Lab 1

Consider a world where there are only two types of Shapes - Circle and Elcric. As the name suggests Elcric is any shape which is not circle.

- Create an abstract class Shape with one **abstract** method draw and one **non-abstract** method delete (details of methods mentioned below).
- Create two classes for Circle and Elcric respectively which inherits the Shape class and implements its methods.
- Create a separate class Lab1_<Roll_Number> which contains main method.
- Create Objects for Circle and Elcric using reference of Shape class.
- Take a string as input from console and call draw functions of both the Circle and Elcric objects.
- Call delete function of each of the objects.

Definition of draw function - draw function takes a string as input and performs below tasks as mentioned against each class.

Input Argument – String , **Return-type** - double

- **For Shape Class** – draw is an **abstract** function which takes a string as input and whose returntype is double.
- **For Circle class** - draw function takes string as input and finds the length of string which is the diameter of circle. It then prints the string as it is and then returns the Area of the circle which is to be printed in main function
- **For Elcric class** - draw function takes string as input, and reverses the string completely, filters (removes) first character and then calculates the length of the string which gives the length of Elcric shape. It then prints the new processed string and then returns the Area of Elcric (length * length) which is to be printed in main function.

Definition of delete function – no input arguments and the return-type as void.

- **For Shape Class** – It prints “Shape deleted”.
- **For Circle class** – It prints “Circle Deleted.”
- **For Elcric class** – It doesn’t override the delete method.

Submission Guidelines – Submit a single zip file containing the Java File(s) on backpack with name as <RollNumber>_Lab1.zip

For Reference –

- Java basics - https://www.tutorialspoint.com/java/java_basic_syntax.htm
- Abstract Class , Abstract method, Inheritence in Java - https://www.javatpoint.com/abstract-class-in-java