Ex. No. 1	USAGE OF CONTROL STATEMENTS FOR LOGICAL BUILDING
Date of Exercise	13-07-2023

Aim

Write a java program that takes 3 inputs from the user and prints the greatest of 3 numbers.

Procedure

1.Import the java.util.Scanner package to allow user input from the console.

2.Create a Scanner object called input to read input from the user.

3.Prompt the user to enter three numbers, and use the nextInt() method of the Scanner class to read integer input from the user and store them in the variables num1, num2, and num3.

4.Determine the greatest number among the three using an if-else statement. If the first number is greater than both the second and third numbers, then it is the greatest. If the second number is greater than both the first and third numbers, then it is the greatest. Otherwise, the third number is the greatest.

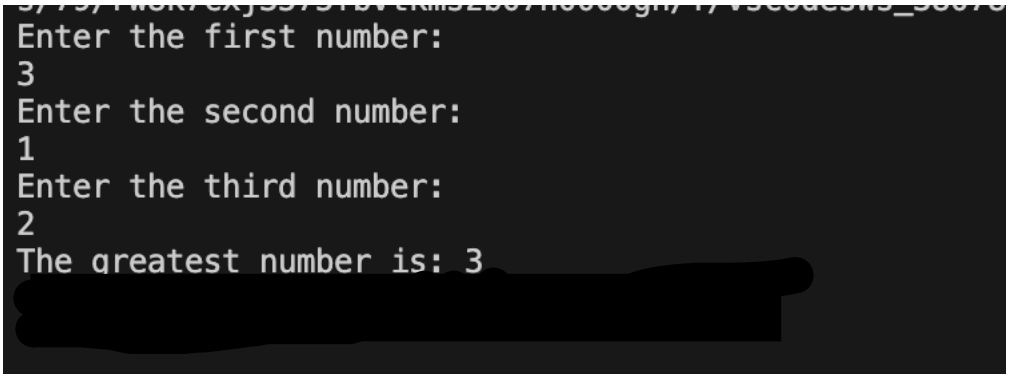
5.Print the greatest number to the console using the System.out.println() method, and close the Scanner object to free up resources.

Program

```
import java.util.*;

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

      System.out.print("Enter the first number: ");
      int num1 = input.nextInt();
```

```
        System.out.print("Enter the second number: ");
        int num2 = input.nextInt();

        System.out.print("Enter the third number: ");
        int num3 = input.nextInt();

        int greatest;

        if (num1 > num2 && num1 > num3) {
            greatest = num1;
        } else if (num2 > num1 && num2 > num3) {
            greatest = num2;
        } else {
            greatest = num3;
        }

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

        input.close();
    }
}
```

Output Screenshot



Result

The above program has been successfully executed and verified

Aim

Write a java program to find the sum of 'N' numbers.

Procedure

1.Import the java.util.Scanner package to allow user input from the console.

2.Create a Scanner object called input to read input from the user.

3.Prompt the user to enter a value for N, which is the number of integers they want to add together. Use the nextInt() method of the Scanner class to read integer input from the user and store it in the variable N.

4.Use a for loop to iterate over the integers from 1 to N. For each integer i, prompt the user to enter a number and use nextInt() to read integer input from the user and store it in the variable num. Then, add num to the variable sum.

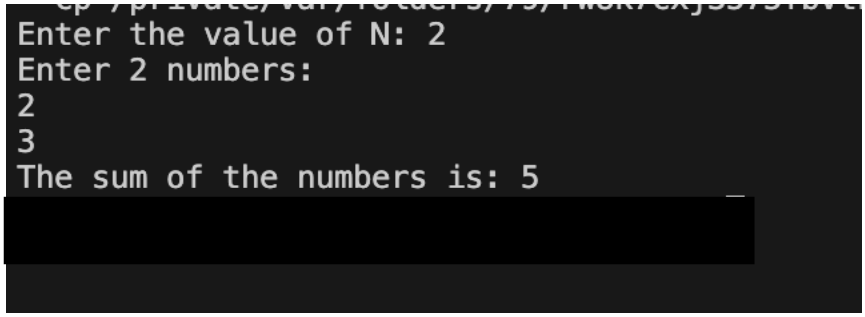
5.Print the sum of the N numbers to the console using the System.out.println() method, and close the Scanner object to free up resources.

Program

```
import java.util.*;

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

      System.out.print("Enter the value of N: ");
      int N = input.nextInt();

      int sum = 0;

      for (int i = 1; i <= N; i++) {
         System.out.print("Enter number " + i + ": ");
         int num = input.nextInt();
         sum += num;
      }
```

```
        System.out.println("The sum of the " + N + " numbers is: " + sum);

        input.close();
    }
}
```

Output Screenshot



Result

The above program has been successfully executed and verified

Aim

Write a java program to find the following pattern:

1
2 3
4 5 6
7 8 9 10

Procedure

1.Initialize two integer variables: rows and number. rows represents the number of rows in the pattern, and number is the starting number for the pattern.

2.Use a nested for loop to iterate over the rows and columns of the pattern. The outer loop iterates over the rows, and the inner loop iterates over the columns in each row.

3.Within the inner loop, print the value of number followed by a space. Then, increment the value of number.

4.After the inner loop completes for a given row, print a newline character to move to the next row.

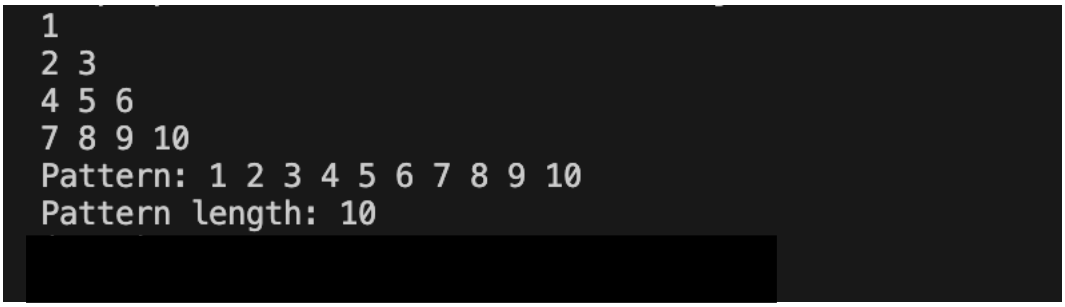
5.Repeat steps 3 and 4 for each row of the pattern, until the outer loop completes. The result is a pattern of numbers that starts with 1 in the first row, and increments by 1 in each subsequent row. The number of columns in each row increases by 1, so the pattern has a triangular shape.

Program

```
public class NumberPattern {
   public static void main(String[] args) {
      int rows = 4;
      int number = 1;

      for (int i = 1; i <= rows; i++) {
         for (int j = 1; j <= i; j++) {
            System.out.print(number + " ");
            number++;
         }
```

```
            System.out.println();
        }
    }
}
```

Output Screenshot



Result

The above program has been successfully executed and verified

Aim

Write a program to input basic salary of an employee and calculate its Gross salary according to following:

- Basic Salary <= 10000 : HRA = 20%, DA = 80%
- Basic Salary <= 20000 : HRA = 25%, DA = 90%
- Basic Salary > 20000 : HRA = 30%, DA = 95%

Procedure

Import the java.util.Scanner package to allow user input from the console.

Prompt the user to enter the employee's basic salary using the nextDouble() method of the Scanner class and store it in the variable basicSalary.

Calculate the employee's HRA (House Rent Allowance) and DA (Dearness Allowance) based on their basic salary. If the basic salary is less than or equal to 10,000, HRA is 20% of the basic salary and DA is 80% of the basic salary. If the basic salary is less than or equal to 20,000, HRA is 25% of the basic salary and DA is 90% of the basic salary. Otherwise, HRA is 30% of the basic salary and DA is 95% of the basic salary.

Calculate the employee's gross salary by adding their basic salary, HRA, and DA.

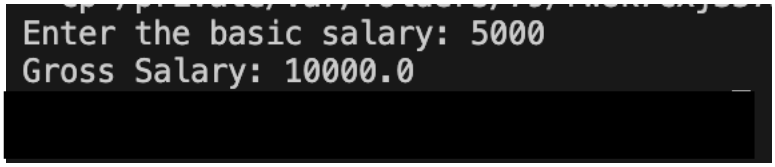
Print the employee's gross salary to the console using the System.out.println() method, and close the Scanner object to free up resources.

Program

```
import java.util.*;

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

      System.out.print("Enter the basic salary: ");
      double basicSalary = input.nextDouble();

      double hra, da, grossSalary;

      if (basicSalary <= 10000) {
         hra = 0.2 * basicSalary;
```

```
            da = 0.8 * basicSalary;
        } else if (basicSalary <= 20000) {
            hra = 0.25 * basicSalary;
            da = 0.9 * basicSalary;
        } else {
            hra = 0.3 * basicSalary;
            da = 0.95 * basicSalary;
        }

        grossSalary = basicSalary + hra + da;

        System.out.println("Gross Salary: " + grossSalary);

        input.close();
    }
}
```

Output Screenshot



Result

The above program has been successfully executed and verified

Aim

Write a java program to develop a Menu driven program and Subscription services of an OTT platform such as:
Basics - 499
Kids- 200 + Basics
Sports- 700 + Basics
English - 300 + Basics

Procedure

1.Import the java.util.Scanner package to allow user input from the console.

2.Initialize two arrays, prices and packages, containing the prices and names of the available subscription packages, respectively.

3.Print a welcome message and a menu of the available subscription packages and their prices using a for loop to iterate over the arrays and print each item.

4.Prompt the user to enter their choice of package using the nextInt() method of the Scanner class and store it in the variable choice. Validate the user's choice to ensure it falls within the range of valid choices, and print an error message and return from the program if the choice is invalid.

5.If the user's choice is valid, calculate the total price of the selected package and print a message indicating which package the user has selected and the total price. Close the Scanner object to free up resources.

Program

```
import java.util.*;

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

      double[] prices = {499, 699, 799, 799};
      String[] packages = {"Basics", "Kids", "Sports", "English"};
```

```
            System.out.println("Welcome to OTT Subscription");
            for (int i = 0; i < prices.length; i++) {
                System.out.println((i+1) + ". " + packages[i] + " - $" + prices[i]);
            }

            System.out.print("Enter your choice: ");
            int choice = input.nextInt();

            if (choice < 1 || choice > prices.length) {
                System.out.println("Invalid choice!");
                input.close();
                return;
            }

            double totalPrice = prices[choice-1];
            System.out.println("You have subscribed to " + packages[choice-1] + " for $" +
totalPrice);

            System.out.println("Total Price: $" + totalPrice);
            input.close();
        }
    }
```

Output Screenshot

```
----- OTT Subscription Menu -----
1. Basics - $499
2. Kids - $200 + Basics
3. Sports - $700 + Basics
4. English - $300 + Basics
0. Exit
Enter your choice: 4
You have subscribed to English.
Total Price: $799.0

----- OTT Subscription Menu -----
1. Basics - $499
2. Kids - $200 + Basics
3. Sports - $700 + Basics
4. English - $300 + Basics
0. Exit
Enter your choice: 5
Invalid choice. Please try again.

----- OTT Subscription Menu -----
1. Basics - $499
2. Kids - $200 + Basics
3. Sports - $700 + Basics
4. English - $300 + Basics
0. Exit
Enter your choice: 0
Exiting the program. Thank you!
```

Result

The above program has been successfully executed and verified