

Endless Space Invaders

For the summer homework, you will implement an endless space invaders like game with allegro library. There are several games on the net for this concept. Some of them are listed below. You can check these videos and market links to get detailed information about the concept.

Game Links

HAWK: <https://play.google.com/store/apps/details?id=com.my.hawk.air.shooter>

Aces of the Luftwaffe: <https://play.google.com/store/apps/details?id=com.hg.aotl>

Astro Attack: https://www.youtube.com/watch?time_continue=7&v=1YgGBneV2w0

Astro Attack: <https://itunes.apple.com/app/id1018118677>

Allegro

<https://www.allegro.cc/>

Game Details

Characters

There are two main character types in the game. First type is the aircraft that you control and second type is the enemy aircrafts. You must implement at least 3 types of controllable aircraft and 5 types of enemy aircraft.

All characters have a health and a damage value. These values can change from character to character. If a character's health decreases below zero, it destroys.

1. Controllable Aircrafts

All controllable aircrafts fire standard bullets continuously. In addition to this, there is a special attack type for each type of aircraft. These attack types are listed below.

- Missile Gun: Periodically fires a missile that follows the nearest enemy.
- Laser Gun: Periodically fires a laser beam that hits all the enemy that touches the beam.
- Lightening: Periodically fires a lightening that hits the enemy with the lowest health on the screen.

2. Enemy Aircrafts

- Static enemy: No move, no fire.
- Static enemy with fire: No move, fires standard bullets.
- Static enemy with missile: No move, fires missile.
- Dynamic enemy: Moves on predefined path, fires standard bullets.
- Dynamic enemy with follow: Moves through controllable aircraft, fires standard bullet.

Game Flow

This game is an endless game. The game must continue until the controlled aircraft destroyed. Therefore, the enemies must be continuously spawn with a random type and random horizontal position. Enemy type and count on the screen is related to the game time. At the beginning, there are less enemy on the screen and the types of these enemies are static enemy. More you play without destroying the controlled aircraft, there is more enemy on the screen and the types of the enemies are the more difficult ones (like static enemy with missile and dynamic enemy with follow).

Controls

You are free to use mouse or keyboard (or both) to control the aircraft. If you use mouse, the aircraft will follow the pressed mouse position on the screen. If you use keyboard, the aircraft will move through the pressed arrow key direction.

Score Table

You must implement a score table that lists first ten highest scores.

Autopilot Mode

If you switch the mode to autopilot, the computer will control the controllable aircraft. The computer must have smart actions like shoot through enemies (not empty areas) or dodge bullets.

This homework will be graded in CSE241 class as HWSummer. You can free to add new features to the game and these features may result with an extra grade.