Game Design Document

SMUDGE

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Version 1.5

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1 Changelist

1.1 VERSION 0.1
- Created the document

1.2 VERSION 1.0
- Added content to [2 Game Overview] and its subsections
- Added content to [3 Mechanics] and its subsections

1.3 VERSION 1.1
- Updated [3.1.4 Control Scheme]
- Added content to [4.1 Heads-Up Display] and its subsections
- Minor updates, spelling fixes

1.4 VERSION 1.2
- Updated [3.1 Player] with information on colour-blind support
- Updated [3.4 Single-Use Pick-Ups] with pick-up behaviour and ink bomb description
- Updated [4.1.4 Single-Use Pick-Ups]
- Updated game title to SMUDGE

1.5 VERSION 1.3
- Added [3.2.4 Octopus Tentacle]
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- Added [3.2.7 Tesla Coil]
- Added icon mock-up to [4.1.3 Upgrades and Downgrades]
- Added bounce/push behaviour to obstacles in [3.2 Hazardous Obstacles]
- Added [4.2 Score Screen]
- Added [4.1.6 Player Indicators]
- Updated [3.5 Game Modes] with information on match start and end, and renamed the section to [3.5 Game Modes and Matches]
- Updated [3.6 Levels] with information on player (re)spawning)
- Updated Single-Use Pick-Up behaviour to replace the previous pick-up upon acquiring a second pick-up
- Updated [3.1.1.3 Push] with information on redirecting projectiles
- Updated [3.5.1.1 Scoring] with information on suicides

1.7 VERSION 1.5
- Updated [3.4 Upgrades and Downgrades] with information on new pick-ups
- Updated [3.5 Single-Use Pick-Ups] with information on new pick-ups
- Added [3.3 World Events]

2 Game Overview

2.1 General Information

Product Title: Smudge

Genre: Action

Platform: PC

Target Audience: Ages 8+

Localisation: English

2.2 Game Summary

A four player free-for-all deathmatch game where players control squids in small arenas. Players have four unique abilities, all of which can harm or otherwise hinder other players. Each ability will also move the player character, and the only way for players to move is to use an ability, making moving and attacking the same.

2.3 Story/Premise and Aesthetics

It is the year 2100 and the world has fallen in disarray. Most of the land has been flooded and sea creatures are the largest population of the earth. The floods brought all the human garbage and waste into the underwater system. Sea creatures were often used by humans for research. For example squids got modified with machinery. With the world flooded, these squids are battling for their territories using everything they can find left by humans. Waste increases or decreases their powers through mutation, but the ink they create damages their systems.

2.4 Game Objective and Win/Lose Conditions

The objective is to win matches by earning the highest score, or to be the last man standing, depending on the game mode being played. All available game modes and their respective win/lose conditions are detailed in [3.5 Game Modes].

3   Mechanics

3.1   Player

Players are represented in-game as squids of various colours. All players can be easily distinguished by their colour – red, blue, yellow or green, their textures' patterns, and by their unique decorations – eye patches, helmets, masks etc. While the colour-blind might have trouble distinguishing the four colours, the patterns and unique decorations – which alter the shape of the character – will also allow the colour-blind to distinguish the four players.

The following sections detail player abilities, mechanics and controls.

3.1.1   Abilities

The player has access to four unique abilities, each mapped to one of the face buttons. Holding the button will continuously reactivate the ability after it has cooled down. Only one ability can be used at a time – the previously used ability has to cool down before the next ability can be used.

3.1.1.1   Trail

Trail is activated by pressing the Cross button. When activated, it will boost the player character slightly forward, while releasing a small cloud of ink behind them. This cloud of ink will remain in place for X seconds, after which it will dissolve.

The Trail ability has a very short cooldown of X seconds, allowing it to be used almost continually. It allows almost continuous movement while also providing good agility, making it perfect for precise movement.

3.1.1.2   Cloud

Cloud is activated by pressing and holding the Circle button. When pressed, the player will start charging their attack. When the button is released, it will boost the player character forward and release a large cloud of ink behind them. The size of the ink cloud and the strength of the burst increase with the amount of time spent charging. This cloud of ink will remain in place for X seconds, after which it will dissolve.

The minimum charge time is 0.5 second, the maximum charge time is 3 seconds.

The Cloud ability has a long cooldown of X seconds. It is best used to eliminate opponents tailing the player, or to lay traps for them.

3.1.1.3   Push

Push is activated by pressing and holding the Triangle button. When pressed, the player will start charging their attack. When the button is released, it will give the player a large forward boost, while pushing away any players or objects directly behind the player. Push can also be used to reflect projectiles, when timed properly – any ink projectiles hit by the Push ability are redirected away from the player using Push. The strength of the burst, as well as the reach and strength of the push effect, increase with the amount of time spent charging.

The minimum charge time is 0.5 second, the maximum charge time is 3 seconds.

The Push ability is used both to quickly escape dangerous situations, to push objects into other players and to push players into hazardous obstacles. It has a medium cooldown of X seconds.

3.1.1.4 Shoot

Shoot is activated by pressing the Square button. When activated, it will give the player a small forward boost, while shooting a small ink projectile in the opposite direction. This projectile will be destroyed upon impact with a player, object or wall, damaging whatever it hits.

The Shoot ability can be used to injure players from a distance, but must be used with care as it also boosts the player forward, potentially into a hazardous obstacle. It has a short cooldown of X seconds.

3.1.2 Health

Players have a number of health points, depending on the settings chosen for the match. Health is lost when hit by an ink projectile, when too much time is spent inside an ink cloud, or when touching a hazardous obstacle.

When hit by an ink projectile, one health point is removed instantly.

When the player is inside an ink cloud, they start to turn black – their character is getting cloaked in ink. Spending 2 seconds inside an ink cloud will have the player turn completely black, at which point they lose one health point and instantly regain their original colour. If the player leaves the ink cloud before taking damage, they turn back into their original colour at the same pace.

Hazardous obstacles and level events can instantly remove a single health point, an entire life, or gradually damage the player in the same manner as ink clouds do. All hazardous obstacles are listed and described in [3.2 Hazardous Obstacles]. Level events are described under [3.6 Levels].

3.1.3 Lives

Players have a number of lives, depending on the settings chosen for the match. A life point is lost when the player loses all their health points, at which point their character is removed and very shortly after respawns in one of the spawn locations. After respawning, players will be immune to damage for two seconds to prevent instant spawn-killing. The player character flashes during this period to indicate their invincibility.

3.1.4 Control Scheme

An overview of all of the game's controls during gameplay (not including menu interaction):

Action	Xbox Controller	PlayStation Dual Shock Controller
Trail	(A)	(X)
Shoot	(X)	(□)
Cloud	(B)	(○)

Push	Y	△
Single Use Pickup	LT / RT LB / RB /	L2 / R2 / L1 / R1
Rotate Character	L	L
Pause Game and open Pause Menu	START	OPTIONS

3.2 Hazardous Obstacles

Hazardous obstacles are found scattered throughout the various levels:

3.2.1 Spiky Coral

Spiky Coral is attached to some of the walls in all levels. These brightly coloured obstacles will remove a single health point when they are touched by a player.

After being hit by the spiky coral, the player bounces off the coral, moving them away from the hazard.

3.2.2 Geyser

Geysers are scattered across the floor of [3.6.2 Smelly Jelly Reef]. Geysers have three states: idle, charging and active.

In the idle state, these geysers are inactive, not dealing damage to players and not emitting any particles. After a random amount of time has passed, the geyser transitions to the charging state.

In the charging state, bubbles start to rise up from the geyser, indicating incoming danger. The geyser does not deal damage at this point. After three seconds, the geyser transitions to the active state.

In the active state, the geyser violently emits smoke and bubbles, damaging any players caught swimming above it. Players caught in the blast instantly lose one health point.

Players cannot remain inside the geyser's stream when it is active: they will be pushed away from its centre if they land on top of the hazard. Moving through the stream is still possible: the player's bursts are stronger than the geyser's push.

3.2.3 Sea Mine

Sea Mines are scattered across [3.6.1 Shipwreck Canyon]. Sea Mines will explode if they are hit with enough force. The player moving at a high enough speed or ink projectiles hitting the Mines will cause them to explode. A player touching the mine does not detonate it if their speed is low enough.

When a Sea Mine explodes, it damages any players within a small range. Detonating the Sea Mine with an ink projectile while another player is near the mine can therefore be used to damage that player. If a player is killed by an exploding Sea Mine, the player that detonated the mine is considered to be the killer. Swimming into a mine will therefore count as committing suicide, while detonating a mine close to another player can result in a kill.

After a mine has been detonated, a 30-second cooldown commences. After the cooldown is completed, the mine will respawn, slowly ascending from the depths until it reaches the player's level.

If a player is hit by a mine's explosion, they are pushed away from the explosion. The push is not strong enough to launch the player into nearby walls or obstacles.

3.2.4 Octopus Tentacle

The Octopus Tentacle is a hazard accompanying the large sunken submarine in [3.6.1 Shipwreck Canyon]. This tentacle will swing around, when exposed, to damage players in its path. Each successful collision with a player will take one health point from that player.

The tentacle has a hidden, warning and exposed state. In its hidden state it is not visible and will remain this way for a random cooldown between 5 and 15 seconds. After this cooldown , the tentacle choses one of the 4 submarine windows to pop out off. Then it will go in its warning state, where the tentacle is only partly sticking out of the chosen window. The player cannot collide with the tentacle during this state. It will wait for 3 seconds before going into the exposed state. In the exposed state, it will fully stick out of the chosen window and swing around to try and damage players. This will last for about 3-5 seconds before it retreats back into the window to go back into the hidden state.

Players getting hit by the tentacle's swing are both damaged and pushed back.

3.2.5 Crabs

Crabs are small critters found in [3.6.2 Smelly Jelly Reef]. They will walk sideways between two points on the sea floor. When a player gets close, it will stop walking and start pinching upwards with its claws. If the player collides with these claws, he/she will take one health point of damage. When the player leaves the agro area, the crab will continue its cycle.

When a player is hit by a crab's pinch attack, they are pushed back slightly in addition to receiving damage.

3.2.6 Jellyfish

Jellyfish are stationary hazards in [3.6.2 Smelly Jelly Reef]. They move up in bursts followed by slowly floating down. Their highest state is slightly higher than the players (so their stingers would touch the player on collision) and their lowest state is near the bottom of the sea.

While moving down the jellyfish are below the players and will not be able to harm them. When at the lowest point they will start glowing and retract their stingers to prepare for a burst. The after 3 seconds they will burst upwards. When reaching the layer of the players, they will be able to harm them on collision.

Players cannot remain inside the jellyfish: they will be pushed away from its centre if they land on top of the hazard. Moving through the jellyfish is still possible: the player's bursts are stronger than the jellyfish's push.

3.2.7 Tesla Coil

The Tesla Coil is a stationary hazard located on walls in most levels similarly to spikes. This hazard has a charging and a dangerous state.

Upon spawn, it will start charging up for about 2-3 seconds. Once this time is up, it will be fully charged and it goes into the dangerous state. In this mode it glows and pulses with electricity. Once a player collides with the tesla coil in this state, it will damage the player for one health point. It will emit large amounts of sparks for about 1 second. After this, it will instantly lose all of its charge. So it will go back into charging mode after which the cycle can continue.

After being hit by a tesla coil, the player bounces off the coil, moving them away from the hazard.
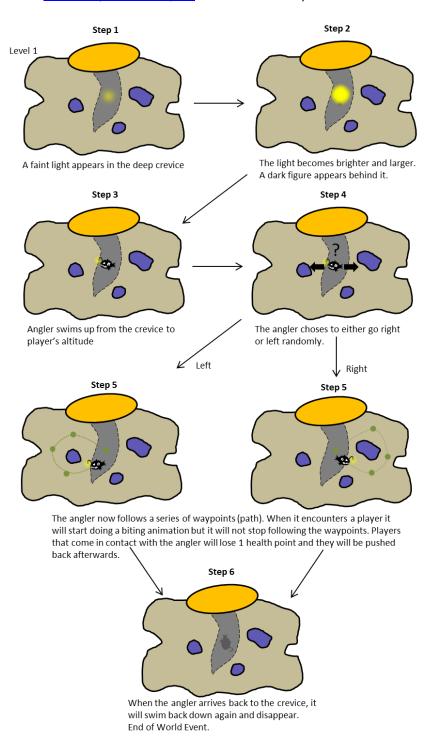
3.3 World Events

World events are certain series of events that happen at random intervals during a match. These events are level specific and they can be a treat to the player.

These events will only happen for a certain amount of time depending on the event. After a world event is done an interval will be randomly chosen between 2 and 4 minutes. After this interval a new world event will occur.

3.3.1 Angler

This event happens in [3.6.1 Shipwreck Canyon] . Here are the steps that are taken during the event:

Step 1

Level 1

A faint light appears in the deep crevice

Step 2

The light becomes brighter and larger. A dark figure appears behind it.

Step 3

Angler swims up from the crevice to player's altitude

Step 4

The angler choses to either go right or left randomly.

Left

Right

Step 5

Step 5

The angler now follows a series of waypoints (path). When it encounters a player it will start doing a biting animation but it will not stop following the waypoints. Players that come in contact with the angler will lose 1 health point and they will be pushed back afterwards.

Step 6

When the angler arrives back to the crevice, it will swim back down again and disappear. End of World Event.

Variables:

- Time it takes to swim in/out of the crevice (about 5 seconds)
- Angler speed
- Waypoint locations

3.3.2 Shark

This event happens in [3.6.2 Smelly Jelly Reef] . Here are the steps that are taken during the event:

Step 1

Level 2
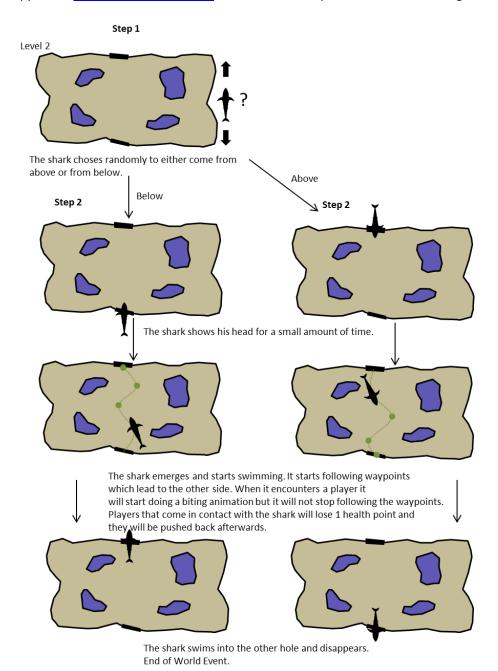
The shark choses randomly to either come from above or from below.

Below

Above

Step 2

Step 2

The shark shows his head for a small amount of time.

The shark emerges and starts swimming. It starts following waypoints which lead to the other side. When it encounters a player it will start doing a biting animation but it will not stop following the waypoints. Players that come in contact with the shark will lose 1 health point and they will be pushed back afterwards.

The shark swims into the other hole and disappears. End of World Event.

Variables:

- Time the shark waits before starting to swim (about 5 seconds)
- Shark speed
- Waypoint locations

3.4 Upgrades and Downgrades

Upgrades and downgrades can be collected during gameplay by picking up the barrels of nuclear waste that appear throughout the map.

The pick-ups are easily distinguished by their shape and the ominous light they emit. Touching a pick-up will grant the player a random upgrade or downgrade, with some having a higher chance of appearing than others.

When an upgrade is picked up by a player, the pick-up is removed, the player receives a random upgrade effect, and the corresponding upgrade icon is added to their HUD (see [4.1.3 Upgrades and Downgrades]). When the upgrade's timer expires, the icon and effect are removed.

If a player picks up a second upgrade when the first is still active, the second upgrade will always be different from the first – players cannot pick up a copy of an upgrade they already have.

Upgrades that have been picked up will respawn after thirty to sixty seconds.

All upgrades/downgrades and their respective spawn chances are detailed below:

- Rapid Fire
    - This upgrade decreases the cooldown time for the Shoot ability for 30 seconds
    - Chance: Medium
- Slow Fire
    - This downgrade increases the cooldown time for the Shoot ability for 30 seconds
    - Chance: Medium
- Faster Shots
    - This upgrade increases the speed of the Shoot ability's ink projectile for 30 seconds
    - Chance: High
- Slower Shots
    - This upgrade decreases the speed of the Shoot ability's ink projectile for 30 seconds
    - Chance: High
- Seeking Shots
    - This upgrade causes the Shoot ability's ink projectiles to curve towards opposing players
    - Chance: Low
- Penetrating Shots
    - This upgrade allows the Shoot ability's ink projectiles to pass through players instead of disappearing upon impact, while still dealing damage
    - Chance: Medium
- High Speed
    - This upgrade increases burst strength by 50% for all abilities for 30 seconds
    - Chance: high
- Slowness
    - This downgrade decreases burst strength by 50% for all abilities for 30 seconds
    - Chance: High
- Invincibility
    - This upgrade makes the player immune to damage for 10 seconds

- o The player character flashes while this upgrade is active
- o Chance: Low
- Larger Cloud
  - o This upgrade increases the size of the Cloud ability's ink cloud for 30 seconds
  - o Chance: High
- Smaller Cloud
  - o This upgrade decreases the size of the Cloud ability's ink cloud for 30 seconds
  - o Chance: High
- Reflective Aura
  - o This upgrade makes the player reflect any projectile for 10 seconds
  - o The player character shines while this upgrade is active
  - o Chance: Low
- Spread Shot
  - o This upgrade causes the Shoot ability to fire 4 scattered ink projectiles for 15 seconds
  - o The projectiles fire at random angles behind the player with a maximum deviation of 30 degrees.
  - o Chance: Medium
- Damage on Contact
  - o This upgrade makes the player damage players on contact for 10 seconds
  - o The player character turns darker while this upgrade is active
  - o The player is not immune to damage
  - o Chance: Low
- Acid Ink
  - o This upgrade causes all abilities to do 2 health points of damage against other players instead of 1 for 10 seconds
  - o All projectiles and clouds are green instead of black
  - o Chance: Low

3.5 Single-Use Pick-Ups

Single-use pick-ups can be collected during gameplay by picking up special barrels of nuclear waste that appear throughout the map.

Picking up a special barrel will grant a random single-use pick-up for the player to use. If a player already has a single-use pick-up available, picking up a new one will replace the previous pick-up.

Once a single-use pick-up has been picked up, the player will be able to use it by pressing any of the four shoulder buttons. Once the pick-up has been used, its icon is removed from the HUD and it cannot be used again.

The available pick-ups are:

- Ink Bomb
  - o Once used, this pick-up will launch a large and slow ink projectile backwards, in the same fashion as Shoot ability projectiles. It also gives the player a medium forward boost.

- o When the ink projectile hits an obstacle, wall or a player, it will explode into a large cloud of ink which remains for a few seconds. Players caught in the initial explosion instantly lose a single point of health. After the initial explosion, the ink cloud will act as a standard Cloud ability ink cloud.
  - o Any players killed by either the initial explosion or the resulting ink cloud count as kills for the player that launched the ink bomb.
- Ink Mine
  - o Once used, this pick-up will drop a stationary ink mine. It also gives the player a medium forward boost.
  - o When the ink mine is placed "inside" a wall it will automatically pop out and remain against the wall.
  - o When a player or projectiles comes near, it will explode into a large cloud of ink which remains for a few seconds. Players caught in the initial explosion instantly lose a single point of health. After the initial explosion, the ink cloud will act as a standard Cloud ability ink cloud.
  - o Any players killed by either the initial explosion or the resulting ink cloud count as kills for the player that launched the ink bomb.
- Roundhouse Shot
  - o Once used, this pick-up will launch 8 medium ink projectiles around the player into different directions (North, West, South, East, NW, SW, NE, and SE).
  - o These projectiles act like normal Shoot ability projectiles.
  - o Any players killed any of the projectiles count as kills for the player that used the pick-up.
- Push Burst
  - o Once used, this pick-up applies a force to all surrounding players and projectiles. This pushes them away from the player. The player comes to a halt when using this pick-up.
  - o Any players killed as a result of being pushed away into an obstacle count as kills for the player that used the pick-up.
- Super Push
  - o Once used, this pick-up will push the player into the facing direction with a large amount of force, in the same fashion as the Push ability. This will cause the player to reach the other end of the arena very quickly.
  - o It also applies a large force backwards causing players and projectiles to be pushed away.
  - o Any players killed as a result of being pushed away into an obstacle count as kills for the player that used the pick-up.
- Lure Anglerfish
  - o This pick-up is only available in level 1, Shipwreck Canyon
  - o Once used, this pick-up will summon the Anglerfish world event.
  - o Any players killed as a result of this world event count as kills for the player that used the pick-up.
- Lure Shark
  - o This pick-up is only available in level 2, Smelly Jelly Reef
  - o Once used, this pick-up will summon the Shark world event.

- o Any players killed as a result of this world event count as kills for the player that used the pick-up.

3.6   Game Modes and Matches

The game offers three distinct game modes, all of which have their own rules as far as scoring and respawning are concerned. Other than these rules, all matches play out the same:

At the start of a match, there is a countdown of three seconds before players gain control over their characters. After this countdown, the players gain control over their characters and the timer will start counting down.

At the end of the match, the winning player's character swims up towards the camera and out of the level. The players are then taken to the Score Screen (see [4.2 Score Screen]) to review their performance during the match.

3.6.1   Eliminate

Eliminate is a timed match in which all players start with a set amount of lives. When a player is out of lives, they are eliminated from the game. The last player with lives remaining wins the game.

3.6.1.1   Scoring

In Eliminate, no score points are awarded for killing players – instead, player ranking is determined by the length of time players managed to survive. The winning player is the last player standing, second place goes to the second-longest lasting player, etc.

3.6.2   Dominate

Dominate is a timed match in which players have infinite lives – the goal is to score as many points as possible. The player with the most points at the end of the match wins.

3.6.2.1   Scoring

The winning player is the player with the most points at the end of the round. Points can be gained by killing players, and can be lost by committing suicide. Players can commit suicide by hitting themselves with their own abilities, by launching themselves into hazardous obstacles, or by getting killed by a level event.

In order to score a point, the player must deal the killing blow to another player. This killing blow can be a direct hit with a projectile, or an indirect kill with an ink cloud – if an opposing player dies in the player's ink cloud, the player gain a point. Additionally, pushing a player into a hazardous obstacle using the Push ability will grant a point if the opposing player dies.

Player ranking is purely based on the amount of points scored – the higher the score, the higher the rank.

3.6.3 Control

Control is a timed match in which players have infinite lives, and a flag is spawned in the centre of the map. Holding this flag for a set amount of time grants a point. The player with the most points at the end of the match wins.

3.6.3.1 Scoring

The winning player is the player with the most points at the end of the round. Points can only be gained from possession of the flag – killing players grants no points. Additionally, suicides also don't decrease one's score.

For every two seconds that a player has the flag in their possession, they are granted a score point.

Player ranking is purely based on the amount of points scored – the higher the score, the higher the rank.

3.6.3.2 Flag Behaviour

The flag is a special barrel of nuclear waste. When a player moves over the barrel, it is strapped to their back with a set of chains, after which the flag is considered 'taken'. If the flag carrier is killed, the flag is dropped and players are able to try and pick it up again.

3.7 Levels

The game will feature a number of levels designed for four player combat. The camera is positioned such that the entire arena is visible at any time, and is independent of whether the game is played locally or online – all players always share the same camera view.

Player spawn points are always pre-determined per player, per level. The spawn point where players start the match are the same as the respawn locations for those players: for example, if player one starts in the top-left corner, they will always respawn in that same corner. This allows players to instantly continue playing, not requiring them to first find where their character was respawned.

3.7.1 Level 1: Shipwreck Canyon

This level contains larger open areas in the centre and narrow areas at the sides. It features a shipwreck of an old submarine with holes where the player can move through. The ship houses an octopus which cannot be seen, however it sticks one tentacle out of a broken window at certain intervals. The level features rock formations on one side and a seemingly bottomless canyon on the other side. The larger open area contains some sea mines which explode on contact. The players can swim over the deep canyon darkness. A world event will cause a large angler to come from the deep area to follow and damage the player. Other environmental features are periscopes sticking out of the sand and parts of the boat scattered, like the steering wheel.

3.7.1.1 Hazards
- Tentacle out of window
- Sea mine
- Overgrown coral

3.7.1.2 Events
- Large angler comes out of the canyon

- Volcano erupts at bottom of the canyon

3.7.2 Level 2: Smelly Jelly Reef

This level has large amounts of coral that define the borders and divisions of the area. Aside from nice colourful coral there is quite some spiky coral that damages the player at the sides. The area is also pretty lively with school of fish swimming by. Additionally there are some crabs at the bottom that try to attack the player when close. Jellyfish also roam the area. They move up and down, only hitting the player when on the same level. Around the reef, garbage and odd objects are found everywhere to highlight the apocalyptic state of the world. The level also features geysers that start blowing hot air on certain intervals. Finally, the world event is a large shark swimming by and biting all squids in its path.

3.7.2.1 Hazards
- Crabs
- Geysers
- Jellyfish
- Overgrown coral

3.7.2.2 Events
- Shark swimming by

4   User Interface

4.1   Heads-Up Display

Each player has a number of HUD elements dedicated to them and shown in one of the corners of the screen. All players also have a unique colour associated with them, which is shown in several of the HUD elements as well as on the player character's texture.

For player 2 through 4, the HUD is flipped in one or more directions. Individual elements (hearts, upgrade icons etc) are only flipped in position, not display. An example of player 4's HUD can be seen in figure 2.

Player 1, coloured red, has their HUD in the top-left corner of the screen.

Player 2, coloured blue, has their HUD in the top-right corner of the screen. The HUD is flipped horizontally.

FIGURE 2: Player 4 HUD

Player 3, coloured yellow, has their HUD in the bottom-left corner of the screen. The HUD is flipped vertically.

Player 4, coloured green, has their HUD in the bottom-right corner of the screen. The HUD is flipped horizontally and vertically.

4.1.1   Lives

The player's health and lives are displayed at the top-left of their HUD space. Lives are displayed as a clearly visible number above a squid icon, showing that the number relates to the number of squids (or lives/respawns) the player has left.

In the Dominate and Control game modes, the number of lives a player has is infinite. The number is replaced by a ∞ symbol.

In the Eliminate game mode, each player starts the game with five lives. When a player is killed, their live count is reduced by one. If the player has no lives left (lives = 0), they will no longer respawn, as they have been eliminated from the game (i.e. if a player has one life left and dies, they are eliminated).

4.1.2   Health

The player's health is displayed as a series of hearts at the top-right of their HUD space. The number of hearts on the HUD depends on the settings of the match being played.

FIGURE 3: Altered HUD

When the player has full health, all hearts are filled. If the player is hit by a projectile or a hazardous obstacle, a single heart quickly pulses (expands and shrinks again) and is instantly drained. An example of a HUD with drained hearts can be seen in figure 3.

If a player enters an ink cloud, a single heart will gradually turn black over a period of two seconds. If the ink cloud is left, the process is reverted (see [3.2.1 Health]). When a heart has turned completely black, it will pulse and instantly drain.

When all hearts have been drained, the player will die and a single life point is removed. If the player has lifes left, they will respawn shortly after.

4.1.3   Upgrades and Downgrades

Active upgrades and downgrades are shown at the bottom-left of a player's HUD space. A total of three upgrades can be active at any time – should a fourth upgrade be picked up, the oldest upgrade is removed.

If an upgrade is picked up, its corresponding icon is added to the 'upgrade bar' (the lower bar in figure 1). If a second upgrade is picked up, and the first is still active, the second upgrade icon appears to the right of the first. When the first expires, the second is moved left to fill the empty space.

Each upgrade has a timer which controls for how long it will be active – when it expires, the upgrade is removed. The timer is visualized by a shade moving down the icon. When the upgrade is picked up, the icon is fully lit. As time passes, a shade moves across the icon from top to bottom, showing for how much longer the upgrade will be active. When the icon is completely shaded, the upgrade expires. See figure 1 and figure 3 for an example of this process.

A mock-up of all upgrade icons:

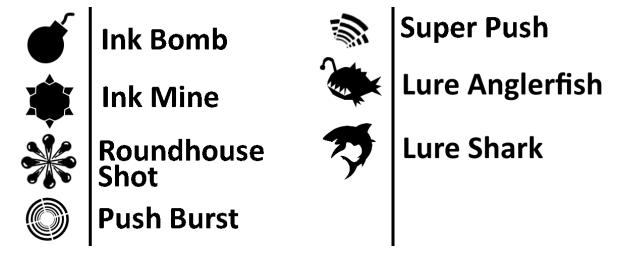|			
Rapid Fire		**Invincibility**	
Slow Fire		**Larger Clouds**	
Faster Shots		**Smaller Clouds**	
Slower Shots		**Spread Shot**	
High Speed		**Acid Shot**	
Slowness		**Reflective Aura**	
Penetrating Shots		**Damage on Contact**	
Seeking Shots			

4.1.4   Single-Use Pick-Ups

Single-use pick-ups are displayed at the bottom-right of a player's HUD space. They are shown as icons representing the pick-up inside a bubble.

When a single-use pick-up is picked up, its corresponding icon is added inside the bubble. The bubble will start growing and shrinking periodically to show that it is ready for use.

When the single-use pick-up is used, the icon disappears and the bubble pops. A new, very small bubble quickly takes its place and grows back to the original bubble's size.

If a player picks up a new single-use pick-up while one is already available, the available pick-up is removed and its icon is replaced.

A mock-up of all single-use pick-up icons:

4.1.5   Score

A player's score is displayed at the bottom of their HUD space. Score is displayed as a very clearly visible number, distinct from other numbers on the HUD due to its colour and position. The word 'SCORE' is also displayed next to the score count.

Score can be both positive and negative: if the player commits suicide, the score can fall below zero. The score will then show as -1, -2 etc. For scoring mechanics, see the Scoring subsections under [3.5 Game Modes].

4.1.6   Player Indicators

Player indicators are shown over player characters when the match starts and after a player respawns. These indicators help players identify which squid they are controlling.
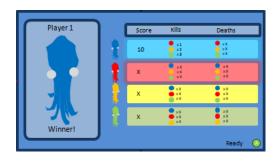
Player indicators are shown as text hovering above player characters: P1 for player one, P2 for player two etc. When a match starts, the indicators appear over every player and remain there for five seconds. After these five seconds, they will quickly fade away.

When a player respawns, an indicator will appear over their character for two seconds: the same period of time as the invincibility effect. After these two seconds have passed, the indicator will fade away.

4.2   Score Screen

At the end of a match, players are taken to the Score Screen to review their performance during the match.

The Score Screen shows the winning player's avatar and name one the left of the screen, with a table displaying each player's final score, kills and deaths on the right, with a section of the table reserved for each player.

Kills and deaths are displayed on a per-player basis. For example, player one's kill count will show the amount of times they killed players two, three and four separately, allowing players to see who dominated who. The same system is used for displaying deaths, although a fourth count is added here to show suicide counts.