JAVA LAB WEEK- 8 (06/10/23) EXERCISES

1) **A)**Create an interface called **InterfaceRegion** that other classes should implement. It contains four abstract methods:

   Contains(Point)

   Area()

   Print details()

   B) Create an abstract class **REGION** with the following data members and member functions:

   String Nameoftheregion

   Functions:

      GetRegionname()

      Contains(Point)

      Area()

      Print details()

   This is the abstract class that implements the **InterfaceRegion** interface and all the different types of regions will extend from.

   C) Create another class POINT with two data members x and y

   D) Derive 2 subclasses **CIRCLE** and **RECTANGLE** from **REGION** and include the

   following:

   CIRCLE:

      Point center

      Double Radius

   Functions:

      Get()- read center and radius

      Area()- compute and return area

      Contains(Point)- Test whether the given point is within the circle or not.

      Print details()- print the name of the region along with area.

   Create an array of circle and throw ArrayIndexOutOfBoundsException when it accesses the array of circle to print the details.

   Throw the custom exception that throws an exception with message "point not present " if the point is outside.

RECTANGLE:

Point topleftcorner

Double height

Double width

Functions:

Get()-

Area()

Contains(Point)- Test whether the given point is within the Rectangle or not. Printdetails()

Write details of the RECTANGLE into a file and read the information about RECTANGLE using object serialization.

E) Write test function to test all the above functionalities.