Project7: Game Engine

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Contents

1   Required Tasks

The goal of this task is to implement an Asteroid game with Game Engine Irrlicht. It can help you have a better understanding of:

- the basic of Game Engine & Game Design
- 2D graphic
- collision detection

2   Detail Description

This part will talk about the implementation in detail.

2.1   The "Asteroid" game

Asteroids was one of the most popular and influential games of the Golden Age of Arcade Games. Asteroids uses a two-dimensional view that wraps around in both screen axes. The player controls a spaceship in an asteroid field. The object of the game is to shoot and destroy asteroids while not colliding with them. See Figure 1.

2.2   Irrlicht

The Irrlicht Engine is an open source high performance realtime 3D engine written in C++. It is completely cross-platform, using D3D, OpenGL and its own software renderers, and has all of the state-of-the-art features which can be found in commercial 3d engines. You can get source and documents from the official website: http://irrlicht.sourceforge.net/

2.3   Game Design

First, you must build your own Asteroid game configuration, like:

- How does the spaceship and asteroids look like?
- How to control the spaceship? Generally, there are four instructions needed: turn left, turn right, speed up and fire. As always, you are encouraged to design your own instructions.
- How does the asteroids move in the space?
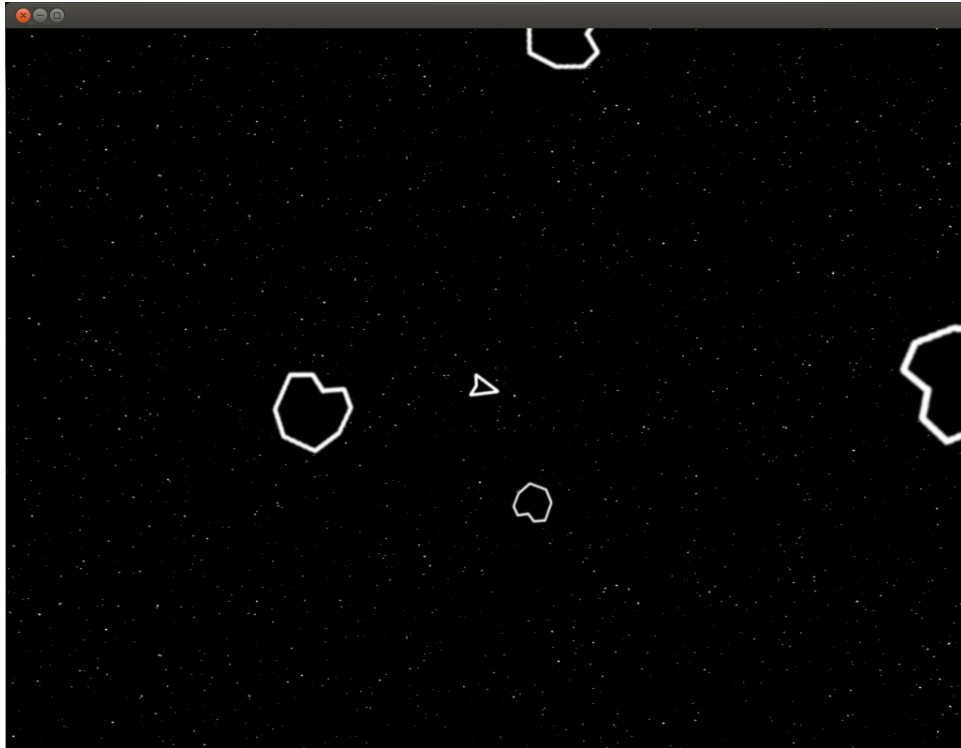- How does the spaceship destory the asteroid? with bullets, or even bomb!

Figure 1: Asteroid

3   Grading

Your task will be graded both on the visual effect and the playability. Any extra features can be considered for extra credits. The difficulty and effects will determine how many extra grades you'll get. Please describe the features you implement in the final report in detail.