

Q) Develop a Java program to create abstract class named shape that contains two integers and an empty method named printArea. provide 3 classes, Rectangle, Triangle and Circle such that each extends shape. Each one should contain only one method printArea and should print the area of given shape.

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Lab-Program 4

import java.util.Scanner;

abstract class shape

{

shape(){};

int h, b;

abstract void printArea();

}

class Rectangle extends shape

{

Scanner s = new Scanner(System.in);

void printArea()

{

System.out.println("Enter height and width");

int h = s.nextInt();

int b = s.nextInt();

System.out.println("Area of rectangle = " + b * h);

}

Rectangle(){} s.close();

}

class Triangle extends shape

{

Scanner s = new Scanner(System.in);

void printArea()

{

System.out.println("Enter height and base");

h = s.nextInt();

b = s.nextInt();

System.out.println("Area of triangle = " + 0.5 * b * h);

}

Triangle(){} s.close();

}

class lab-3\$

```

public static void main(String[] args) {
    Scanner s = new Scanner(System.in);
    System.out.println("Enter the no of courses");
    int n = s.nextInt();
    int credits[] = new int[n];
    int marks[] = new int[n];
    Student st = new Student(n);
    System.out.println("Enter the credits of  
the courses: ");
    for (int i = 0; i < n; i++) {
        credits[i] = s.nextInt();
    }
    System.out.println("Enter your user name");
    String user = s.next();
    String syllable = s.nextLine(); // consumes \n
    String name = s.nextLine(); // for spaced input
    System.out.println("Enter your marks in  
each subject");
    for (int i = 0; i < n; i++) {
        System.out.println("Enter the marks  
obtained in " + i + " course (credits  
+ credits[i] + " ) : ");
        marks[i] = s.nextInt();
    }
    st.accept(user, name, credits, marks);
    st.separator();
    st.display();
    s.close();
}
}

```

OUTPUT:

```
Microsoft Windows [Version 10.0.22000.348]
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C:\Users\amshu\OneDrive\Desktop>javac lab5.java

C:\Users\amshu\OneDrive\Desktop>java Main
Enter height and width of rectangle
3 4
Area of Rectangle is 12
Enter height and base of triangle
3 4
Area of Trianle is 6.0
Enter radius of Circle
5
Area of Circle is 78.5

C:\Users\amshu\OneDrive\Desktop>_
```