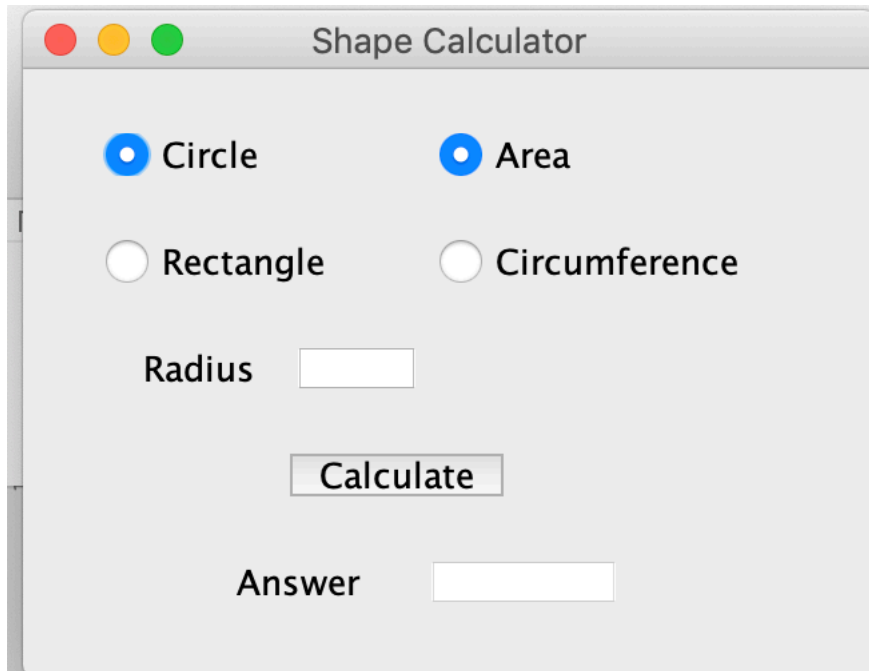
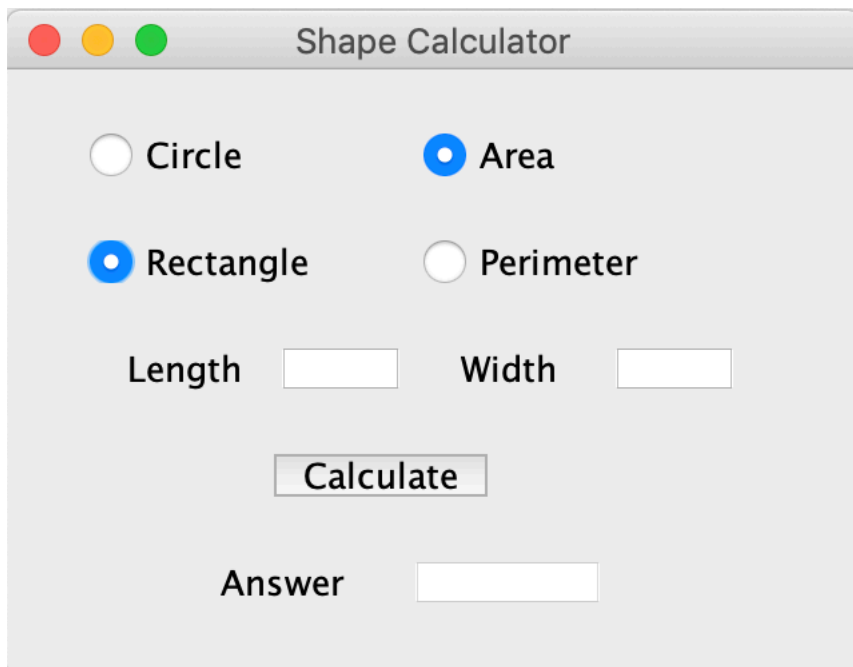


Write a Java program to perform computations on simple shapes.
The user interface looks like this when the program starts:



The initial state of the Shape Calculator GUI. The window has a title bar with red, yellow, and green buttons and the title "Shape Calculator". Inside, there are two rows of radio buttons. The first row has "Circle" (selected) and "Area" (selected). The second row has "Rectangle" (unselected) and "Circumference" (unselected). Below these is a text input field labeled "Radius". A "Calculate" button is centered below the input field. At the bottom is a text input field labeled "Answer".

If the Rectangle radio button is pressed, the display changes to



The state of the Shape Calculator GUI after the "Rectangle" radio button is pressed. The window title remains "Shape Calculator". The radio buttons are now: "Circle" (unselected), "Area" (selected), "Rectangle" (selected), and "Perimeter" (unselected). The text input fields are now labeled "Length" and "Width". The "Calculate" button and the "Answer" input field remain at the bottom.

You will be given a jar file that is the server.

You will also be given a java file that is a partial implementation of a client. It contains code that provides everything except

- 1) a method that connects to the server
- 2) a method that uses the server to calculate the requested value
- 3) global variables needed by those methods

The server protocol consists of a command in the form

shape attrib(s) wanted

where *shape* is either circle or rect

attrib(s) is the radius if it is a circle and is the length and width if it is a rect

wanted is area or circum if it is a circle and is area or perim if it is a rect

Examples:

circle	2.5	area	
rect	7.481	13.9	perim

Your program should send a command using a `PrintWriter`.

The server will return the result using `writeUTF`.

The server has no GUI so you will not see any indication that it is running.

I suggest that you run the server from the command line using

```
java -jar ShapeCalculatorServer.jar
```

Then you can see the server and easily terminate it with CTRL/C