

Project 2

UML Class Diagram

- A UML Class diagram is shown below in (Fig.1).

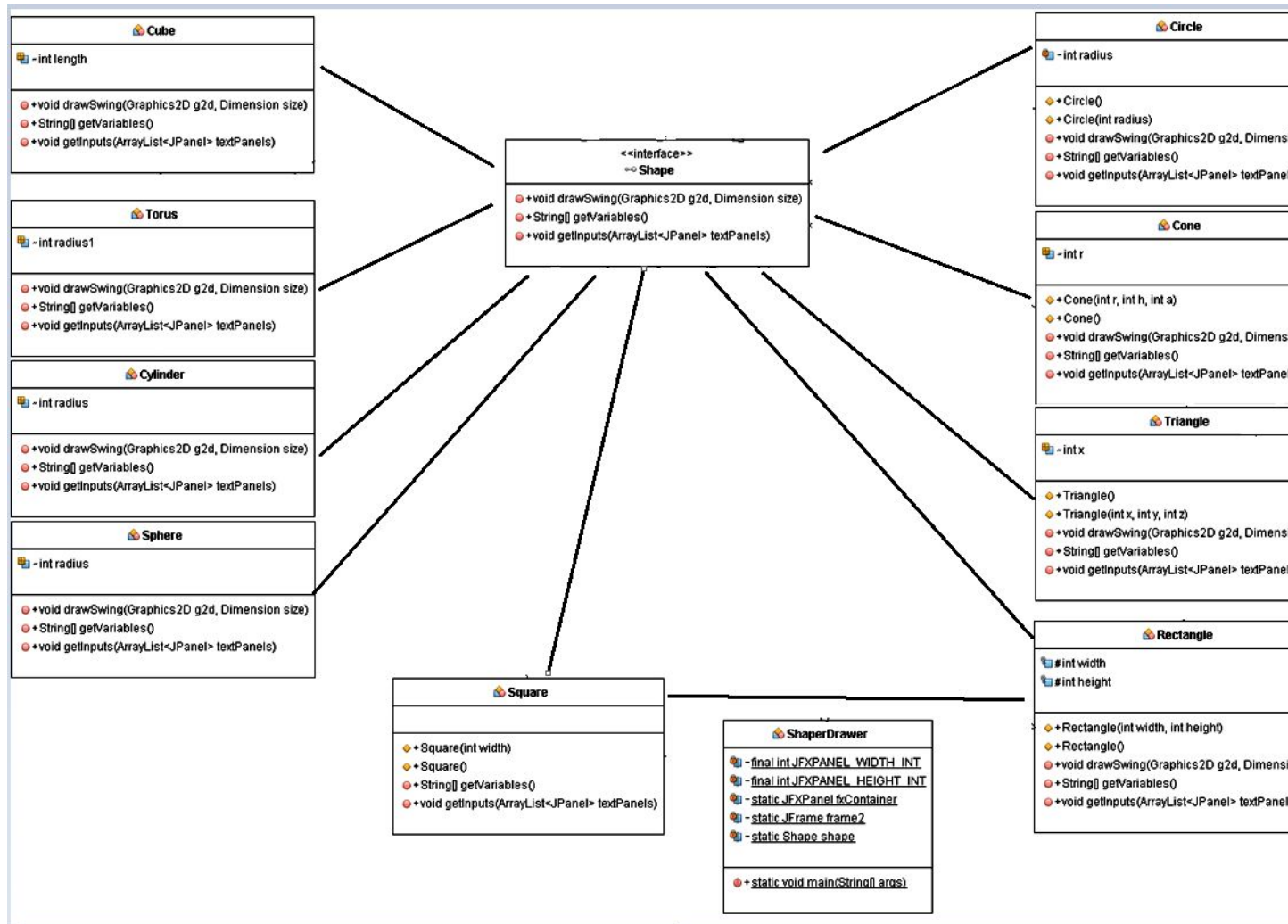


Fig.1 In this figure we can see the UML diagram showing the relation between the classes of the program.

Compile and Running:

1- To compile:

```
javac *.java
```

2- To run:

```
java ShaperDrawer
```

Lesson learned:

- How to use the Swing GUI to draw GUI using java.
- Use Layout Managers, Event Handlers, Listener Interfaces, Buttons and other widgets.
- Use Inner classes and lambda functions.
- Using the keywords *extends* and *implements*.
- Design and implement classes using inheritance and function overloading.

Tests and Screenshots

A- Test drawing Circle

- **Steps:**
 - 1- Open Application
 - 2- Choose circle
 - 3- Edit radius to 350
 - 4- Press "Draw!"
- **Result:** Shown in Fig.2

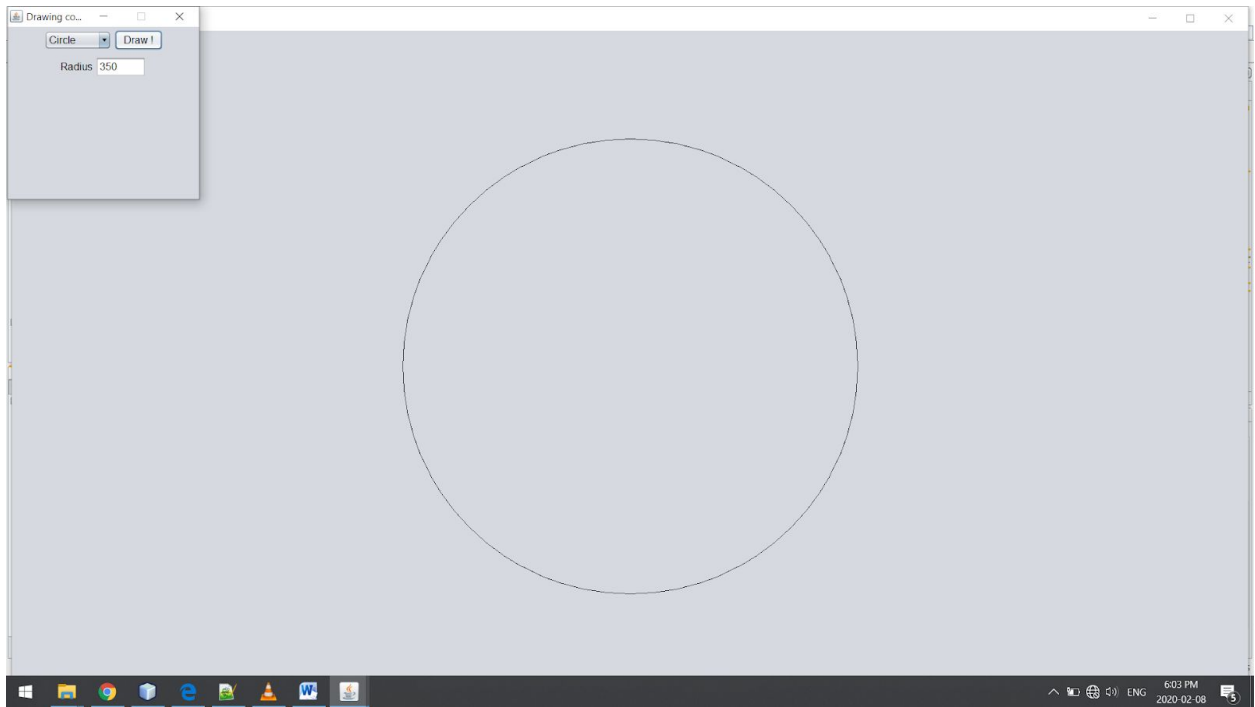


Fig.2 Test A Results.

B- Test Drawing Square

- **Steps:**
 - 1- Open Application
 - 2- Choose Square
 - 3- Edit radius to 350
 - 4- Press "Draw!"
- **Result:** Shown in Fig.3

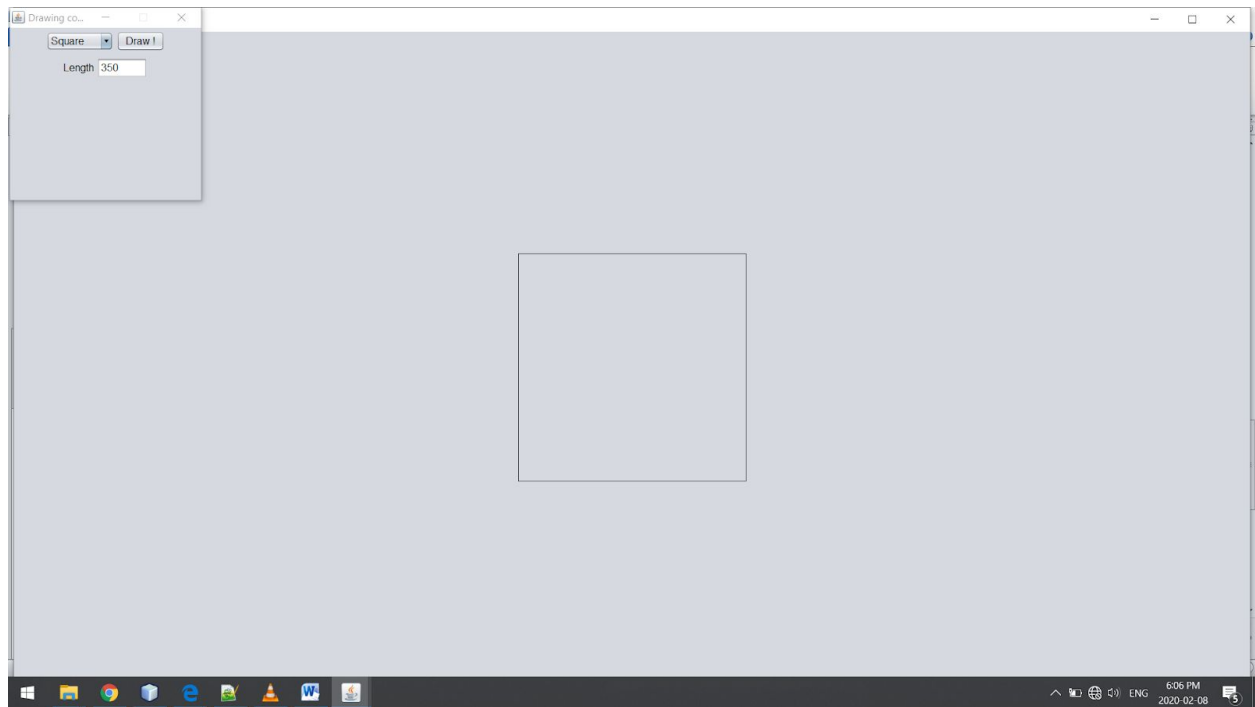


Fig.3 Test B results.

C- Test Drawing Triangle

- **Steps:**
 - 1- Open Application
 - 2- Choose Triangle
 - 3- Edit lengths to {400,300,500}
 - 4- Press "Draw!"
- **Result:** Shown in Fig.4.

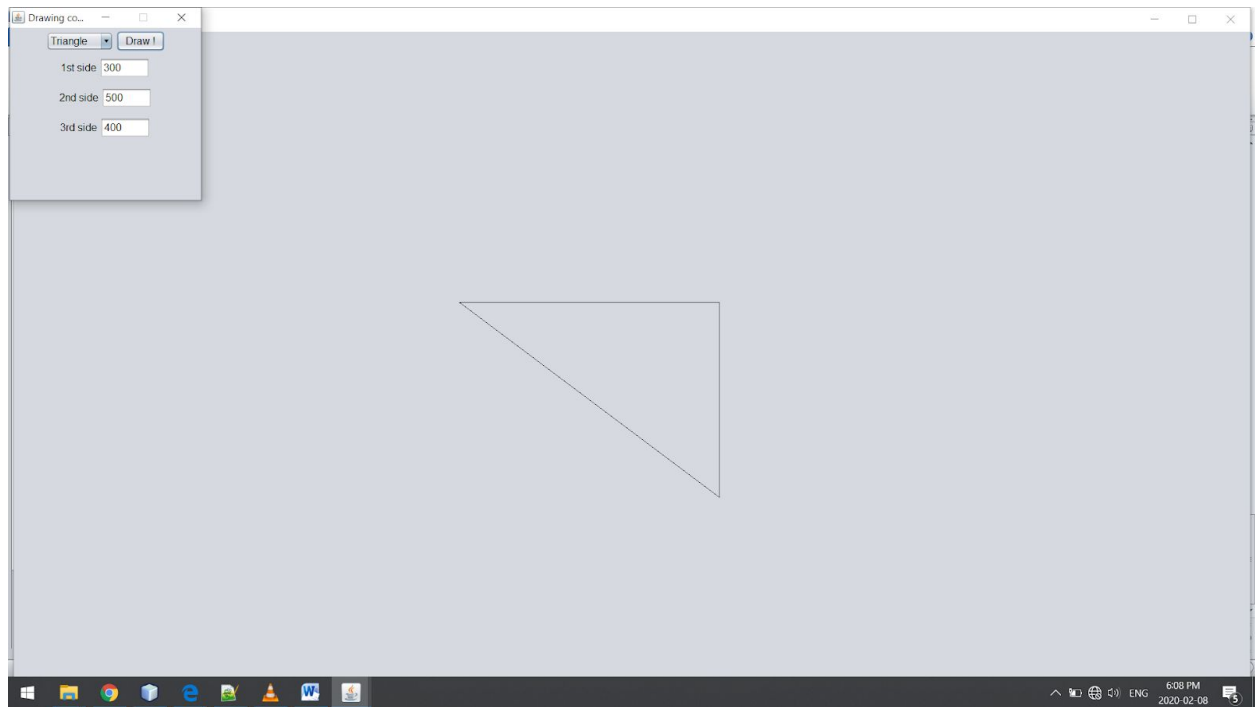


Fig.4 Test C results.

D- Test Drawing Rectangle

- **Steps:**
 - 1- Open Application
 - 2- Choose Rectangle
 - 3- Edit lengths to {500,300}
 - 4- Press “Draw!”
- **Result:** Shown in Fig.5.

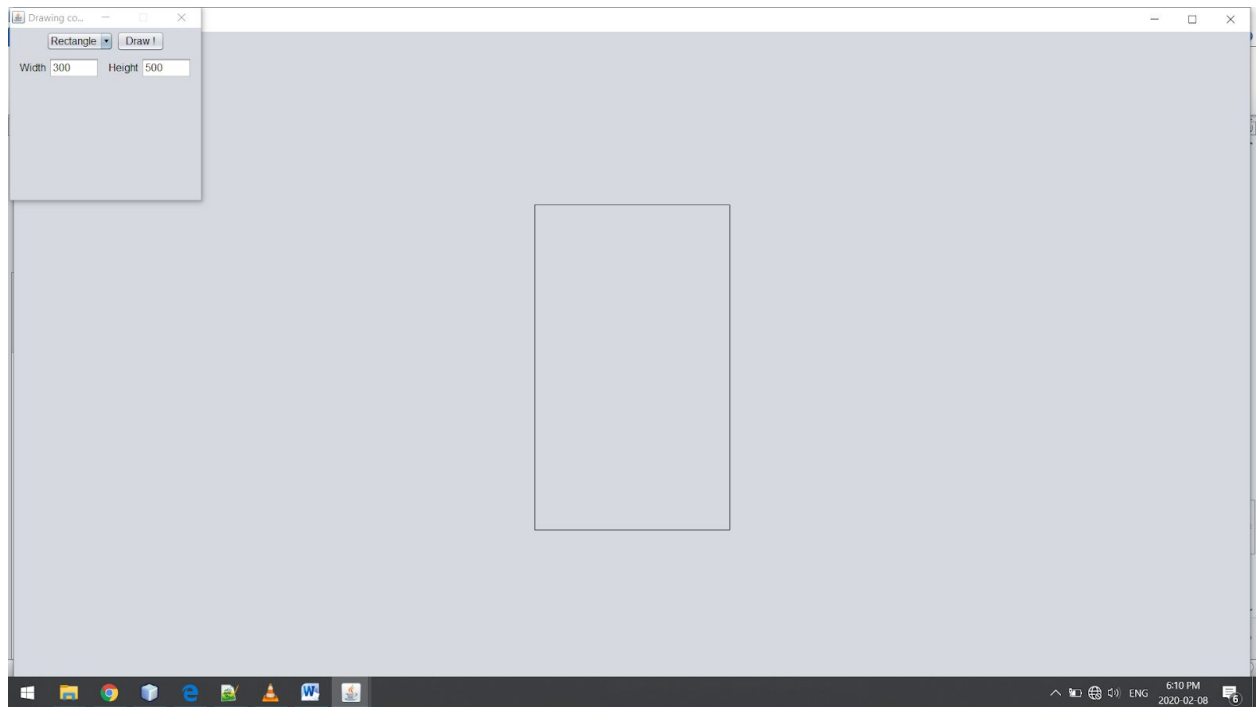


Fig.5 Test D Results.

E- Test Drawing Sphere

- **Steps:**
 - 1- Open Application
 - 2- Choose Sphere
 - 3- Edit length to 300
 - 4- Press “Draw!”
- **Result:** Shown in Fig.6.

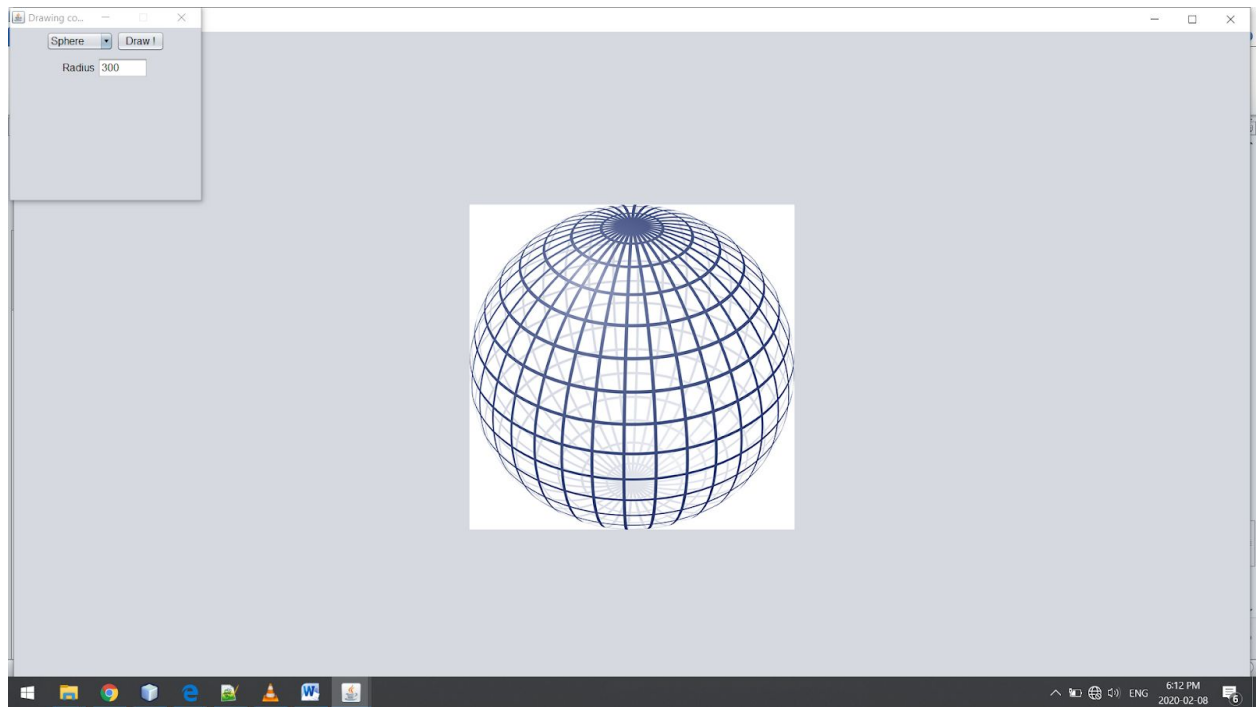


Fig.6 Test E Results.

F- Test Drawing Cube

- **Steps:**
 - 1- Open Application
 - 2- Choose Cube
 - 3- Edit length to 200
 - 4- Press “Draw!”
- **Result:** Shown in Fig.7.

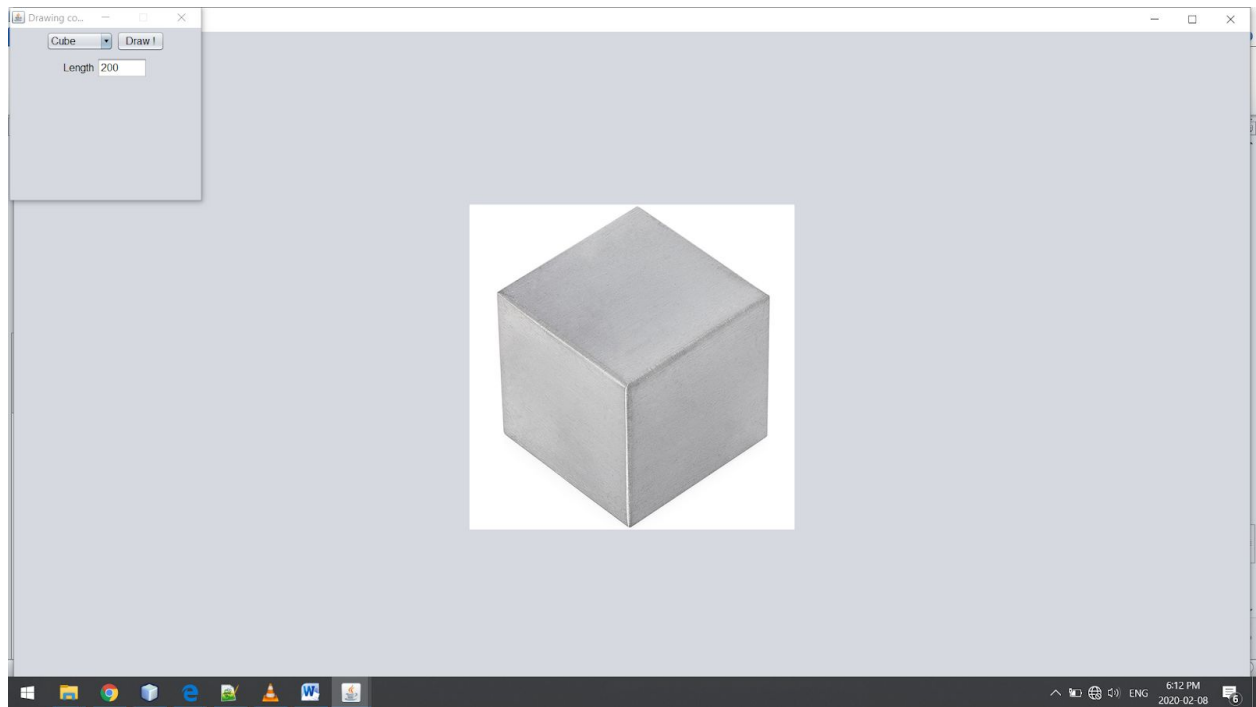


Fig.7 Test f Results.

G- Test Drawing Cone

- Steps:
 - 1- Open Application
 - 2- Choose Cone
 - 3- Edit lengths to {200,400,500}
 - 4- Press "Draw!"
- Result: Shown in Fig.8

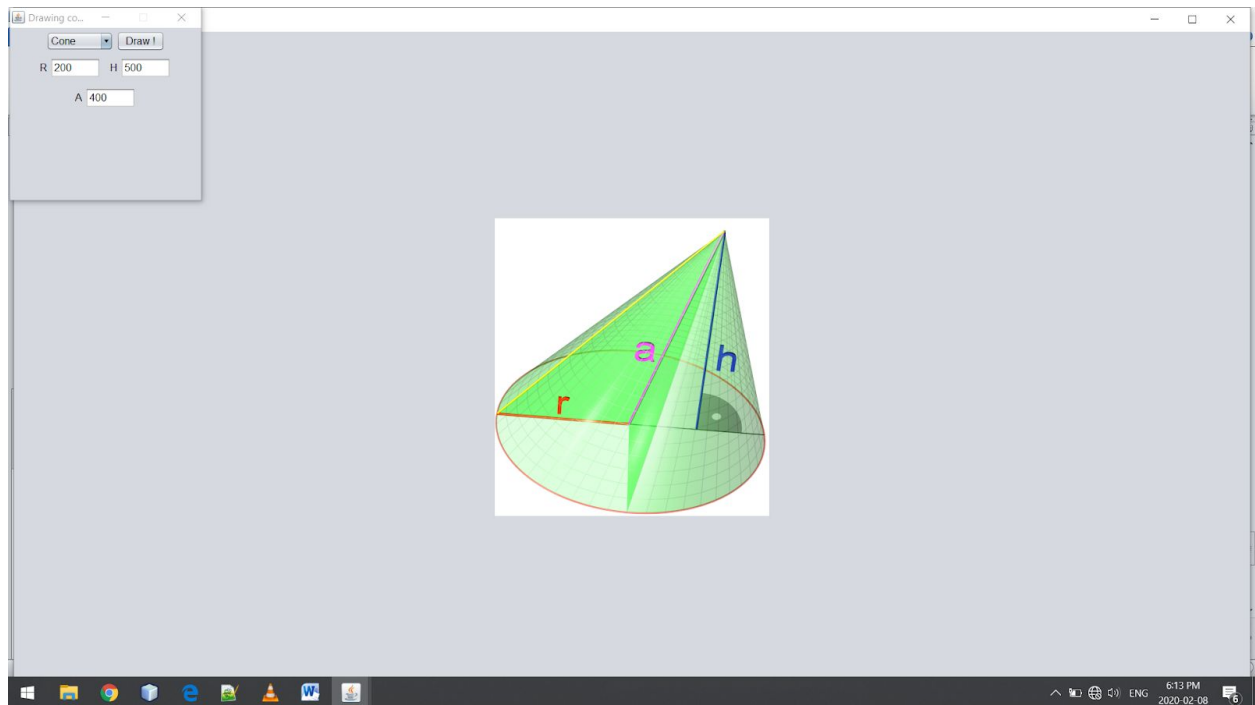


Fig.8 Test G Results.

H- Test Drawing Cylinder

- **Steps:**
 - 1- Open Application
 - 2- Choose Cylinder
 - 3- Edit lengths to {200 ,500}
 - 4- Press “Draw!”
- **Result:** Shown in Fig.9.

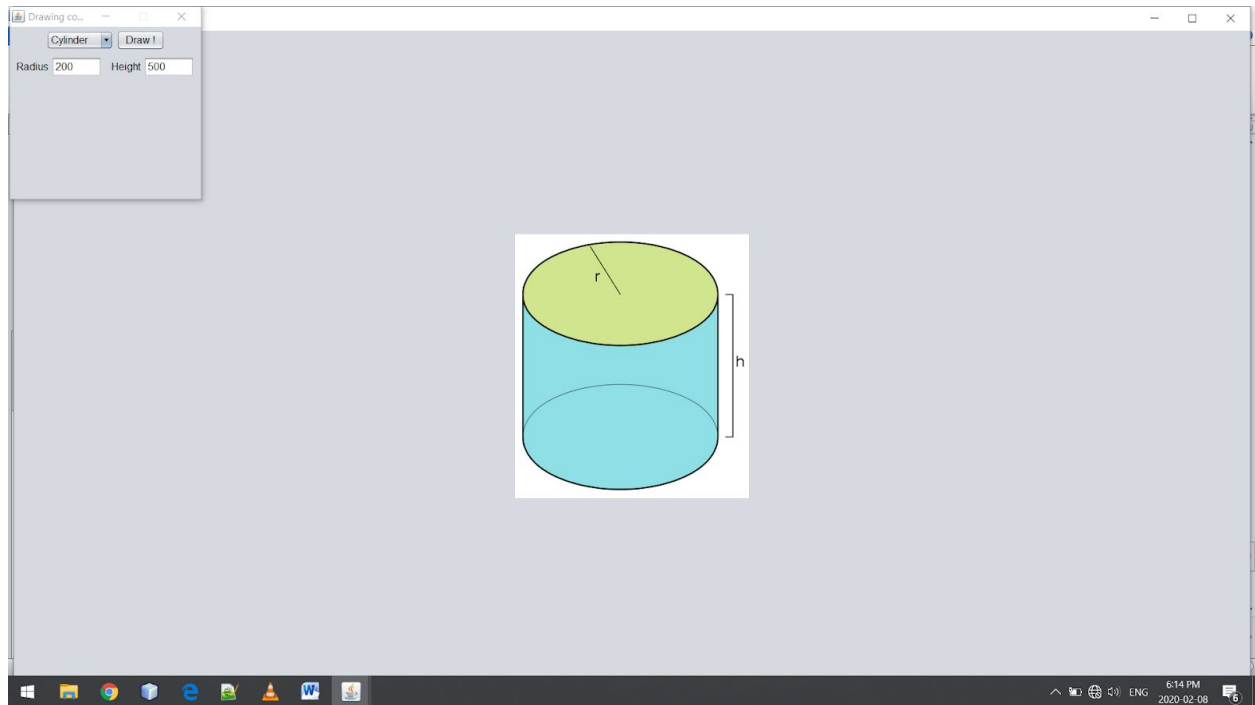


Fig.9 Test H Results.

I- Test multi-drawing

- **Steps:**
 - 1- Open Application
 - 2- Choose Cylinder
 - 3- Edit lengths to {200 ,500}
 - 4- Choose Circle
 - 5- Edit length to 200
 - 6- Press "Draw!"
- **Results:** Shown in Fig.10.

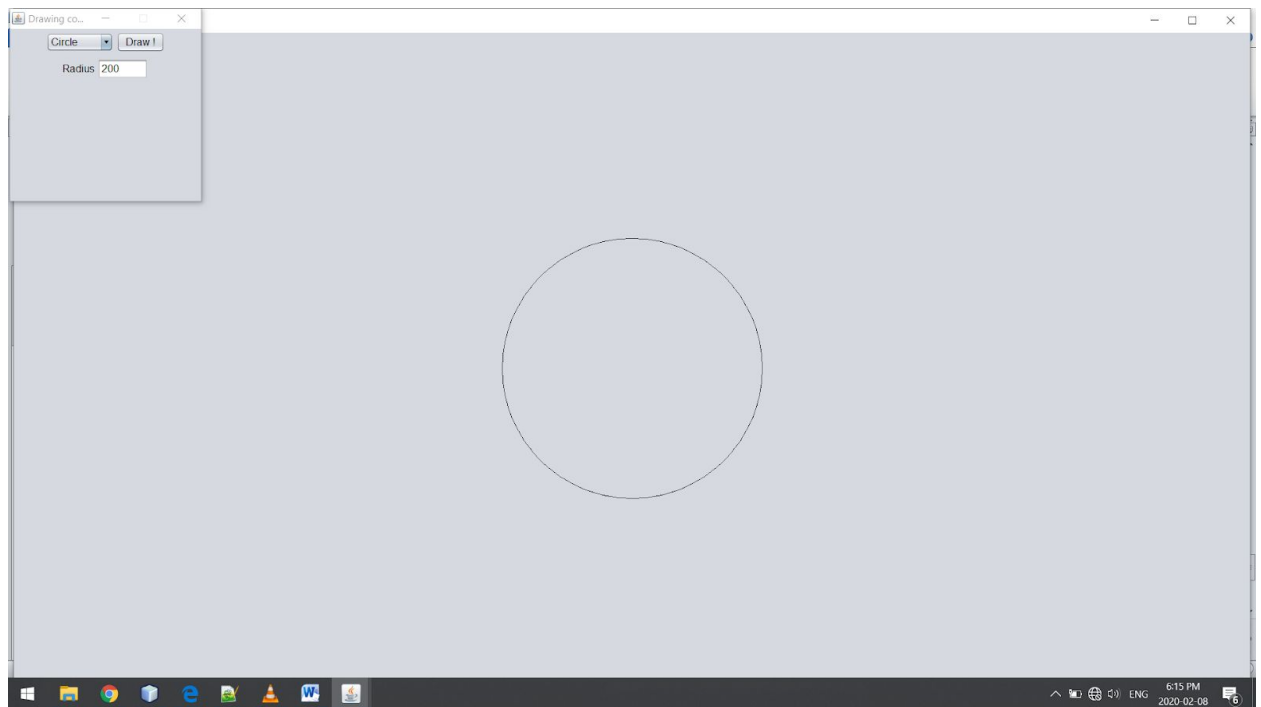


Fig.10 Test I Results.

J- Test Changing window size

- **Steps:**
 - 1- Open Application
 - 2- Choose Cylinder
 - 3- Edit lengths to {200 ,500}
 - 4- Choose Circle
 - 5- Edit length to 200
 - 6- Press "Draw!"
 - 7- Change window size
- **Result:** Shown in Fig.11.

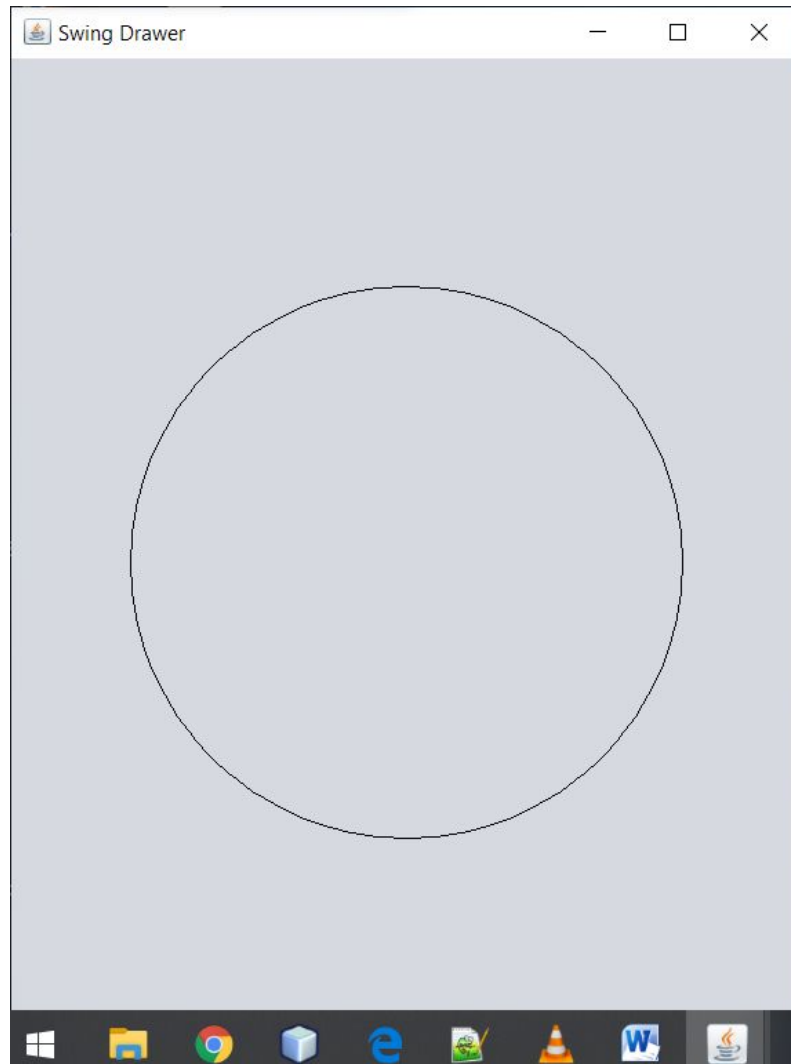


Fig.11 Test I Results.