Game Design Document

TITLE: Oxydive

Semester Project BA 3

Theme: "Hobbies"

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1. Overview

1.1. Summary

Oxydive is a team-based competitive sports game inspired by the extreme sport Underwater Rugby.
In its simple mechanics and high complexity it is open to players from all skill-levels offering a ludic and action-loaded experience where no round feels the same.
The unique Sci-Fi Setting combined with the Underwater mechanics offers a new experience for players looking for a one of a kind challenge and sets itself apart from other games of this genre.

Platform: PC, keyboard & controller

Mode: Local Network Multiplayer, 3rd person

Genre: Sports game

1.2. Vision Statement

Oxydive is a team-based sports game which encapsulates the fun of Underwater Rugby and blends it with innovative elements like a sci-fi setting and wacky mechanics.

1.3. Unique Selling Points

- Dynamic Underwater Mechanics
- Quick and action-loaded gameplay
- Unique Alien Setting

1.4. Target Audience

Playing needs and frequency: Feel competent through competing with others on a daily level
Mode of use: Dip in & out when they have time
Motivation: Beating other players makes me feel skilled and connects me with my teammates

1.4.1. Persona

Alex and Brooke are roommates who are hosting a weekend study party with university friends. During the breaks they use their laptops for impromptu LAN parties with a cool new game they found. Short rounds and quick gameplay grants them a fast and non-committed opt-in. The casually competitive nature of Oxydive allows them all to bond and relieve stress at the same time.

1.5. Inspirations & Competitors

- Rocket League
- Abzu
- Nintendo Sports Games

2. Core of the Game

2.1. Design Pillars

Team-Based Competition	Abstract Setting	Underwater Mechanics
Cooperation & Competition, Rewarding effective team-work	Alien Olympics, Living Ball Creature, Unique Map Layout	Full 3D Movement, Oxygen-Dependency, Water Currents

2.2. Core Rules

2.2.1. Win-Condition

The goal of the game is to score more points than the opposing team in 5 minutes. Should one team achieve this goal they automatically win the game.

2.2.1.1. Beyond the clock

If both teams have scored the same amount of points, the game goes into overtime until one of them scores one more point.

2.2.2. Course of a Round

2.2.2.1. Starting of the Round

The starting state is always the same. The players stay equal distance from the ball that sits in the middle of the arena. Each team is on the side of their own goal.
When a new round starts players are frozen in place for 3 seconds before they are allowed to start playing at the count of Zero.

2.2.2.2. Course of the Round

After the start of the round both teams try to gain possession of the ball to be able to score a point. Should one team be able to get to the ball they can pick it up to throw it. This way they can pass to their teammates, score goals or merely move the ball to a desired location.

Should they throw the ball into the goal they score one point and the game gets reset to its starting state.
The other team's goal becomes to steal the ball to defend their goal and be able to attack the other team's goal.

To achieve their goals it is vital that the teams play together effectively, passing the ball back and forth and keeping their oxygen levels above minimum.

2.3. Game Loop
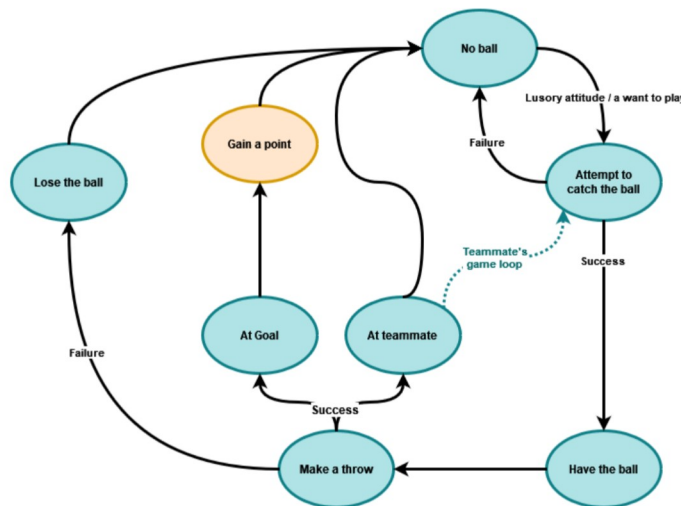
3. Feature Set
3.1. General Features
3.1.1. Camera

The camera is set on the player character from behind. They can look around by rotating their character horizontally or vertically by moving for a short bit in the intended direction. The camera follows the player vertically after moving for a short bit.

3.1.2. Oxygen-Meter

Players have a limited amount of Oxygen that can be refilled by swimming into a bubble spawning from pipes in the arena.

If the player loses all their Oxygen they won't be able to boost anymore and they automatically drop the ball should they be holding it.

Shortly before the players run out of Oxygen they will get visual cues on their suit as well as the non-diegetic UI on the side of their screen as a reminder that their Oxygen is low.

3.1.3. Water Currents

On multiple places on the map the players (as well as the ball and Oxygen bubbles) can get affected by water currents increasing the movement-speed in one direction while decreasing it in the opposing one. While not moving the player gets dragged in the direction of the current.
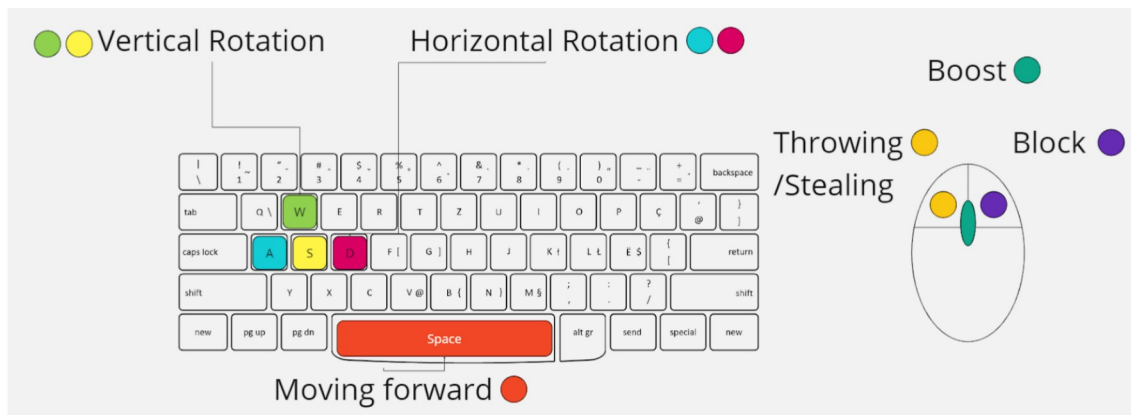
3.1.4. Compass

To allow for better orientation players are always able to see the position of the ball represented by a 3D-Arrow functioning like a compass. This makes it difficult to make a goal without the opposing team noticing and therefore encourages fights for the ball.
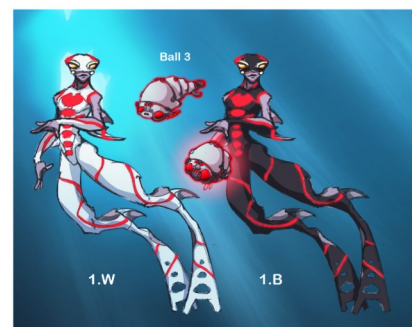

3.2. Gameplay

3.2.1. Input

3.2.2. Movement

3.2.2.1. Diving

Players are able to move in any direction underwater. Because of buoyancy the player feels like gliding through the water mimicking gravity, acceleration and deceleration from diving as it is in real-life.

Pressing **WASD** results in the player character rotating vertically or horizontally.

After choosing a direction the player can move forward by pressing **space**.

Through pressing the **middle-mouse button** the players can give themselves a small speed boost which however they won't be able to do while holding the ball. Should they pick up the ball while boosting they automatically stop boosting.

3.2.2.2. Blocking

Players are able to block the ball to obstruct the opposing team's movement and actions and therefore prevent them from scoring a goal. To use this mechanic players can keep the **right-mouse button** key pressed at any time to extend their body and therefore have a higher chance of catching the ball. While actively blocking players cannot move and lose their current speed.

3.3. Interaction
3.3.1. The Ball (Crawly)

The ball (or Crawly) is the central object the "moment-to-moment gameplay" revolves around. By catching the ball and throwing it into the goal players can score goals. They also have the possibility to steal the ball from the opposing team should they be in possession of the ball.

The ball also possesses a unique twist as the object is in fact a living creature with its own agency. After staying idle for 5 seconds Crawly starts moving on its own in a random direction.

3.3.1.1. Throwing

By pressing the **left-mouse button** players can throw the ball. Throwing the ball can lead to the player scoring a goal by throwing it into the goal or can lead to the players gaining an advantage. For instance they can pass the ball to their teammate, increase their speed by throwing the ball and then immediately boosting after it to catch it again or throw it to avoid it getting stolen by an enemy.

3.3.1.2. Catching

By swimming through the ball and therefore colliding with it players automatically catch the ball.

3.3.1.3. Stealing

Players have the ability to steal the ball from the opposing team by aligning a spheric collider around their upper body with the ball and keeping the **left-mouse button** pressed.

3.3.2. Goal

By throwing the ball directly into the Goal the attacking team scores a point. The ball as well as the players then respawn in the starting area.

4. Level Design

4.1. Level Layout

The arena consists of multiple elements on three different levels differing in their vertical height.
Tubes allow for moving between the different levels, some of them are one-dimensional because of their strong currents.
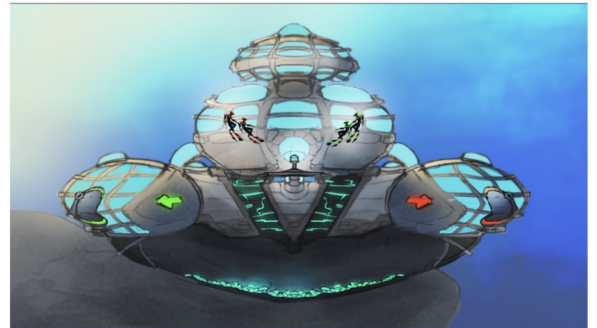
4.1.1. Upper Level

The players as well as the ball spawn in this large elliptic area at the beginning of the game and after a goal gets scored.

There are four tubes leading into the middle level all 90 degrees from each other.

There are two additional tubes leading from the lower level up to this level.

4.1.2. Middle Level

This torus-formed area contains the goals and leads to the upper level through four tubes and to the lower level through two smaller tubes which hold strong currents leading midwards.
Six Oxygen Spawners are also located here.

4.1.3. Lower Level

This area consists of two tubes on opposing ends leading into each other supported by currents. From the middle of the tubes two additional tubes lead upwards back into the upper level also supported by currents.