**Assignment II**

Name :- Bibek Chand Sah

Roll :- 22054029

Branch :- CSE

Section :- CSE-05

1. Aim of the program -Write a program to print your name, roll no, section and branch in separate lines.

import java.util.Scanner;

public class StudentInfo {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter Name: ");

        String name = scanner.nextLine();

        System.out.print("Enter Roll No: ");

        int rollNo = scanner.nextInt();

        scanner.nextLine();

        System.out.print("Enter Section: ");

        String section = scanner.nextLine();

        System.out.print("Enter Branch: ");

        String branch = scanner.nextLine();

        scanner.close();

        System.out.println("\nStudent Information:");

        System.out.println("Name: " + name);

        System.out.println("Roll No: " + rollNo);

        System.out.println("Section: " + section);

        System.out.println("Branch: " + branch);

    }

}

Output

Enter Name: bibek

Enter Roll No: 22054029

Enter Section: cse-05

Enter Branch: cse

Student Information:

Name: bibek

Roll No: 22054029

Section: cse-05

Branch: cse

2. Aim of the program: Write a program to print the corresponding grade for the given mark using if..else statement in Java

import java.util.Scanner;

public class Grade {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter the mark: ");

        int mark = scanner.nextInt();

        char grade;

        if (mark >= 90) {

            grade = 'O';

        } else if (mark >= 80) {

            grade = 'E';

        } else if (mark >= 70) {

            grade = 'A';

        } else if (mark >= 60) {

            grade = 'B';

        } else {

            grade = 'C';

        }

        System.out.println("Grade: " + grade);

        scanner.close();

    }

}

Output

Enter the mark: 99

Grade: O

3. Aim of the program: Write a program to print the week day for the given day no. of the current month using switch case statement

import java.util.Scanner;

public class Week {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter the day number: ");

        int dayNumber = scanner.nextInt();

        String weekday;

        switch (dayNumber) {

            case 1:

                weekday = "Sunday";

                break;

            case 2:

                weekday = "Monday";

                break;

            case 3:

                weekday = "Tuesday";

                break;

            case 4:

                weekday = "Wednesday";

                break;

            case 5:

                weekday = "Thursday";

                break;

            case 6:

                weekday = "Friday";

                break;

            case 7:

                weekday = "Saturday";

                break;

            default:

                weekday = "Invalid day number";

        }

        System.out.println("Day: " + weekday);

        scanner.close();

    }

}

Output

Enter the day number: 3

Day: Tuesday

4. Aim of the program : Program to check a user entered number is palindrome or not

import java.util.Scanner;

public class Palindrome {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter a number: ");

        int number = scanner.nextInt();

        boolean isPalindrome = checkPalindrome(number);

        if (isPalindrome) {

            System.out.println(number + " is a Palindrome.");

        } else {

            System.out.println(number + " is not a Palindrome.");

        }

        scanner.close();

    }

    private static boolean checkPalindrome(int num) {

        int originalNumber = num;

        int reversedNumber = 0;

        while (num > 0) {

            int digit = num % 10;

            reversedNumber = reversedNumber \* 10 + digit;

            num /= 10;

        }

        return originalNumber == reversedNumber;

    }

}

Output

Enter a number: 121

121 is a Palindrome.

5. Aim of the program : Write a program in Java to take first name and last name from user and print both in one line as last name followed by first name

import java.util.Scanner;

public class concatenate {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter the First Name: ");

        String fname = scanner.nextLine();

        System.out.print("Enter the Last Name: ");

        String lname = scanner.nextLine();

        System.out.println("The Full Name is " + lname + " " + fname);

        scanner.close();

    }

}

Output

Enter the First Name: bibek

Enter the Last Name: sah

The Full Name is sah Bibek

6. Aim of the program : Find the largest among 3 user entered nos. at the command prompt using Java

import java.util.Scanner;

public class largest {

    public static void main(String[] args) {

        Scanner scan = new Scanner(System.in);

        System.out.print("Enter first number: ");

        int firstNum = scan.nextInt();

        System.out.print("Enter second number: ");

        int secondNum = scan.nextInt();

        System.out.print("Enter the third number: ");

        int thirdNum = scan.nextInt();

        if (firstNum > secondNum && firstNum > thirdNum) {

            System.out.println("The largest number is " + firstNum);

        } else if (secondNum > firstNum && secondNum > thirdNum) {

            System.out.println("The largest number is " + secondNum);

        } else {

            System.out.println("The largest number is " + thirdNum);

        }

        scan.close();

    }

}

Output

Enter first number: 12

Enter second number: 11

Enter the third number: 14

The largest number is 14

7. Aim of the program : Accept 10 numbers from command line and check how many of them are even and how many are odd.

import java.util.Scanner;

public class evenOdd {

    public static void main (String[] args){

        Scanner sc = new Scanner(System.in);

        int num, countEven=0, countOdd=0;

        System.out.println("Enter a total of 10 numbers");

        for(int i=1;i<=10;i++){

            System.out.print((i)+" Number : ");

            num = sc.nextInt();

            if(num%2==0)

            countEven++;

            else

            countOdd++;

        }

        System.out.println("\nNumber of Even Numbers = "+countEven);

        System.out.println("Number of Odd Numbers = "+countOdd);

        sc.close();

    }}

Output

Enter a total of 10 numbers

1 Number : 1 2 2 3 4 4 5 6 7 8

2 Number : 3 Number : 4 Number : 5 Number : 6 Number : 7 Number : 8 Number : 9 Number : 10 Number :

Number of Even Numbers = 6

Number of Odd Numbers = 4

8. Aim of the program: Program to sort the user entered list of numbers of any size

import java.util.Arrays;

import java.util.Scanner;

public class ascending {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter the number of elements in the list: ");

        int size = scanner.nextInt();

        int[] numbers = new int[size];

        System.out.println("Enter the list of numbers:");

        for (int i = 0; i < size; i++) {

            System.out.print("Enter number #" + (i + 1) + ": ");

            numbers[i] = scanner.nextInt();

        }

        Arrays.sort(numbers);

        System.out.println("\nSorted Numbers (Ascending Order):");

        for (int num : numbers) {

            System.out.print(num + " ");

        }

        scanner.close();

    }

}

Output

Enter the number of elements in the list: 5

Enter the list of numbers:

Enter number #1: 4 6 3 7 1

Enter number #2: Enter number #3: Enter number #4: Enter number #5:

Sorted Numbers (Ascending Order):

1 3 4 6 7

9. Aim of the program: Find the no. of occurrence of each element in a user entered list of nos.

import java.util.HashMap;

import java.util.Map;

import java.util.Scanner;

public class OccurrenceCounter {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter the list of numbers: ");

        String input = scanner.nextLine();

        String[] numbersStringArray = input.split(" ");

        int[] numbers = new int[numbersStringArray.length];

        for (int i = 0; i < numbersStringArray.length; i++) {

            numbers[i] = Integer.parseInt(numbersStringArray[i]);

        }

        Map<Integer, Integer> occurrencesMap = new HashMap<>();

        for (int num : numbers) {

            if (occurrencesMap.containsKey(num)) {

                occurrencesMap.put(num, occurrencesMap.get(num) + 1);

            } else {

                occurrencesMap.put(num, 1);

            }

        }

        System.out.println("\nOccurrence of each element:");

        for (Map.Entry<Integer, Integer> entry : occurrencesMap.entrySet()) {

            System.out.println("Occurrence of " + entry.getKey() + "=" + entry.getValue());

        }

        scanner.close();

    }

}

Output

Enter the list of numbers: 11 12 11 12 13 14

Occurrence of each element:

Occurrence of 11=2

Occurrence of 12=2

Occurrence of 13=1

Occurrence of 14=1

10. Aim of the program: Program to find no. of objects created out of a class using ‘static’ modifier.

public class ObjectCounter {

    private static int numberOfObjects = 0;

    public ObjectCounter() {

        numberOfObjects++;

    }

    public static int getNumberOfObjects() {

        return numberOfObjects;

    }

    public static void main(String[] args) {

        ObjectCounter obj1 = new ObjectCounter();

        ObjectCounter obj2 = new ObjectCounter();

        ObjectCounter obj3 = new ObjectCounter();

        System.out.println("Number of objects created: " + ObjectCounter.getNumberOfObjects());

    }

}

Output

Number of objects created: 3

11. Aim of the program: Find sum of each diagonal (left & right) elements separately of a user entered 3 X 3 matrix in Java.

import java.util.Scanner;

public class DiagonalSumProgram {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        int[][] matrix = new int[3][3];

        System.out.println("Enter the 3x3 matrix:");

        for (int i = 0; i < 3; i++) {

            for (int j = 0; j < 3; j++) {

                System.out.print("Enter element at position [" + (i + 1) + "][" + (j + 1) + "]: ");

                matrix[i][j] = scanner.nextInt();

            }

        }

        int leftDiagonalSum = 0;

        for (int i = 0; i < 3; i++) {

            leftDiagonalSum += matrix[i][i];

        }

        int rightDiagonalSum = 0;

        for (int i = 0; i < 3; i++) {

            rightDiagonalSum += matrix[i][2 - i];

        }

        System.out.println("\nSum of diagonal elements:");

        System.out.println("Left: " + leftDiagonalSum);

        System.out.println("Right: " + rightDiagonalSum);

        scanner.close();

    }

}

Output

Enter the 3x3 matrix:

Enter element at position [1][1]: 1

Enter element at position [1][2]: 2

Enter element at position [1][3]: 3

Enter element at position [2][1]: 4

Enter element at position [2][2]: 5

Enter element at position [2][3]: 6

Enter element at position [3][1]: 7

Enter element at position [3][2]: 8

Enter element at position [3][3]: 9

Sum of diagonal elements:

Left: 15

Right: 15