Coding Assessment

1. We have to calculate the area of a rectangle, a square and a circle. Create an abstract class 'Shape' with three abstract methods namely 'RectangleArea' taking two parameters, 'SquareArea' and 'CircleArea' taking one parameter each. The parameters of 'RectangleArea' are its length and breadth, that of 'SquareArea' is its side and that of 'CircleArea' is its radius. Now create another class 'Area' containing all the three methods 'RectangleArea', 'SquareArea' and 'CircleArea' for printing the area of rectangle, square and circle respectively. Create an object of class 'Area' and call all the three methods.

2. Create a java project and in that , you have to create a file named “data.txt” and store this data in that file “HAPPY NEW YEAR” . Create a program to read the data from the file and display the count of each of VOWELS (A E I O U)

```
1. package class6;

public class Class6 {

  public static void main(String[] args) {

        Area a = new Area();

        a.RectangleArea(5.5f, 7f);

        a.SquareArea(5f);

        a.CircleArea(4);

    }

}

abstract class Shape{

    abstract void RectangleArea(float length , float breadth);

    abstract void SquareArea(float radius);

    abstract void CircleArea(float side);

}
```

```
class Area extends Shape{
    double Area=0;
   void RectangleArea(float length , float breadth){
    Area = length * breadth;
       System.out.println("Area of rectangle is: "+Area);
    }
    void SquareArea(float Side){
    Area = Side * Side;
       System.out.println("Area of Square is: "+Area);
    }
    void CircleArea(float radius){
    Area = (radius * radius)*3.14;
       System.out.println("Area of Circle is: "+Area);
    }
}
```

2.

```
import java.util.Scanner;
public class ReadData {
    public static void main(String[] args) throws Exception {
        // Create a File instance
        java.io.File file = new java.io.File("filename.txt");

        // Create a Scanner for the file
        Scanner input = new Scanner(file);

        // Create the Content String
        String fileContent = "";

        // Read data from a file
        while (input.hasNext()) {
            fileContent += input.next() + " ";
        }
        // Close the file
        input.close();
```

```
        //Split the string into a character array
        char[] charArr = fileContent.toCharArray();

        //loop through every character to find the vowels
        int counter = 0;
        for (char c : charArr) {
            if (c == 'A' || c == 'E' || c == 'I' || c == 'O' || c == 'U' || c == 'a' || c == 'e' || c == 'i'
|| c == 'o' || c == 'u' )
                counter++;
        }

        //Tell the user the number of vowels
        System.out.println("Number of Vowels: " + counter);
    }
}
```