

Assignment 1

Aim: Install JDK, setup Java environment and write a program to print
—CODING IS FUN, ENJOY IT!.

Code:

```
// Install JDK, setup Java environment and write a program to print -CODING IS FUN, ENJOY IT!.

import javax.swing.*;

public class Assignment_1 {
    public static void main(String[] args) {
        JOptionPane.showMessageDialog( null, "CODING IS FUN, ENJOY IT!" );
    }
}
```

Output:



Assignment 2

Aim: Write a program in Java to generate first n prime numbers.

Algorithm:

1. Input n
2. Declare boolean flag to check prime numbers
3. Iterate i from 2 till n>0:
 - 2.1 Initialize flag to true
 - 2.2 Iterate j from 2 to square root of i:
 - 2.2.1 if $i \% j == 0$:
 - 2.2.1.1 set flag to false
 - 2.2.1.2 break
 - 2.2.2 $j = j + 1$
 - 2.3 If flag is true:
 - 2.3.1 print i
 - 2.3.2 $n = n - 1$
 - 2.4 $i = i + 1$

Code:

```
// Write a program in Java to generate first n prime numbers.  
import java.io.BufferedReader;  
import java.io.InputStreamReader;  
2 usages  ↳ Varzil  
public class Assignment_2 {  
    ↳ Varzil  
    public static void main(String[] args) {  
        try {  
            BufferedReader br=new BufferedReader(new InputStreamReader(System.in));  
            System.out.println("Enter the value of N: ");  
            int n=Integer.parseInt(br.readLine());  
            int count=0,num=2;  
            Assignment_2 obj=new Assignment_2();  
            do {  
                if (obj.isPrime(num)) {  
                    count++;  
                    System.out.println(num);  
                }  
                num++;  
            } while (count != n);  
        }  
        catch (Exception ignored){  
            System.out.println("Error Occurred");  
        }  
    }  
    1 usage  ↳ Varzil  
    boolean isPrime(int n){  
        boolean counter=false;  
        int x=0;  
        for (int i=1;i<=(n/2);i++){  
            if(n%i==0){  
                x++;  
            }  
        }  
        if(x==1){  
            counter=true;  
        }  
        return counter;  
    }  
}
```

```
        if(x==1){  
            counter=true;  
        }  
        return counter;  
    }  
}
```

Output:

```
Enter the value of N:
```

```
11
```

```
2
```

```
3
```

```
5
```

```
7
```

```
11
```

```
13
```

```
17
```

```
19
```

```
23
```

```
29
```

```
31
```

Assignment 3

Aim: Write a program to enter two numbers and perform mathematical operations on them.

Algorithm:

1. Declare three variables ‘a’, ‘b’ and ‘ans’ of data type int to store operands
2. Input the values of ‘a’, ‘b’.
3. Now making a function that calculates normal mathematical operations is called
 - 3.1 Addidtion 3.1.1 ans = a+b
 - 3.2. If op is ‘-’:
 3.2.1 ans = a-b
 - 3.3. If op is ‘*’:
 3.3.1 ans = a*b
 - 3.4. If op is ‘/’:
 3.4.1 ans = a/b
 - 3.5. If op is ‘%’:
 3.5.1 ans = a%b
 - 3.7. Else operand is invalid

Code:

```
import java.io.InputStreamReader;
import java.util.Scanner;

// Write a program to enter two numbers and perform mathematical operations on them.
2 usages  ↲ Varzil *
```

```
public class Assignment_3 {  
    1 usage  ↳ Varzil *  
    void calculator(int n,int m){  
        System.out.println("Addition "+(n+m));  
        System.out.println("Subtraction "+(n-m));  
        System.out.println("Multiplication "+(n*m));  
        System.out.println("Division "+(n/(float)m));  
        System.out.println("Modulus "+(n%m));  
    }  
    ↳ Varzil  
    public static void main(String[] args) {  
        int n1,n2;  
        InputStreamReader isr=new InputStreamReader(System.in);  
        Scanner sc=new Scanner(isr);  
        Assignment_3 obj=new Assignment_3();  
        System.out.println("Enter 2 numbers");  
        n1=sc.nextInt();  
        n2=sc.nextInt();  
        obj.calculator(n1,n2);  
    }  
}
```

Output:

```
Enter 2 numbers  
5  
2  
Addition 7  
Subtraction 3  
Multiplication 10  
Division 2.5  
Modulus 1
```

Assignment 4

Aim: Write a program that calculates percentage marks of the student if marks of 6 subjects are given.

Algorithm:

1. Input total number of subjects (t).
2. Input maximum marks of subjects (m).
3. Declare and initialize float variable perc with value 0.0f
4. Iterate i from 0 till t:
 - 4.1. Input marks of ith subject
 - 4.2. $\text{perc} += 100 * \text{marks} / m$
5. Print perc

Code:

```
// Write a program that calculate percentage marks of the student if marks of 6 subjects are given.

import java.io.InputStreamReader;
import java.util.Scanner;

▲ Varzil
public class Assignment_4 {
    ▲ Varzil
    public static void main(String[] args) {
        int a,b,c,d,e,f;
        Scanner sc=new Scanner(new InputStreamReader(System.in));
        System.out.println("Enter the marks of six subjects");
        a=sc.nextInt();
        b=sc.nextInt();
        c=sc.nextInt();
        d=sc.nextInt();
        e=sc.nextInt();
        f=sc.nextInt();
        double average=(double)(a+b+c+d+e+f)/6.0;
        System.out.println("The percentage is "+average+" %");
    }
}
```

Output:

```
Enter the marks of six subjects
```

```
34
```

```
99
```

```
56
```

```
66
```

```
70
```

```
89
```

```
The percentage is 69.0 %
```

Assignment 5

Aim: Write a program in Java to find a maximum of three numbers using conditional operators.

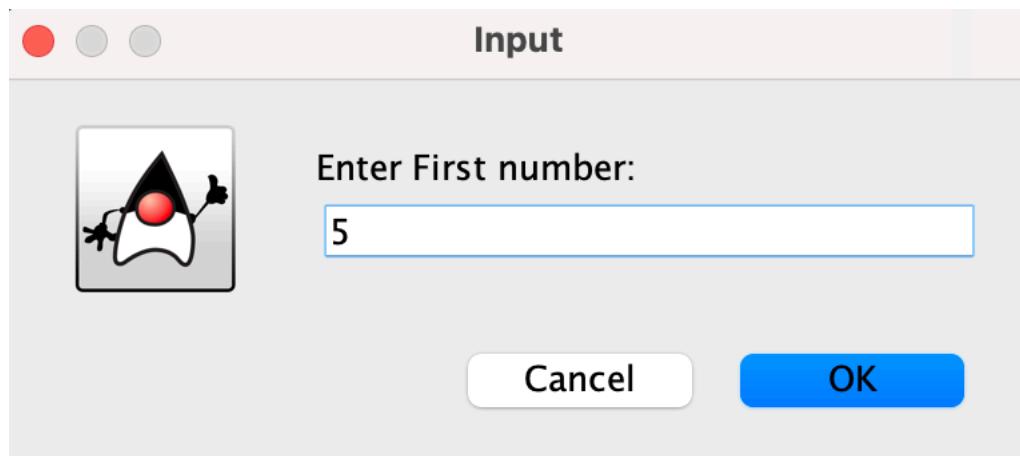
Algorithm:

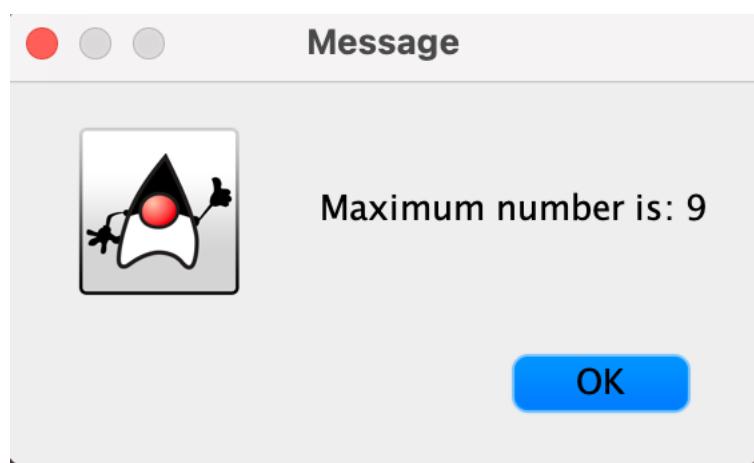
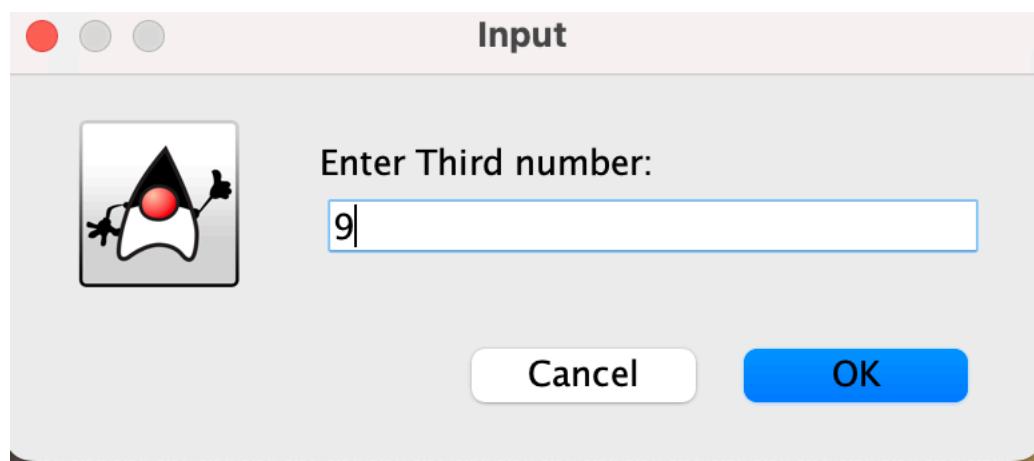
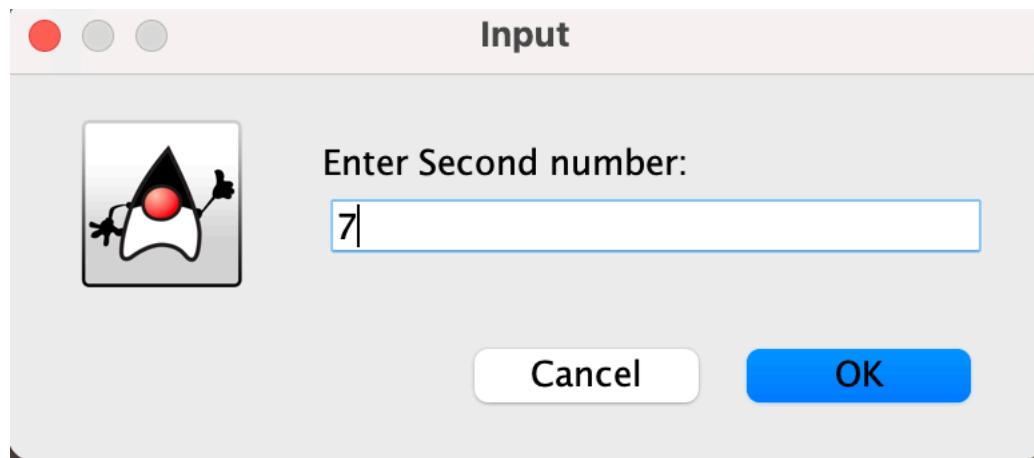
1. Declare four integer variables 'a', 'b', 'c' and 'max'
2. Input values of the variables 'a', 'b' and 'c'
3. Evaluate the expression max=(a>b)?**Math.max(a,c):Math.max(b,c);**
4. Print max

Code:

```
// Write a program in Java to find maximum of three numbers using conditional operator.  
import javax.swing.*;  
  
public class Assignment_5{  
    public static void main(String[] args) {  
        int a, b, c, max;  
        a = Integer.parseInt(JOptionPane.showInputDialog("Enter First number:"));  
        b = Integer.parseInt(JOptionPane.showInputDialog("Enter Second number:"));  
        c = Integer.parseInt(JOptionPane.showInputDialog("Enter Third number:"));  
  
        max=(a>b)?Math.max(a,c):Math.max(b,c);  
        JOptionPane.showMessageDialog(null, "Maximum number is: " + max);  
    }  
}
```

Output:





Assignment 6

Aim: Write a program to accept a line and check how many consonants and vowels are there in line.

Algorithm:

1. Declare a string s and input a line of string from user
2. Declare character variable c, and 2 integer variables vowelCount and consonantCount and initialize them with 0.
3. Iterate i from 0 to length of string:
 - 3.1. Assign c with ith character of s
 - 3.2. Check if c is a letter:
 - 3.2.1. Use lowercase of c in switch-case statement:
 - 3.2.1.1. if lowercase of c is either ‘a’, ‘e’, ‘i’, ‘o’ or ‘u’
 - 3.2.1.1.1. vowelCount++
 - 3.2.1.1.2. Default case:
 - 3.2.1.2.1. consonantCount++
 4. Print vowelCount and consonantCount

Code:

```
// Write a program to accept a line and check how many consonants and vowels are there in line.  
import java.io.InputStreamReader;  
import java.util.Scanner;  
  
↳ Varzil  
↳ Varzil  
public class Assignment_6 {  
    public static void main(String[] args) {  
        Scanner sc=new Scanner(new InputStreamReader(System.in));  
        String str=sc.nextLine();  
        int c=0,v=0;  
        char ch;  
        str=str.toLowerCase();  
        str=str.trim();  
        for (int i=0;i<str.length();i++){  
            ch=str.charAt(i);  
            if(ch=='a'||ch=='e' || ch=='i' || ch=='o' || ch=='u'){  
                v++;  
            }  
            else if(ch==' '){  
                continue;  
            }  
            else{  
                c++;  
            }  
        }  
        System.out.println("Consonants are "+c+" and Vowels are "+v);  
    }  
}
```

Output:

```
HELLO varzil abcdef  
Consonants are 11 and Vowels are 6
```

Assignment 7

Aim: Write a program to count the number of words that start with capital letters.

Algorithm:

1. Create an array of strings named 'line'.
2. Input a line of string and split it from “ “ character and store the result in line.
3. Declare an integer count and initialize it with 0.
4. For every string element in the array line:
 - 4.1. If 0th character of the trimmed word is an uppercase letter: 4.1.1. count++
 - 4.2 Use try-catch block to handle string exceptions
5. Print count

Code:

```
// Write a program to count the number of words that start with capital letters.  
import java.io.InputStreamReader;  
import java.util.Scanner;  
  
↳ Varzil  
public class Assignment_7 {  
    ↳ usage ↳ Varzil  
    static void count(String str){  
        str=str.trim();  
        String[] words;  
        int count=0;  
        String s;  
        char ch;  
        words=str.split( regex: " " );  
        for (String word : words) {  
            s = word;  
            ch = s.charAt(0);  
            if (ch >= 65 && ch <= 90) {  
                count++;  
            }  
        }  
        System.out.println("Count is "+count);  
    }  
    ↳ Varzil  
    public static void main(String[] args) {  
        Scanner sc=new Scanner(new InputStreamReader(System.in));  
        System.out.println("Enter a String");  
        String str=sc.nextLine();  
        count(str);  
    }  
}
```

Output:

```
Enter a String  
hello varzil Hello Abcdef Ghi J K  
Count is 5
```

Assignment 8

Aim: Create a class which asks the user to enter a sentence, and it should display the count of each vowel type in the sentence. The program should continue till user enters a word “quit”. Display the total count of each vowel for all sentences.

Algorithm:

1. Declare a string s, character c and integers countVowels and countConsonants.
2. Iterate forever:
 - 2.1. countVowels = 0, countConsonants = 0 , Print input prompt
 - 2.2. Input s
 - 2.3. Is s is equal to ‘quit’:
 - 2.3.1 break out of loop
 - 2.4. Iterate i from 0 to length of s with increment of 1:
 - 2.4.1. Initialize c with ith character of s.
 - 2.4.2. If c is a letter:
 - 2.4.2.1. Convert c to lowercase and use it in the switch case.
 - 2.4.2.1.1. If c is either ‘a’, ‘e’, ‘i’, ‘o’ or ‘u’:
 - 2.4.2.1.1.1. countVowels++
 - 2.4.2.1.2. Default case:
 - 2.4.2.1.2.1 countConsonants++
 - 2.5. Print countVowels and countConsonants

Code:

```

/*
Create a class which ask the user to enter a sentence,
and it should display count of each vowel type in the sentence.
The program should continue till user enters a word "quit".
Display the total count of each vowel for all sentences.
*/
import java.io.InputStreamReader;
import java.util.Objects;
import java.util.Scanner;
👤 Varzil
public class Assignment_8 {
    1 usage 👤 Varzil
    static void count(String str){
        char ch;
        int c=0,v=0;
        for(int i=0;i<str.length();i++){
            ch=str.charAt(i);
            str=str.toLowerCase();
            if(ch=='a' || ch=='e' || ch=='i' || ch=='o' || ch=='u'){
                v++;
            }
            else if(ch==' '){
                continue;
            }
            else{
                c++;
            }
        }
        System.out.println("Number of Consonants in string are "+c+" Vowels are "+v+"\n");
    }
}

```

```

👤 Varzil
public static void main(String[] args {

    Scanner sc=new Scanner(new InputStreamReader(System.in));
    String str;

    while(true){
        System.out.println("Enter string ");
        str=sc.nextLine();
        if(Objects.equals(str, "quit")){
            break;
        }
        else{
            count(str);
        }
    }
}

```

Output:

```
Enter string
hello
Number of Consonants in string are 3 Vowels are 2

Enter string
varzil
Number of Consonants in string are 4 Vowels are 2

Enter string
Abcde
Number of Consonants in string are 4 Vowels are 1

Enter string
quit

Process finished with exit code 0
```

Assignment 9

Aim: Write an interactive program to print a string entered in a pyramid form. For instance, the string “stream” has to be displayed as follows:

S
St
Str
Stre
Strea
Stream

Algorithm:

1. Declare a string s and input a string word. 2. Iterate i from 0 to length of s:

 2.1. Iterate j from 0 till length of s-i-1 and increment by 1:

 2.1.1. Print “ ”

 2.2. Iterate j from 0 to i with increment by 1:

 2.1.2. Print ith character of s with a “ ”

2.3 Print a new line

Code:

```
//...
/*...*/  
  
import java.io.InputStreamReader;  
import java.util.Scanner;  
  
public class Assignment_9 {  
    public static void main(String[] args) {  
        Scanner sc=new Scanner(new InputStreamReader(System.in));  
        System.out.println("Enter a string");  
        String str=sc.nextLine();  
        int len=str.length();  
        int i,j;  
        for (i=0;i<len;i++){  
            for (j=(len/2)-i+2;j>0;j--){  
                System.out.print(" ");  
            }  
            for (j=0;j<=i;j++){  
                System.out.print(str.charAt(j)+" ");  
            }  
            System.out.println();  
        }  
    }  
}
```

Output:

```
Enter a string
varzil
    v
    v a
    v a r
    v a r z
    v a r z i
v a r z i l
```

Assignment 10

Aim: Write an interactive program to print a diamond shape. For example, if user enters the number 3, the diamond will be as follows:

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

Algorithm:

1. Declare an integer n and input n.
2. Iterate i from 0 till n with increment by 1:
 - 2.1. Iterate j from 0 till n-i-1 with increment by 1:
 - 2.1.1. Print “ ”
 - 2.2. Iterate j from 0 to i with increment by 1:
 - 2.2.1. Print “* ”
 - 2.3. Print newline
3. Iterate i from 0 till n-1:
 - 3.1. Iterate j from 0 to i with increment by 1:
 - 3.1.1. Print “ ”
 - 3.2. Iterate j from 0 till n-i-1 with increment by 1:
 - 3.2.1. Print “* ”
 - 3.3. Print newline

Code:

```
import java.io.InputStreamReader;
import java.util.Scanner;

▲ Varzil
public class Assignment_10 {
    ▲ Varzil
    public static void main(String[] args) {
        Scanner sc =new Scanner(new InputStreamReader(System.in));
        System.out.println("Enter a number");
        int n=sc.nextInt();
        int i,j;
        for (i=0;i<n;i++){
            for (j=0;j<n-i-1;j++){
                System.out.print(" ");
            }
            for (j=0;j<=i;j++){
                System.out.print("* ");
            }
            System.out.println();
        }
        for (i=0;i<n-1;i++){
            for (j=0;j<=i;j++){
                System.out.print(" ");
            }
            for (j=n-1-i;j>0;j--){
                System.out.print("* ");
            }
            System.out.println();
        }
    }
}
```

Output:

```
Enter a number
```

```
5
*
* *
* * *
* * * *
* * * * *
* * * *
* *
*
```

Assignment 12

Aim: Write a Java Program to find the area of Geometric figures using method Overloading.

Algorithm:

1. Define function area() with parameters a, b and c of data type double for triangle.
 - 1.1. Declare double s
 - 1.2. $s = (a+b+c)/2$
 - 1.3. Return $\sqrt{s*(s-a)*(s-b)*(s-c)}$
2. Define function area() with parameter r of data type double for circle.
 - 2.1. Return $\pi * r * r$
3. Define function area() with parameter base and height of data type double for parallelograms.
 - 3.1. Return base * height
4. Input different dimensions for different shapes and call area() functions inside the Print function.

Code:

```
import java.io.InputStreamReader;
import java.util.Scanner;

└ Varzil
public class Assignment_10 {
    └ Varzil
    public static void main(String[] args) {
        Scanner sc =new Scanner(new InputStreamReader(System.in));
        System.out.println("Enter a number");
        int n=sc.nextInt();
        int i,j;
        for (i=0;i<n;i++){
            for (j=0;j<n-i-1;j++){
                System.out.print(" ");
            }
            for (j=0;j<=i;j++){
                System.out.print("* ");
            }
            System.out.println();
        }
        for (i=0;i<n-1;i++){
            for (j=0;j<=i;j++){
                System.out.print(" ");
            }
            for (j=n-1-i;j>0;j--){
                System.out.print("* ");
            }
            System.out.println();
        }
    }
}
```

Output:

```
Triangle:  
Enter length of three sides of the triangle  
2  
3  
4  
Area of triangle: 2.9047375096555625  
Circle:  
Enter radius of circle: 4.5  
Area of circle: 63.61725123519331  
Parallelogram:  
Enter base and height of parallelogram: 3  
4  
Area of parallelogram: 12.0
```

Assignment 13

Aim: Write a program in Java to create a simple scientific calculator using Math Class.

Algorithm:

1. Create a class of Calculator containing all major functions.
 - 1.1. Create a method addition() with parameters num1, num2:
 - 1.1.1. Print num1+num2
 - 1.2. Create a method subtraction() with parameters num1, num2:
 - 1.2.1. Print num1-num2
 - 1.3. Create a method multiplication() with parameters num1, num2:
 - 1.2.1. Print num1*num2
 - 1.4. Create a method division() with parameters num1, num2:
 - 1.4.1. If num2 != 0:
 - 1.4.1.1 Print num1/num2
 - 1.4.2. Else:
 - 1.4.2.1. Print "Zero division error"
 - 1.5. Create a method squareRoot() with parameters num1:
 - 1.5.1. Print sqrt(num1)
 - 1.6. Create a method cubeRoot() with parameters num1:
 - 1.6.1. Print cbrt(num1)
 - 1.7. Create a method square() with parameters num1:
 - 1.7.1. Print num1*num1
 - 1.8. Create a method trigonometric() with parameters num1:
 - 1.8.1. Declare integer c to take choice for trigonometric function.
 - 1.8.1.1. Case 1:
 - 1.8.1.1.1. Print sin(num1)
 - 1.8.1.2. Case 2:
 - 1.8.1.1.1. Print cos(num1);
 - 1.8.1.3. Case 3:
 - 1.8.1.1.1. Print tan(num1);

2. Create an instance of the Calculator class in the main method

Code:

```
// Write a program in Java to create a simple scientific calculator using Math Class
import java.util.Scanner;
↳ Varzil
public class Assignment_13 {
    1 usage  ↳ Varzil
    static void Addition(int num1, int num2) {
        int add=num1+num2;
        System.out.println("Answer: "+add);
    }
    1 usage  ↳ Varzil
    static void Subtraction(int num1, int num2) {
        int sub=num1-num2;
        System.out.println("Answer: "+sub));
    }
    1 usage  ↳ Varzil
    static void Multiplication(int num1, int num2) {
        int mul=num1*num2;
        System.out.println("Answer: "+mul));
    }
    1 usage  ↳ Varzil
    static void Division(int num1, int num2) {
        if (num2!=0) {
            int div=num1/num2;
            System.out.println("Answer: "+div));
        }
        else
            System.out.println("Num2 cannot be zero."));
    }
    1 usage  ↳ Varzil
    static void squareRoot(int num) {
        double root = Math.sqrt(num);
        System.out.println("The root of "+num+" is "+root));
    }
}
```

```
static void cubeRoot(int num) {
    System.out.println("Num2 cannot be zero.");
    double root = Math.cbrt(num);
    System.out.println("The cube root of "+num+" is "+root);
}

1 usage  ↳ Varzil
static void square(int num) {
    double root = Math.pow(num,2);
    System.out.println("The square of "+num+" is "+root);
}

1 usage  ↳ Varzil
static void trigo() {
    System.out.println("-----");
    System.out.println("1.Sine");
    System.out.println("2.Cosine");
    System.out.println("3.Tangent");
    System.out.println("-----");
    Scanner s = new Scanner(System.in);
    int ch = s.nextInt();
    System.out.println("-----");
    System.out.println("Enter the angle (in radians) :");
    double angle = s.nextDouble();
    System.out.println("-----");
```

```
switch (ch) {  
    case 1:  
        double ans = Math.sin(angle);  
        System.out.println("Answer: "+ans);  
        break;  
    case 2:  
        double ans2 = Math.cos(angle);  
        System.out.println("Answer: "+ans2);  
        break;  
    case 3:  
        double ans3 = Math.tan(angle);  
        System.out.println("Answer: "+ans3);  
        break;  
    default:  
        System.out.println("The entered choice ");  
}  
}
```

```
public static void main(String[] args) {  
    System.out.println("----- -");  
    System.out.println("Enter your choice of operation:");  
    System.out.println("----- -");  
    System.out.println("1.Addition");  
    System.out.println("2.Subtraction");  
    System.out.println("3.Multiplication");  
    System.out.println("4.Division");  
    System.out.println("5.Square Root");  
    System.out.println("6.Cube root");  
    System.out.println("7.Square");  
    System.out.println("8.Trigonometric Functions");  
    System.out.println("----- -");|
```

```
Scanner sc = new Scanner(System.in);
int ch1 = sc.nextInt();
if (ch1 == 1 || ch1==2||ch1==3||ch1==4) {
    int num1,num2;
    System.out.println("Enter num1:");
    num1 = sc.nextInt();
    System.out.println("Enter num2:");
    num2 = sc.nextInt();
    if (ch1==1)
        Addition(num1, num2);
    else if(ch1==2)
        Subtraction(num1, num2);
    else if (ch1==3)
        Multiplication(num1, num2);
    else
        Division(num1, num2);
}
else if(ch1==5||ch1==6||ch1==7) {
    int num;
    System.out.println("Enter a number to be operated upon:");
    num = sc.nextInt();
    if (ch1==5)
        squareRoot(num);
    else if(ch1==6)
        cubeRoot(num);
    else if(ch1==7)
        square(num);
    else if(ch1==8)
        trigo();
    else
        System.out.println("Invalid Choice!!!!");
}
}
}
```

Output:

```
-----  
Enter your choice of operation:  
-----  
1.Addition  
2.Subtraction  
3.Multiplication  
4.Division  
5.Square Root  
6.Cube root  
7.Square  
8.Trigonometric Functions  
-----  
5  
Enter a number to be operated upon:  
3  
The root of 3 is 1.7320508075688772
```

Assignment 14

Aim: Write a program in Java to sort the elements of a list so that they are in ascending order.

Algorithm:

1. Declare an integer n and input n which is the size of array
2. Declare an array arr of size n
3. Declare a boolean variable swapped
4. Iterate i from 0 till length of arr with increment by 1:
 - 4.1. Initialize swapped to false
 - 4.2. Iterate j from 1 till length of arr-i with increment by 1:
 - 4.2.1. if arr[j-1] > arr[j]:
 - 4.2.1.1. Declare an integer temp and initialize it with arr[j-1]
 - 4.2.1.2. arr[j-1] = arr[j]
 - 4.2.1.3. arr[j] = temp
 - 4.2.1.4. swapped = true
 - 4.3. If not swapped break

Code:

```
import java.util.Scanner;

❶ Varzil
public class Assignment_14 {
    ❶ usage ❷ Varzil
    static void swap(int[] arr, int i, int j) {
        int temp = arr[i];
        arr[i] = arr[j];
        arr[j] = temp;
    }
    ❶ usage ❷ Varzil
    static void sort(int[] arr){
        int temp;
        boolean swapped;
        for(int i=0; i<arr.length; i++) { swapped = false;
            for(int j=1; j<arr.length-i; j++) if(arr[j-1] > arr[j]) {
                swap(arr, i: j-1, j); swapped = true;
            }
            if(!swapped)
                break;
        }
        System.out.print("The sorted array is : ");
        for (int j : arr) {
            System.out.print(j + " ");
        }
    }
}
```

```
1 usage  ± Varzil
static void input(){
    int n;
    Scanner sc=new Scanner(System.in);
    System.out.println("Enter the size of array");
    n=sc.nextInt();
    int[] arr =new int[n];
    System.out.println("Enter the terms ");
    for (int i=0;i<n;i++){
        arr[i]=sc.nextInt();
    }
    sort(arr);
}
± Varzil
public static void main(String[] args) { input(); }
```

Output:

```
Enter the size of array
6
Enter the terms
2
3
0
9
1
-1
The sorted array is : -1 0 1 2 3 9
```

Assignment 15

Aim: Write a program in Java to multiply two matrices.

Algorithm:

1. Declare 4 integers namely rows1, cols1, rows2, cols2
2. Input values of rows1, cols1, rows2 and cols2
3. Create two array objects mat1 and mat2 of dimensions [rows1][cols1] and [rows2][cols2] respectively using Dynamic memory allocation
4. Input elements of mat1.
5. Input elements of mat2.
6. If cols1 == rows2:
 - 6.1. Create a new array object mat3 of dimension [rows1][cols2]
 - 6.2. Iterate i from 0 till rows1:
 - 6.2.1. Iterate j from 0 to cols2:
 - 6.2.1.1. mat3[i][j] += mat1[i][k] + mat2[k][j]
7. Else print “Dimensions are incompatible”

Code:

```
// Write a program in Java to multiply two matrixes.
import java.util.Scanner;

❷ Varzil
public class Assignment_15 {
   ❷ Varzil
    public static void main(String[] args) {
        int r1 = 2, c1 = 3, r2 = 3, c2 = 1;
        int[][] m1 = new int[r1][c1];
        int[][] m2 = new int[r2][c2];
        int[][] m3 = new int[r1][c2];
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter input for first matrix : ");

        for (int i = 0; i < r1; i++) {
            for (int j = 0; j < c1; j++) {
                m1[i][j] = sc.nextInt();
            }
        }

        System.out.println("First matrix is : ");

        for (int i = 0; i < r1; i++) {
            for (int j = 0; j < c1; j++) {
                System.out.print(m1[i][j] + " ");
            }
            System.out.println();
        }
    }
}
```

```
System.out.println("Enter input for first matrix : ");

for (int i = 0; i < r2; i++) {
    for (int j = 0; j < c2; j++) {
        m2[i][j] = sc.nextInt();
    }
}

System.out.println("Second matrix is : ");

for (int i = 0; i < r2; i++) {
    for (int j = 0; j < c2; j++) {
        System.out.print(m2[i][j] + " ");
    }
    System.out.println();
}

for (int i = 0; i < r1; i++) {
    for (int j = 0; j < c2; j++) {
        m3[i][j] = 0;
        for (int k = 0; k < c1; k++) {
            m3[i][j] = m3[i][j] + m1[i][k] * m2[k][j];
        }
    }
}

System.out.println("Multiplication of m1 and m2 is : ");

for (int i = 0; i < r1; i++) {
    for (int j = 0; j < c2; j++) {
        System.out.print(m3[i][j] + "\t");
        System.out.println();
    }
}
```

Output:

```
Enter input for first matrix :  
2  
3  
4  
5  
6  
7  
First matrix is :  
2 3 4  
5 6 7  
Enter input for first matrix :  
8  
2  
1  
Second matrix is :  
8  
2  
1  
Multiplication of m1 and m2 is :  
26  
59  
32  
Process finished with exit code 0
```