Neon Commander

Game Design Documentation
Dancing Emu Studios (Heath, Jarrod and Richard)
Advanced Diploma in Professional Game Development
Assessment 4 - Cross Platform Development

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Game Design

- Summary

In the game, you play as a single ship who can move and shoot in any direction. Your objective, survive as long as humanly possible against endless waves of unique and dangerous enemies. The aim of the game is to be the ruler of the leaderboard. Gain top spot by earning yourself high scores through lasting as long as possible and scoring as high as you possibly can.

- Gameplay

As the player you spawn into the centre of the screen and this is where the survival begins. The round will start off at a slow/medium pace before really escalating into all out panic for the player as they struggle through endless amounts of enemies that are after one thing, the player.

The player can move in any direction as well as shoot in any direction independent of the direction they face in their bid to survive. The player will be forced to intelligently maneuver around the screen to avoid collisions with enemies as this will cause death and bring the end of the round. The player has one single life and must survive as long as they can with it.

There are multiple types of enemies that will be introduced to the player during gameplay. These enemies are colour-coded to differentiate from each other and to give the player visual cues for remembering which enemies are the most dangerous.

Power-ups will also feature during gameplay and will be designed to give the player a slight edge over the pursuing enemies for a short period of time. Power-ups such a screen clearing bombs and rapid fire guns will be used. These power-ups will be activated upon impact with them from the player and will last 10 to 15 seconds.

Game States

- Flow Chart

This is the flow chart for the game states. It shows all of the game states and how they are connected to each other. If two states aren't connected in the chart then there will be no way to traverse between those particular states.
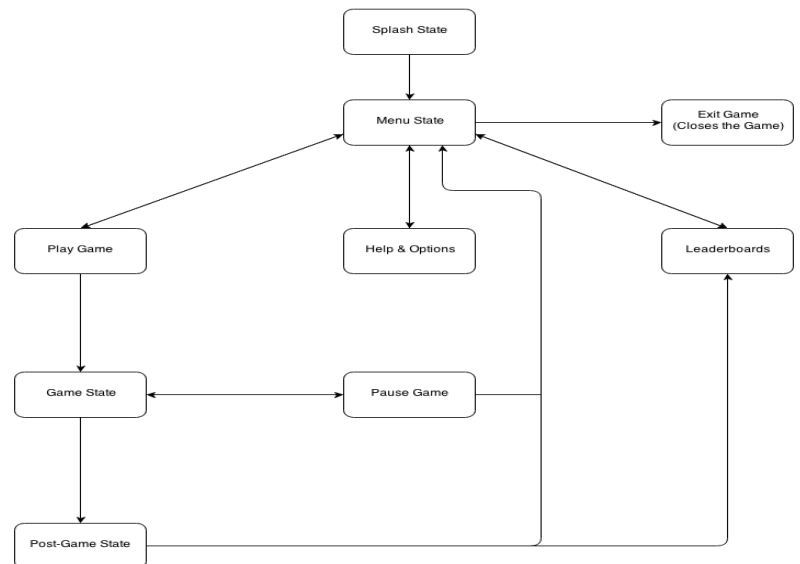
- Splash Screen

The Splash Screen will play at game startup and will last approximately 3 seconds. It will display the logo of Dancing Emu Studios.

- Main Menu

The main menu is entered after the splash screen. This links to the options, instructions, and the game state itself.
Play - Enters the game. May enter an additional screen to select the game mode.
Help & Options - Enters an options and instructions screen.
Instructions - This screen only outlines the controls and goal of the game, as well as what each power-up does.

Leaderboards - Enters the leaderboards screen, shows the top 'x' score of each game mode along with a corresponding name.
*Exit Game* - Quits the game and closes the application.

- Help & Options

Contains several options for the game; including player colour, fullscreen and volume.

Instructions - Overlay containing the instructions/controls for how to play the game.

Enemies - Overlay containing all the information about the enemies within the game.

Powerups - Overlay containing all the information about the power ups within the game.
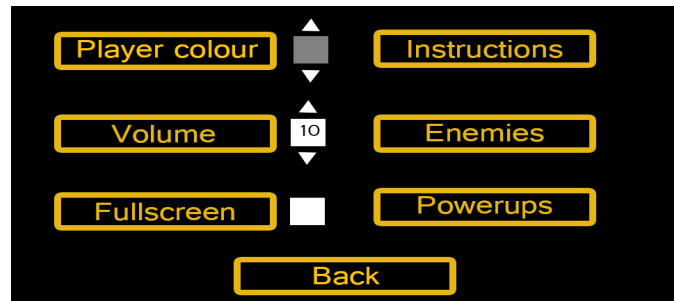
- Leaderboards

Entered from the main menu, can return back to the main menu. Shows the top scores for each game mode and who scored them. Potentially using an SQL database to store and retrieve the information.

- Game State

This is entered from the main menu, and is where the game itself is. This state is exited only when paused or when the game is over. When the game is over, it enters the post-game state.
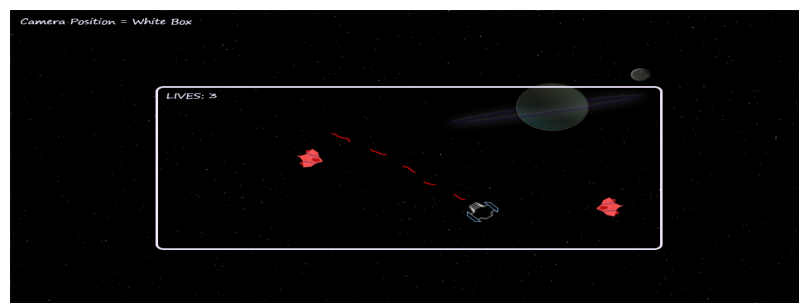
- Pause State

Accessed by pausing the game state. Unpausing simply goes back to the game state, or you can select an option to return to the main menu and restart the game.

- Post-Game State
The state entered once the game state is over. This state displays your final score. Links back to the main menu.

Gameplay Elements

- Controls
PlayStation Vita
Left thumbstick to move player and menu item selected. Right thumbstick to control shooting direction. Right trigger to shoot, can be held down for continuous shooting. Start button pauses and unpauses the game. X button confirms the menu item selected. O button sends the user to the previous menu; if choosing a game mode it will return them to the main menu, if game is paused it will unpause.

PC
WASD keys to move the player and menu item selected. Mouse movement to control shooting direction. Left click to shoot, can be held down for continuous shooting. Escape to pause and unpause the game, also sends the user to the previous menu. Enter confirms the menu item selected.

- Enemies
Seeker
When the player is detected, this enemy will follow the player wherever they move until either one dies. Will be faster than the player so that it is an imminent threat. Is currently the blue coloured enemy.

Missile
When the player is detected, this enemy will launch itself towards the player's current location but will not follow the player. This enemy can collide with other enemies killing both and giving the player bonus points. Is currently the red coloured enemy.

Multi-directional shooter
When the enemy spawns in, it will move to a point and then stay there, shooting bullets in multiple directions until it is killed. This enemy cannot kill other enemies, the bullets will simply pass through them. Currently this enemy has not been prototyped. Enemy may spin around.

- Power ups

All power ups last a short time before expiring unless stated otherwise.

Bomb

Instantly kills all enemies within a certain radius. Activated once the powerup is picked up.

Light Trail

A line spawns behind the player, following them, if an enemy collides with the line then they die. The player can collide and be killed by their own light trail.

Shield

Protects the player from damage. Will either be long lasting but only protects from one hit, or short but protecting from all damage in that time.

Multi-Fire (3 shots)

Each time the player shoots they launch 3 bullets instead of a single one. Bullets will have a slight spread so they aren't all in a single line.

Spread-Fire (5 shots)

Each time the player shoots they launch 5 bullets in a cone instead of a single one. Bullets resemble a classic retro shotgun spread.

Missiles

Each time the player shoots they launch a missile instead of a single bullet. Missiles explode and kill all enemies within a small radius, similar to the missile enemies.

Rebounding Bullets

If a player's bullets hit the edge of the playable area, they will rebound off in the opposite direction.

Stat Boosters

Will increase the players stats (movement speed, fire rate) for the rest of that match.

- Physics

Movement

All movement will be controlled using forces so that it looks smooth. Player movement will be one of two systems; Can only move in the direction the player is facing, with left and right movement keys rotating the player. Or, the player can move in any direction regardless of which way they are facing. If the user stops pressing the movement key then the player will slowly come to a stop, due to friction.

Collision

Most objects will be using circles to check for collisions. This is because for non-rectangular shapes, a circle can usually give a more accurate hitbox. This accuracy comes at a cost as circle to circle collisions are more expensive due to requiring a square root.

- Artificial Intelligence

The game takes place in a space-like environment so there are no obstacles for enemies to collide with besides the player, so complex pathfinding is not required. Certain enemies will have a line of sight (LoS) and their active behaviours will only be triggered once the player enters this LoS.

Art Style

The art style of this game will be a neon retro style in a similar vein to Geometry Wars. This means lots of particle effects with brightly coloured enemies. This will give the game a simple yet nice look, without feeling cluttered or overdone.

Sound Style

The sound style of this game will be an electronic/techno style, mixed with some retro sounds. This will give the game an older retro vibe and will lend more power to the games art style.