



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.

```
1 public class details {
2     public static void main(String[] args) {
3         String name="talha";
4         int age=19;
5         String city="islamabad";
6         System.out.println(name);
7         System.out.println(age);
8         System.out.println(city);
9     }
10 }
11
```

Run arithmetic x PIZZA x details x

"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.

```

1  import java.util.Scanner;
2
3  public class arithmetic {
4      public static void main(String[] args) {
5          Scanner scanner = new Scanner(System.in);
6
7          // Input two numbers
8          System.out.print("Enter the first number: ");
9          double num1 = scanner.nextDouble();
10
11         System.out.print("Enter the second number: ");
12         double num2 = scanner.nextDouble();
13
14         // Perform operations
15         double sum = num1 + num2;
16         double difference = num1 - num2;
17         double product = num1 * num2;
18         double quotient = (num2 != 0) ? num1 / num2 : Double.NaN;
19
20         // Display results
21         System.out.println("Sum: " + sum);
22         System.out.println("Difference: " + difference);
23         System.out.println("Product: " + product);
24         if (num2 != 0) {
25             System.out.println("Quotient: " + quotient);
26         } else {
27             System.out.println("Quotient: Undefined (division by zero)");
28         }
29
30         scanner.close();
31     }

```

OUTPUT:

```

Run  arithmetic x
Enter the first number: 10
Enter the second number: 20
Sum: 30.0
Difference: -10.0
Product: 200.0
Quotient: 0.5

Process finished with exit code 0

```

2. Even or Odd Number

Write a program that asks the user to enter a number and prints whether it is even or odd.

```
1 import java.sql.SQLException;
2 import java.util.Scanner;
3 public class oopclass {
4     public static void main(String[] args) {
5         Scanner sc=new Scanner(System.in);
6         System.out.println("enter a number:");
7         int num=sc.nextInt();
8         if(num%2==0){
9             System.out.println("entered number is even");
10        }
11        else{
12            System.out.println("enter number is odd");
13        }
14    }
15 }
16 }
```

Run oopclass x

"C:\Program Files\Java\jdk-24\bin\java.exe" "-javaagent:C:\Users\Dubai Computers\Downloads\IntelliJ IDEA Community Edition 2025.2\lib\idea_rt.jar" 11:47 AM 9/5/2025

enter a number:
3
enter number is odd

Process finished with exit code 0

3. Temperature Converter

Write a Java program to convert a temperature from Celsius to Fahrenheit. The formula is:

$$\text{Fahrenheit} = (\text{Celsius} \times 9/5) + 32$$

```
1 import java.util.Scanner;
2 public class oopsssss {
3     public static void main(String[] args) {
4         // System.out.println("enter the number to print the sum");
5         Scanner sc=new Scanner(System.in);
6         /* int a=sc.nextInt();
7         System.out.println("enter number 1");
8         int b=sc.nextInt();
9         System.out.println("enter number 2");
10        int sum=a+b;
11        System.out.println("the sum of these number is");
12        System.out.println(sum);*/
13        System.out.println("enter temperature in celsius");
14        double celsius=sc.nextDouble();
15        double fahrenheit=(celsius*9/5)+32;
16        System.out.println(celsius+"c is equal to"+fahrenheit+"f");
17    }
18 }
```

Run oopsssss x

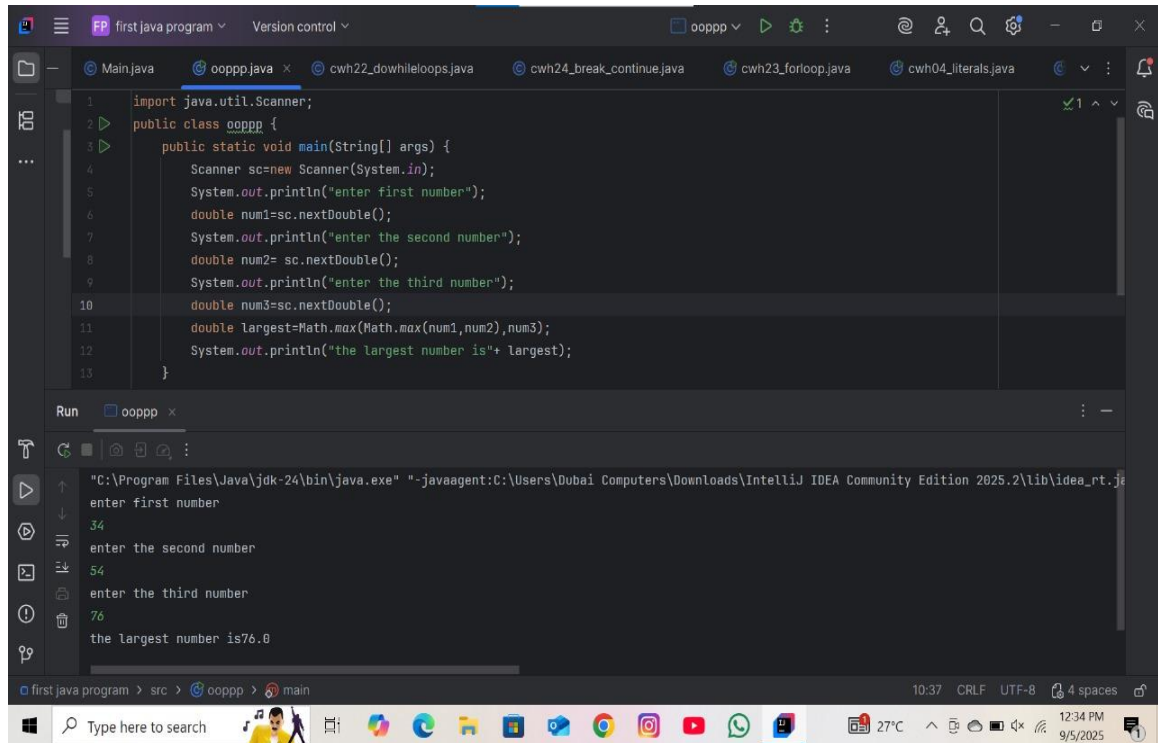
"C:\Program Files\Java\jdk-24\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2025.2\lib\idea_rt.jar=49715" -Dfile.encoding=UTF-8 -Dsun.stc 12:01 PM 9/5/2025

enter temperature in celsius
32
32.0c is equal to 89.6f

Process finished with exit code 0

4. Find the Largest Number

Write a program that asks the user to enter three numbers and prints the largest number among them.



The screenshot shows an IDE with a Java file named 'ooppp.java'. The code uses a Scanner to read three double values from the user and then uses the Math.max method to find the largest number. The Run window shows the program's execution with the input values 34, 54, and 76, resulting in the output 'the largest number is 76.0'.

```
1 import java.util.Scanner;
2 public class ooppp {
3     public static void main(String[] args) {
4         Scanner sc=new Scanner(System.in);
5         System.out.println("enter first number");
6         double num1=sc.nextDouble();
7         System.out.println("enter the second number");
8         double num2= sc.nextDouble();
9         System.out.println("enter the third number");
10        double num3=sc.nextDouble();
11        double largest=Math.max(Math.max(num1,num2),num3);
12        System.out.println("the largest number is"+ largest);
13    }
}
```

Run ooppp x

"C:\Program Files\Java\jdk-24\bin\java.exe" "-javaagent:C:\Users\Dubai Computers\Downloads\IntelliJ IDEA Community Edition 2025.2\lib\idea_rt.je
enter first number
34
enter the second number
54
enter the third number
76
the largest number is76.0

first java program > src > ooppp > main 10:37 CRLF UTF-8 4 spaces

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.

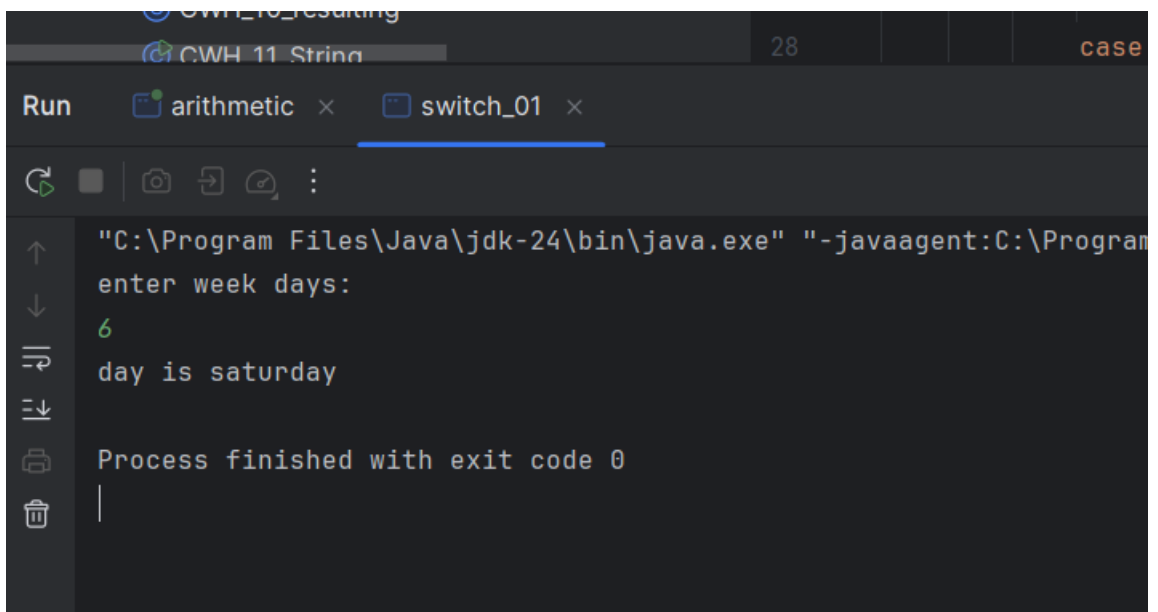
```

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:



```

C:\Program Files\Java\jdk-24\bin\java.exe" "-javaagent:C:\Program
enter week days:
6
day is saturday
Process finished with exit code 0

```

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 $\geq 85 \rightarrow$ Grade A
- $70 \leq \text{Average} < 85 \rightarrow$ Grade B
- $50 \leq \text{Average} < 70 \rightarrow$ Grade C
- Average $< 50 \rightarrow$ 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 arith
1 import java.util.Scanner;
2 public class grades {
3     public static void main(String[] args) {
4
5         Scanner scanner = new Scanner(System.in);
6
7         System.out.print("Enter Quiz Marks (out of 15): ");
8         int quizMarks = scanner.nextInt();
9
10        System.out.print("Enter Assignment Marks (out of 10): ");
11        int assignmentMarks = scanner.nextInt();
12
13        System.out.print("Enter Mid-Term Marks (out of 25): ");
14        int midTermMarks = scanner.nextInt();
15
16        System.out.print("Enter Final Exam Marks (out of 50): ");
17        int finalExamMarks = scanner.nextInt();
18
19        int totalMarks = quizMarks + assignmentMarks + midTermMarks + finalExamMarks;
20
21        double average = totalMarks / 4.0;
22
23        System.out.println("\nTotal Marks = " + totalMarks);
24        System.out.println("Average = " + average);
25
26        if (average >= 85) {
27            System.out.println("Grade = A");
28        } else if (average >= 70) {
29            System.out.println("Grade = B");
30        } else if (average >= 50) {
31            System.out.println("Grade = C");
32        } else {
33            System.out.println("Grade = Fail");
34        }
35
36        scanner.close();
37    }
38 }

```

OUTPUT:

```

Run arithmetic x grades x
"C:\Program Files\Java\jdk-24\bin\java.exe" "-javaagent:C:\Program F
Enter Quiz Marks (out of 15): 14
Enter Assignment Marks (out of 10): 7
Enter Mid-Term Marks (out of 25): 19
Enter Final Exam Marks (out of 50): 43

Total Marks = 83
Average = 20.75
Grade = Fail

Process finished with exit code 0

```

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

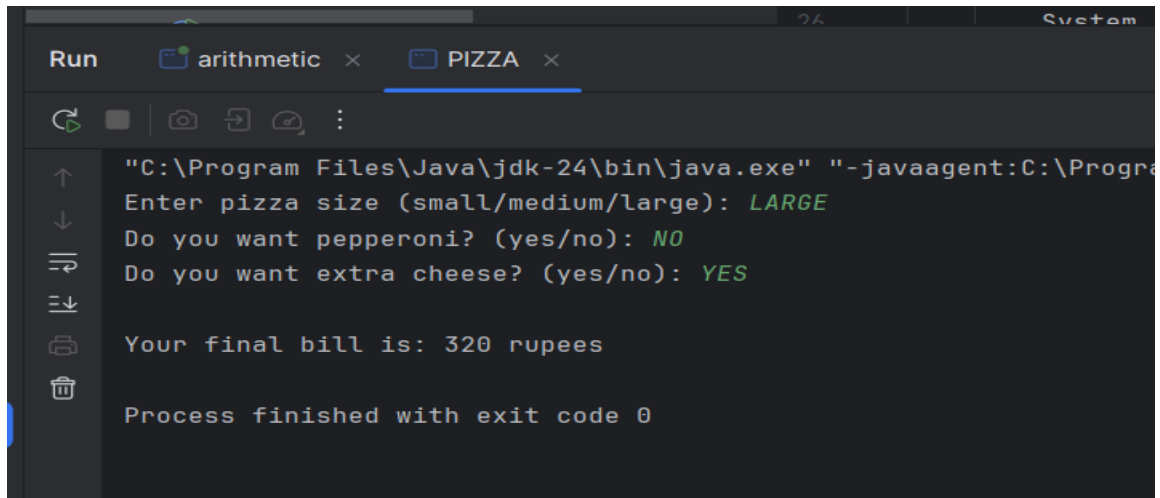
Do you want pepperoni? (yes/no): yes

Do you want extra cheese? (yes/no): no

Your final bill is: 130 rupees

```
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:



The screenshot shows an IDE's Run console with two tabs: 'arithmetic' and 'PIZZA'. The 'PIZZA' tab is active. The console output is as follows:

```
"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
```