Space Invaders

COP290: Assignment 3

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Objectives

Problem statement in brief

Our choice

Space Invaders

Space Invaders

Basic Game-play

- The player will control a space ship and shoot down aliens.
- The player will be allowed to move in the 2D plane and change its orientation in that plane
- The aliens will shoot bullets at the players ship.
- On getting hit by bullets the player will lose 1 life.
- On destroying a large number of aliens, the player will get bonus lives.

Space Invaders

Multi-player

Co-op Mode

- In co-op mode, the different players will team up to fight the aliens.
- The points scored by each will be combined together.

Competitive mode

- Players will be put up against each other, every player for himself.
- Each player has its own score which will be increased on hitting the other players.

Space Invaders

Scoring Scheme

Lives

- Each player will be given 3 lives.
- On getting hit by an alien bullet or colliding with an alien, a life will be lost.
- After killing 10 aliens in a row without any waste shot, a life will be awarded.

Scoring

- On killing an alien a point would be avoided.
- On killing more and more aliens in a row, a multiplying factor associated with points would increase.

Network Design

TODO: SOCCER

Network Design

Some more

TODO: SOCCER

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Something about replacing player with AI player of same level till network is back.
Also something on if the AI server goes down then a different user becomes the AI server.

The working of the enemy/opponent will be based on the concept of finite state machines where the enemy/ opponent will transition between particular states based on the situation. Different states define different modes of operation which include attacking, dodging or fleeing.

Artificial Intelligence

Enemy

Difficulty Level : Three Difficulty levels: easy medium and hard.
Enemy: Speed of enemy and frequency of bullets fired will be a function of difficulty.

Opponent

Accuracy of the opponent, frequency of bullets fired, and dodging ability of the opponent will be a function of difficulty.

Incorporation

For games with simple entities, Entity pull systems work best where entities call on the AI system when they update themselves.

Time Line

Thank You