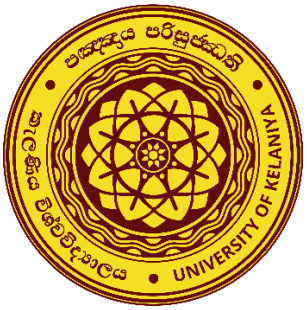
Worksheet 02

CTEC 22043
Object Oriented Programming

Student No: CT/2021/002



Faculty of Computing and Technology
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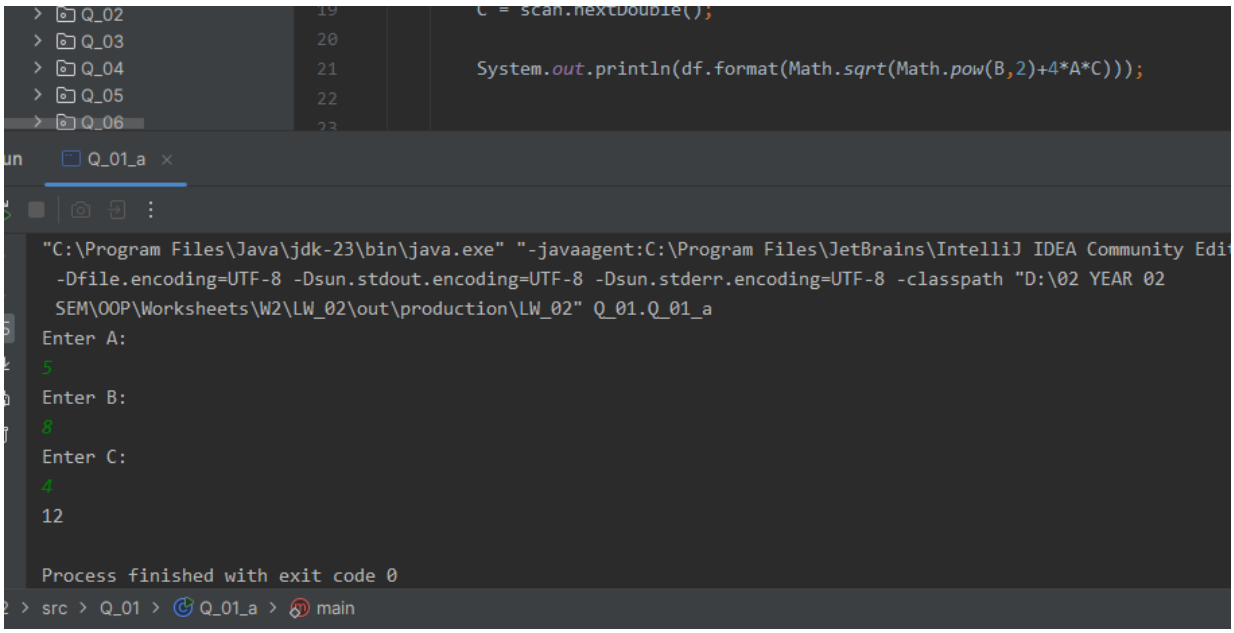
Worksheet 02

Q 01-a:

Code:

```
package Q_01;

import java.text.DecimalFormat;
import java.util.Scanner;

public class Q_01_a {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        DecimalFormat df = new DecimalFormat("#.##");
        double A,B,C;

        System.out.println("Enter A:");
        A = scan.nextDouble();

        System.out.println("Enter B:");
        B = scan.nextDouble();

        System.out.println("Enter C:");
        C = scan.nextDouble();

        System.out.println(df.format(Math.sqrt(Math.pow(B,2)+4*A*C)));


    }
}
```

Output:

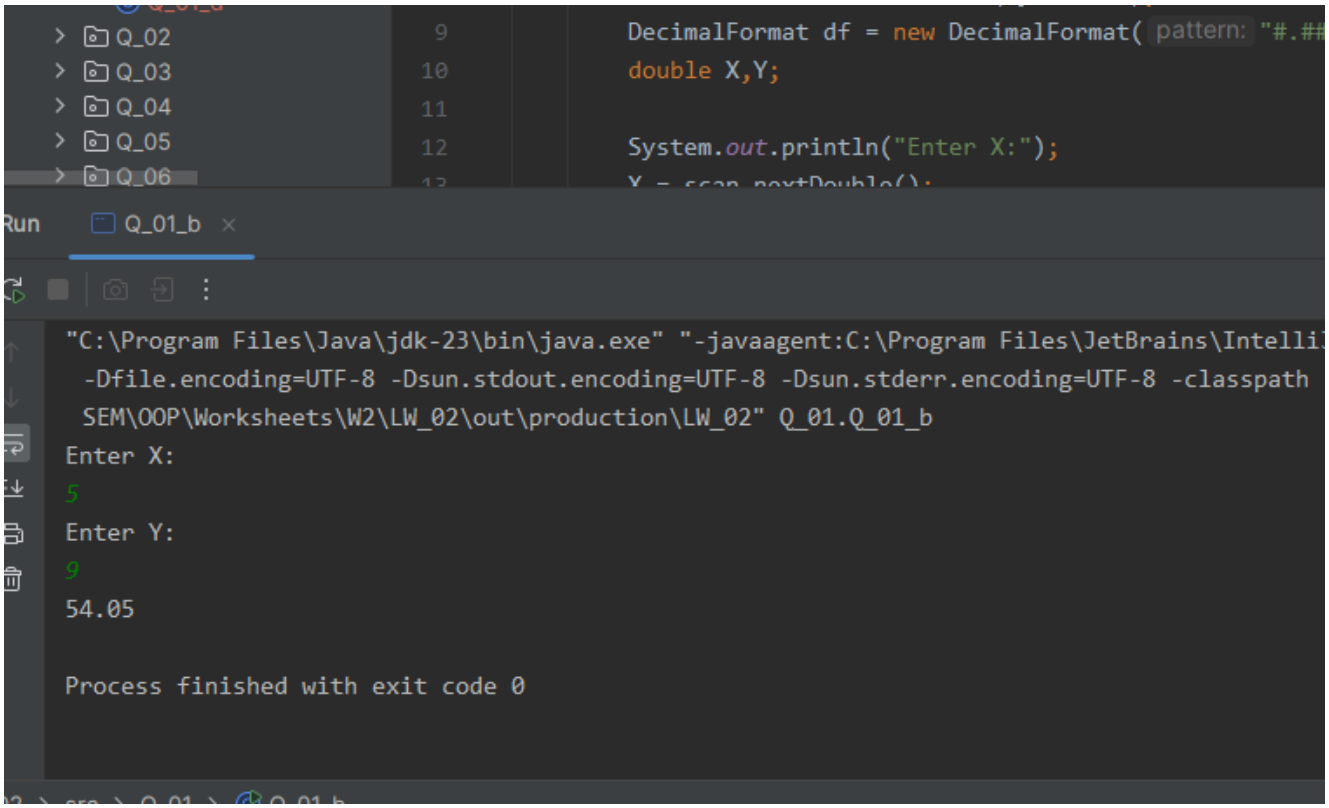


Q 01-b:

Code:

```
package Q_01;

import java.text.DecimalFormat;
import java.util.Scanner;

public class Q_01_b {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        DecimalFormat df = new DecimalFormat("#.##");
        double X,Y;

        System.out.println("Enter X:");
        X = scan.nextDouble();

        System.out.println("Enter Y:");
        Y = scan.nextDouble();

        System.out.println(df.format(Math.sqrt(X+(4*(Math.pow(Y,3))))));
    }
}
```

Output:

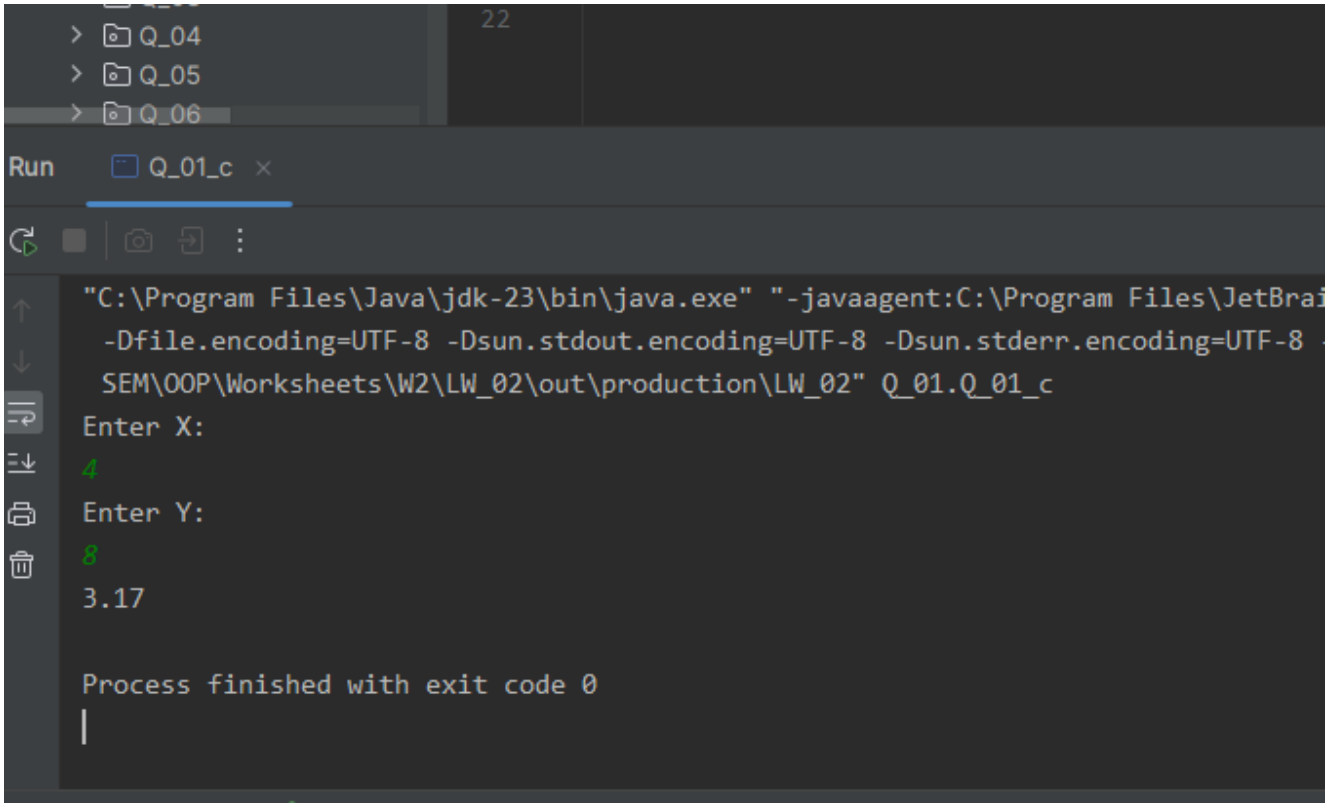


Q 01-c:

Code:

```
package Q_01;

import java.text.DecimalFormat;
import java.util.Scanner;

public class Q_01_c {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        DecimalFormat df = new DecimalFormat("#.##");
        double X,Y;

        System.out.println("Enter X:");
        X = scan.nextDouble();

        System.out.println("Enter Y:");
        Y = scan.nextDouble();

        System.out.println(df.format(Math.cbrt(X*Y)));

    }
}
```

Output:

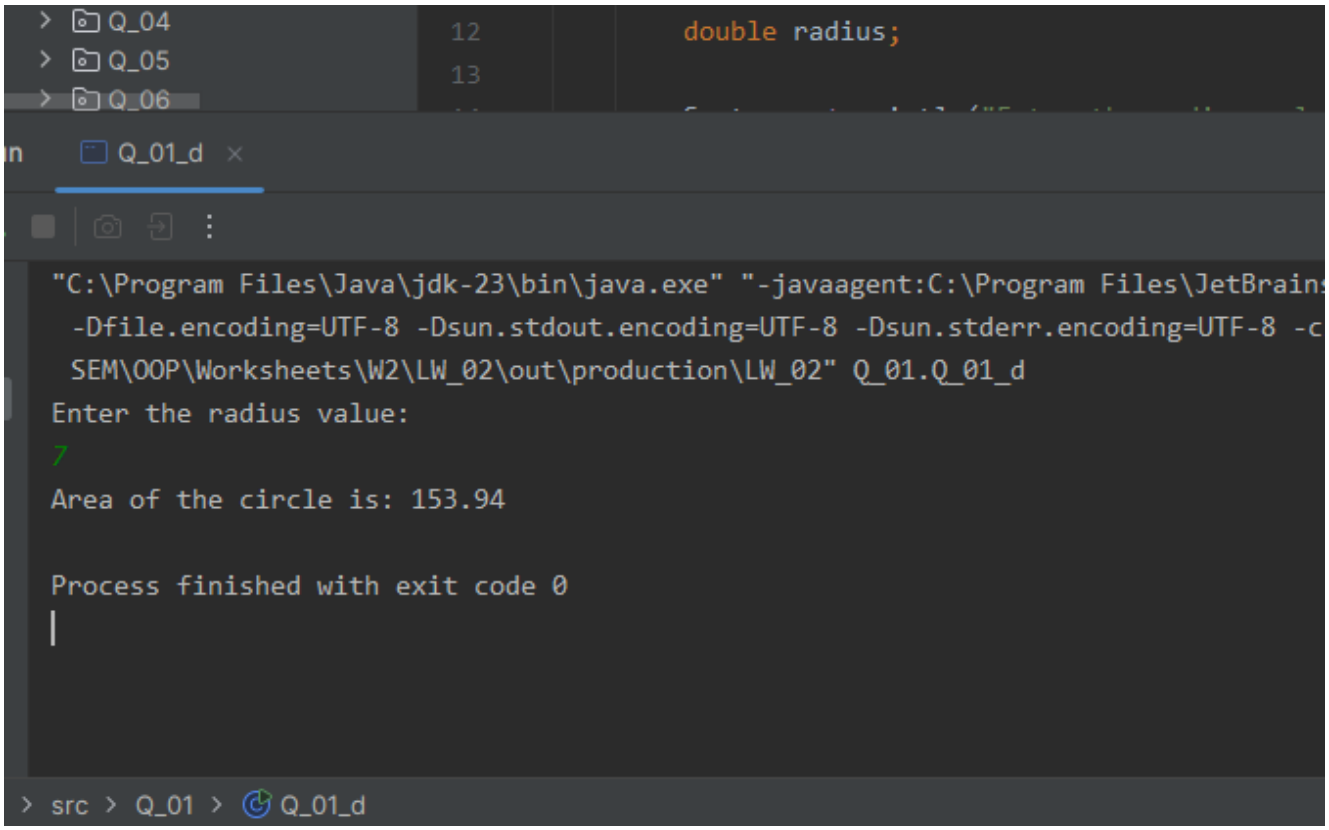


Q 01-d:

Code:

```
package Q_01;

import java.text.DecimalFormat;
import java.util.Scanner;

public class Q_01_d {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        DecimalFormat df = new DecimalFormat("#.##");

        final double PI = 3.14159;
        double radius;

        System.out.println("Enter the radius value: ");
        radius = scan.nextDouble();

        System.out.println("Area of the circle is:
        "+df.format(PI*radius*radius));
    }
}
```

Output:

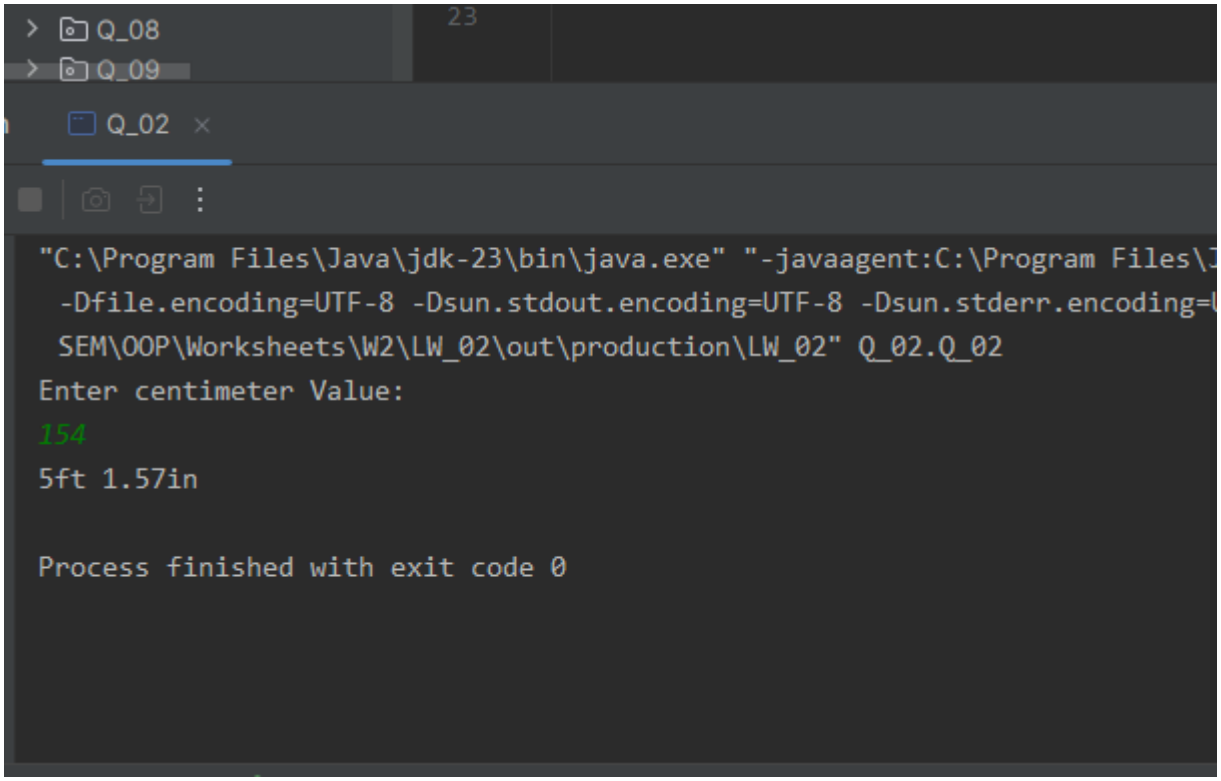


Q 02:

Code:

```
package Q_02;

import java.text.DecimalFormat;
import java.util.Scanner;

public class Q_02 {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        DecimalFormat df = new DecimalFormat("#.##");
        int cm;

        System.out.println("Enter centimeter Value:");
        cm = scan.nextInt();

        // 1ft = 30cm

        int feet = cm/30;
        float inch = cm%30 * 0.3937f;

        System.out.println(feet+"ft "+df.format(inch)+"in");
    }
}
```

Output:

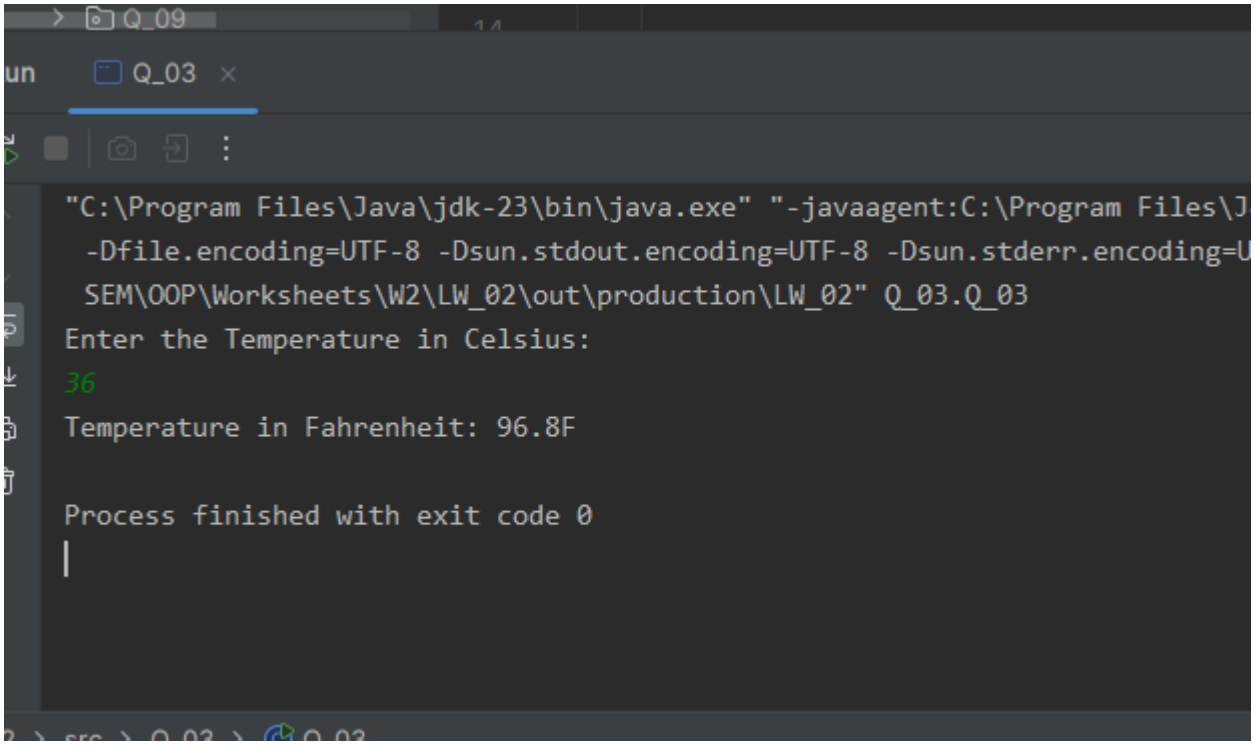


Q 03:

Code:

```
package Q_03;

import java.text.DecimalFormat;
import java.util.Scanner;

public class Q_03 {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        DecimalFormat df = new DecimalFormat("#.##");
        double c,f;

        System.out.println("Enter the Temperature in Celsius:");
        c = scan.nextDouble();

        f = (1.8*c)+32;

        System.out.println("Temperature in Fahrenheit: "+df.format(f)+"F");
    }
}
```

Output:

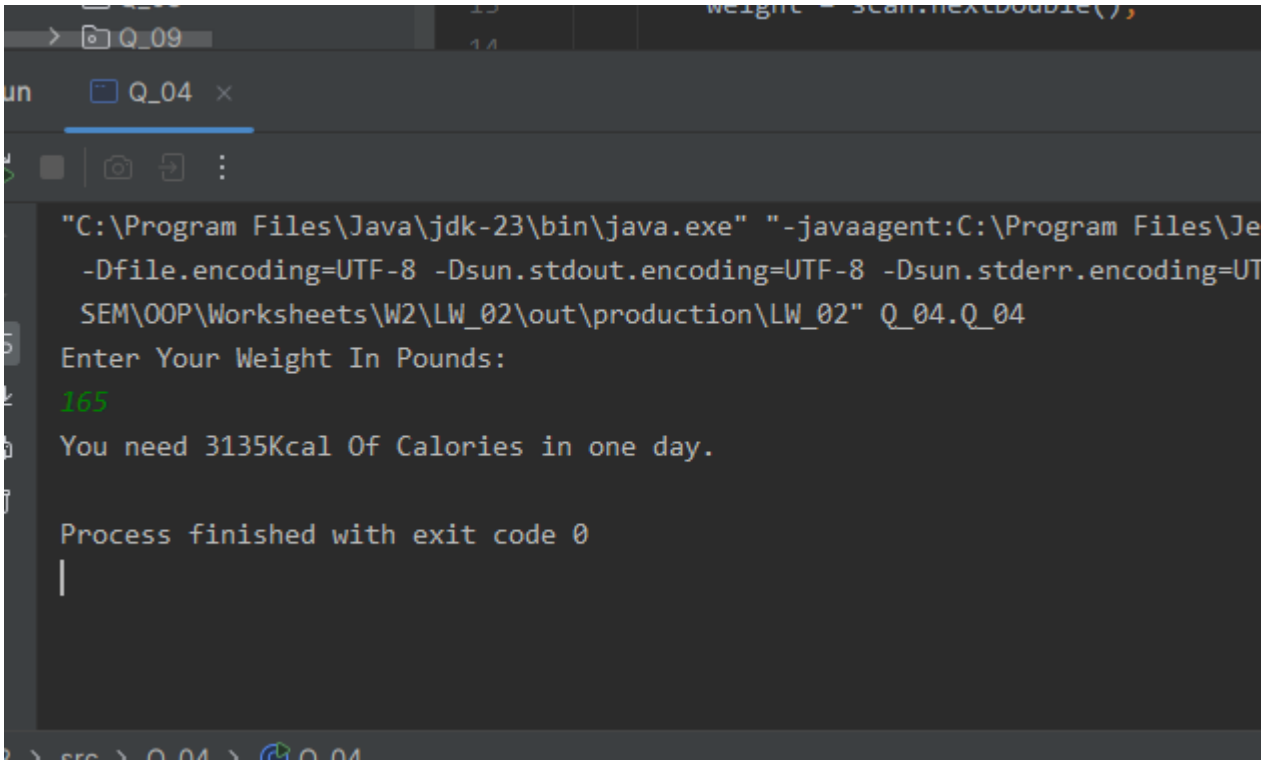


Q 04:

Code:

```
package Q_04;

import java.text.DecimalFormat;
import java.util.Scanner;

public class Q_04 {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        DecimalFormat df = new DecimalFormat("#.##");
        double weight;

        System.out.println("Enter Your Weight In Pounds: ");
        weight = scan.nextDouble();

        System.out.println("You need "+(df.format(weight*19))+"Kcal Of
Calories in one day.");
    }
}
```

Output:

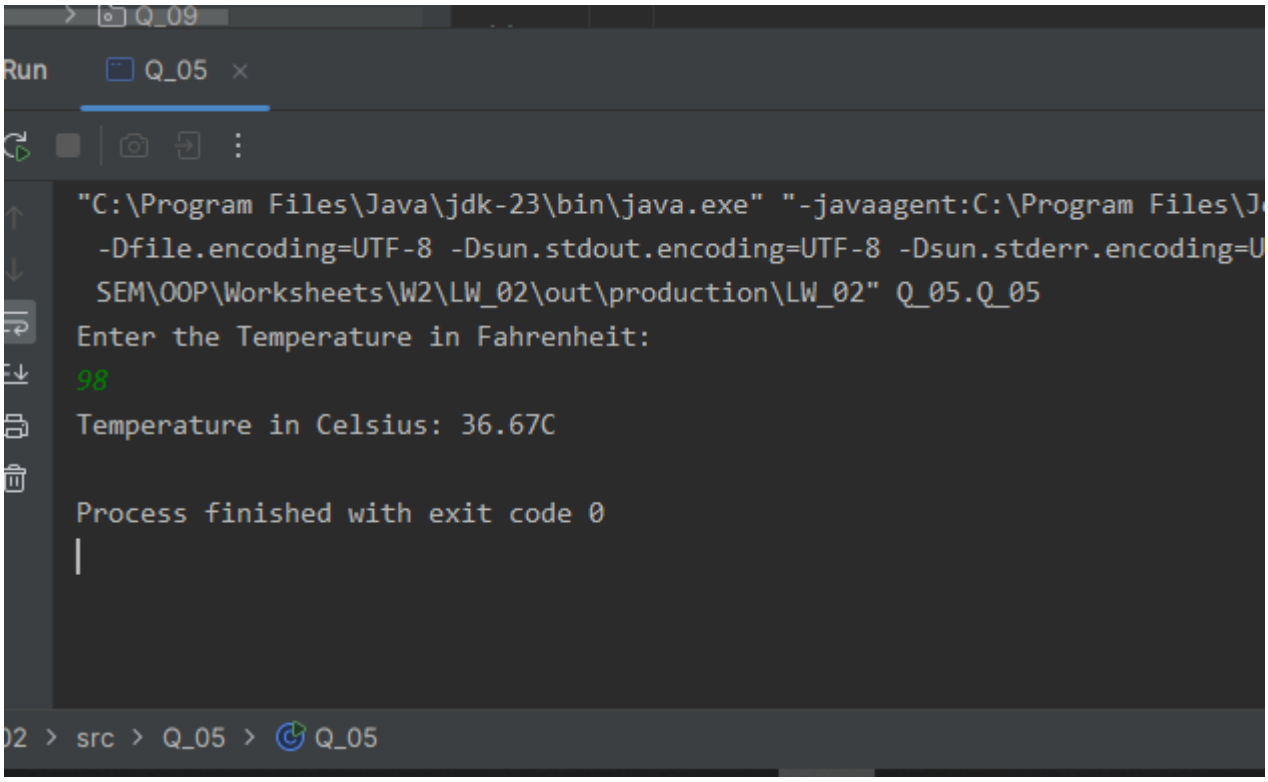


Q 05:

Code:

```
package Q_05;

import java.text.DecimalFormat;
import java.util.Scanner;

public class Q_05 {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        DecimalFormat df = new DecimalFormat("#.##");
        double c,f;

        System.out.println("Enter the Temperature in Fahrenheit:");
        f = scan.nextDouble();

        c =((f-32)*5/9);
        System.out.println("Temperature in Celsius: "+df.format(c)+"C");
    }
}
```

Output:

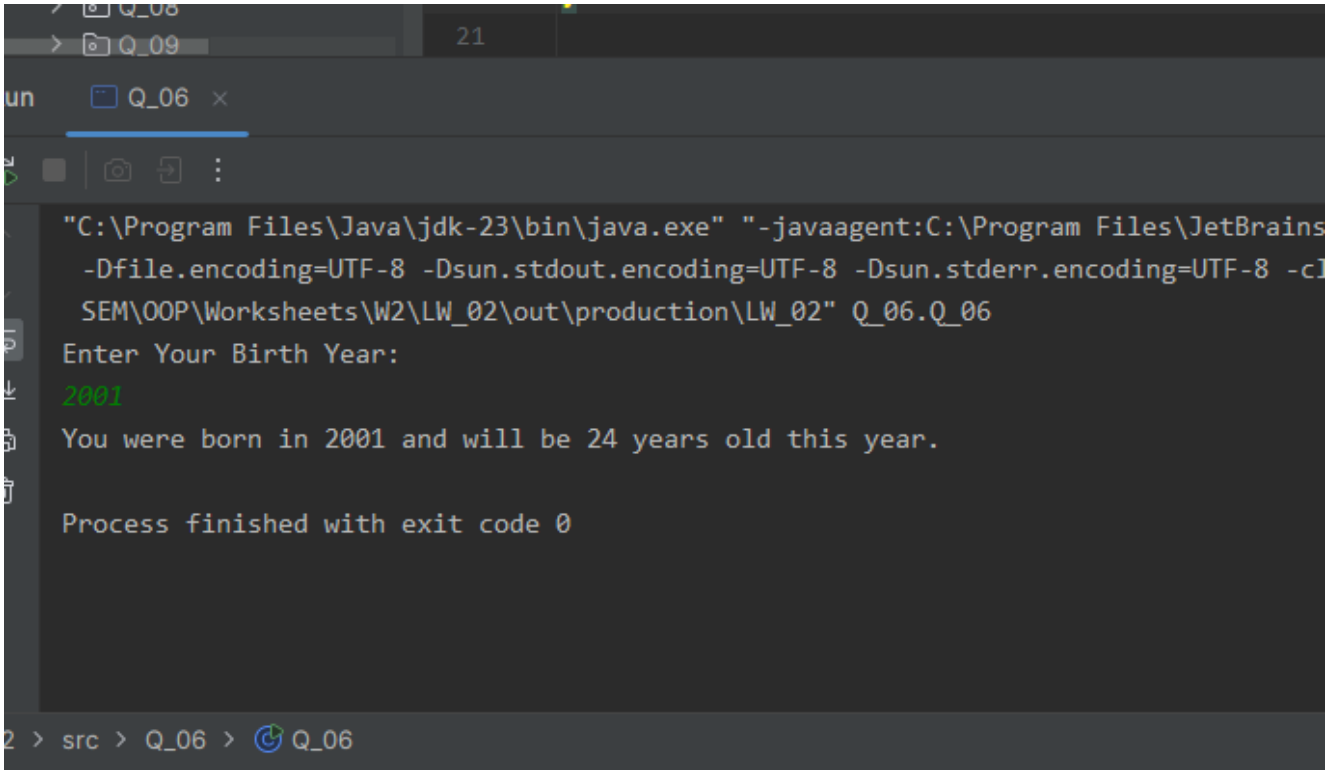


Q 06:

Code:

```
package Q_06;

import java.time.Year;
import java.util.Scanner;

public class Q_06 {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        int birthYear;
        int currentYear = Year.now().getValue();

        System.out.println("Enter Your Birth Year: ");
        birthYear = scan.nextInt();

        int age = (currentYear-birthYear);
        System.out.println("You were born in "+birthYear+" and will be
"+age+" years old this year.");
    }
}
```

Output:

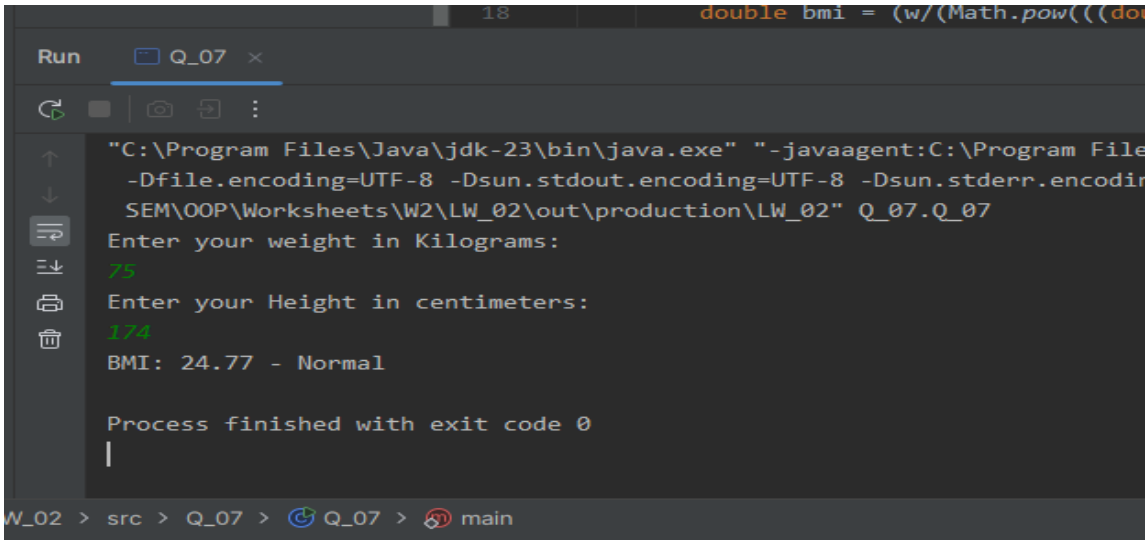


Q 07:

Code:

```
package Q_07;

import java.text.DecimalFormat;
import java.util.Scanner;

public class Q_07 {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        DecimalFormat df = new DecimalFormat("#.##");
        int w,h;

        System.out.println("Enter your weight in Kilograms: ");
        w = scan.nextInt();

        System.out.println("Enter your Height in centimeters: ");
        h = scan.nextInt();

        double bmi = (w/(Math.pow(((double)h/100.0),2)));

        if (bmi >= 20 && bmi <= 25) {
            System.out.println("BMI: " + df.format(bmi) + " - Normal");
        }
        else if (bmi > 25) {
            System.out.println("BMI: " + df.format(bmi) + " - Overweight");
        }
        else {
            System.out.println("BMI: " + df.format(bmi) + " - Underweight");
        }
    }
}
```

Output:

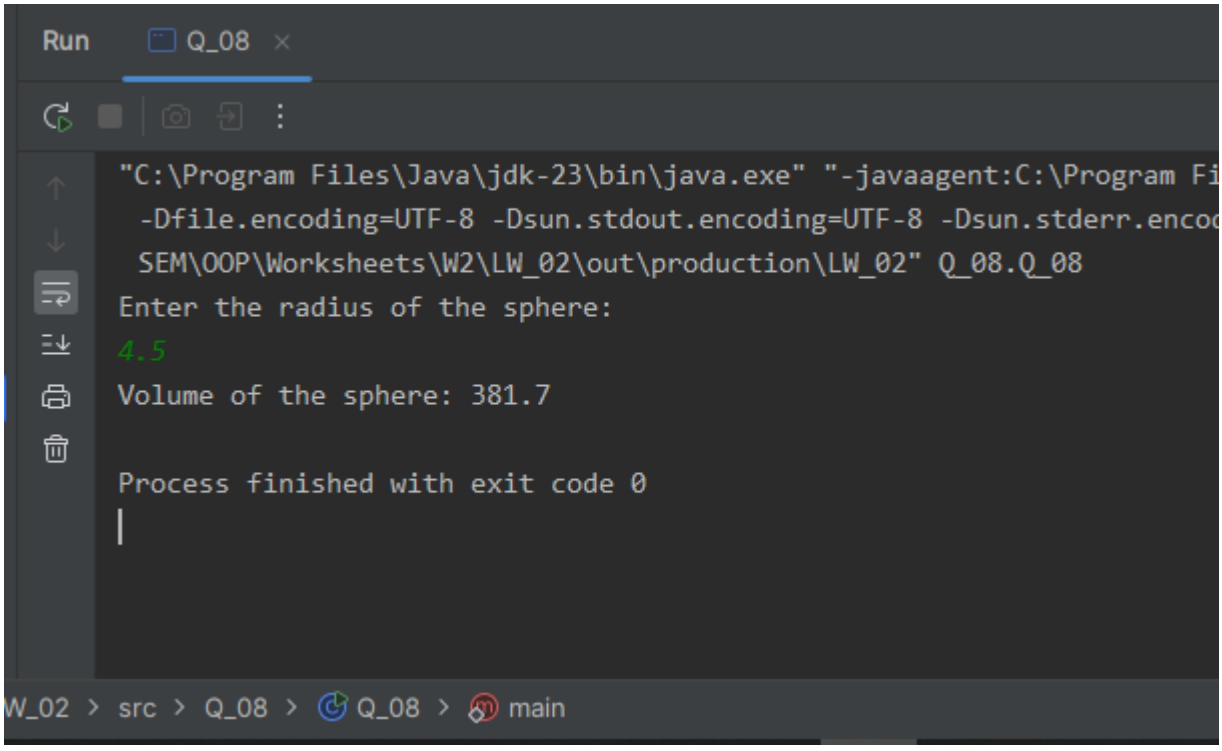


Q 08:

Code:

```
package Q_08;

import java.text.DecimalFormat;
import java.util.Scanner;

public class Q_08 {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);

        DecimalFormat df = new DecimalFormat("#.##");
        final double PI = 3.14159;
        double r;

        System.out.println("Enter the radius of the sphere: ");
        r = scan.nextDouble();

        double v = ((4.0/3.0) * (PI * Math.pow(r,3)));

        System.out.println("Volume of the sphere: " + df.format(v));

    }
}
```

Output:

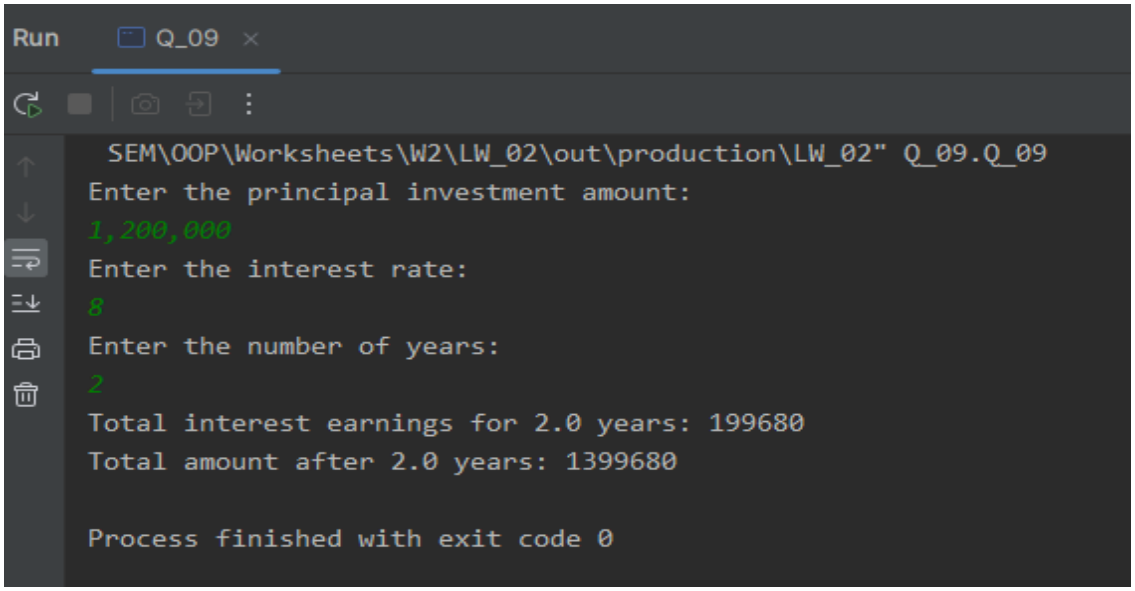


Q 09 :

Code:

```
package Q_09;

import java.text.DecimalFormat;
import java.util.Scanner;

public class Q_09 {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        DecimalFormat df = new DecimalFormat("#.##");
        double P,R,N;

        System.out.println("Enter the principal investment amount: ");
        P = scan.nextDouble();

        System.out.println("Enter the interest rate: ");
        R = scan.nextDouble();

        System.out.println("Enter the number of years: ");
        N = scan.nextDouble();

        double amt = (P * (Math.pow((1 + (R/100)),N)));
        double earn = amt-P;

        System.out.println("Total interest earnings for "+N+" years:
"+df.format(earn));
        System.out.println("Total amount after "+N+" years: " +
df.format(amt));
    }
}
```

Output:

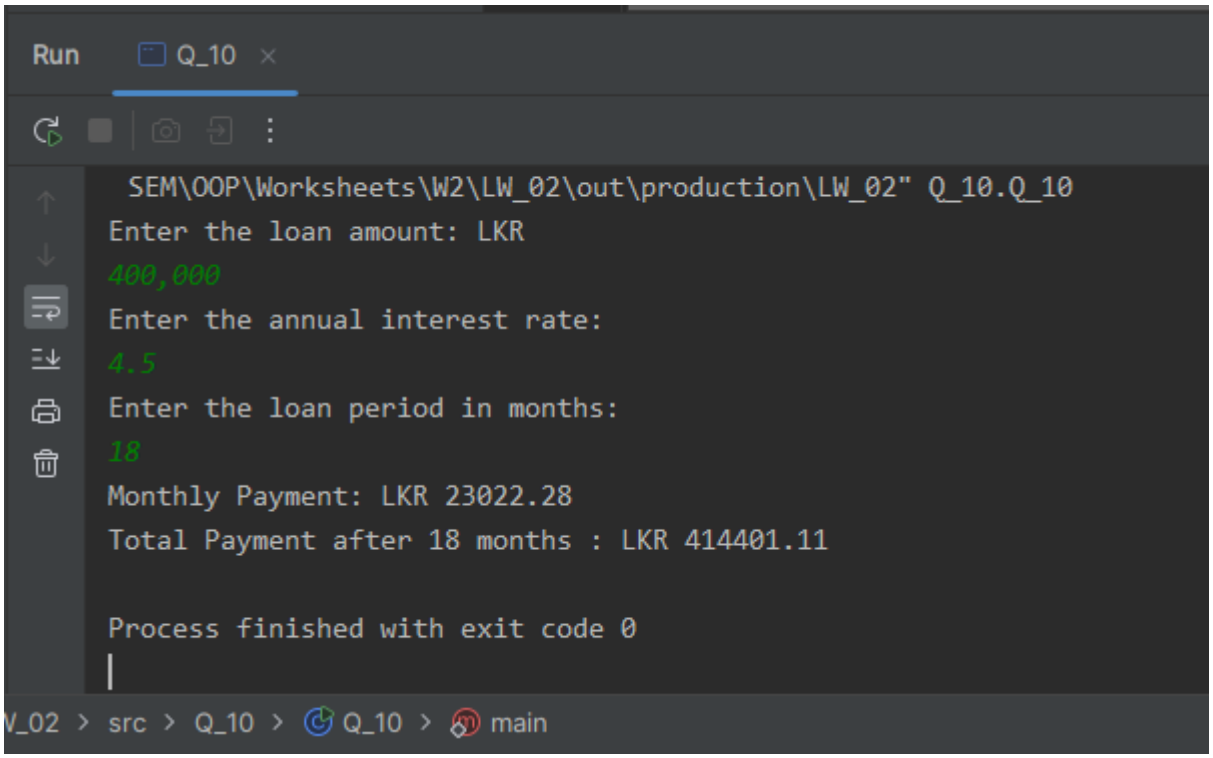


Q 10:

Code:

```
package Q_10;

import java.text.DecimalFormat;
import java.util.Scanner;

public class Q_10 {
    public static void main(String[] args) {
        Scanner scan = new Scanner(System.in);
        DecimalFormat df = new DecimalFormat("#.##");

        double loanAmount,annualInterestRate,monthlyInterestRate,
monthlyPayment,totalPayment;
        int loanPeriod,numberOfPayments;

        System.out.println("Enter the loan amount: LKR");
        loanAmount = scan.nextDouble();

        System.out.println("Enter the annual interest rate: ");
        annualInterestRate = scan.nextDouble();

        System.out.println("Enter the loan period in months: ");
        loanPeriod = scan.nextInt();

        monthlyInterestRate = (annualInterestRate / 100) / 12;
        numberOfPayments = loanPeriod;
        monthlyPayment = (loanAmount * monthlyInterestRate) / (1 - Math.pow((1 /
( 1 + monthlyInterestRate)),numberOfPayments));
        totalPayment = monthlyPayment * numberOfPayments;

        System.out.println("Monthly Payment: LKR "+ df.format(monthlyPayment));
        System.out.println("Total Payment: LKR "+ df.format(totalPayment));
    }
}
```

Output:


Run
Q_10
SEM\OOP\Worksheets\W2\LW_02\out\production\LW_02" Q_10.Q_10
Enter the loan amount: LKR
400,000
Enter the annual interest rate:
4.5
Enter the loan period in months:
18
Monthly Payment: LKR 23022.28
Total Payment after 18 months : LKR 414401.11
Process finished with exit code 0
V_02 > src > Q_10 > Q_10 > main