

CS350 Project 1

Synopsis

Implement a multitude of small geometry library procedures. These procedures will be used throughout the rest of the semester.

Instructions

Download the project framework from Moodle. This framework defines a number of geometry related classes: **Line**, **Segment**, **Ray**, **Box**, **Sphere**, **Plane**, and **Triangle**, as well as a set of basic vector and matrix objects from **GLM**: **vec2**, **vec3**, **vec4**, **mat4**, **ivec3**. The framework implements much of the basic point/vector functionality (via GLM), but 25 functions are left for you to implement. They are all in **geomlib-advanced.cpp** and have a body that currently consists of the single line:

```
throw Unimplemented();
```

The framework provides a main procedure in **geomlib-main.cpp**, which runs through 400+ tests, each of which calls your functions, examines the result, and prints and counts any discrepancies. These tests are **not** guaranteed to be thorough. You are encouraged to add tests of your own to verify the correct functioning of your code.

How to submit

Submit to Moodle a single ZIP file containing **SOURCE CODE ONLY**: (*.cpp and *.h)
Do not include any of the following:

- Build artifacts (*.o, *.pdb, *.sdf, etc...),
- Executable files (*.exe),
- Debug, Release, or .vs folders.

Grading Basis

The framework's main program, in **geomlib-main.cpp**, contains 400+ tests, each of which makes a call into the geometry library, and informs you of any differences between your returned result and the expected result. Any test which fails will result in the loss of some points. I reserve the right to add any tests beyond those in **geomlib-main.cpp** which test your adherence to the stated requirements.

Output

The framework, as distributed, will output to the console a series of lines claiming that tests failed due to calling **unimplemented code**, and ending in:

```
0 tests completed.  
18 tests failed.
```

Upon successful implementation of all required procedures, the printed results will end in:

```
418 tests completed.  
0 tests failed.
```