COMSATS University Islamabad Abbottabad Campus
Department of Computer Science

Course: Object Oriented Programming
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Class: BSE-3C
Registration NO.: FA24-bse-144
Marks: 20 marks

Lab Task 02 – Java Basics Practice

Print Your Details

Write a Java program to print your name, age, and city on screen.

```java
public class details {
    public static void main(String[] args) {
        String name="talha";
        int age=19;
        String city="islamabad";
        System.out.println(name);
        System.out.println(age);
        System.out.println(city);
    }
}
```

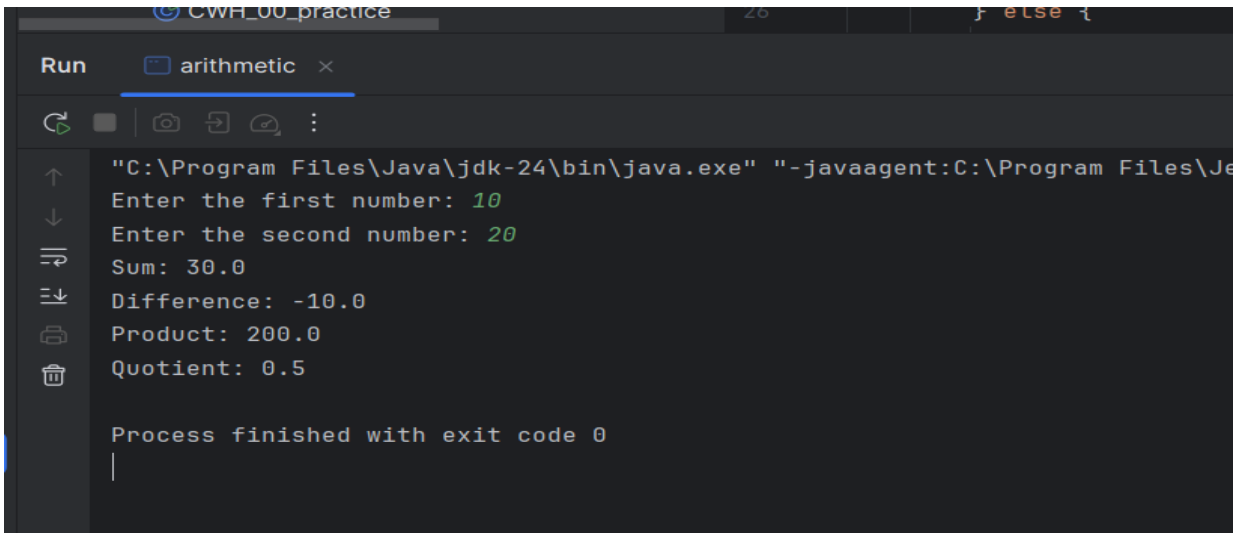
```
Run  arithmetic  PIZZA  details
"C:\Program Files\Java\jdk-24\bin\java.exe" "-javaagent:C:\Pr
talha
19
islamabad

Process finished with exit code 0
```

1. **Simple Arithmetic Calculator**

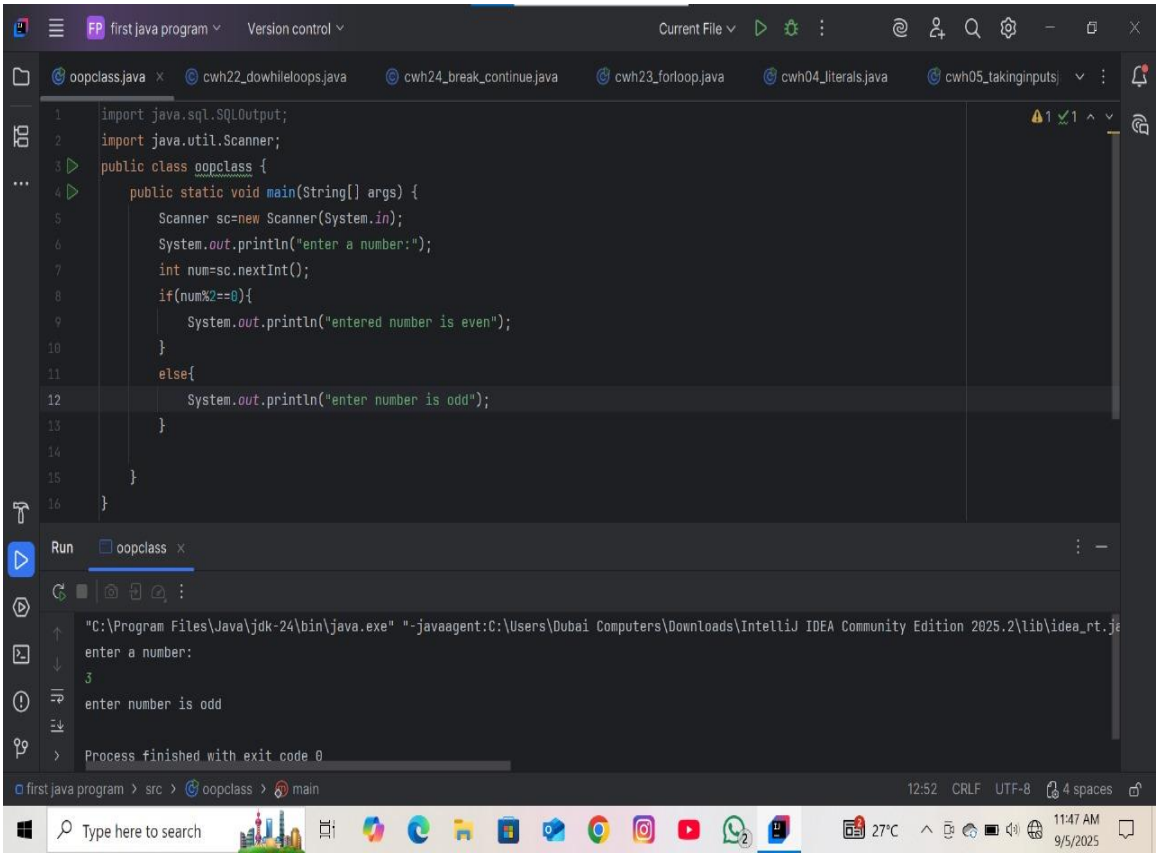
   Write a program that takes two numbers as input from the user and displays their sum, difference, product, and quotient.

```java
import java.util.Scanner;

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

        // Input two numbers
        System.out.print("Enter the first number: ");
        double num1 = scanner.nextDouble();

        System.out.print("Enter the second number: ");
        double num2 = scanner.nextDouble();

        // Perform operations
        double sum = num1 + num2;
        double difference = num1 - num2;
        double product = num1 * num2;
        double quotient = (num2 != 0) ? num1 / num2 : Double.NaN;

        // Display results
        System.out.println("Sum: " + sum);
        System.out.println("Difference: " + difference);
        System.out.println("Product: " + product);
        if (num2 != 0) {
            System.out.println("Quotient: " + quotient);
        } else {
            System.out.println("Quotient: Undefined (division by zero)");
        }

        scanner.close();
    }
```

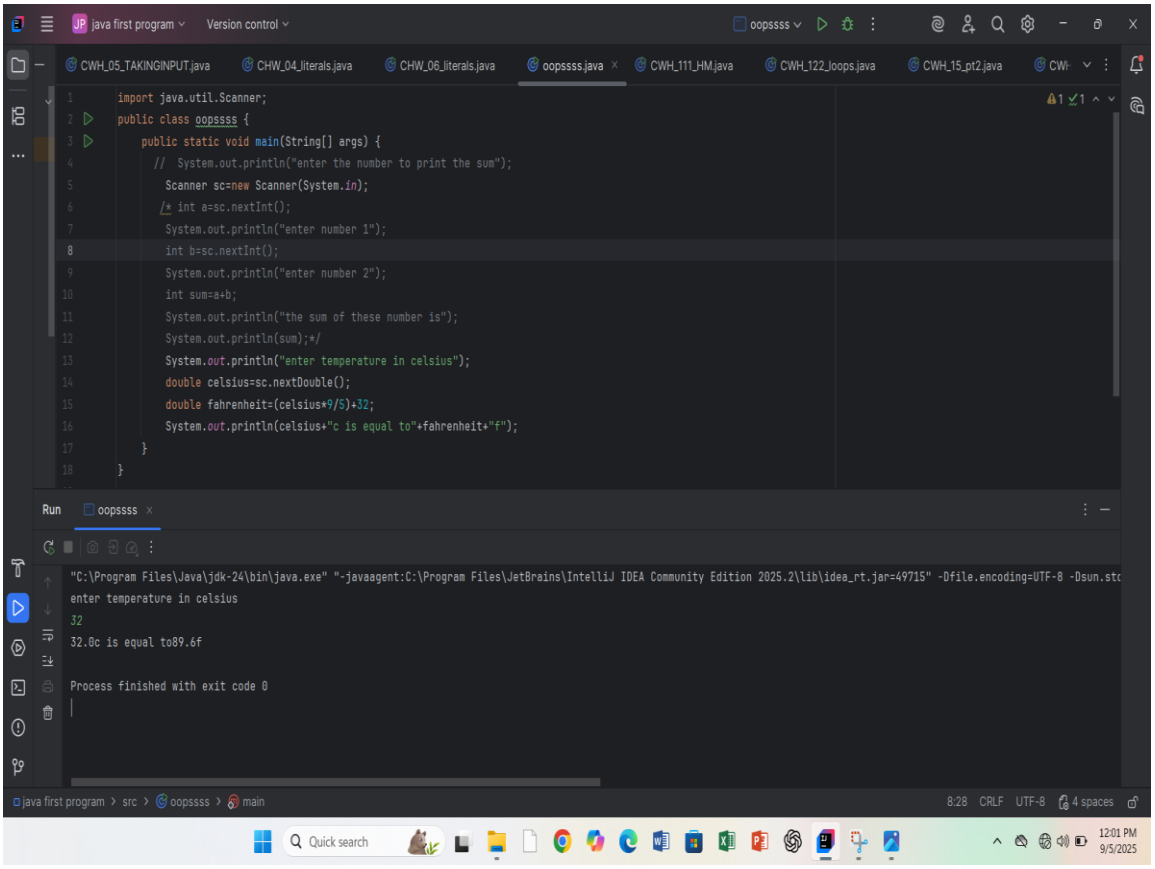
OUTPUT:



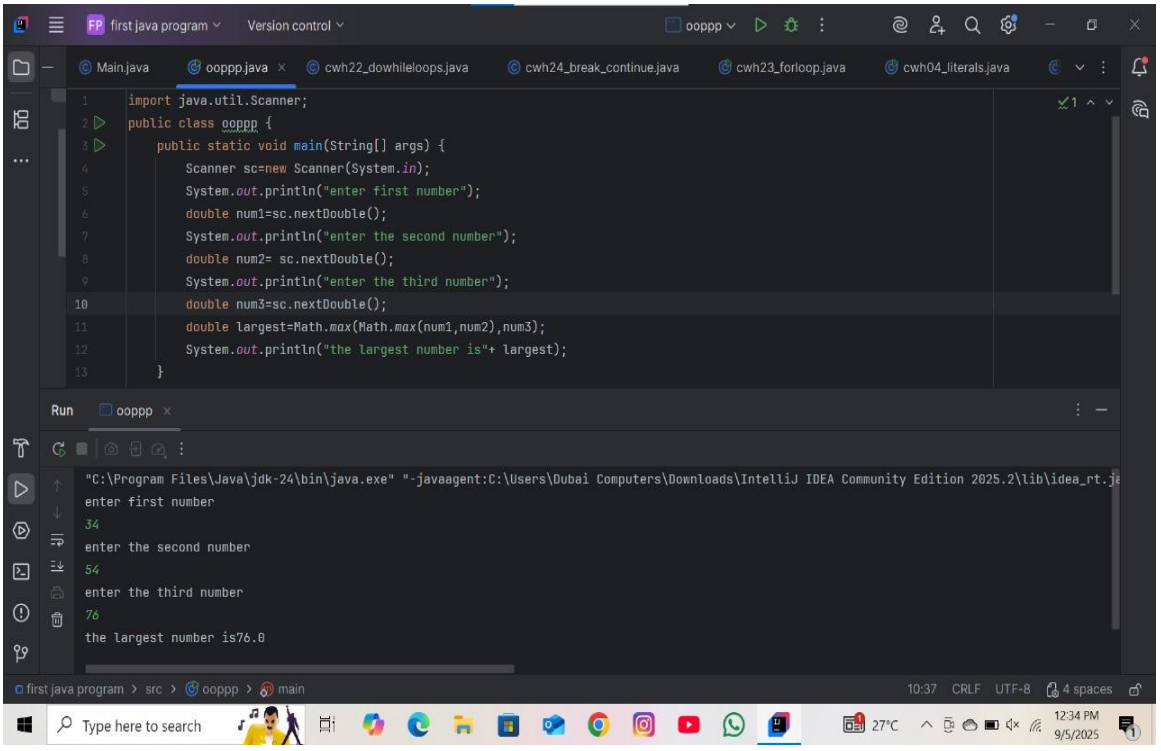
2. **Even or Odd Number**
   Write a program that asks the user to enter a number and prints whether it is even or odd.



3. **Temperature Converter**
   Write a Java program to convert a temperature from Celsius to Fahrenheit. The formula is:
   Fahrenheit = (Celsius × 9/5) + 32



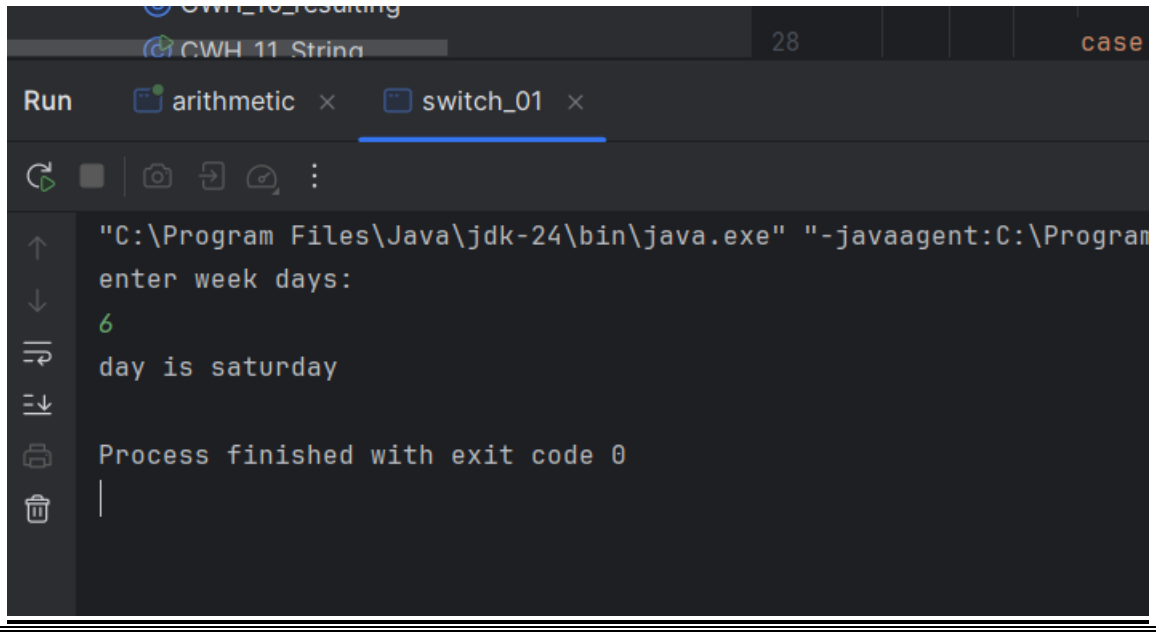
4. **Find the Largest Number**
   Write a program that asks the user to enter three numbers and prints the largest number among them.



5. **Day of the Week Using Switch**
   Write a program that asks the user to enter a number (1–7) and prints the corresponding day of the week using a switch statement.

```java
import java.util.Scanner;

public class switch_01 {
    public static void main(String[] args) {
        int weekdays;
        System.out.println("enter week days:");
        Scanner sc =new Scanner(System.in);
        weekdays = sc.nextInt();
        switch(weekdays){
            case 1:
                System.out.println("day is monday");
                break;
            case 2:
                System.out.println("day is tuesday");
                break;
            case 3:
                System.out.println("day is wednesday");
                break;
            case 4:
                System.out.println("day is thursday");
                break;
            case 5:
                System.out.println("day is friday");
                break;
            case 6:
                System.out.println("day is saturday");
                break;
            case 7:
                System.out.println("day is sunday");
                break;
            default:
                System.out.println("you entered invalid number");
        }
```

OUTPUT:



Lab Task 03 – Java Basics Practice project

Q1: Student Grade Calculator

Topics Covered:
Output, Comments, Variables, Data Types, Operators, Type Casting, If-Else Statements

Instructions:
- Ask the user to enter marks for Quiz (out of 15), Assignment (out of 10), Mid-Term (out of 25), and Final Exam (out of 50).

- Store these values in variables of appropriate data types.
- Calculate Total Marks and Average (use type casting to show decimal values).
- Display the Grade using if-else.
- Add comments to explain your code.

Grading Rules:
- Average >= 85 → Grade A
- 70 <= Average < 85 → Grade B
- 50 <= Average < 70 → Grade C
- Average < 50 → Fail

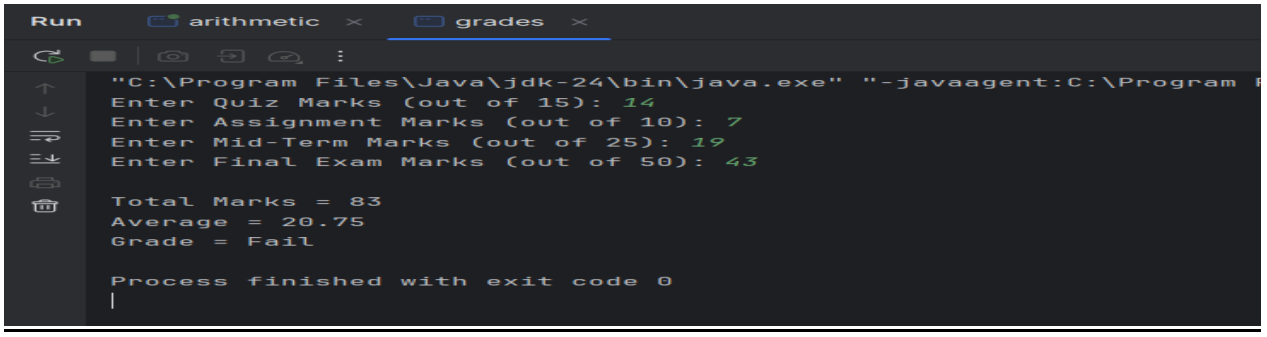
Expected Output Example:
Enter Quiz Marks: 12
Enter Assignment Marks: 9
Enter Mid-Term Marks: 20
Enter Final Marks: 40

Total Marks = 81
Average = 81.0
Grade = B

ss.java | CWH_111_HM.java | CWH_122_loops.java | switch_01.java | ari

```java
import java.util.Scanner;
public class grades {
    public static void main(String[] args) {

            Scanner scanner = new Scanner(System.in);

            System.out.print("Enter Quiz Marks (out of 15): ");
            int quizMarks = scanner.nextInt();

            System.out.print("Enter Assignment Marks (out of 10): ");
            int assignmentMarks = scanner.nextInt();

            System.out.print("Enter Mid-Term Marks (out of 25): ");
            int midTermMarks = scanner.nextInt();

            System.out.print("Enter Final Exam Marks (out of 50): ");
            int finalExamMarks = scanner.nextInt();

            int totalMarks = quizMarks + assignmentMarks + midTermMarks + finalExamMarks;

            double average = totalMarks / 4.0;

            System.out.println("\nTotal Marks = " + totalMarks);
            System.out.println("Average = " + average);

            if (average >= 85) {
                System.out.println("Grade = A");
            } else if (average >= 70) {
                System.out.println("Grade = B");
            } else if (average >= 50) {
                System.out.println("Grade = C");
            } else {
                System.out.println("Grade = Fail");
            }

            scanner.close();
        }
    }
```

OUTPUT:



Q2: Pizza Billing System Topics

Covered:

Strings, If-Else, Switch, Math Operators, Booleans, Output and Comments

Instructions:

- Ask the user for Pizza Size (small, medium, large).
- Use a switch statement to assign base prices: Small = 100, Medium = 200, Large = 300.
- Ask if the user wants pepperoni: Small → +30, Medium/Large → +50.
- Ask if the user wants extra cheese (+20).
- Display the final bill.

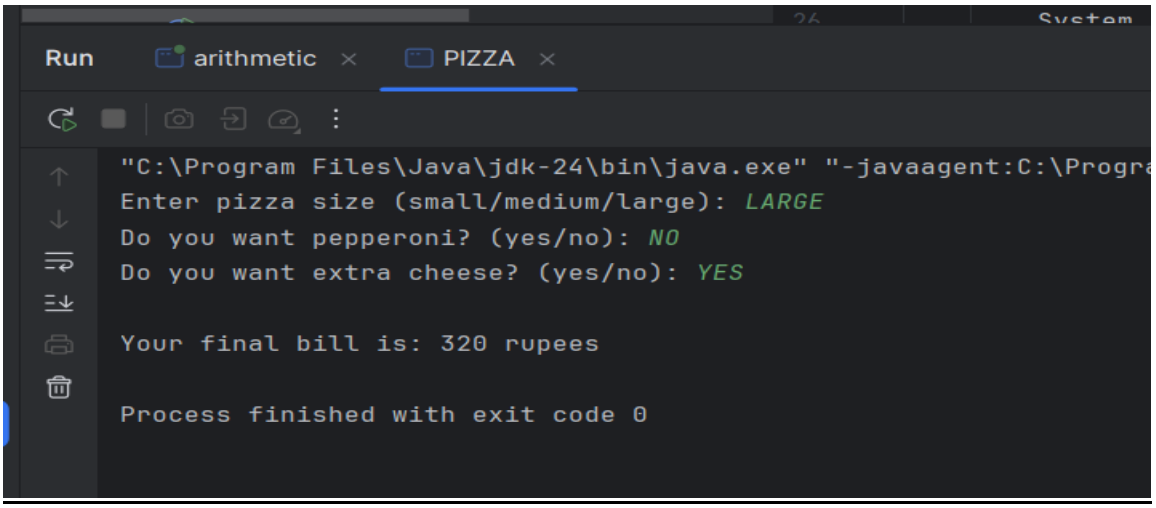
Expected Output Example:

Enter pizza size (small/medium/large): small
Do you want pepperoni? (yes/no): yes
Do you want extra cheese? (yes/no): no

Your final bill is: 130 rupees

```java
public class PIZZA {
    public static void main(String[] args) {

        System.out.print("Enter pizza size (small/medium/large): ");
        String size = scanner.nextLine().toLowerCase();

        int bill = 0;
        switch (size) {
            case "small":
                bill = 100;
                break;
            case "medium":
                bill = 200;
                break;
            case "large":
                bill = 300;
                break;
            default:
                System.out.println("Invalid size entered.");
                scanner.close();
                return;
        }

        System.out.print("Do you want pepperoni? (yes/no): ");
        String pepperoni = scanner.nextLine().toLowerCase();
        if (pepperoni.equals("yes")) {
            if (size.equals("small")) {
                bill += 30;
            } else {
                bill += 50;
            }
        }

        System.out.print("Do you want extra cheese? (yes/no): ");
        String cheese = scanner.nextLine().toLowerCase();
        if (cheese.equals("yes")) {
            bill += 20;
        }

        System.out.println("\nYour final bill is: " + bill + " rupees");

        scanner.close();
    }
}
```

OUTPUT:


Run
arithmetic
PIZZA
"C:\Program Files\Java\jdk-24\bin\java.exe" "-javaagent:C:\Progra
Enter pizza size (small/medium/large): LARGE
Do you want pepperoni? (yes/no): NO
Do you want extra cheese? (yes/no): YES
Your final bill is: 320 rupees
Process finished with exit code 0