

# Endless Runner

## Game Ideas:

### Reef Run:

The protagonist can be a common striped parrot fish as it navigated up the food chain. Obstacles can be typical stuff found in reefs such as coral, rocks, sea stars, sea urchins and plants (seaweed). Common enemies can be smaller crabs, shrimp, lionfish, parrot fish while larger enemies can be large predatory fish such as barracuda, groupers and sea snappers. Boss Fights can be Goliath groupers and Reef sharks e.g. (Black Tip Reef Shark, White Tip Reef Shark and Nurse Shark).

## Game Rules:

### Objective:

The player controls a striped parrot fish and must navigate through the vibrant reef environment while avoiding obstacles and enemies.

### Controls:

The player can use simple touch or keyboard controls to make the fish swim up, down, left, or right to avoid obstacles and collect power-ups.

### Health:

The player has a health meter that decreases upon collision with obstacles or enemies. Running out of health results in a game over.

### Power-Ups:

Power-ups can include temporary invincibility, speed boosts and health regeneration. This helps the player navigate through difficult sections of the reef.

### Scoring:

Points are earned by collecting items scattered throughout the reef and by surviving for as long as possible. The player can compete for high scores on a leader board.

### Level Progression:

As the player progresses, the game increases in difficulty with faster speeds, more obstacles, and tougher enemies.

## Game Scripts:

### Player movement script:

Controls the movement of the player's fish character based on user input.

### Collision detection script:

Detects collisions between the player's fish character and obstacles/enemies, deducting health accordingly.

### Score tracking script:

Keeps track of the player's score and updates it based on collected items and survival time.

### Power-up activation script:

Activates power-ups when the player collects them and applies their effects for a limited duration.

### Level generation script:

Dynamically generates the reef environment, placing obstacles, enemies, and collectibles to create a challenging and varied gameplay experience.

### UI management script:

Handles the display of UI elements such as health meters, scoreboards, and notifications.

## Prefab Types:

### Player character prefab:

Contains the visual and functional components of the player's fish character, including animations and collision detection.

### Obstacle prefab:

Represents various obstacles found in the reef, such as coral formations, rocks, sea stars, and sea urchins.

### Enemy prefab:

Includes smaller enemies like crabs, shrimp, and lionfish, as well as larger predatory fish such as barracuda and groupers.

### Power-up prefab:

Represents power-up items that the player can collect, each with its unique visual and functional effects.

### Environment prefab:

Includes background elements like seaweed, rocks, and coral reefs, enhancing the visual richness of the game world.

### UI prefab:

Contains UI elements such as health meters, score displays, and on-screen notifications, ensuring consistent and intuitive user interface design.

## Script Relationship:

- ❖ The player movement script interacts with the collision detection script to ensure that the player's movement is affected by collisions with obstacles and enemies.
- ❖ The collision detection script communicates with the score tracking script to update the player's score and health based on collisions.
- ❖ The power-up activation script interacts with the player movement script to apply power-up effects to the player's fish character.
- ❖ The level generation script works alongside the obstacle, enemy, and environment prefabs to create a dynamic and challenging game environment for the player.
- ❖ The UI management script coordinates the display and functionality of various UI elements, providing essential feedback and information to the player throughout the game.