Lost In Space...
Game Design Document
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This game is based on classic arcade games like Galaga and Galaxian. The game is one where the player commands a ship is space. With the goal of surviving against waves of enemies and destroying them to in order to get points. In turn completing against other player scores and achieving a higher score than everyone else.

Goals of the Game

As described before the goal of the game is having the player trying to survive as long as possible and achieving points by destroying enemies that in turn try to destroy the player. Once the player is defeated there score is compared to the top scores set by other players who have played to see if they have the highest score.

Screen Overview Layout

The screen layout will be relativity simple. As they will be divided up into mainly four screen/pages that the players can use.

Start Screen

The start screen will be the first screen the player see when starting the games. The screen opens with an introduction to the game and story. Followed by a title page that has the game's name at the top of the screen and two buttons, a start button and a help button which let the player the start the game or read the game instruction.

Help Screen

The help screen will be broken up between a main help page and a quick help sheet. The main help page will have four pages that each has all the instructions for the game written in text with very little pictures. This page will also have two buttons, the next and previous buttons. On the last page of the main help screen the next button will take the player back to the start screen. The same will happen when the main help screen is on the first page the previous button take the player back to the start screen. The main help screen can only be accessed by going through the start screen help button. The quick help sheet will be display like a map's legend. The page will have images of the different upgradeable objects with what they do, images of the different enemies, and images of the keys the player use to interact with there ship. The page will also have a list of the other commands that player can use in the game. The quick help sheet can be accessed at any time while the game is live through the use of the command CTRL-H.

Game Screen

The game screen is where the live game is played. This screen is relative simple as the whole screen is the playable screen. In this screen the background image is to be animated and the top right corner of the screen has the number of life status displayed with the use of the life status image. Under that image will be the special weapon image and then the current score the player has achieved.

Game Over Screen

The game over screen is where the player goes when they have no more lives left. This screen has a title of game over and one button that is play again. In the middle of the screen is a list of the top ten high score that has the name on the left and the score on the right. When the player first enters this screen there score will be compared to the top ten and see if the player beat any of the score if they did. A pop will appear asking the player to enter there name then click the enter button.
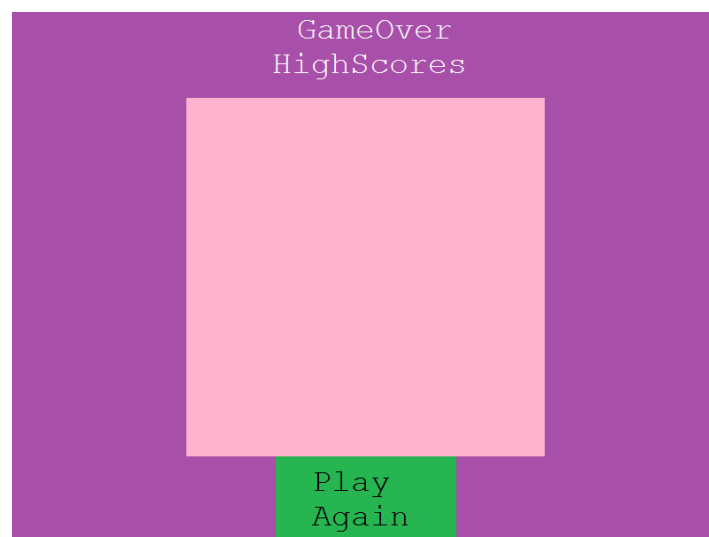
Story

Since the game is more of an arcade survivor based game it doesn't have a story running throughout the game but does have a small intro story in the introduction/welcome screen of the game. The story is the player ship was patrolling there sector of space when all of a sudden a ship appears and fires a wormhole weapon that send the player to an known sector of space filled with enemy ships. Now the ship must survive against the enemies and make there way back home.

Player and Player Interaction

The player object for the game is a ship. The player can move in eight direction as the picture below shows.
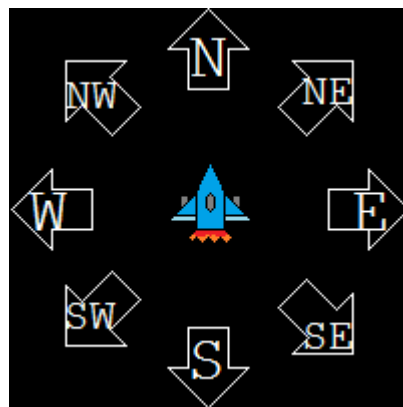
 The player will have three different types weapons which are upgradeable by three levels by using breakable object that reset each time a different weapons upgrade is gained. Each weapon is described in more in the weapon and upgrade overview. The player can only have access to one type of weapon at any given time. The weapons themselves can be fired using the space bar. The player will also have access to a special secondary weapon that can destroy all the enemies on the screen which again is explain in more details in the weapon and upgrade overview. This weapon is fired by using the key E. The players have a non direct interaction with enemies through causing the enemies to fire at the players and a more direct interaction with the enemies as to cause them to be destroyed when they hit the players weapon or a direct collision with the player. The player also has an interaction with the upgradeable objects.

Outside of the live game player interacts by using the mouse left button to click on the button on the start or main help screen.

NPC Overview

Enemy Types

As mentioned above the game's enemies will each have there own attributes that maybe shared by the other types.

Enemy Type Asteroid

Enemy type asteroid will have a movement that moves directly down the screen and on destruction it will spawn two asteroid mini type of enemy.

Enemy Type Asteroid Mini

This type of enemy will exactly like the asteroid type. The key difference is instead of spawn more enemies on its destruction it doesn't it is just destroyed.

Enemy Type Snake

This type of enemy's movement will use one where the enemy moves horizontal from one side of the game screen until it hits the other side. At which point the enemy will move down 50 pixels before starting to move in the opposite horizontal direction that it was moving in. Then moving down and start the process again until the enemy either is destroyed by the player or it runs off the screen. This enemy type will also fire corner gun at the player when they across the middle point of the X position and width of the enemy.

Enemy Type Zig Zag

The movement this enemy will use is one where it moves in the a diagonal way down the screen until it hit one if the vertical side limits. In which case it will start moving in the opposite direction but still going down the game screen. This enemy will fire a slow machine gun at the player when they across the middle point of the X position and width of the enemy.

Enemy Type Stairs

This type of enemy will use movement that is one where it moves in a steps motion. Depending on if it spawn on the right or left side of the game screen enemy move left or right going down the steps. The enemy will move 50 pixels right or left and then 50 pixels down and then repeating until it is destroyed or run off the game screen. This enemy will fire missile at the player when they across the middle point of the X position and width of the enemy.

Enemy Type Reverse Stairs

This is enemy the same as stair type enemy expect for every other movement left or right instead of going down it will go up 25 pixels. Then move right or left. Also that it use the corner gun instead of the missile.

(New Addition)

Enemy Type Kamikaze Runner

This is enemy type is a new type that uses the range of the player to run at the player in a kamikaze attack. The players range is determined using the distances formula between the enemy and the player. At a distance of 300 the enemy moves towards the player. At 150 the enemy doubles speed while still moving toward the player. At a distance greater than 300 the enemy just moves down the screen.

Weapon and Upgrade Overview

Weapon Types

There are six different types of weapons with only four be available to the player.

Machine Gun Type

This type of weapon has three levels. The first level of the weapon it fires one bullet. The second level it fires two bullet at one time and three bullet for level three. The weapon's bullet only moves in a vertical direction from the point they are fired. The bullets for this weapon is going to have four frames that it cycles through for its animation.

Corner Gun Type

This type of weapon has three levels as will. The first level fires one bullet, the second level fire two bullets one in a diagonal direction to the left and the other to the right. The last level fire three bullets, one bullet moves in a vertical direction only and the other two bullets are fire in a diagonal direction to the left and right. The bullets for this weapon is going to have four frames that it cycles through for its animation.

Laser Type

This type of weapon has three levels as will. The first level fires sixty beam projectiles one after the other as long as the laser charge is greater than zero. The charge is not displayed and the charge decrease by one every time the laser beam is fired. The charge is recharged when the laser is not fired. Each level the charge increases as the level goes up by ten.

Missile Type

This type of weapon is one that the player can't use. This weapon fire a missile that works by moving toward the target. However the missile only moves toward the target in the x plane and not the y plane. This weapons missile only has two frames that it cycles through for its animation.

Special Type

This type of weapon is the special weapon for the player. It can be used by the player if they have a special weapon charge. The weapons projectile movement is one where it moves towards the center of the game screen than explodes and destroys all the enemy on the screen. This weapons projectile only has two frames that it cycles through for its animation and two frames for it explosion.

Upgrade Objects Types

All upgrade objects have the same amount of chances of spawning. All the of the objects have four frames for normal and destruction animation. The movement of the objects are vertical and only fall from the top of the screen to the bottom.

Machine Gun Upgrade

This type of upgrade is for the players machine gun.

Corner Gun Upgrade

This type of upgrade is for the players corner gun.

Laser Upgrade

This type of upgrade is for the players laser.

Life Upgrade

This type of upgrade is for the player's life which it restores one at a time.

Special Upgrade

This type of upgrade is for the player's special charges which it restores one at a time.

<u>Enemy Spawn Patterns Overview</u>

The enemies are spawned use seven predetermined patterns. That have 750 game time cooled between spawning and are random selected once the cooled out is complete.

Spawn Pattern One

This spawn pattern to spawn two diagonal line of the zig zag enemy type that switch side at the end one line. Each line has eight enemies that spawn in it.

Spawn Pattern Two

This pattern spawns ten asteroid type of enemies in random position along the x axis and between 0 and -300 on the y axis.

Spawn Pattern Three

This pattern use the reverse stair enemy type and spawn eight of them a straight line across the x axis.

Spawn Pattern Four

This pattern is like the last expect it spawn the snake type enemy.

Spawn Pattern Five

This pattern spawns eight snake in a staggered pattern with four on the left and four on the right.

Spawn Pattern Six

This pattern spawns four stair type and four reverse stair type enemy in diagonal line on the left and the other on the right. While alternating between the two types each row.

Spawn Pattern Seven

This pattern use the stair and asteroid enemy type. Spawn two diagonal line of the stair type enemy with three enemies per line. Then eight asteroid types at random just like in the spawn pattern two.

Image theme

The image theme the game will use for the player and enemy will be a mixture of a cartoon and old arcade games. Like the one in the game Galaga. The score text will be one where it looks like old registrar display numbers.

Player's Image

The players ship image is one that it looks like an arrow with wing and fire coming out of its base. The size player's image will use is 50 by 50 pixels. The player's animation sequence has two frames for each direction and for its neutral and destruction animation sequence as well.

Enemy's Image

The enemy will each look different yet follow the image theme previous state and be 50 by 50 pixels. All enemies will also have two frame for its right, left, and down movement animation and destruction animation. The exception to that will the asteroid enemy type that will only

have two frames for down animation and no other animations.

Upgradeable Object

The upgradeable object will each have an image that are 30 by 30 pixel that will be scaled down to 20 by 20 pixel in the game. All images will have the a standard crate image over the upgraded objects picture. With the exception that is the life upgraded.

Weapon's Projectiles

The weapon projectiles will have a standard of 10 by 10 pixel image. The player and enemies weapon projectiles that are the same will share the same image but be in there respective files. All the projectile will have four frames for all there animations.

Game Screen Life and Special Weapon Status Picture

The status picture will both be 21 by 25 pixel. The life image will be a picture of the player ship with a white border and the special weapon will be a picture of the special weapon projectile with a white border.

Screens Background Image

The background images for the different screen will 800 by 600 pixels and static for all the different backgrounds. Exception being the game screen that will be animated.

(New Addition)
Game Data Storage

All of games data file such as the images, sound effect, and music will be stored in allegro own unique data file. From there the game data files will be loaded.