**Game Design Document (GDD) for Flappy Shark**

**1. Game Overview**

* **Title**: Flappy Shark
* **Platform**: PC
* **Genre**: Casual, Arcade
* **Target Audience**: All ages

**2. Game Description**

Play as a shark navigating a perilous underwater world filled with dangerous mines. With each tap, guide the shark up or let it sink, avoiding the mines and striving for the highest score possible.

**3. Core Game Mechanics**

* **One-Tap Control**: Players click once to make the shark swim upwards. Release to let the shark sink.
* **Adaptive Spawner System**: Dynamically spawn mines and other obstacles using prefabs. The system is expandable to include multiple types of obstacles.
* **Music Playlist System**: The game features a dynamic music playlist, shuffling through a list of input tracks, ensuring variety and immersion.
* **Parallax Background System**: Create depth in the game's visuals with a 5-layer parallax background, each moving at different speeds.

**4. Game Features**

* **Expandable Obstacle Types**: Plug in multiple types of obstacles to keep gameplay fresh.
* **Dynamic Music Experience**: Never hear the same sequence of tracks twice with the shuffling system.
* **Multi-layered Background**: A dynamic visual experience with 5 layers of parallax background.

**5. Visual Style**

The game possesses an underwater aesthetic, with the shark protagonist appearing realistic yet playful. Background layers depict varying depths of the ocean - from coral reefs near the surface to the dark abyssal zones below. It is all in pixel art and utilizes sprites to achieve that look!

**6. Sound Design**

The sound design is immersive, blending tranquil oceanic ambience with dynamic musical tracks. Audio feedback is essential, with different sound effects for swimming, hitting mines, and achieving milestones.

**7. Technical Requirements**

* **Unity Engine**: As the game will be developed in Unity, familiarity with C# and the respective engine is vital.
* **Dynamic Spawner**: Create a system where obstacles (like mines) can be plugged in as prefabs.
* **Music Controller**: A system to manage and shuffle through a list of audio tracks.
* **Parallax System**: Support for unlimited layers but initially designed for 5 layers of parallax background.
* **Highscore System**: Support for client-side saving and highscore recording system.

**8. Roles & Responsibilities**

* **Project Manager**:
  + **Shadab Ali**
    - Oversee the project's progress
    - Manage deadlines and resources
    - Liaison between all departments
* **Art**:
  + **Musse**
    - Character design (Shark, potential secondary characters)
    - Parallax background layers design
  + **Yufen**
    - Obstacle design (mines, future obstacles)
    - UI/UX design
* **Programmer**:
  + **Vedant**
    - Core game mechanics (tap control, collision detection)
    - Adaptive spawner system
    - Parallax background system
  + **Abel**
    - Music playlist system
    - Highscore System

**9. Milestones**

* Prototype Completion: 8th September 2023
* First Playable Version: 11th September 2023
* Beta Testing: 15th September 2023
* Release: 18th September 2023

**10. Feedback & Iteration**

Regular testing will be performed, and feedback from the team and selected external testers will drive refinements and iterations.

**10. Goal of the GDD**

This GDD provides a clear direction for Flappy Shark's development, ensuring alignment across all roles. Regular updates to the document are crucial as the game evolves.