

SPACE RACE

FINAL PROJECT PROPOSAL

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INTRODUCTION

Space Race is a game that allows the player to drive a spaceship around a simple maze, shooting asteroids and trying to make it to the SpacePort. Points are scored for completing the maze in certain time amounts and destroying asteroids.

OBJECTS

The game objects include:

- Spaceship
 - Can move any direction using arrow keys
 - Can be teleported (*predefined animation requirement*) to mouse location using the space bar
 - Spaceship Gun
 - Can be pointed any direction using MouseMove (*2nd scene node requirement*)
 - Spaceship Gun Shot
 - Affected by Vector of the Spaceship and direction the Spaceship Gun is pointed (*complexity requirement*)
 - When a Shot collides with an Asteroid, both objects are destroyed
 - When a Shot collides with a Wall or the Spaceport, the Shot is destroyed
- Asteroids
 - Asteroids move around in random directions and bounce off Walls
 - Will be texture mapped/alpha blended (*primitive attribute requirement*)
 - Asteroids can be destroyed by a shot from the gun
 - If the asteroid is destroyed the player scores points
 - If the Spaceship collides with an asteroid the Spaceship is destroyed and the game is over
- Walls
 - Walls are stationary objects that form a maze. Asteroids bounce off Walls
- Spaceport
 - If the Spaceship collides with the Spaceport, the level is completed
- Timer
 - The timer will count down and if the Spaceship has not yet collided with the Spaceport, the game is over

VIEWS

The game will include three views:

- Main Game Window
 - The main window will be the focus of attention, displaying a windowed view of the current Game Model
 - The Main Game Window will be centered around the Spaceship and not show the whole world
 - The main game window will accept mouse events for shooting the Gun
 - The main game window will have two predefined zoom levels
- Map Window
 - A full view of the current Level's map will be viewable in a smaller Map Window
 - The full model of the Level will be displayed in the Map Window including an outline of the Main Game Window and smaller versions of Asteroids, the Spaceship, and the Spaceport
- Info Pane
 - An Information Pane will display current Score, Asteroids Left, Difficulty, Teleports Left, Current Level, and Time Left

OTHER OPTIONS

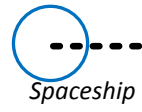
A menu will provide options to:

- Pause the Game (*Suspend requirement*)
- Restart the Game (*Reset requirement*)
- Change the Difficulty
 - Higher difficulty would add more asteroids that move faster (*Semantic requirement*)
- Set the Main Game Window zoom level (*Zoom requirement*)

AUDIO

An audio sound effect will sound when:

- A Shot is fired
- The Spaceship finds the Spaceport (*Audio effect requirement*)



shot



Time: 60

Difficulty: Easy

Level 1

Asteroids Left: 20

Teleports Left: 2

Score: 75

