



EAST WEST UNIVERSITY

Course Title: CSE110

Section: 06

Semester: Summer 22

Week 01 Class Practice

SUBMITTED TO

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1.

```
import java.util.Scanner;

public class ComputerAreaWithConsoleInput {

    public static void main(String[] args) {

        Scanner input=new Scanner (System.in);

        System.out.println("Enter a number for radius:");

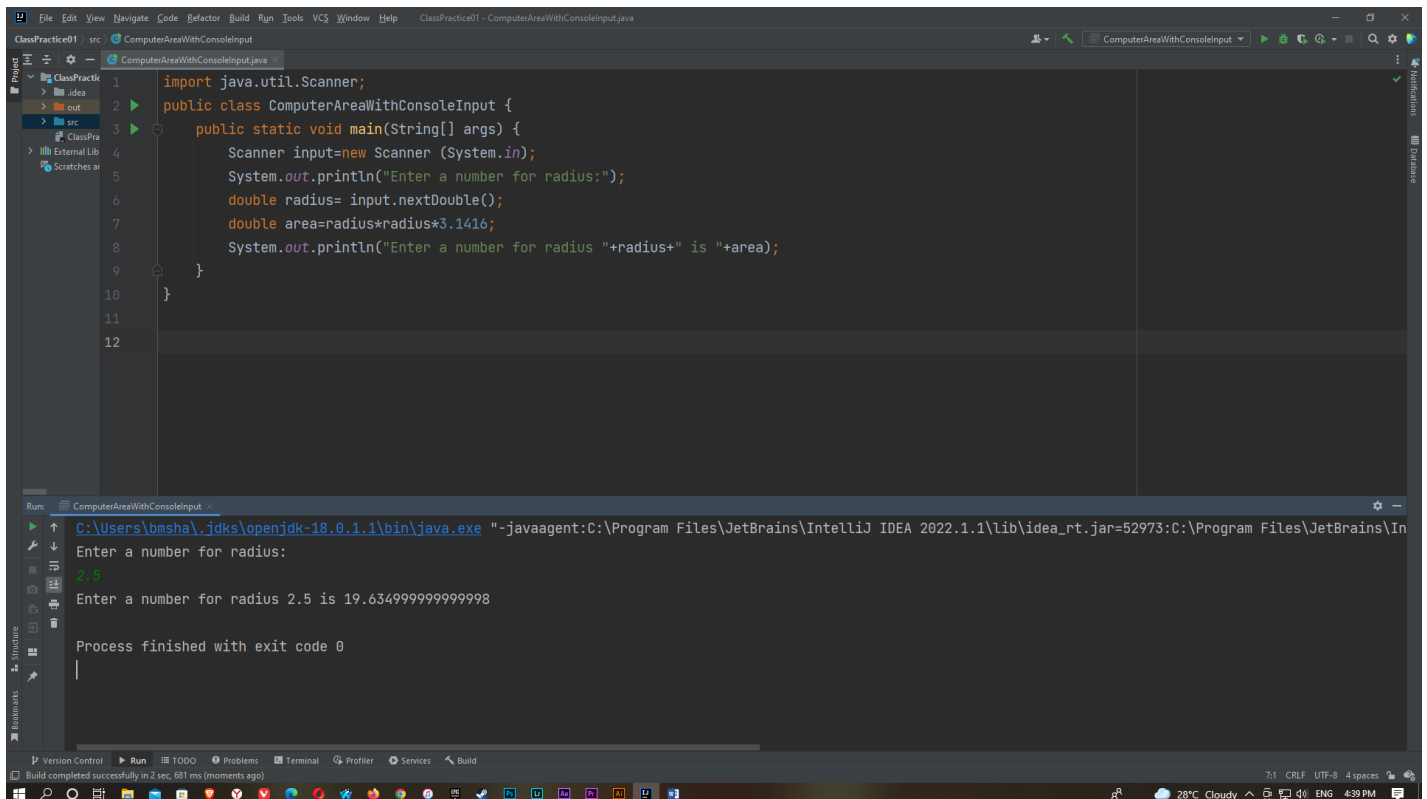
        double radius= input.nextDouble();

        double area=radius*radius*3.1416;

        System.out.println("Enter a number for radius "+radius+" is "+area);

    }

}
```



The screenshot displays the IntelliJ IDEA IDE with a project named 'ClassPractice01'. The source file 'ComputerAreaWithConsoleInput.java' is open, showing the following code:

```
1 import java.util.Scanner;
2 public class ComputerAreaWithConsoleInput {
3     public static void main(String[] args) {
4         Scanner input=new Scanner (System.in);
5         System.out.println("Enter a number for radius:");
6         double radius= input.nextDouble();
7         double area=radius*radius*3.1416;
8         System.out.println("Enter a number for radius "+radius+" is "+area);
9     }
10 }
11
12
```

The Run window at the bottom shows the execution output:

```
C:\Users\bmsha\.jdk\openjdk-18.0.1.1\bin\java.exe "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2022.1.1\lib\idea_rt.jar=52973:C:\Program Files\JetBrains\In
Enter a number for radius:
2.5
Enter a number for radius 2.5 is 19.634999999999998
Process finished with exit code 0
```

The status bar at the bottom indicates 'Build completed successfully in 2 sec, 681 ms (moments ago)'.

2.

```
import java.util.Scanner;

public class ComputerLoan {

    public static void main(String[] args) {

        Scanner input = new Scanner(System.in);
```

```

System.out.println("Enter annual interest rate, e.g. 7.25%: ");

double AnnualInterestRate = input.nextDouble();

double MonthlyInterestRate=AnnualInterestRate/1200;

System.out.println("Enter number of years, e.g. 5: ");

int numberofyears= input.nextInt();

System.out.println("Enter annual interest rate, e.g. 120000.95: ");

double LoanAmount = input.nextDouble();

double monthlypayment= LoanAmount*MonthlyInterestRate/(1-
1/Math.pow(1+MonthlyInterestRate,numberofyears*12));

double totalpayment=monthlypayment*numberofyears*12;

System.out.println("The monthly payment is $ "+(monthlypayment*100)/100.0);

System.out.println("The total payment is $ "+(totalpayment*100)/100.0);

}

}

```

The screenshot shows the IntelliJ IDEA IDE with the `ComputerLoan.java` file open. The code is a Java program that calculates the monthly and total payments for a loan. The program prompts the user for the annual interest rate, number of years, and loan amount, then calculates the monthly payment and total payment.

The output of the program is shown in the Run window:

```

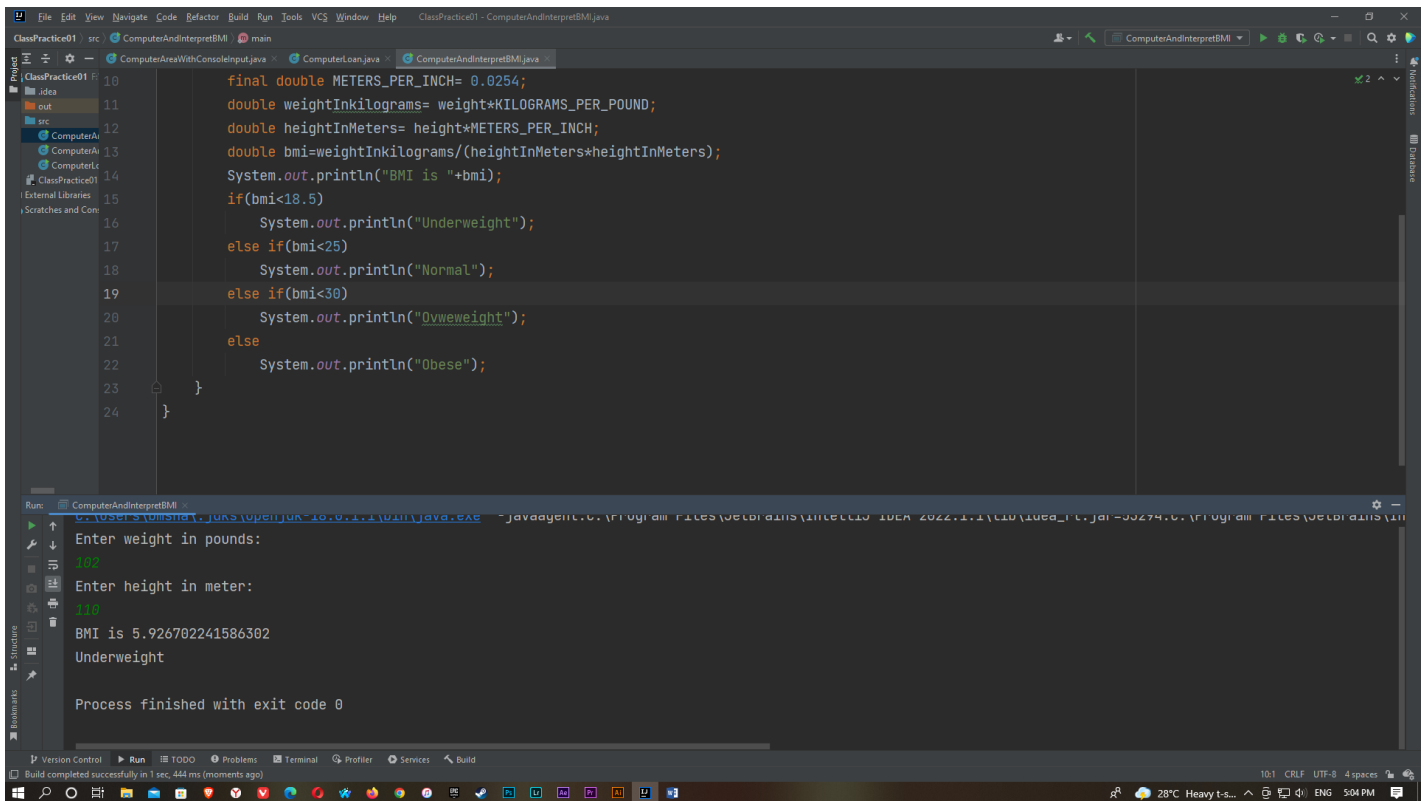
C:\Users\bmsha\jdk8\openjdk-18.0.1.1\bin\java.exe "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2022.1.1\lib\idea_rt.jar=53130:C:\Program Files\JetBrains\In
Enter annual interest rate, e.g. 7.25%:
7.25
Enter number of years, e.g. 5:
5
Enter annual interest rate, e.g. 120000.95:
120000.95
The monthly payment is $ 2076.025217549142
The total payment is $ 373684.53915884555

```

3.

```
import java.util.Scanner;
```

```
public class ComputerAndInterpretBMI {  
    public static void main(String[] args) {  
        Scanner input = new Scanner(System.in);  
        System.out.println("Enter weight in pounds: ");  
        double weight = input.nextDouble();  
        System.out.println("Enter height in meter: ");  
        double height = input.nextDouble();  
        final double KILOGRAMS_PER_POUND= 0.45359237;  
        final double METERS_PER_INCH= 0.0254;  
        double weightInkilograms= weight*KILOGRAMS_PER_POUND;  
        double heightInMeters= height*METERS_PER_INCH;  
        double bmi=weightInkilograms/(heightInMeters*heightInMeters);  
        System.out.println("BMI is "+bmi);  
        if(bmi<18.5)  
            System.out.println("Underweight");  
        else if(bmi<25)  
            System.out.println("Normal");  
        else if(bmi<30)  
            System.out.println("Ovweweight");  
        else  
            System.out.println("Obese");  
    }  
}
```



4.

```

import java.util.Scanner;

public class ComputeTax {

    public static void main(String[] args) {

        Scanner input = new Scanner(System.in);

        System.out.println("(0-single filer, 1-married jointly or "+"qualifying widow(er), 2-married separately, 3-head of "+"household) Enter the filing status: ");

        int status = input.nextInt();

        System.out.println("Enter the taxable income: ");

        double income= input.nextDouble();

        double tax=0;

        if(status==0)
        {
            if(income <= 8350)

                tax=income*0.10;

            else if(income<=33950)

```

```

    tax=8350*0.10+(income-8350)*0.15;
else if(income<=82250)
    tax=8350*0.10+(33950-8350)*0.15+(income-33950)*0.25;
else if(income<=171550)
    tax=8350*0.10+(33950-8350)*0.15+(82250-33950)*0.25+(income-82250)*0.28;
else if(income<=372950)
    tax=8350*0.10+(33950-8350)*0.15+(82250-33950)*0.25+(171550-82250)*0.28+(income-171550)*0.33;
else
    tax=8350*0.10+(33950-8350)*0.15+(82250-33950)*0.25+(171550-82250)*0.28+(372950-
171550)*0.33+(income-372950)*0.35;
}
else if(status==1)
{
    if(income <= 16700)
        tax=income*0.10;
    else if(income<=67900)
        tax=16700*0.10+(income-16700)*0.15;
    else if(income<=137050)
        tax=16700*0.10+(67901-16700)*0.15+(income-67900)*0.25;
    else if(income<=208850)
        tax=16700*0.10+(67901-16700)*0.15+(137050-33950)*0.25+(income-137050)*0.28;
    else if(income<=372950)
        tax=16700*0.10+(67901-16700)*0.15+(137050-33950)*0.25+(208850-137050)*0.28+(income-208850)*0.33;
    else
        tax=16700*0.10+(67901-16700)*0.15+(137050-33950)*0.25+(208850-137050)*0.28+(372951-
171550)*0.33+(income-372951)*0.35;
}
else if(status==2)
{
    if (income <= 8350)
        tax = income * 0.10;

```

```

else if (income <= 33950)
    tax = 8350 * 0.10 + (income - 8350) * 0.15;
else if (income <= 68525)
    tax = 8350 * 0.10 + (33950 - 8350) * 0.15 + (income - 33950) * 0.25;
else if (income <= 104425)
    tax = 8350 * 0.10 + (33950 - 8350) * 0.15 + (68525 - 33950) * 0.25 + (income - 68525) * 0.28;
else if (income <= 186475)
    tax = 8350 * 0.10 + (33950 - 8350) * 0.15 + (68525 - 33950) * 0.25 + (104425 - 68525) * 0.28 + (income - 104425) * 0.33;
else
    tax = 8350 * 0.10 + (33950 - 8350) * 0.15 + (68525 - 33950) * 0.25 + (104425 - 68525) * 0.28 + (186475 - 104425) * 0.33 + (income - 186475) * 0.35;
}
else if(status==3)
{
    if (income <= 11950)
        tax = income * 0.10;
    else if (income <= 45500)
        tax = 11950 * 0.10 + (income - 11950) * 0.15;
    else if (income <= 117450)
        tax = 11950 * 0.10 + (45500 - 11950) * 0.15 + (income - 45500) * 0.25;
    else if (income <= 190200)
        tax = 11950 * 0.10 + (45500 - 11950) * 0.15 + (117450 - 45500) * 0.25 + (income - 117450) * 0.28;
    else if (income <= 372950)
        tax = 11950 * 0.10 + (45500 - 11950) * 0.15 + (117450 - 45500) * 0.25 + (190200 - 117450) * 0.28 + (income - 190200) * 0.33;
    else
        tax = 11950 * 0.10 + (45500 - 11950) * 0.15 + (117450 - 45500) * 0.25 + (190200 - 117450) * 0.28 + (372950 - 190200) * 0.33 + (income - 372950) * 0.35;
}
else
{

```

```

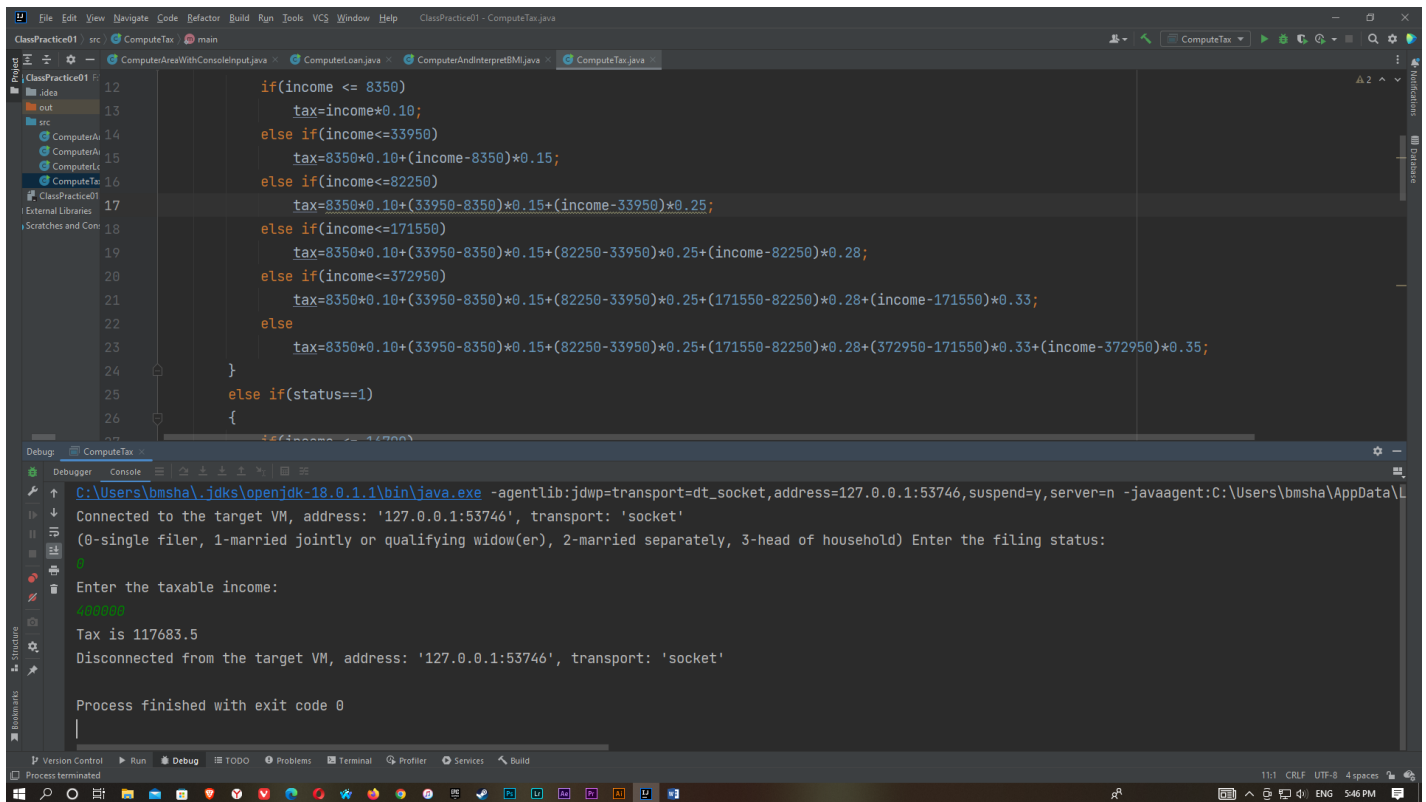
        System.out.println("Error: invalid status");

        System.exit(1);
    }

    System.out.println("Tax is "+(tax*100)/100.0 );

}
}

```



5.

```

import java.util.Scanner;

public class ChaineseZodiac {

    public static void main(String[] args) {

        Scanner input = new Scanner(System.in);

        System.out.println("Enter a year: ");

        int year = input.nextInt();

        switch(year%12)

        {

            case 0: System.out.println("monkey");break;

```



```

case 1: System.out.println("rooster");break;

case 2: System.out.println("dog");break;

case 3: System.out.println("pig");break;

case 4: System.out.println("rat");break;

case 5: System.out.println("ox");break;

case 6: System.out.println("tiger");break;

case 7: System.out.println("rabbit");break;

case 8: System.out.println("dragon");break;

case 9: System.out.println("snake");break;

case 10: System.out.println("horse");break;

case 11: System.out.println("sheep");break;

}

}

}

```

The screenshot shows an IDE window with the file `ChineseZodiac.java` open. The code defines a `main` method that uses a `Scanner` to read a year and a `switch` statement to print the corresponding zodiac animal. The `switch` statement has cases for years 0 through 9, with the first case (0) printing "monkey". The IDE's Run window shows the execution output: "Enter a year: 1963" followed by "rabbit". The process finished with exit code 0.

```

import java.util.Scanner;

public class ChineseZodiac {

    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        System.out.println("Enter a year: ");
        int year = input.nextInt();
        switch(year%12)
        {
            case 0: System.out.println("monkey");break;
            case 1: System.out.println("rooster");break;
            case 2: System.out.println("dog");break;
            case 3: System.out.println("pig");break;
            case 4: System.out.println("rat");break;
            case 5: System.out.println("ox");break;
            case 6: System.out.println("tiger");break;
            case 7: System.out.println("rabbit");break;
            case 8: System.out.println("dragon");break;
            case 9: System.out.println("snake");break;
        }
    }
}

```

Run: ComputeTax - ChineseZodiac

C:\Users\bmsha\jdk\openjdk-18.0.1.1\bin\java.exe "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2022.1.1\lib\idea_rt.jar=53824:C:\Program Files\JetBrains\In

Enter a year:

1963

rabbit

Process finished with exit code 0

6)

import java.util.Scanner;

```

public class ComputeAngles {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);

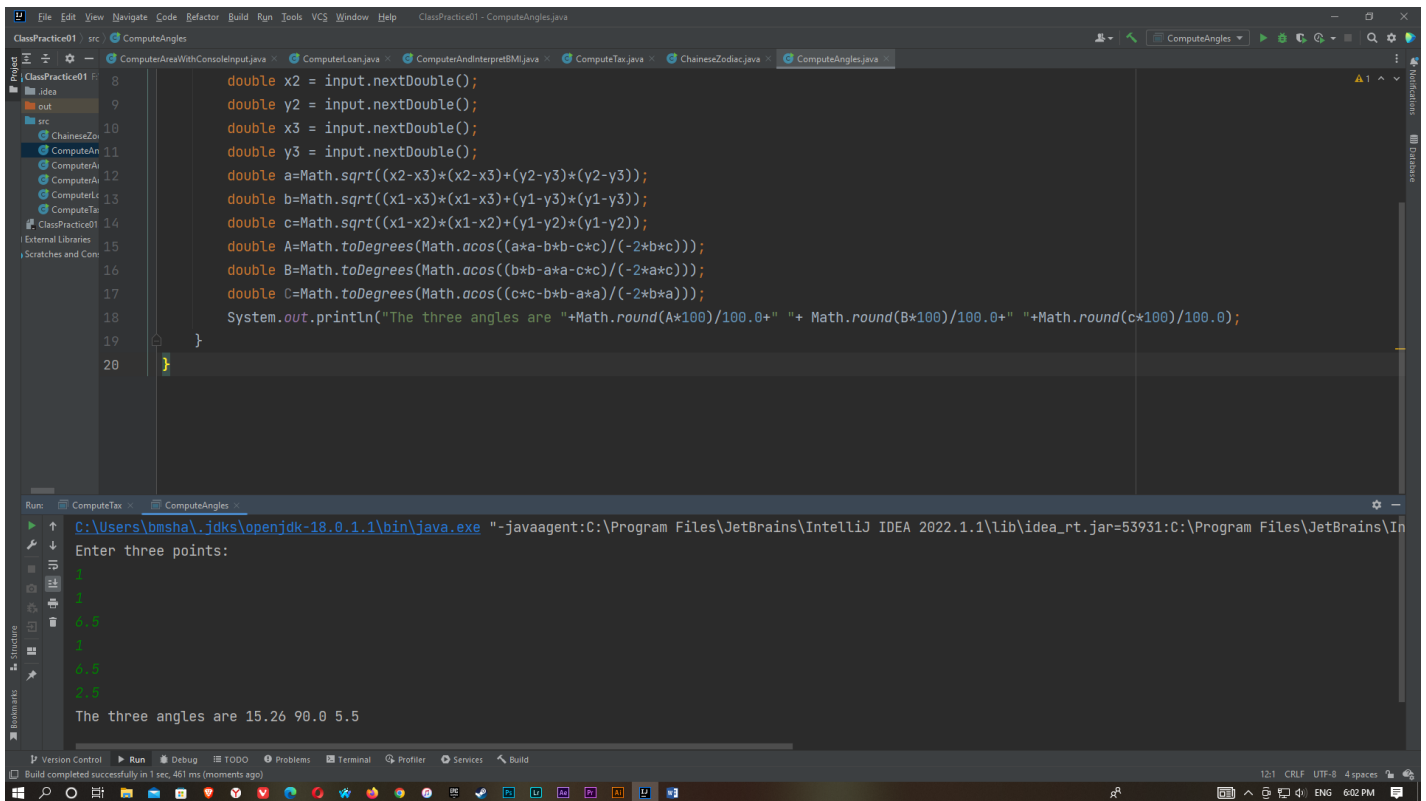
        System.out.println("Enter three points: ");

        double x1 = input.nextDouble();
        double y1 = input.nextDouble();
        double x2 = input.nextDouble();
        double y2 = input.nextDouble();
        double x3 = input.nextDouble();
        double y3 = input.nextDouble();

        double a=Math.sqrt((x2-x3)*(x2-x3)+(y2-y3)*(y2-y3));
        double b=Math.sqrt((x1-x3)*(x1-x3)+(y1-y3)*(y1-y3));
        double c=Math.sqrt((x1-x2)*(x1-x2)+(y1-y2)*(y1-y2));
        double A=Math.toDegrees(Math.acos((a*a-b*b-c*c)/(-2*b*c)));
        double B=Math.toDegrees(Math.acos((b*b-a*a-c*c)/(-2*a*c)));
        double C=Math.toDegrees(Math.acos((c*c-b*b-a*a)/(-2*b*a)));

        System.out.println("The three angles are "+Math.round(A*100)/100.0+" "+ Math.round(B*100)/100.0+" "+Math.round(c*100)/100.0);
    }
}

```



7)

```

import java.util.Scanner;

public class LotteryUsingString {

    public static void main(String[] args) {

        Scanner input = new Scanner(System.in);

        String lottery = "" + (int) (Math.random() * 10) + (int) (Math.random() * 10);

        System.out.println("Enter your lottery pick (two digits): ");

        String guess = input.nextLine();

        char lottarydigit1= lottery.charAt(0);

        char lottarydigit2= lottery.charAt(1);

        char guessdigit1= guess.charAt(0);

        char guessdigit2= guess.charAt(1);

        System.out.println("The lottery number is : "+lottery);

        if(guess.equals(lottery))

            System.out.println("Exact match: you win $10,000");

        else if(guessdigit2== lottarydigit1 && guessdigit1==lottarydigit2)

```

```

        System.out.println("Match all digits: you win $3,000");

        else if(guessdigit1 ==lottarydigit1 || guessdigit1 ==lottarydigit2 || guessdigit2==lottarydigit1 || guessdigit2==
lottarydigit2)

            System.out.println("Match one digits: you win $1,000");

        else

            System.out.println("Sorry, no match.");

    }

}

```

```

import java.util.Scanner;

public class LotteryUsingString {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        String lottery = "" + (int) (Math.random() * 10) + (int) (Math.random() * 10);
        System.out.println("Enter your lottery pick (two digits): ");
        String guess = input.nextLine();
        char lottarydigit1= lottery.charAt(0);
        char lottarydigit2= lottery.charAt(1);
        char guessdigit1= guess.charAt(0);
        char guessdigit2= guess.charAt(1);
        System.out.println("The lottery number is : " +lottery);
        if(guess.equals(lottery))
            System.out.println("Exact match: you win $10,000");
        else if(guessdigit2== lottarydigit1 && guessdigit1==lottarydigit2)
            System.out.println("Match all digits: you win $3,000");
        else if(guessdigit1 ==lottarydigit1 || guessdigit1 ==lottarydigit2 || guessdigit2==lottarydigit1 || guessdigit2== lottarydigit2)
            System.out.println("Match one digits: you win $1,000");
    }
}

```

Run: C:\Users\bmsha\.jdk\openjdk-18.0.1.1\bin\java.exe "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2022.1.1\lib\idea_rt.jar=54118:C:\Program Files\JetBrains\In

Enter your lottery pick (two digits):

61

The lottery number is : 61

Sorry, no match.

Process finished with exit code 0