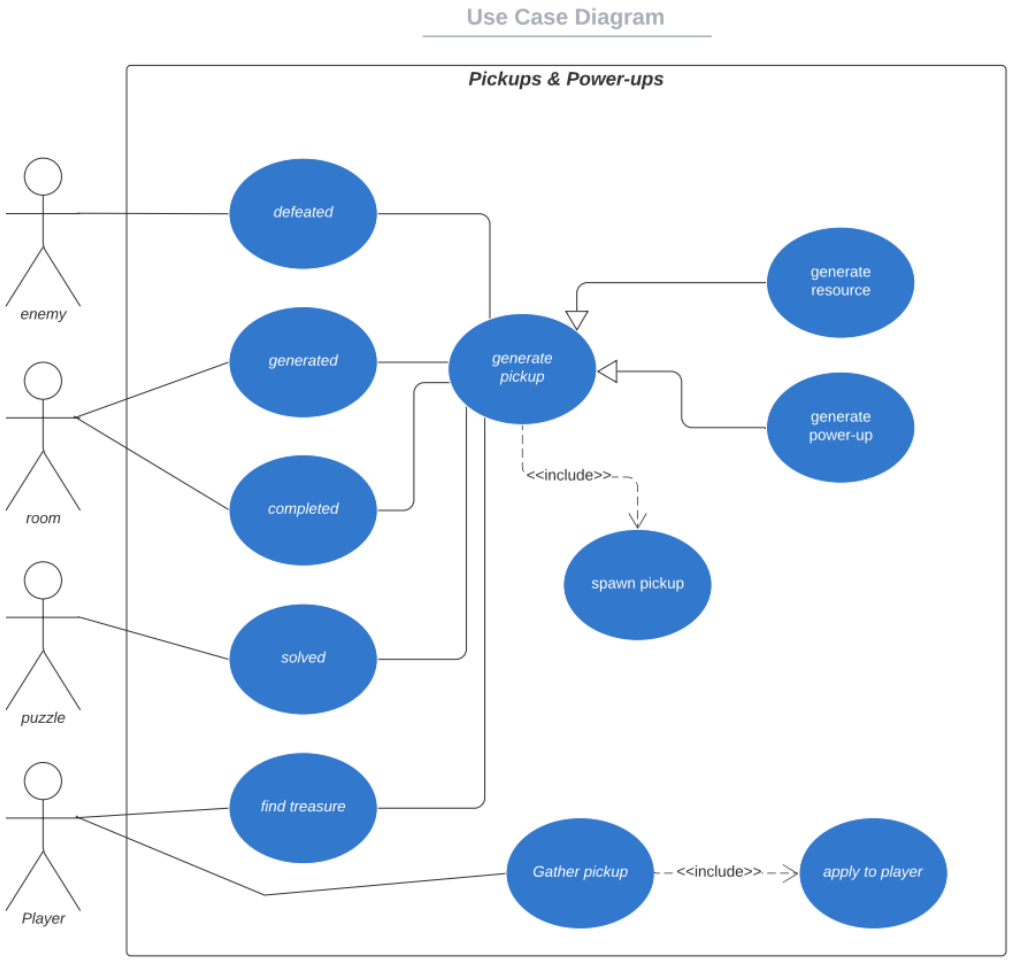
Champion document
Company: Scosoft | Game: Scoto | Feature: Pickups and Power-ups
Name: James Lasso | Date: 9/20/2021

1. Brief introduction

My feature is **Pickups & Power-ups**. Throughout the game the player will come across various power-ups from either exploring, completing puzzles, defeating enemies or completing levels. A power up could be various forms of buffs to the player such as health increase, weapon power increases, better vision, or more tools the player can use. Pickups could be ammo, more batteries/charges for the players tools or to replenish health. The pickups and power-ups will be placed in the level during level generation.

2. Use case diagram with scenario



Scenarios

Scenario 1 (enemy defeated):
Name: defeated
Summary: Player defeats and enemy
Actors: Player, Enemy
Preconditions: Player Alive
Basic Sequence:
- **Step 1:** Generate pickup triggered
- **Step 2:** Resource is determined by loot list
- **Step 3:** Pickup is spawned

Exceptions: none
Post conditions: Resources granted to player
Priority: 2*
ID: JL01

Scenario 2 (room generated):
Name: generated
Summary: A random pickup is spawned on room generation
Actors: Room generation
Preconditions: Room is generating
Basic Sequence:
- **Step 1:** Room generation starts
- **Step 2:** pickup location chosen
- **Step 3:** pickup generated
- **Step 4:** Spawn pickup

Exceptions: Pickup generation not triggered
Post conditions: Pickup is available to player
Priority: 2*
ID: JL02

Scenario 3 (room completed):
Name: completed
Summary: Occasionally completing a room will spawn a pickup item
Actors: Room
Preconditions: Player alive and room completed
Basic Sequence:
- **Step 1:** Player clears room

Step 2: treasure spawns near exit
Step 3: pickup generated
Step 4: Spawn pickup

Exceptions: none
Post conditions: pickup available to player
Priority: 2*
ID: JL03

Scenario 4 (player find treasure):
Name: find treasure
Summary: The player will come across treasure chests that will trigger pickup generation
Actors: Player
Preconditions: treasure available
Basic Sequence:
Step 1: Player finds treasure
Step 2: player opens treasure
Step 3: pickup generated
Step 4: Spawn pickup

Exceptions: none
Post conditions: pickup available to player
Priority: 2*
ID: JL04

Scenario 4(Puzzle Solved):
Name: solved
Summary: Player will solve puzzles and upon completion may receive a reward
Actors: Puzzle, player
Preconditions: Puzzle solved
Basic Sequence:
Step 1: Player completes puzzle
Step 2: Pickup generated
Step 4: Spawn pickup

Exceptions: none

Post conditions: pickup available to player
Priority: 2*
ID: JL05

Scenario 6 (Player gather pickup):
Name: gather pickup
Summary: Player interacts with available pickup
Actors: Player
Preconditions: pickup available
Basic Sequence:
Step 1: Player interacts with pickup
Step 2: pickup bonus applied to player

Exceptions: none
Post conditions: none
Priority: 2*
ID: JL06

3. Data flow diagram(s) Level 0 to process description for your feature

Data flow diagrams

Diagram 0

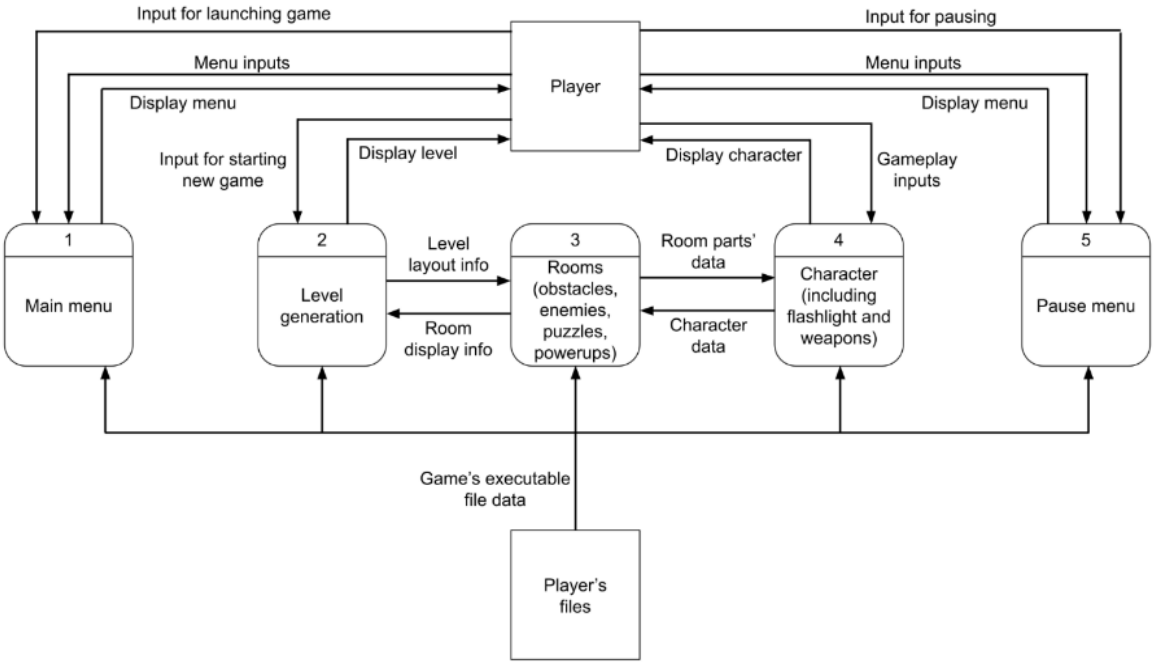
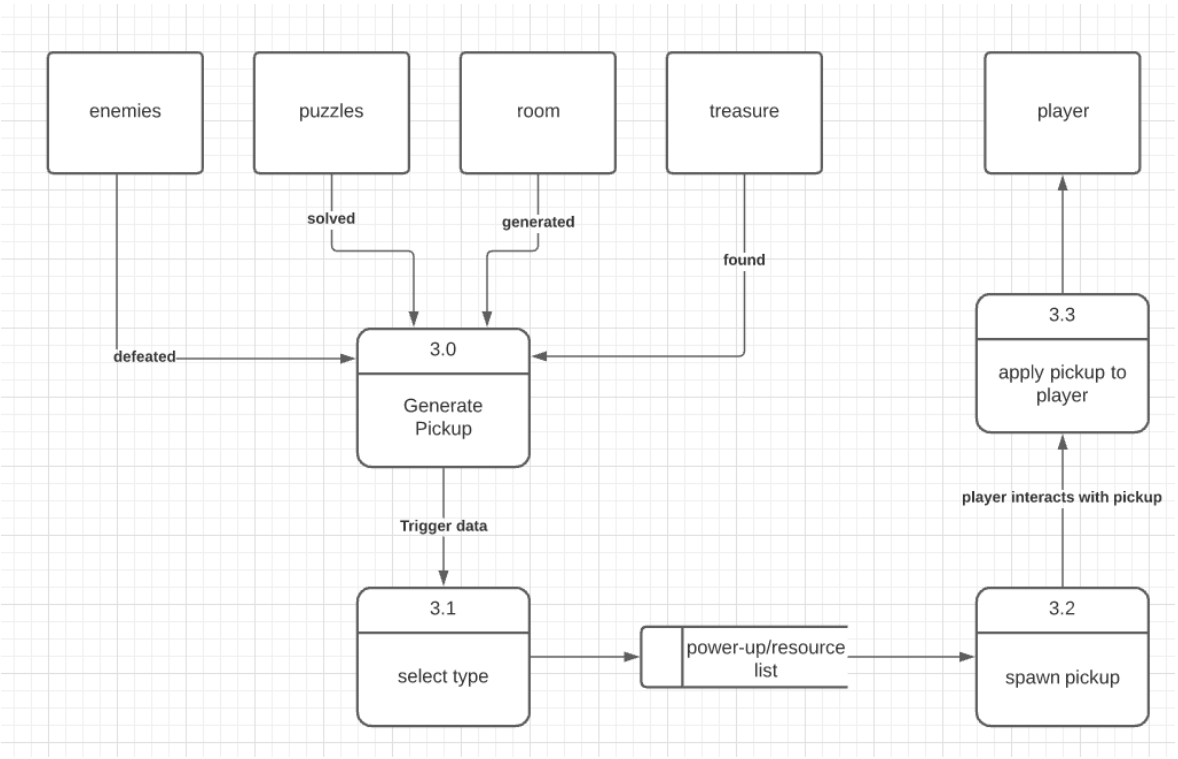


Diagram 3 - Generate Pickup



Process Descriptions

Process 3.0

Structured english process description for “generate pickup”

```
IF entity.hasLoot = true
        Select type
ELSE
        End
```

Process 3.1

Structured english process description for “select type”

```
IF entity = enemy
        type = type.enemy
ELSE IF entity = puzzle
        type = type.puzzle
ELSE IF entity = room
        type = type.room
ELSE IF entity = treasure
        type = type.treasure
END IF
```

Process 3.2

Structured english process description for “spawn pickup”

```
FOR pickup
        Load pickup
```

Process 3.3

Structured english process description for “apply pickup to player”

```
FOR each attribute
        addToPlayerStats
FOR each resource
        addToPlayerInventory
END FOR
```

4. Acceptance Tests

Powerups

Power-ups should not break the game. For example, a power-up in most cases will not allow the player to completely skip entire levels. Power-ups will be tested based on usage and dialed back accordingly.

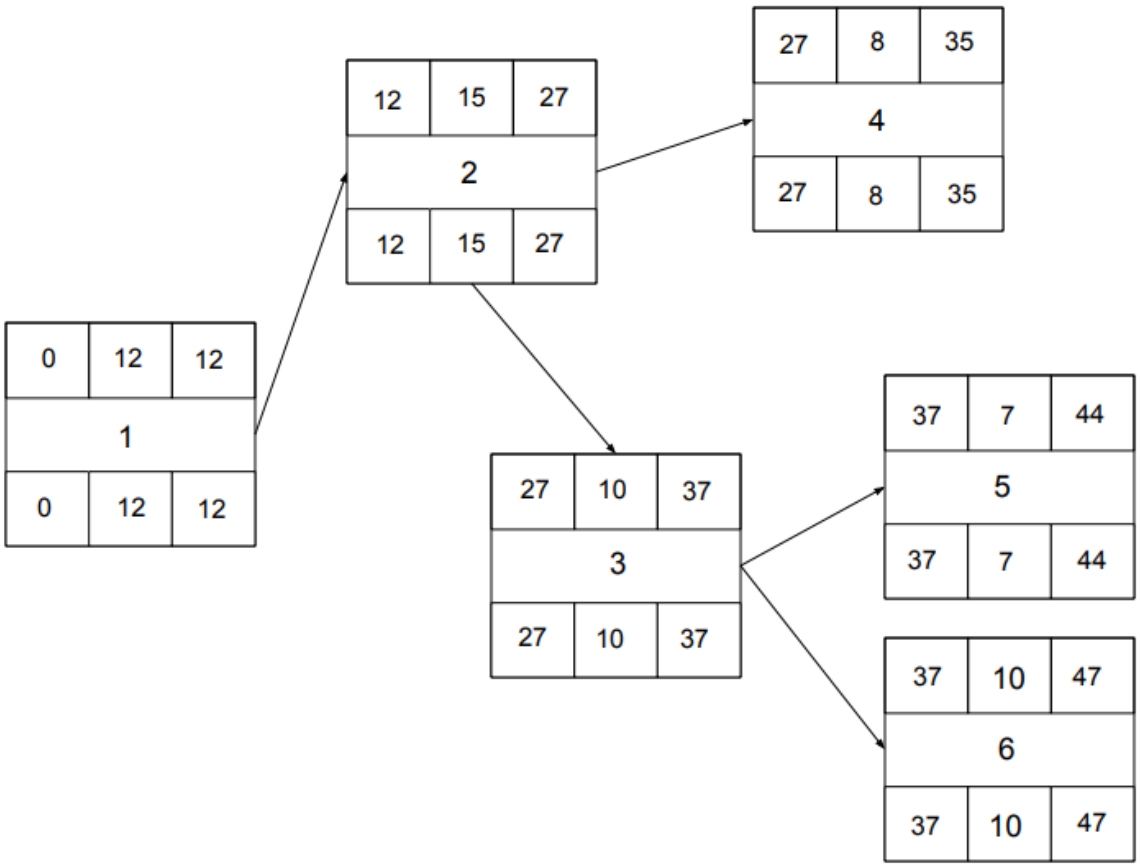
Resources

Resources should not be infinite. The dispensing of resources should be limited to a value per level as to not unbalance gameplay. Drop rates of resources will be tested and fine tuned to a balanced quantity.

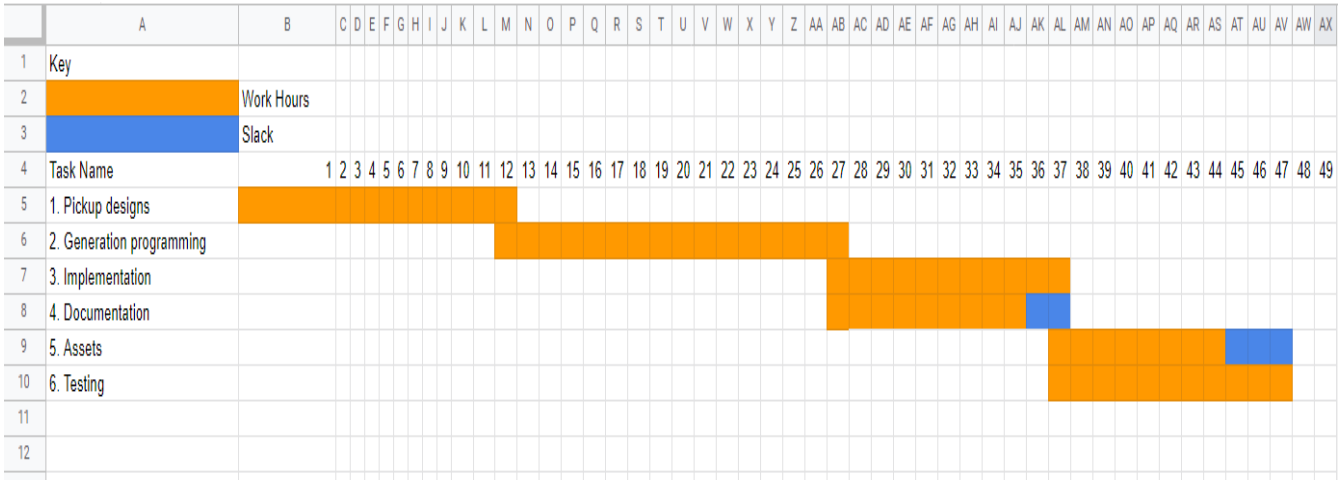
5. Timeline

Task	Duration (pred. Hours)	Predecessor task(s)
1. Pickup designs	12	-
2. Generation Programming	15	1
3. Implementation	10	2
4. Documentation	8	2
5. Assets	7	3
6. Testing	10	3

Pert Diagram



Gantt Timeline



[Gantt Link]