Penguin Plunge

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Otherwise this would not have happened

Overview

Theme / Setting / Genre

- Underwater

Core Gameplay Mechanics Brief

- Swimming
- Collecting Fish
- Avoiding Obstacles (Sharks, Jellyfish, Pufferfish)

Targeted platforms

- Android
- PC

Project Scope

- <Game Time Scale>
    - 1 Week
- <Team Size>
    - <Core Team>
        - Tal
            - Programming, Game Design
        - Ali
            - Game Art

Influences (Brief)

- Jetpack Joyride

Jetpack Joyride is a simple game with intuitive controls that enable anyone to play. It doesn't have a steep learning curve, allowing the player to feel the thrill of success without much time investment. The explosive start to each run along with music that ramps up over the playthrough help build momentum to get the player invested in each run.

- Monster Dash

Monster Dash is a more complex and fast-paced action game that pits the player against a variety of NPC and environmental obstacles, requiring the use of weapon and jump abilities. Whilst developed by the same creators as Jetpack Joyride, it doesn't capture the same magic due to the immediate fast-paced action and various abilities the player must learn to use makes for a steeper learning curve. Consequently, the sense of progression provided by infinite runners is lost. Nonetheless, the game pairs the player's abilities with satisfying animations, sounds, and particle FX.

The elevator Pitch

In this Fast-paced arcade style game, you take control of a penguin exploring the dangerous depths of the ocean filled with deadly sharks, jellyfish and pufferfish. Dodge obstacles and carefully navigate through the treacherous waters as you collect fish to score points.With colourful art, it's the perfect game for players looking for a quick, fun and exhilarating challenge.

Project Description (Brief):

Penguin Plunge is an arcade-style pixel art game that takes the player into dangerous underwater territory as they control a penguin looking to collect fish. The game's objective is for the player to gather fish and travel as far as possible while avoiding obstacles, and keeping up with the game's accelerating pace.

The game's primary object is simple but challenging: swim as far as possible. A single button press causes the penguin to swim up, and release to fall. This single control allows the player to skillfully avoid frequent obstacles, as well as swim in a pattern matching the layout of collectable fish.

Project Description (Detailed)

"Penguin Plunge" is a cartoonish pixel-art arcade-style game that has the player taking control of a penguin swimming in the perilous ocean. The game begins with a short cutscene in which the penguin breaks through the ice, and

plunges into the ocean. This explosive start immediately sets the tone for adrenaline-fueled gameplay ahead.

The objective is to travel as far as possible while avoiding obstacles such as sharks that lock onto the players position, then swim directly forwards like torpedoes, stationary jellyfish that vary in length and rotation, as well as electric eels that present themselves in various configurations, and finally pufferfish that bounce between the ocean bed and the layer of ice on the ocean's surface. Each obstacle that is successfully dodge provides the player with a strong sense of accomplishment, stemming from the player's primal need to earn safety and security, and the satisfaction that comes with earning that. As the player progresses, obstacles become more frequent and reaction time is pushed to its limits.

The player controls the penguin's swimming by using a single button, causing the penguin to swim upwards when pressed, and downwards on release.This simple mechanic is the only control in the game, making it very accessible, whilst still allowing for the expression of skill through the game's procedurally generated levels. Each one provides a fresh experience, as the player uses their swimming skill to gracefully dodge obstacles and swim in patterns that match the layouts of collectable fish. These fish are coloured gold to reflect their worth, and present themselves randomly across each level, with some sections of a level being dedicated purely to these fish, serving to give the player respite from the hostile environment, before throwing them back into the action.

The game keeps track of the player's progress, showing their distance travelled in metres, enabling them to engage in some self-competition and reach a higher score.

What sets this project apart?

- Simplicity - In contrast to many modern games which place high emphasis on complex mechanics, Penguin Plunge offers a return to the basics, making it easy for anyone to pick up and play.
- Infinite Runners have yet to explore the dangers and wonders of the ocean. Penguin Plunge offers that experience through the eyes of a penguin

struggling to survive in a hostile world, and delivers the satisfaction that comes with overcoming its obstacles.

Core Gameplay Mechanics (Detailed)

- Swimming

- Enables the player to alter the height of the character, which determines whether or not they collide with obstacles. The response to input is fast in both directions, giving the player a high level of control.
- The player controls the penguin's swimming by using a single button. When the button is pressed, the penguin swims upwards, and when it is released, the penguin swims downwards.

- Obstacle - Jellyfish

- Jellyfish are stationary obstacles that move with the level. They appear as two jellyfish intertwined by their tentacles.
- Jellyfish can appear in 4 potential configurations including straight vertical or horizontal, as well as at 45 or 315 degree angles.

- Obstacle - Spinning Jellyfish

- Spinning jellyfish appear similar to ordinary jellyfish, with the key difference of a spinning motion around their central point.
- They rotate slowly enough that the player can narrowly pass around them as they spin, or try to avoid them entirely.

- Obstacle - Sharks

- Sharks swiftly swim towards the player in a straight horizontal line.
- The game provides a fair warning system for incoming sharks with an icon alert appearing on the right side of the screen. After a brief period, the shark will target the player's position and a sound alert will signal its arrival, allowing the player to choose a dodge direction. Once the shark passes the player, it will exit the visible screen space and despawn.

- Obstacle - Electric Eels

- Eels act as lethal horizontal zones. Two eel heads emerge on opposite sides of the screen, and converge in the centre to activate a deadly electric zone. After being active for a brief period, they will swim away, opening up that section of the screen for the player to use.

- Due to their challenging nature, other obstacle spawns are restricted during their activation. When the eels become electrically active, a collision zone is triggered that serves as an instant death zone for the player.

- Obstacle - Pufferfish

- Pufferfish slowly move between the top and bottom of the screen. With their slow bouncing, players have a fair opportunity to manoeuvre between them and the screen's edges.
- Because of their unique movement pattern, pufferfish are best used as a separate obstacle from electric eels to maintain fair gameplay.

Gameplay

To ensure a gradual increase in difficulty and maintain player engagement, the gameplay in Penguin Plunge begins with a relatively easy challenge of dodging jellyfish and collecting fish. As the player progresses, they encounter the different obstacles, each of which is introduced independently to provide a fair and focused introduction. After an intense series of obstacles, empty areas can be used to give the player an opportunity to catch their breath for the more challenging obstacles ahead. The game alternates between dodging obstacles with light fish collection, and just skillful fish collection. The player's horizontal velocity increases as they progress, creating a sense of momentum.

Initially, each type of obstacle is presented alone, with a distance that allows for easy dodging. However, as the game progresses, the obstacles become more frequent and more challenging, with 5-10 jellyfish, 1-5 sharks, or 1-6 eels appearing together. Sharks and spinning jellyfish, which require different dodging techniques, make for good intensifying pairs, while eels are more likely to be paired with other eels to form a pattern, as shown in concept art.

Assets Needed

- 2D Sprites

- Player Penguin

- **Obstacles**
  - Pufferfish Obstacle
  - Jellyfish Obstacle
  - Spinning Jellyfish Obstacle

- Eels Obstacle
- Collectable Fish

- Background

- Parallax Ocean Background
- Sea bed
- Ice Ceiling

- **Decoration**

- Coral
- Crabs
- Shells

- **Particles**

- Swim Bubble
- Sand
- Fish Collection Sparkle
- Sparks
- Ice Shards

- Animation

- Environment Animations
    - Example
    - etc.
- Character Animations
    - Player
        - Run
        - Swim
        - Glide
        - Fall
        - Death
        - Electrocution
    - Shark
        - Swim
        - Bite
        - Warning Icon
    - Jellyfish
        - Idle
        - Various Lengths: Small, Medium, Long

- Spinning Jellyfish
    - Idle
    - Lengths: Small, Medium
- Eels
    - Emerge
    - Swim Towards Each Other
    - Electrocute
    - Swim Away from Each Other
- Pufferfish
    - Idle Breathing
- Collectable Fish
    - Idle

- Sound

- Sound List (Ambient)
    - Ocean Sound
    - Splash (Plunge)
    - Ice Crash (Plunge)
- Soundtrack
    - Main Menu Soundtrack
    - Gameplay Soundtrack

- Sound List (Player)
    - Player Sound List
        - Swim
        - Hurt
        - Footsteps on Sand
        - Landing on the Sand
    - Shark
        - Swim
        - Bite Sound
        - Submarine Sonar (For Shark Warning)
        - etc.

        - Pufferfish
            - Bounce
        - Jellyfish
            - Zap Sound

- Sound List UI
        - Button Click

- Code
    - Player
        - State Machine : Idle, Swim, Death
        - PlayerSpawner

    - Ambient Scripts (Runs in the background)
        - LevelScroller : Moves level objects leftward
        - Parallax : Parallax Background
        - ObstacleGenerator : Decides which objects to spawn
        - ObstacleSpawner : Spawns obstacles as dictated by ObstacleGenerator
        - ScoreCounter : Counts the distance travelled and displays it on screen.
    - Obstacle Scripts
        - Abstract Obstacle
        - JellyfishObstacle
        - RotatingJellyfishObstacle
        - SharkObstacle
        - EelObstacle
        - PufferfishObstacle
    - Core Scripts
        - SimpleObjectPooler
        - ObjectPooler
        - EventBus
        - Death Event
    - UI Scripts

- VolumeSlider
- InterfaceButton

Schedule

- Prototype with Primitives

- 3 Days : 28/04/2023
  - Level Scrolling
  - Obstacle Generation
  - User Interface

- Artwork & Sound

- 5 Days : 30/04/2023
  - Art Added
  - Sound Added
  - Feel Added

- Mobile Port

- 2 Days : 01/05/2023
  - All Features Working

- Mobile Release

- 4 Days : 05/05/2023
  - Approval
  - Release