1,10																													
12. Area 3 Object Placement and Programming													11																						
13. Area 3 Enemy Placement													11																						
14. Testing																							4,5,8,9,12,13												
15. Final Polish																										14									