Game Design Document

Clash of Titans

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1 Game Overview

Clash of Titans is a two dimensional side scrolling shooting game built in **C++** using **ASCII** art. The player moves a gun at the bottom of the screen to aim and fire. Waves of enemy planes fly across the top. The player shoots bullets to destroy planes before they drop bombs. Planes drop bombs that fall toward the player. The player can shoot bombs to protect the gun.

2 Game Mechanics

The game works with simple rules that define how enemies and the player interact. Key mechanics include:

- Enemy planes appear in waves and fly across the screen from one side to the other. As levels advance, enemy speed goes up and waves are closer together.

- Bombs fall from planes toward the bottom. If a bomb hits the player gun, the player loses health. The player can shoot bombs before they hit.

- Player gun and bullets The player moves the gun left or right along the bottom using keys. Pressing fire shoots a bullet upward. Bullets travel up and disappear when they leave the screen or hit a target. There is a limit on how fast the player can fire to keep the game fair.

- Health system The player starts with three health points. Each bomb hit removes one health point. When health reaches zero the game ends. The player can earn extra health by reaching score milestones.

- Levels and progression The game has three levels. Each level becomes harder by increasing plane speed frequency of bombs and wave size. The player advances to the next level by reaching a score or surviving a set time.

3 Game Controls

The player uses the keyboard to move and fire:

- Left arrow or A key Move the gun left

- Right arrow or D key Move the gun right

- Up arrow W key or spacebar Fire a bullet

4 Scoring and Progression System

Player performance is measured by score and health:

- Scoring The player earns ten points for each plane destroyed. Shooting bombs before they reach the bottom gives extra points. Allowing a plane to escape or getting hit by a bomb does not add points.

- Display The score and current health points show on the screen at all times in clear text at the top.

- Level advancement Reach one thousand points or survive sixty seconds to move to level two. Reach two thousand points or survive another sixty seconds to move to level three.

5 Level Design

The game includes three levels with increasing intensity:

- Level one Planes move at a gentle speed with few bombs. This level helps the player learn movement and firing.

- Level two Planes move at a medium speed and appear more often. Bombs drop more frequently.

- Level three Planes move at a high speed in large waves. Bombs fall faster and in greater number. This level tests player skill and timing.

6   Visual Design

Clash of Titans uses ascii art for all visuals. Key elements include:

- Player gun The gun is drawn as ascii characters at the bottom. It can slide left or right.

- Enemy planes Each plane is shown using ascii shapes. Planes come in different patterns to add variety.

- Bullets and bombs Bullets are represented by a vertical line of ascii symbols moving up. Bombs are a small ascii symbol falling down.

- Background The play area shows a simple ascii sky with clouds or mountains. The background stays the same across levels.

- Heads Up Display Score and health points appear at the top in clear text.