

CSCI 3161: Introduction to Computer Graphics and Animation — Assignment 1

Summer Term 2018

due date: Wednesday, June 13

Implement the *Asteroids* video game using C, OpenGL, and GLUT. *Asteroids* is a 2D game where you pilot a spaceship in an asteroid field, shooting asteroids to destroy them before they collide with you. Larger asteroids break into smaller ones as you shoot them. The smallest asteroids are simply destroyed when shot. For an idea what the game may look like, check out

<http://www.brainjar.com/java/games/asteroids/>

As discussed in class, it is recommended that you start with a baseline implementation where the asteroids have circular shapes. Later on, implement full functionality and use a keystroke command to switch between circular shapes and general polygonal shapes at any point in time.

Please implement all functionality as described on the lecture slides and discussed in class. For a grade in the A range, functional fully polygonal collision detection for both the asteroids and the spaceship are required. Visual appeal, playability, and any extra features will be considered when marking, but to a lesser degree.

Please be sure not to use any platform specific libraries. I will use `gcc` to compile your code, and it is your responsibility to make sure that there are no issues. For additional hints and instructions, please check the lecture slides.

Submission instructions: Submit your source code on *Brightspace*. Please also submit a one-page document detailing all keystroke commands, any special features that your program may have, and a brief explanation of which of the required features work and which don't. Remember that

- you may discuss assignments with each other, but you must program your solutions independently
- all work you submit must be your own
- you must not share your code with anyone
- you must not make use of any code you find on the web with the exception of the sample programs that come with the textbook