

Galaxian Video Game Design

CSEE 4840 SPRING 2011 PROJECT PROPOSAL

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I . Object description



Our team proposes to build a shooting video game named Galaxian. This is a game where a spaceship flies back and forth shooting several waves of aliens in space. The player controls a space fighter who must shoot wave after wave of aliens. The ship could only have one shot on screen at a time.

In the beginning, the player has 3 spaceships. The ship can only move left and right at the bottom of the wraparound screen. Several rows of swarm are on the screen, they would jump out of row and randomly rejecting missiles to the ship. After one wave of swarm is destroyed, the player will face the next wave.

II . Design features

- Players control the ship using PS2 keyboard.
- Game interface is shown on the VGA.
- The position of swarm would fluctuate back and forth during the game.
- The swarm would fall out of wave one by one to attack the ship, if it is not destroyed, it would fly back to the wave.
- The swarm would attack the player with missiles. Different levels of swarm are designed, swarm of higher level have a higher probability of rejecting missiles.
- The flying path of the bullet and the swarm are depended on the current position of the ship.
- Several sectors are established. With the number of sector increases, the ratio of high-level swarm increases, and the speed of swarm also increases.

- When the player destroys the swarm, gifts would randomly appear in screen and gradually fall out of screen, if the ship did not catch the gift, it would disappear. The gifts can be 1up(extra life), or armor upgraded, etc.
- Scores are calculated during the game, and the high score will be recorded.

III. Milestones

Milestone1 (March 29)

- Set up peripherals of the project and hardware.
- Establish the models of swarm (of different levels), spaceship and the background.

Milestone2 (April 12)

- Spaceship can reject missiles, and when the missile meet swarm, the swarm would be destroyed and the score would change.
- The swarm can fall out reject missiles, and different swarm can reject missiles of different probability.

Milestone3 (April 28)

- The gift would randomly appear when swarm destroyed.
- Add other features, like swarm fluctuation, boss swarm, missile trace function, score display.
- Add several waves(sectors) of swarm.

IV. If time permits

Adding features:

Ethernet-based game between two players over two different terminals: two players begin to play at the same time, and compare the final scores. The player with higher score wins. If the scores are the same, then compare the time used. The player that uses less time wins.