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.

```java
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

```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

```java
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
```