

DESIGN TEST

PART A

1. Create and write level logic for an endless runner game for the following approach:

a) Approach 1 - Runner game with random obstacle spawn mechanic with a simple combat system.

Feel free to add any power up/ pick up logic and their details in the game.

Ans:

1. **Game Concept:**

- a. The player controls a character that runs endlessly in a 3-lane track, typically a runner through several environments one after the other.
- b. Objects and obstacles spawn in the player's path to try to stop/kill it.
- c. Player has several power ups and pick-ups to boost performance or kill enemies coming the way.

2. **Game Elements:**


- a. **Player character:** The character is a someone who works in a coal mine. While mining, rocks shifted, due to which a huge boulder started rolling towards him that now chase him for his life.
- b. **Obstacles:** There are a variety of obstacles that spawn in the player's way randomly. Some require combat to overcome and some can be simply dodged by the defined controls(touch & swipe controls).

Dodge obstacles:

- a. **A pile of coal:** Pile of coal is present in the player's way to slow him down and it'll will eventually stop him if player collides with it several times.
- b. **Rails filled with coal:** Rails filled with coal are to be present in the way to make him stop at once. They are one shot kill basically.
- c. **Small tunnels:** Occasionally, there will be no more straight oath to run, instead there will be two small tunnels to slide through. Player swipes left/right to slide through the respective tunnel.

Combat obstacles:

- a. **Snakes:** There are snakes present in the mine which will spawn randomly into the way to hurt the player. The player must either dodge the snake, probability of which is very low as the snake will be moving along with the lane it spawned on or he can perform a kick action to tackle the snake.
- b. **Springtail bugs:** Spring tail bugs are found in the coal mine. They are called spring tail bugs because they jump using their tale. They move by jumping on the track horizontally. It will deal damage to player if he collides with it. Player can dodge the bug by either jumping over it or performing the kick action.

<div><h3>Collembola</h3><p>This bug is found crawling over mine timbers</p><p>Its common name is the Springtail. It lives near the entrance to the mine.</p></div>	
Name	Collembola or 'Springtail'
Habitat	Soil / vegetation debris
Diet	Collembola eat fungi
Special features & creepy facts	<p>They find their way using special senses, such as heat detection.</p> <p>They have a sort of tail that allows them to spring out of harm's way. This gives them the name Springtail.</p>

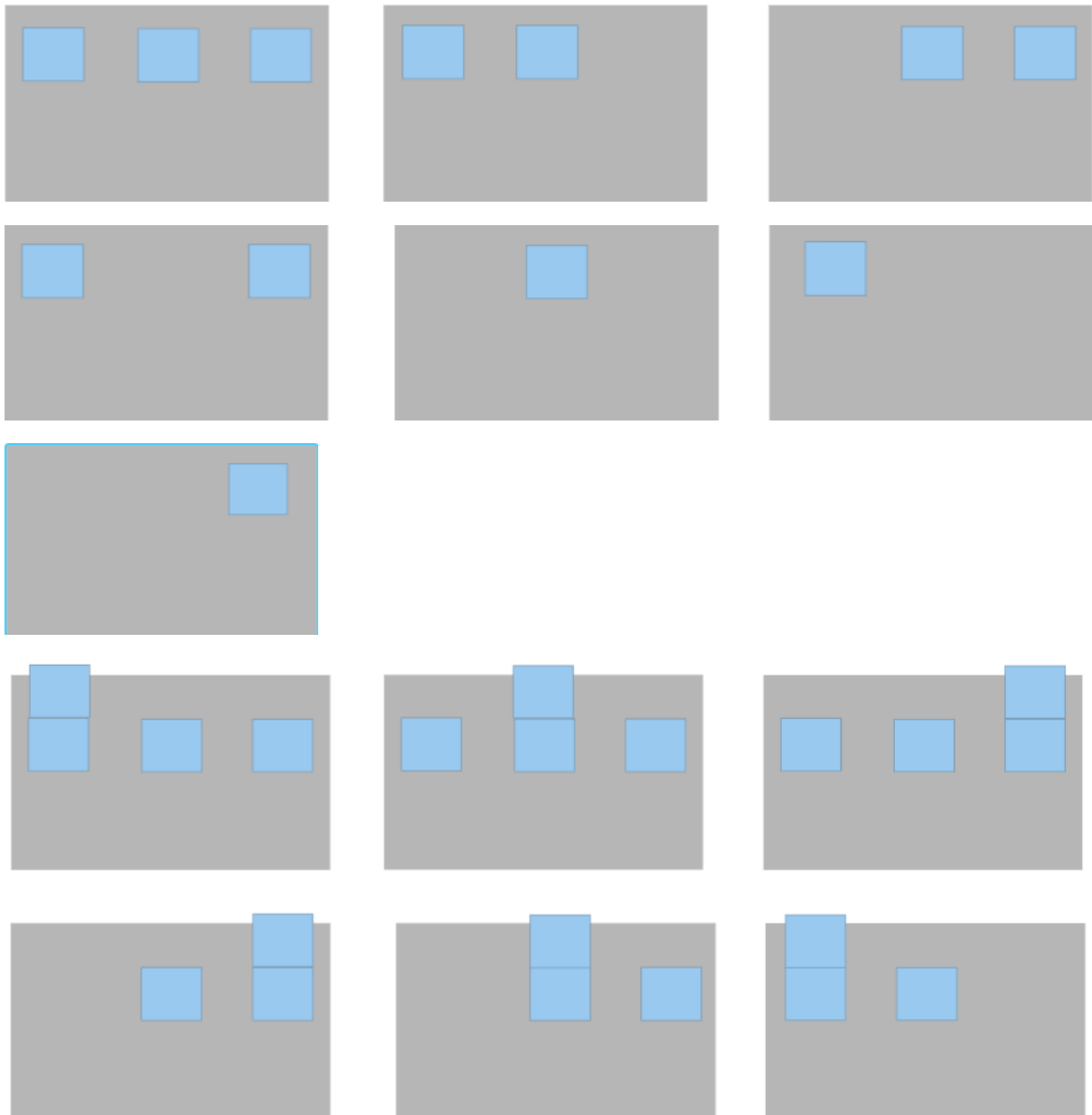
Possible Power ups:

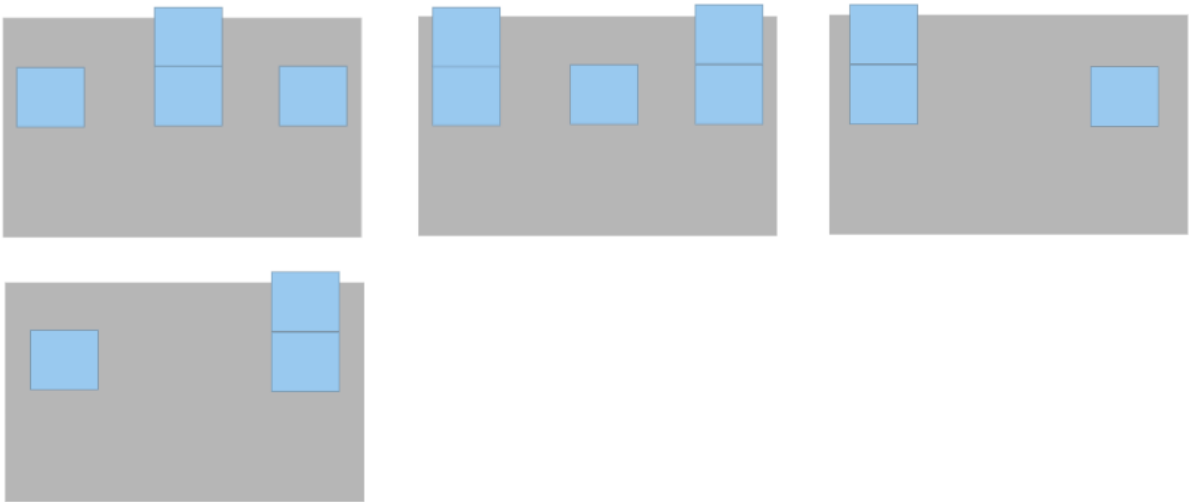
- a. **Give player a rail for 10-30 seconds:** When activated, a rail cart will be given to the player which cannot be damaged by "piles of coal", "snakes", and "springtail bugs".
- b. **The ability to throw rocks at enemies:** Player will throw rocks at enemies which can harm and eliminate them. Can last up to 20 seconds.
- c. **Magnet to attract collectible (ex: gems):** Exactly what it sounds like, attracts in-game primary currency like diamonds.
- d. **2x score multiplier:** Multiplies the score by 2.

LEVEL LOGIC:

- Obstacles are spawned far from player sight so that it cannot see them spawning.
- Obstacles are spawned with a random pattern.
- As soon as the obstacle platforms goes behind the player, they touch an invisible wall(trigger) that will destroy obstacle platforms so that they are being destroyed right after use. Memory is not being occupied by them unnecessarily. Game will start to get laggy overtime if not done so.

Some of the object spawning patterns:





Visual representation of what it is going to look like:

