3990 Project documentation

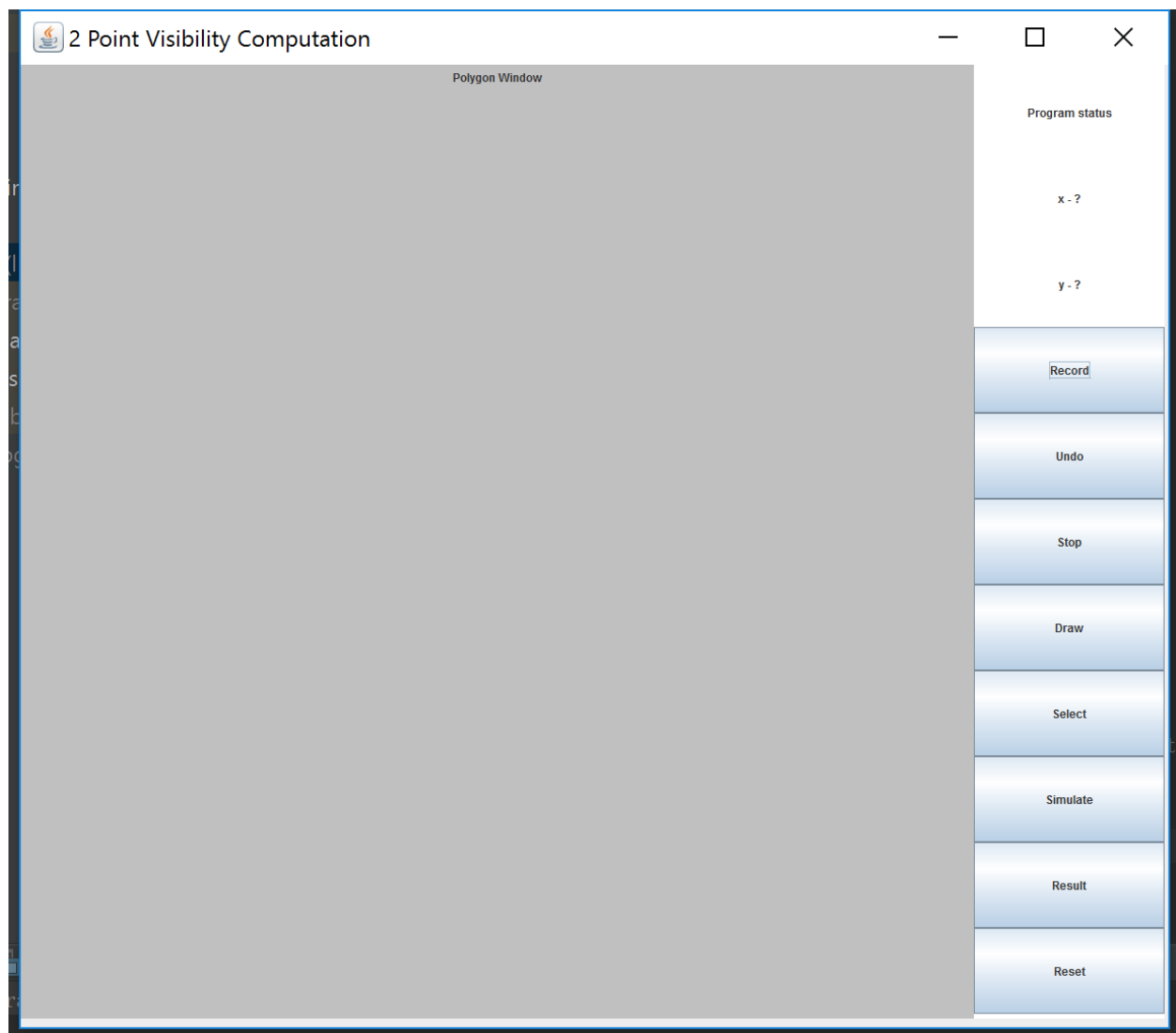## Ruikai Liu

Source code:

The source code are included in the zip file as GeoCompute

The internal library is java 1.8

The external library is GeoLib in the zip file as GeoLib

The executable java file is the gcRunner.java
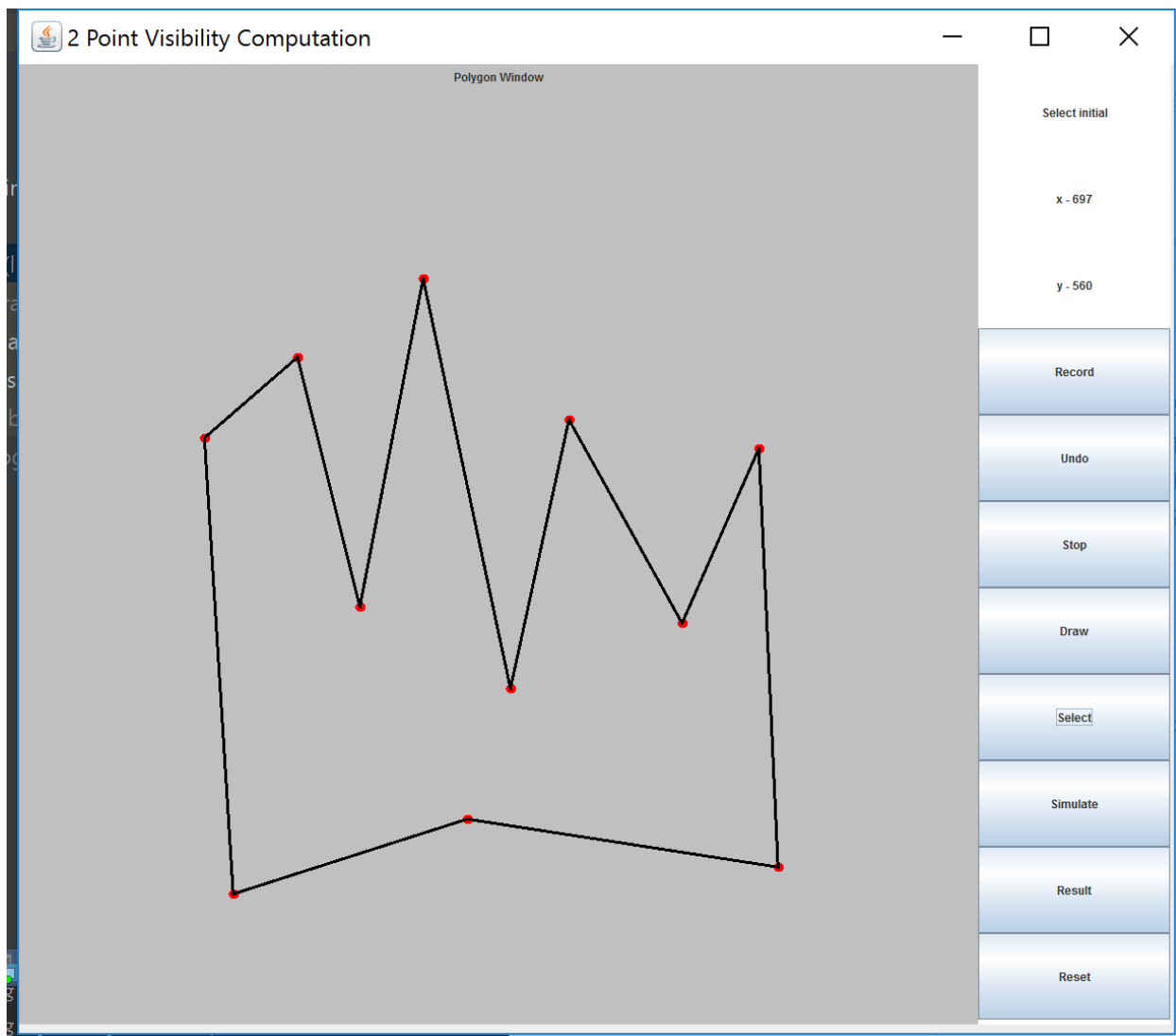
Program interface:

Procedure to use:

1. Click Record, then click some points in the grey area, the points must be clockwise
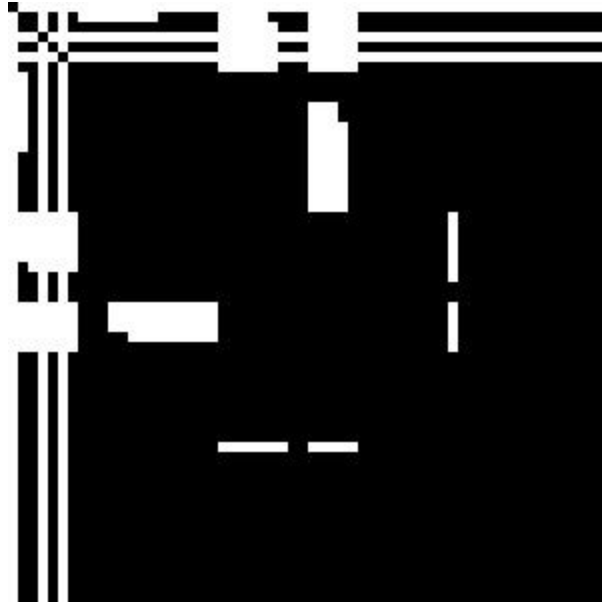
2. Click Stop to stop recording of the polygon
3. Click Draw to show the polygon
4. Click Select and select an initial point for calculating
5. Click Simulate to run the 2-point-visibility algorithm
    a. On success, the console would prompt "JPG result is generated: c:/Result/result.jpg"
    b. The stepwise of simulating can be set through the variable stepwise in gcModel.java
    c. The choice of the stepwise is related with the screen resolution, since large resolution would generate larger amount of points on the polygon borders

Sample Run:

For a sample run, the polygon is in the shape of

The result jpg is as follow:

The black pixel means that it is 2-point-visible between the 2 points.

The white pixel means that it is not 2-point-visible between the 2 points.

The white line is due to numerical rounding issue.

The white area is the area where it is not2 point visible between 2 line segments.