



Super Sonic Fish

GDD v.4

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Project Description

Super Sonic Fish is a 3D shooter arcade roguelike that is about a starfish defending its island from an invasion of other marine animals. Players will be navigating around shooting at enemies and upgrading themselves to fight off this onslaught.

The core gameplay will be to kill as many enemies while managing health; all the while getting the upgrades necessary to keep up with the ramping difficulty.

Game Overview

Genre: (Arcade, Shooter, Roguelike)

Platform: PC

Target Audience: Primarily Young Teens 13-16, though accessible for all ages

Playtime per Session: ~20 minutes

Key Features: Physics Based Gameplay, Strategic Upgrade Choices, Boss Battles, Humorous Character Design

Gameplay & Mechanics

Goals

Long term: Survive having gained as many points as possible by the end of the onslaught

Short term:

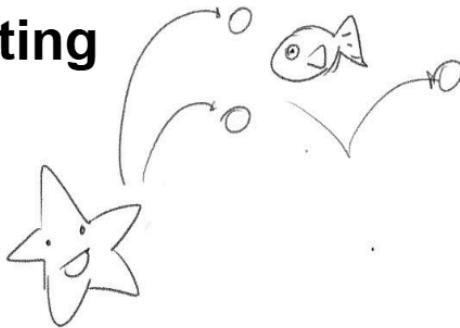
1. Survive by avoiding damage
2. Kill enemies for points
3. Level-up to become better at goal 1 &2

Mechanics List

Shooting: Player shoots physical projectiles that damage enemies on contact. Players can shoot as fast as their fire rate allows and will be forced to reload after expending their figurative magazine clip. The parameters of the bullets can change with upgrades.

Score: The numerical value that determines the player's performance. The more enemies the player kills, the higher score the player can achieve. Enemies will get stronger as time passes, netting more score per kill.

Shooting



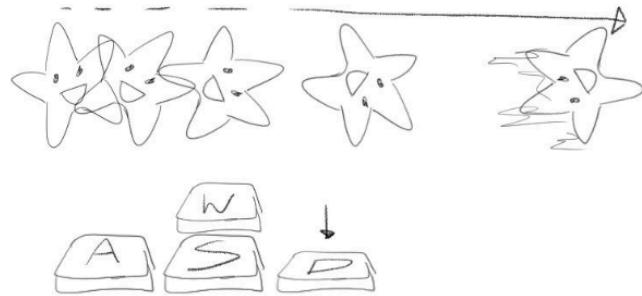
Spacebar - Jump straight forward

Directional movement + Jump =
directional bias in upward force
based on direction

Shooting: The player can shoot a physical projectile that damages enemies on contact

Parameters: Damage, Fire rate, Shot count, Velocity, Mass, Drag, Max bounce count, max ammo, reload speed, Size

Movement



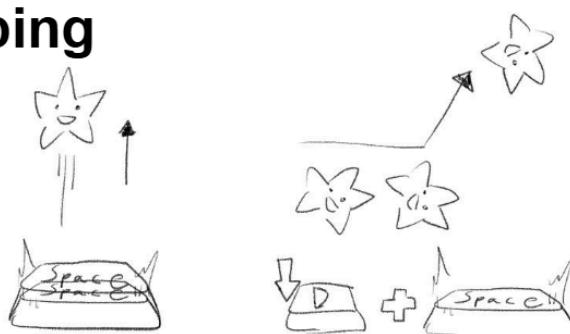
WASD - Forward, Left, Back, Right movement

Physics Based Movement - duration of acceleration

Movement: The player can accelerate in any direction, adding velocity to the direction they want their character to go. Changing direction means fighting inertia, rewarding commitments to moving a direction and dodging / platforming at high speeds.

Parameters: Mass, Movement Force, Drag, Friction

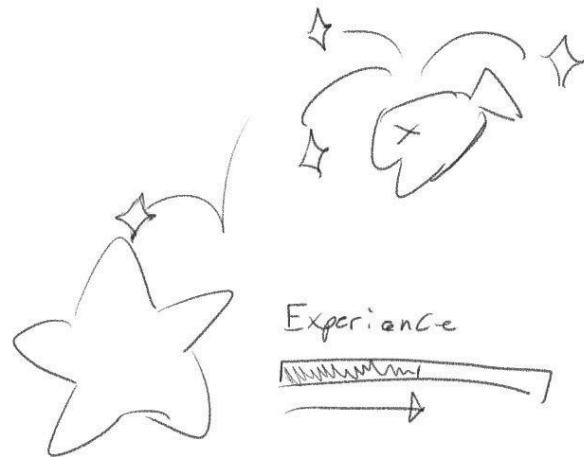
Jumping



Spacebar - Jump straight forward

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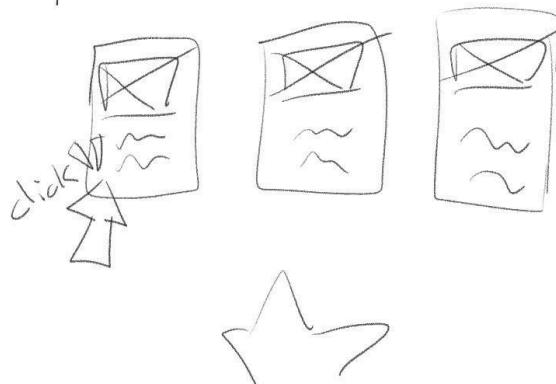
Jumping: The player can jump by giving a pulse of momentum upwards to their character in addition to its pre-existing momentum. This can be performed when the character touches a surface below itself.



Level-ups: The player will periodically level up once they collect enough xp-orbs by getting close enough to have them be pulled towards the player and consumed once making contact with the player. Xp-orbs will appear every time an enemy is killed. Upon, leveling up the player will be able to upgrade.

Parameters: xp pull radius

Upgrades



Upgrades: Upgrades are the choices the player can make to enhance their shooting upon leveling-up. The player will be presented with 3 choices by default which will contain common, rare, unique, and legendary cards that are chronologically rarer to appear as an option but generally stronger with more distinct changes.

Parameters: Number of choices

Controls:

CameraControl: Omni directional Mouse movement

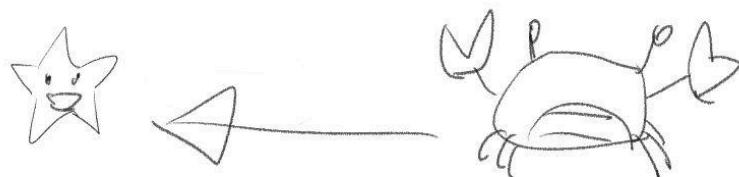
Movement: W,A,S,D holdable 4 directional input

Jump: Space Bar

Reload: R key

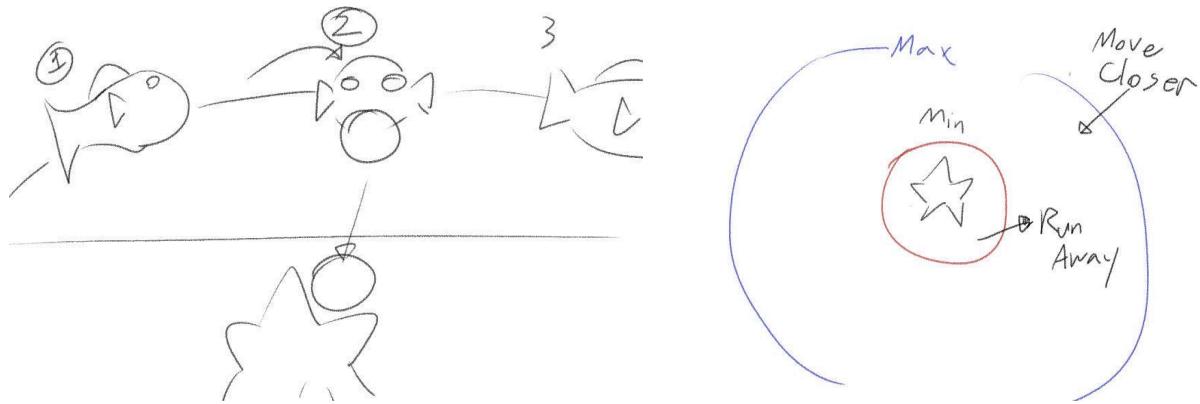
Enemies

Standard enemies have variants of easy, normal, and hard which have a 50% increased stat to its health and 25% increase in damage with each increase in difficulty. They are also susceptible to being knocked back by the force of the bullets.



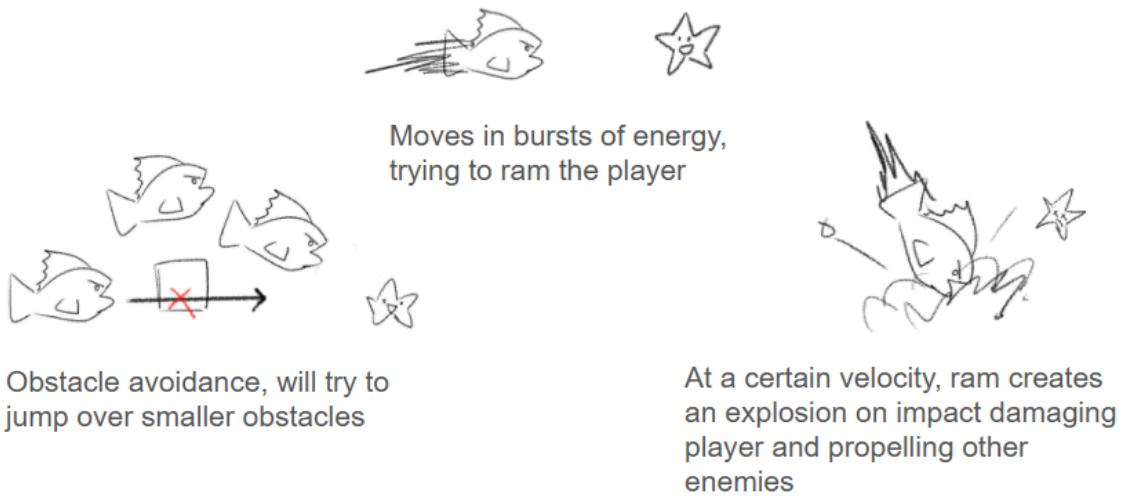
Crabs

Standard Enemy, it will try to make contact with the player to damage them. Constantly keeps the player on the move.



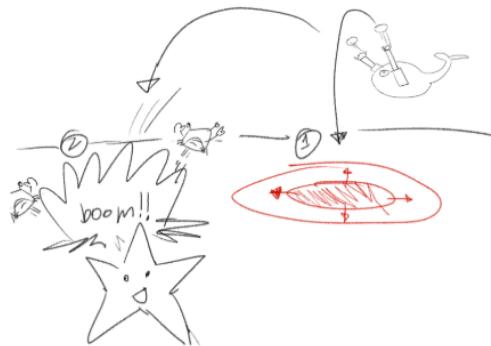
Flying Fish

Standard Enemy, this enemy flies around the player trying to keep itself with a certain distance from the player. It periodically shoots at the player which forces them to dodge.



SuperSonicFish

A boss enemy, its movement is fully physics based and hovers on the ground. It will periodically try to ram into the player with a burst of movement as its form of attack; damaging the player on contact.

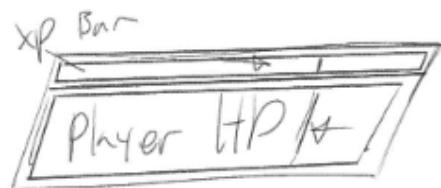


Whale

The last boss of the game. It will circle around the map in the sky and periodically shoot at the player with a mortar like weapon which will arc in the air to hit near the player's location. (2) Its projectile causes an explosion on impact, damaging the player if within range of the explosion; the more damage taken closer to the impact. (3) It telegraphs the explosion radius by filling a circle projected on the ground where the projectile is projected land which gets filled from the center nearing the projectile's arrival.

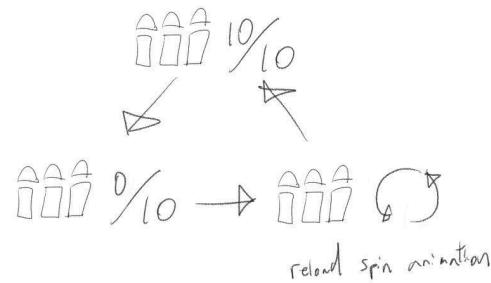
Player UI

Elements

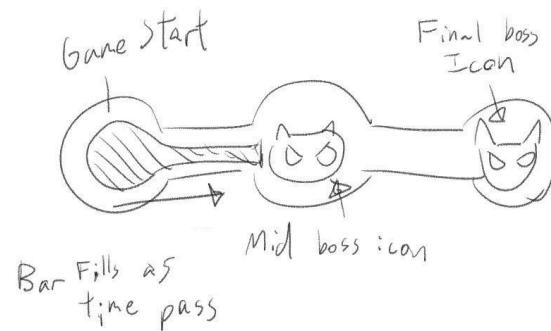


HP Bar: Bar that is proportionally filled to the current player hp and max hp

XP Bar: Bar that proportionally fills up based on the amount of xp points obtained and the number of xp required for the next level-up. The xp bar is lower urgency than hp, so will be represented as a smaller bar on top of the HP.



Ammo count: represents the number of ammo remaining before a reload is needed, represented as a fraction. When reloading, a cycle icon will appear and rotate to represent a reloading state that will end based on reload time.

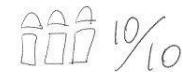
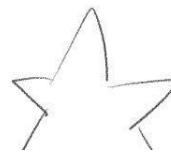
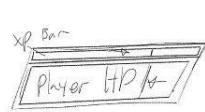
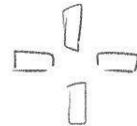


Game Progress Bar: A bar that represents its max duration, filling up as the game comes closer to an end. The bar is marked with icons representing when the bosses will appear.



Crosshair: 4 lines centered at the direction the player's bullet will launch itself towards if shot, keeping the center open for visibility in what the player is shooting.

UI Layout



Abiding by the standard configuration of UI elements in third person shooters, player state indicators will be positioned on the bottom and reserving the top for notifications and status of the environment. They are positioned to make a triangular scan pattern with the eyes and leave plenty of space in the middle for the action.

Player Stats

Player Stats	
Damage	The damage the player's bullet cause to the enemy
Health	When this reaches 0 it will trigger a 'game over', deducted when the player is hit by an enemy attack
Reload Time	The time it takes for the player to be able to shoot again after depleting their ammunition
Fire Rate	The max speed in which the player can shoot
Bullet Count	The number of bullets consisting in every 'shot'
Movement Speed	The rate of velocity the player apply to their

	character for movement
Health Regeneration	The amount of Health added every second, stopping when the Health is at its maximum value
Max Hp	The maximum value Health can achieve

Level design

The game will take place on a tropical island. The map will be closed with invisible walls inclosing the player, enemies, and xp-orbs.

Card Upgrades

Card Upgrades		
Name	Description	Stats: common/rare/epic/legendary
Sea gun - implemented	You were provided with better equipment with fighting the fish! The damage of your gun increases	Damage +5 / 7 / 10 / 15
Poseidon Boots - implemented	The Gods provide you with shoes used by Poseidon himself! Speed increases	Movement Velocity +30 / 50 / 65 / 75
Bounce! Bounce! Bounce! - implemented	The new formula allows your bullets to bounce more times before falling apart!	Bullet Bounce Count +1 / 2 / 3 / 5
Nano-regeneration - implemented	Your sea power mends your wounds! Health regeneration increased!	Health regeneration + 0.5 / 1 / 2 .5 / 5
Longer Gun - implemented	The Gun gets longer and longer! Your range is increased	projectile speed +10 / 20 / 25 / 40
Extra Barrel - implemented	Your gun gains an additional barrel!	number of bullets per shot +1, bullet spread +1
Sailors power - implemented	You multiply your health and shape twice for 30 seconds!	Model of a player is increased in size and the health is doubled for 30 sec / 60 sec
Shielded! - implemented	Your power concentrates	A sphere around a player is

	around you and grants you protection!	protecting it for 30 sec / 40 sec / 50 sec / 60 sec
Bigger BANG! - implemented	More gunpowder in your ammunition makes you shoot a lot faster!	Fire rate *0.9 / 0.85 / 0.8 / 0.75
Bomb O' Fish - implemented	Every 20 shot you do, explosive projectile will spawn	Players shots an explosive bullet every set amount of shots
Sharing is caring - implemented	The amount of cards that can be chosen is increased! (0/2)	Amounts of cards to choose +1
Bait them! - implemented	You are very attractive. Your magnet power increases!	magnet power +3 / 6 / 10 / 15
Swirl Shot - implemented	Swirling the ammo gets more efficient! Reload speed and Ammo capacity increases!	Reload time * 0.9 / 0.8 / 0.75 / 0.7 Ammo Count +5 / 7 / 10 / 15
Sunscreen - implemented	Applied sunscreen protects your skin from sun and enemy fish! Max HP increases!	Max HP +15 / 25 / 35 / 50
Jumpingo	Double jump is unlocked! (0/1)	To be determined
Rambo! Rambo! Rambo! - implemented	Pew! Pew! Pew!	Reload time *0.1 Ammo Count +999 Attack Speed *0.1 damage *1.5 for 10 seconds