# WEEK 5

**1.** Write a Java program to insert 10, 20, 30 ....in an array and display them.

week5_1.java

```java
import java.util.Scanner;

public class week5_1 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter length of Array :");
        int l = sc.nextInt();
        int[] arr = new int[l];
        System.out.println("Enter the elements :");
        for(int i=0;i<l;i++) arr[i] = sc.nextInt();
        System.out.print("Array : ");
        for(int i=0;i<l;i++) System.out.print(arr[i]+" ");
    }
}

```

```
Enter length of Array :
5
Enter the elements :
10 20 30 40 50
Array : 10 20 30 40 50
```

**2.** Write a Java program to calculate the sum of all the array elements.

week5_1.java week5_2.java

```java
import java.util.Scanner;

public class week5_2 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter length of Array :");
        int l = sc.nextInt();
        int[] arr = new int[l];
        int sum=0;
        System.out.println("Enter the elements :");
        for(int i=0;i<l;i++) {
            arr[i] = sc.nextInt();
            sum+=arr[i];
        }
        System.out.println("Sum of all elements = "+sum);
    }
}

```

# WEEK 5

```
Enter length of Array :
5
Enter the elements :
1 2 3 4 5
Sum of all elements = 15
```

**3.** Write a java program to print the following pattern:

```
    1
   12
  123
 1234
12345
```

week5_1.java | week5_2.java | week5_3.java

```
1  public class week5_3 {
2      public static void main(String[] args) {
3          for (int i = 1; i <= 5; i++){
4              for (int j = 1; j <= 5-i; j++)
5                  System.out.print(" ");
6              for (int k = 1; k <= i; k++)
7                  System.out.print(k);
8              System.out.println();
9          }
10     }
11 }
12
```

```
    1
   12
  123
 1234
12345
```

**4.** Write a java program to find the sum of following series where n is input by the user:
1+1/2+1/3+1/4+.....+1/n

# WEEK 5

week5_1.java week5_2.java week5_3.java

```java
import java.util.Scanner;

public class week5_4 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter N :");
        int n = sc.nextInt();
        double sum=0;
        for(int i=1; i<=n; i++) sum+=1.0/i;
        System.out.println("Result = "+sum);
    }
}
```

```
Enter N :
5
Result = 2.283333333333333
```

**5.** Write a Java program and compute the sum of the digits of an integer.

week5_1.java week5_2.java week5_3.java wee

```java
import java.util.Scanner;

public class week5_5 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter an integer :");
        int n = sc.nextInt();
        int sum=0;
        while(n!=0){
            sum+=n%10;
            n/=10;
        }
        System.out.println("Sum of digits = "+sum);
    }
}
```

```
Enter an integer :
123
Sum of digits = 6
```

# WEEK 5

**6.** Write a Java program to calculate the factorial of a number.

week5_6.java

```java
import java.util.Scanner;

public class week5_6 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter number :");
        int n = sc.nextInt();
        int fact = 1;
        for(int i=2; i<=n; i++) fact*=i;
        System.out.println("Factorial = "+fact);
    }
}

```

```
Enter number :
6
Factorial = 720
```

**7.** Write a Java program to find the largest element in a given integer array.

week5_6.java week5_7.java

```java
import java.util.Scanner;

public class week5_7 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter length of Array :");
        int l = sc.nextInt();
        int[] arr = new int[l];
        System.out.println("Enter the elements :");
        int max=0;
        for(int i=0;i<l;i++) {
            arr[i] = sc.nextInt();
            if(i==0) max = arr[i];
            if(arr[i] > max) max = arr[i];
        }
        System.out.println("Biggest element = "+max);
    }
}

```

# WEEK 5

```
Enter length of Array
5
Enter the elements :
6 4 8 3 2
Biggest element = 8
```

**8.** Write a Java program to reverse the digits of a given integer.

week5_6.java | week5_7.java | week5_8.java

```java
import java.util.Scanner;

public class week5_8 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter an integer :");
        int n = sc.nextInt();
        int rev = 0;
        while(n!=0){
            rev = rev*10 + n%10;
            n/=10;
        }
        System.out.println("Reverse = "+ rev);
    }
}

```

```
Enter an integer
12345
Reverse = 54321
```

# WEEK 5

**9.** Write a Java program to check if a given number is a palindrome or not.

week5_6.java | week5_7.java | week5_8.java | week5_9.

```java
import java.util.Scanner;

public class week5_9 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter an integer :");
        int n = sc.nextInt();
        int copy = n;
        int rev = 0;
        while(copy !=0){
            rev = rev*10 + copy %10;
            copy /=10;
        }
        if(rev == n) System.out.println("Palindrome");
        else System.out.println("Not Palindrome");
    }
}

```

```
Enter an integer :
12321
Palindrome
```

# WEEK 5

**10.** Write a Java program to convert a decimal number into Hexadecimal number and vice-versa.

week5_6.java week5_7.java week5_8.java week5_9.java

```java
import java.util.Scanner;

public class week5_10 {

    static String decimalToHex(int num) {  1 usage
        if (num == 0) return "0";
        String hex = "";
        char[] hexDigits = "0123456789ABCDEF".toCharArray();
        while (num > 0) {
            int rem = num % 16;
            hex = hexDigits[rem] + hex;
            num = num / 16;
        }
        return hex;
    }

    static int hexToDecimal(String hex) {  1 usage
        int dec = 0;
        hex = hex.toUpperCase();
        for (int i = 0; i < hex.length(); i++) {
            char ch = hex.charAt(i);
            int value;
            if (ch >= '0' && ch <= '9') {
                value = ch - '0';
            } else {
                value = ch - 'A' + 10;
            }
            dec = dec * 16 + value;
        }
        return dec;
    }
```

# WEEK 5

```java

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("1. Decimal to Hex");
        System.out.println("2. Hex to Decimal");
        System.out.print("Choose option: ");
        int choice = sc.nextInt();
        sc.nextLine(); //clears input buffer

        switch (choice) {
            case 1:
                System.out.print("Enter decimal number: ");
                int dec = sc.nextInt();
                String hex = decimalToHex(dec);
                System.out.println("Hexadecimal: " + hex);
                break;

            case 2:
                System.out.print("Enter hexadecimal number: ");
                String hexInput = sc.nextLine();
                int decimal = hexToDecimal(hexInput);
                System.out.println("Decimal: " + decimal);
                break;

            default:
                System.out.println("Invalid option");
        }
    }
}

```

```
1. Decimal to Hex
2. Hex to Decimal
Choose option: 2
Enter hexadecimal number: 4f
Decimal: 79
```

# WEEK 5

**11.** Write a Java program to print the following pattern:

```
  *
 **
***
 **
  *
```

week5_6.java week5_7.java week5_8.java

```java
public class week5_11 {
    public static void main(String[] args) {
        for (int i = 1; i <= 3; i++) {
            for (int j = 1; j <= 3 - i; j++)
                System.out.print(" ");
            for (int k = 1; k <= i; k++)
                System.out.print("*");
            System.out.println();
        }
        for (int i = 2; i >= 1; i--){
            for (int j = 1; j <= 3 - i; j++)
                System.out.print(" ");
            for (int k = 3 - i; k < 3; k++)
                System.out.print("*");
            System.out.println();
        }
    }
}

```

```
  *
 **
***
 **
  *
```