Develop a Java program to create an abstract class named Shape that contains two integers and an empty method named printArea(). Provide three classes named Rectangle, Triangle and Circle such that each one of the classes extends the class Shape. Each one of the classes contain only the method printArea() that prints the area of the given shape.

```
import java.util.*;
abstract class Shape {
  double a, b;
  abstract void printarea();
  }

class triangle extends shape {
  void getdata (double x, double y)
  { a = x; b = y; }
  void printarea()

{
  double area = 0.5 * a * b;
  System.out.println ("Area of triangle = " +area);
  }
}

class rectangle extends shape {
void getdata (double x, double y)
  { a = x; b = y; }
    void printarea ()
  { double area = a * b;
  System.out.println ("Area of rectangle = " +area);
  }
}
```

```
Class circle extends shape {
  void getdata (double x)
  { a = x; }
  void printarea()
  {  double area = 3.142 * a * a;
  System.out.println ("Area of circle = " + area);
}
}

Class abstarea { public static void main (String args[
{ int ch;
  Shape si;
  Scanner sc = new Scanner (System.in);
  rectangle r = new rectangle();
  triangle t = new triangle();
  circle c = new circle();
  s.o.p ("1. Area of rectangle \n 2. Area of triangle \n 3.
        Area of circle \n Enter your choice ");
      ch = sc.nextInt();

   Switch (ch)
{
case 1: System.out.println ("Enter length and breath:")
      double ll = sc.nextDouble();
      double b = sc.nextDouble();
        r.getdata (l, b);
        r.printarea();
        break;
```

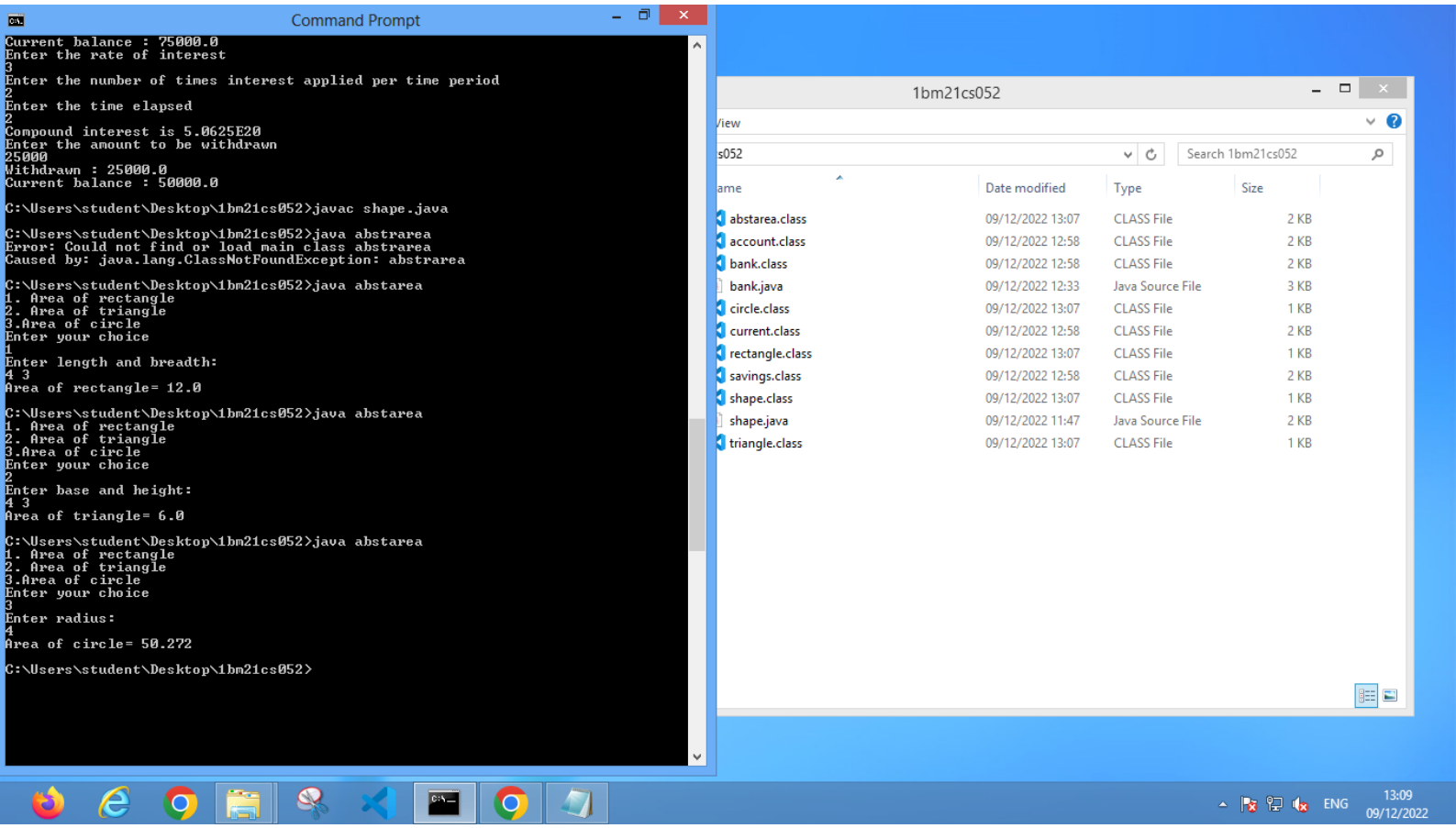
```
case 2: System.out.println("Enter base and height:");
        double b1 = sc.nextDouble();
        double b2 = sc.nextDouble();
          t.getdata(b1,b2);
          t.printarea();
          break;

case 3: S o p ("Enter radius:");
        double r1 = sc.nextDouble();
          c.getdata(r1);
          c.printarea();
          break;
        default : System. S.O.p ("Invalid input");
    }
  }
}
```

output

1. Area of rectangle
2. Area of triangle
3. Area of circle.

Enter your choice
1.
Enter length and breadth
3 4
Area of rectangle = 12.0

Enter your choice
2.
Enter base and height.
4 6
Area of triangle = 12.0.


Command Prompt
Current balance : 75000.0
Enter the rate of interest
3
Enter the number of times interest applied per time period
2
Enter the time elapsed
2
Compound interest is 5.0625E20
Enter the amount to be withdrawn
25000
Withdrawn : 25000.0
Current balance : 50000.0
C:\Users\student\Desktop\1bm21cs052>javac shape.java
C:\Users\student\Desktop\1bm21cs052>java abstrarea
Error: Could not find or load main class abstrarea
Caused by: java.lang.ClassNotFoundException: abstrarea
C:\Users\student\Desktop\1bm21cs052>java abstarea
1. Area of rectangle
2. Area of triangle
3.Area of circle
Enter your choice
1
Enter length and breadth:
4 3
Area of rectangle= 12.0
C:\Users\student\Desktop\1bm21cs052>java abstarea
1. Area of rectangle
2. Area of triangle
3.Area of circle
Enter your choice
2
Enter base and height:
4 3
Area of triangle= 6.0
C:\Users\student\Desktop\1bm21cs052>java abstarea
1. Area of rectangle
2. Area of triangle
3.Area of circle
Enter your choice
3
Enter radius:
4
Area of circle= 50.272
C:\Users\student\Desktop\1bm21cs052>
1bm21cs052
Search 1bm21cs052
Date modified
Type
Size
abstarea.class 09/12/2022 13:07 CLASS File 2 KB
account.class 09/12/2022 12:58 CLASS File 2 KB
bank.class 09/12/2022 12:58 CLASS File 2 KB
bank.java 09/12/2022 12:33 Java Source File 3 KB
circle.class 09/12/2022 13:07 CLASS File 1 KB
current.class 09/12/2022 12:58 CLASS File 2 KB
rectangle.class 09/12/2022 13:07 CLASS File 1 KB
savings.class 09/12/2022 12:58 CLASS File 2 KB
shape.class 09/12/2022 13:07 CLASS File 1 KB
shape.java 09/12/2022 11:47 Java Source File 2 KB
triangle.class 09/12/2022 13:07 CLASS File 1 KB
ENG
13:09
09/12/2022