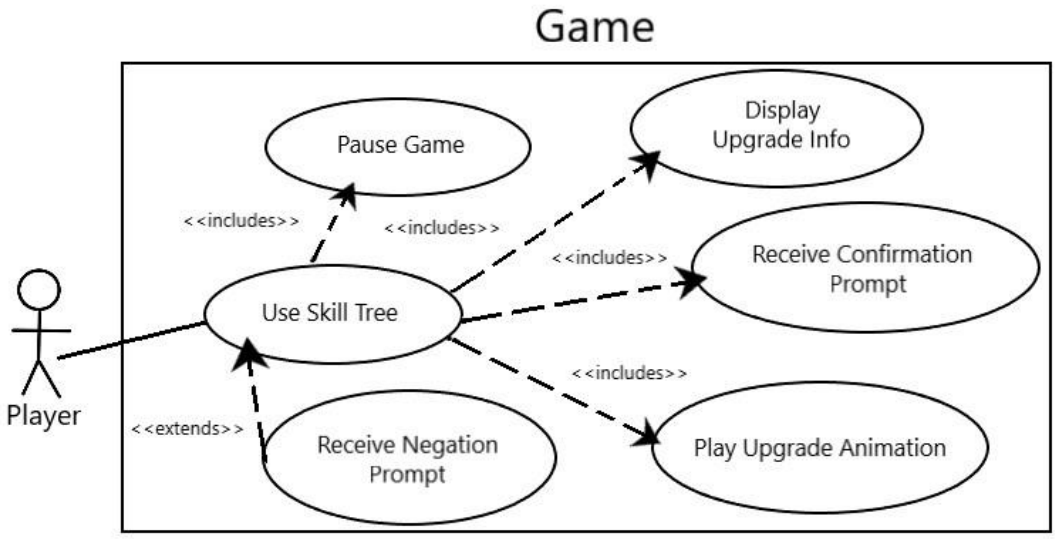
Name Liam Mathews Mark _____/50

1. Brief introduction __/3

My feature is a skill tree/leveling system. In game the player will collect experience points when defeating enemies. These experience points will be used as a sort of “currency” for which the player can acquire upgrades for their character relating to aspects such as health, damage, defense, or even new additions to the player character’s moveset or upgrades to existing moves. As mentioned, experience points will function like currency, and as such if the player does not have enough to earn a skill or upgrade, they will be unable to. Additionally, my skill tree will follow a common approach to skill trees, that is to make upgrades available once their predecessor has been obtained. Lastly, the skill tree will be a subset of the pause menu, available when the player pauses the game, and navigates to the skill tree.

2. Use case diagram with scenario __14

Use Case Diagrams



Scenarios

Name: Upgrade Character

Summary: Player uses experience points to unlock new skills for the player character to improve their performance in-game.

Actors: Player.

Preconditions: The Player is currently playing the game, has a minimum required amount of experience points, and has already acquired the preceding upgrade.

Basic sequence:

Step 1: Player selects pause.

Step 2: Player selects right bumper (or specified key) to navigate to the skill tree menu.

Step 3: Player can toggle current focus of the controller onto a desired skill. A prompt appears describing the upgrade, the necessary materials to obtain it, and which button to press to earn the skill.

Step 4: Player selects a skill; a prompt will appear asking the Player to confirm their choice.

Step 5: An animation plays showing the player character obtaining the upgrade, and the required experience points being removed from the Player's total. The player character now has the skill obtained from the skill tree.

Step 6: Player exits the skill tree and the pause screen and resumes the game.

Exceptions:

Step 5: If the Player has either not acquired the skill preceding the one selected, or does not possess enough experience points, a prompt will display informing the Player they cannot yet get the upgrade. Return to step 3.

Post conditions: The player character has improved abilities, endurance, or new additions to their moveset, allowing the Player to take on greater challenges.

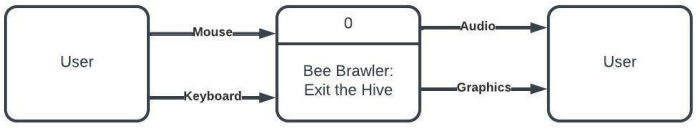
Priority: 2

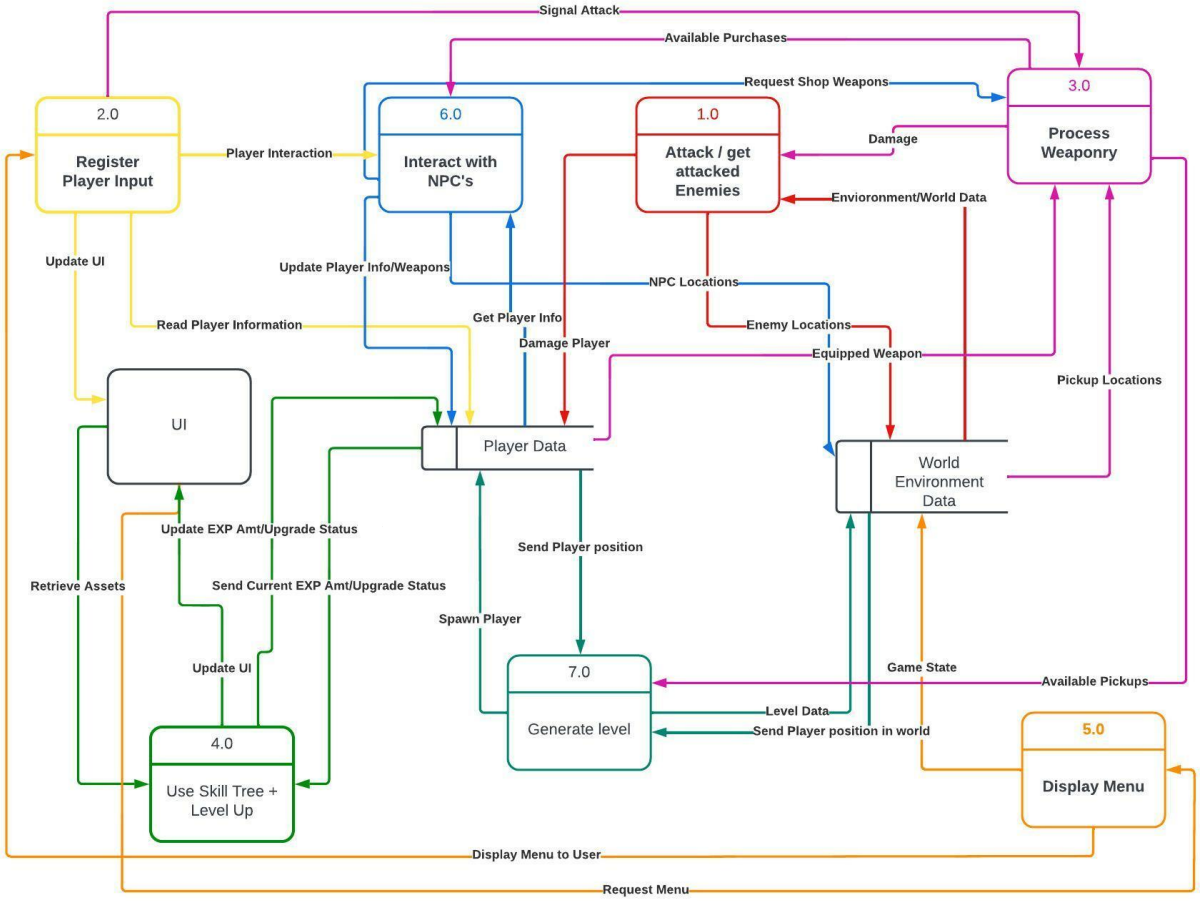
ID: LM1

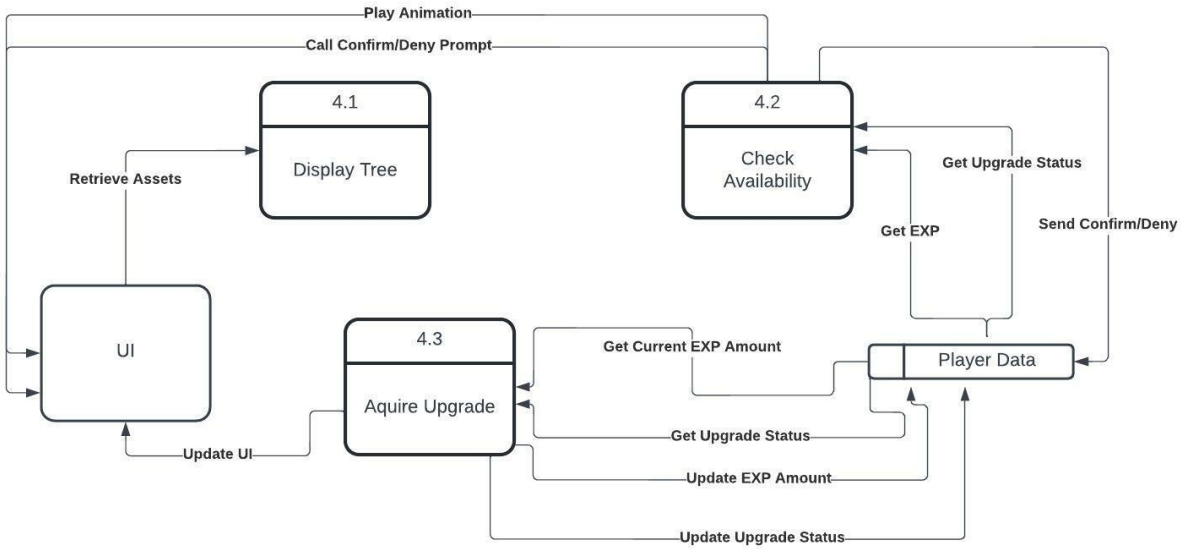
*The priorities are 1 = must have, 2 = essential, 3 = nice to have.

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

Data Flow Diagrams







Process Descriptions

If Skill Tree Selected

Display Skill Tree

Endif

If Skill Selected

Retrieve Current EXP Amount

Retrieve Current Upgrade Status

If Current EXP Amount and Upgrade Status Are Valid

Display Confirmation Prompt

Change Upgrade Status

Change EXP Amount

Change Skill Tree UI

Play Animation

Else

Display Negation Prompt

Return to Skill Tree

4. Acceptance Tests _____9

Test Ideas for Skill Tree

Testing will require adjusting the player's current exp count.

Testing procedure will be conducted as follows:

- Start with high amount of exp to unlock every skill at once to ensure that the entire tree can be filled.
- Check that changes exist only in current save state.

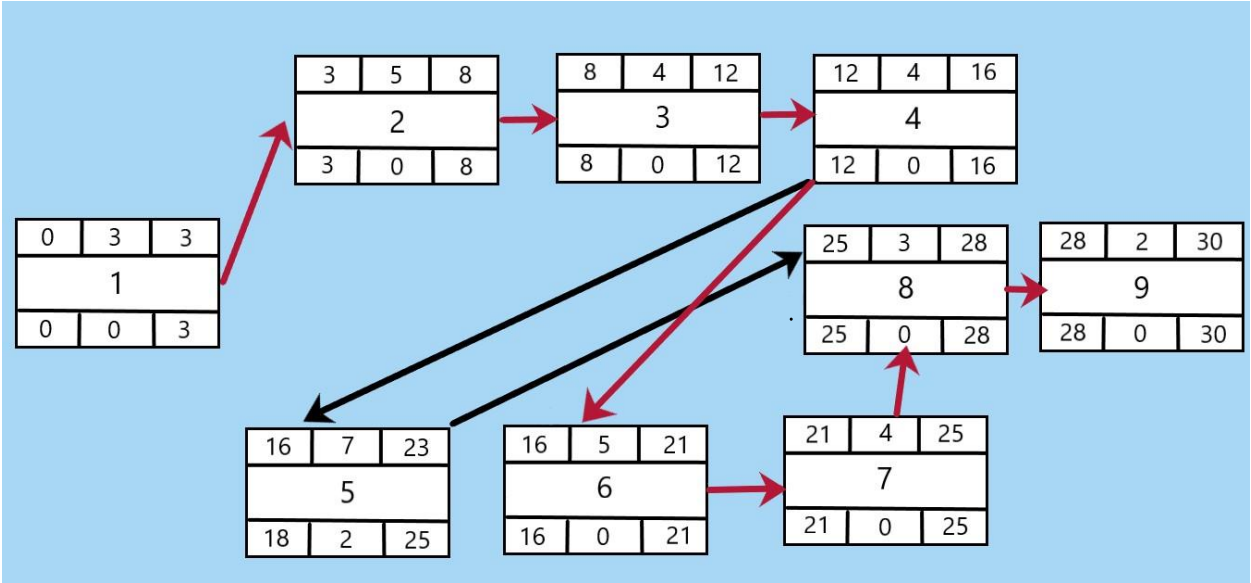
- Ensure that required amount of experience points are being subtracted from player balance when a skill is successfully added.
- Make sure that upgrade animation plays each time when receiving upgrade.
- Ensure proper graphical changes are made to selected skill after acquiring it.
- Reset tree, change exp to zero, attempt to unlock skills with insufficient experience. Will be conducted on all skills.
- Change exp count to exact required balance, ensure skill can be acquired. Repeat for all skills.
- Change exp count to be 1 higher than required balance, ensure skills can be acquired. Repeat for all skills.
- Attempt to unlock skills when exp count is set to negative number. Repeat for all skills.
- Attempt to unlock skills with exp count set to real number (EX: 0.1). Will be conducted on all skills.
- Attempt to unlock skills with locked predecessor(s). Will be conducted on all skills.

5. Timeline _____/10

Work items

Task	Duration (PWks)	Predecessor Task(s)
1. Analyze Character Moveset	3	-
2. Plan Upgrades/Additions to Player Character Attributes	5	1
3. Create Initial Skill Tree Draft	4	2
4. Finalize Skill Tree Draft	4	3
5. Script Programming	7	4
6. UI Design	5	4
7. UI Implementation	4	6
8. Testing	3	5, 7
9. Finalize	2	8

Pert diagram



Gantt timeline