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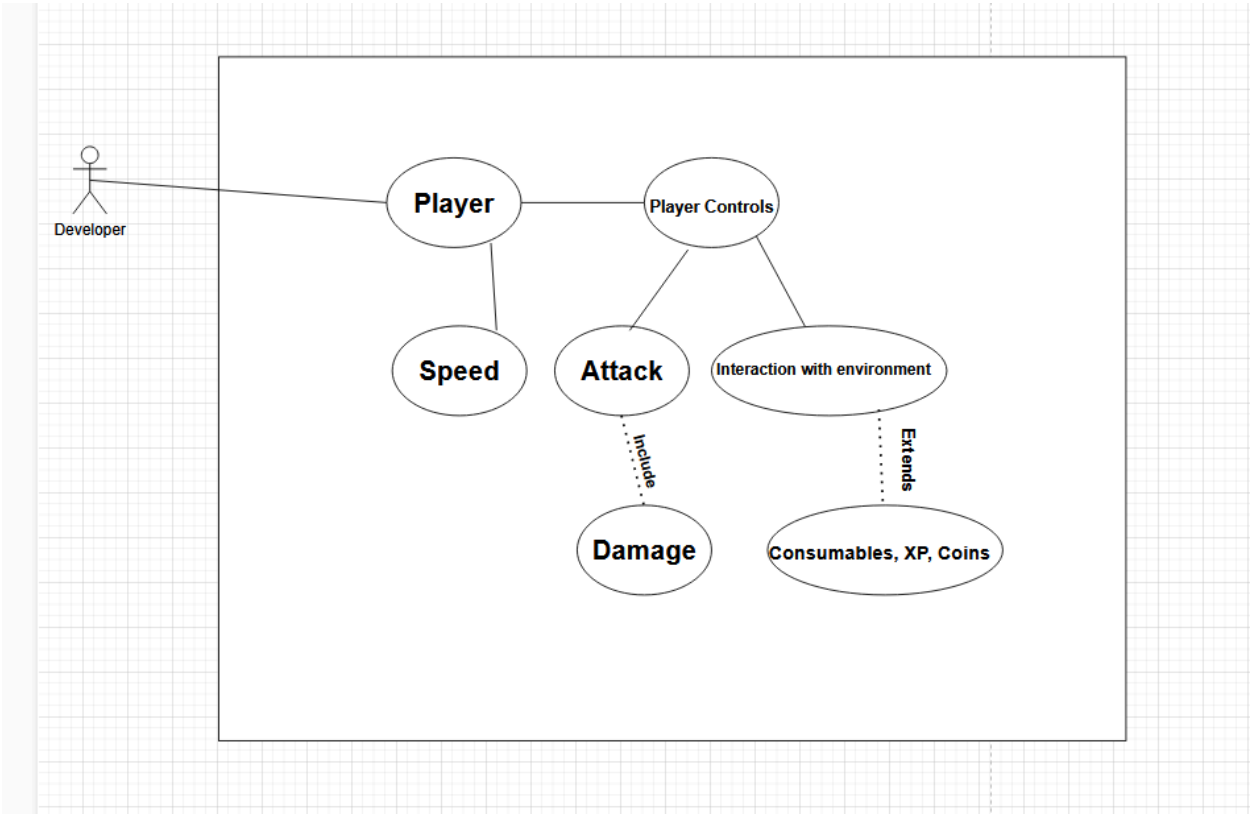
1. Brief Introduction __/3

For our group project my team, SuperNova Nerds, are designing a game in which I will be working on input controls related to the controls of the player, attacking, and its movement interactions. This includes:

- Basic movement including movement up, down, left, and right.
- Advanced movement including the blending of the basic movements, such as right-up or left-down etc..
- Mobile Controls involving touch screen controls, and movements controls.
- Porting to Android, IOS, and other platforms.
- Interactions with the player sprite including basic animations related to movements, and attacks.
- Player attacks and their related interactions to things such as environment and enemies.

2. Use case diagram with scenario __/14



Scenarios

1. **Name:** Speed
   - 1.1. **Summary:** Defines the speed of the player based on the movement of the player and what controls have been inputted.
   - 1.2. **Actors:** Developer
   - 1.3. **Precondition:** Player must be in the game environment.
   - **1.4. Basic sequence:**

1.4.1. Player is spawned.
1.4.2. Player must input a key.
1.4.3. Player sprite must cross the environment area according to input at a predetermined rate.

1.5. Exceptions:

1.5.1. Player is not initialized properly.
1.5.2. Player is dead.
1.5.3. Player has a debuff affecting speed or inputs.

1.6. Post conditions:

1.6.1. Player stops inputting the movement key.
1.6.2. Player dies.

2. Name: Player Controls

2.1. **Summary:**Interacts with the player sprite based on the controls selected and their given input to move the player around the environment.
2.2. **Actors:** Developer
2.3. **Precondition:** Player must be in the game environment.

2.4. Basic sequence:

2.4.1. Player is spawned.
2.4.2. Player must input a key or touch screen manipulation.
2.4.3. Player sprite must cross the environment area according to input and moves to desired area.

2.5. Exceptions:

2.5.1. Player is not initialized properly.
2.5.2. Player is dead.
2.5.3. Player has a debuff affecting speed or inputs.

2.6. Post conditions:

2.6.1. Player stops inputting the movement key.
2.6.2. Player dies.

3. **Name:** Attack

3.1. **Summary:**Actors: Developer
3.2. **Precondition:** Player must be in the game environment and have aimed correctly at the enemy.

3.3. Basic sequence:

3.3.1. Player moves in range of the enemy.
3.3.2. Player aims.
3.3.3. Player attacks.
3.3.4. Attack hits dealing damage according to preset and scaled values.

3.4. Exceptions:

3.4.1. Player cannot deal damage to enemy type yet.
3.4.2. Player misses the attack.
3.4.3. Player dies.

3.5. Post conditions:

3.5.1. Enemies will take damage related to Player level and other factors.

4. **Name:** Interaction with environment

4.1. **Summary:** Player interacts with items within the current space such as shops/vendors, item pickups, or item usage.

4.2. **Actors:** Developer

4.3. **Precondition:** Player must be in range of interaction and alive.

4.4. Basic sequence:

4.4.1. Player goes within range of the item or area.
4.4.2. Player presses the key to interact with the item or area.
4.4.3. Interaction is prompted and occurs.
4.4.4. Continuation of interaction if required. (Buying items, swapping items)

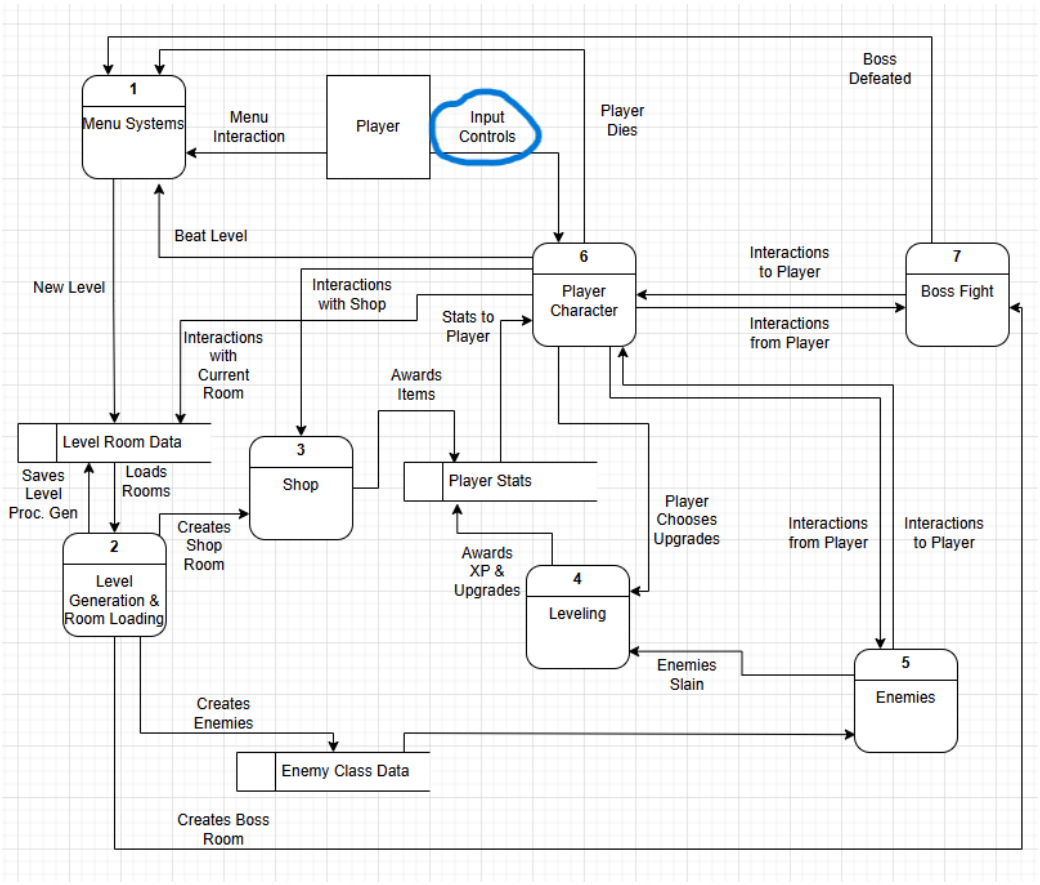
4.5. Exceptions:

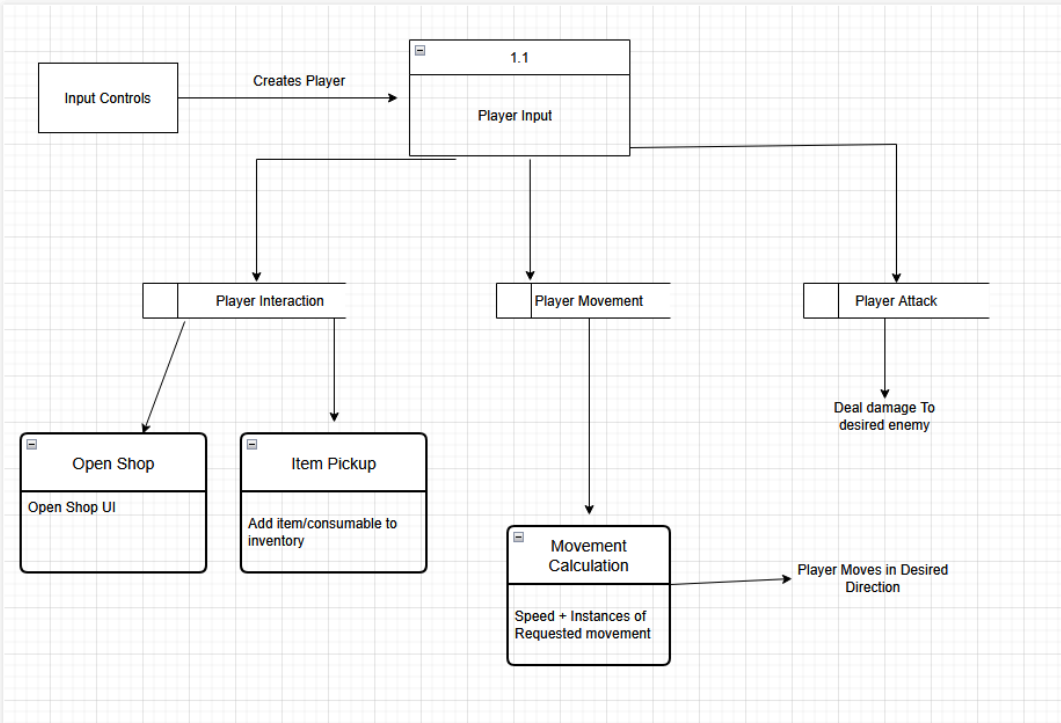
4.5.1. Player has full inventory.
4.5.2. Player does not have sufficient funds to purchase items.
4.5.3. Player cannot use item.

4.6. Post conditions:

4.6.1. Player and item interact creating outcome desired.

3. Data Flow diagram(s) from Level 0 to process description for your feature __/14





Process Descriptions:

```
Player Controls:
Create Player():
        Add Player Attack;
        Add Player Speed;
        Add Player Controls;
        Add Player Interaction;

                Wait for inputs();
                Receive inputs();
                if(input == PlayerControl)
                {
                        Move Player within environment(based on speed value);
                }

                if(input == PlayerAttack)
                {
                        Attack Enemy(determined by player aim/cursor);
                }

                if(input == PlayerInteract)
                {
                        If(interact == shop)
                        {
                                Open ShopUI();
                        }
                        If(interact == item pickup)
                        {
                                Add item to inventory;
                                If (inventory = full)
                                {
                                        Display message informing player;
                                }
                }
```

4. Acceptance Tests __/9

There will be multiple tests run with these controls to ensure 3 things: Proper movement, Attacks, and intractability. Each of these tests will be run for each type of movement, attack, and interactions.

- Move in a direction 100 times, in any environment.
- Move along objects and ensure no clipping occurs 100 times.
- Move into an enemy's sprite directly 100 times.
- Interact with an item 100 times, in any environment.
- Interact with the shop 100 times, in the first environment it appears.
- Interact with a pickup 100 times.

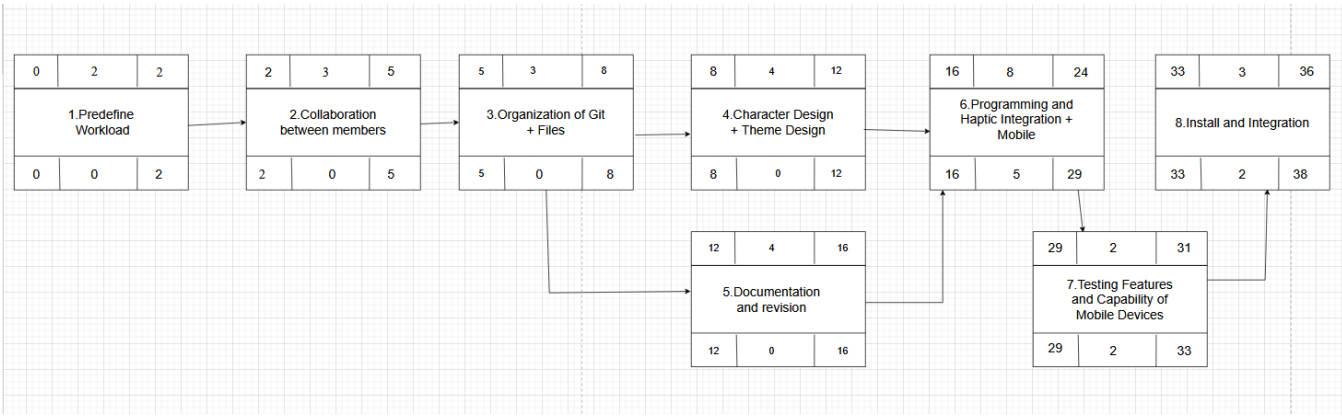
- Attack 100 of each enemy type.
- Attack 100 times towards a boss type.
- Attack with no enemies present.

Action Taken	**Non-Occurrence? (_/100)**	**Average FPS**	**Issues?**
Interaction	5	45	Shop wouldn't display it every time.
Movement	2	54	No, User error
Attack	0	32	N/A

5. Timeline ___/10

Task	**Duration (PWks)**	**Predecessor Task(s)**
1.Predefine Workload	2	-
2. Collaboration between members	3	1
3. Organization of Git + Files	3	1
4. Character Design + Theme design	4	2,3
5. Documentation and Revision	4	2,4
6. Programming and Haptic integration + Mobile	8	1,5
7.Testing Features and capability of mobile devices	2	3,6
8.Install and Integration	3	5,6,7

5.2 Pert Diagram



5.3 Gantt Diagram