

## Control Statement →

Control Statement in Java are statements that used to alter the execution of program based on condition.

- \* \* Control flow of Execution in a program \*
- \* \* Alters flow of execution of Program based on Condition \* \*

## Types of Control Statements →

- ① Branching Control Statements or Conditional Statements →  
(If, If Else, Else If ladder, Nested If, Switch)
- ② Looping Or Iterative Statements →  
(For, While, Do While)
- ③ Jump Statement (Continue, break)

## Conditional Statements →

- ① If Statement →  

```
if (Condition) {  
    execute when condition is true  
    if (age >= 18) {  
        out ("Can Vote");  
    }  
}
```
- ② If - Else Statements →  

```
if (Condition) {  
    execute when condition is true  
} else {  
    execute when condition is false  
}
```

If executes when condition evaluated to be true.

Else executes when condition evaluated to be false.

③ If Else If ladder →

If (Condition) {  
Else If (Condition) {  
Else {  
} } }

④ Nested If Else →

if (Condition) {  
if (Condition) {  
} else {  
} }

else {  
if (Condition) {  
} }

else {  
}

else {  
}

else {  
}

Q1 Can vote or not

{ if Age >= 18 {  
} else {  
} }

Send "Can Vote") ;

Send "Cannot Vote") ;

} ;

Q2 If  $A > B$  then  
if  $CA > = B$  {  
    cout  $\langle A \rangle$ ;  
} else {  
    cout  $\langle B \rangle$ ;  
}  
}

Q3 Print if number is Odd or Even  
if (Number % 2 == 0) {  
    cout ("Number " + " is Even");  
} else {  
    cout ("Number " + " is Odd");  
}

Why Else If  $\rightarrow$

if (Condition) { true  
    true  
} if (Condition) { but this if  
    Condition will  
    also be checked  
} else { if also leads  
    to checking  
    of Condition  
}  
}

\* Else if () { } block checked only  
if condition of if () { } block  
evaluates to be false. \*\*

Q Income Tax Calculator  $\rightarrow$   
income  $< 5L$  0% tax  
income  $5L - 10L$  20% tax  
income  $> 10L$  30% tax

# Income Tax Calculator →

```
import java.util.Scanner;

class IncomeTax {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter your Income = ");
        int income = sc.nextInt();
        int tax = 0;

        if(income<500000){
            tax = 0;
        }else if(income>=500000 && income < 1000000){
            tax = (int)(income*0.2);
        }else if(income>=1000000){
            tax = (int)(income*0.3);
        }else{
            System.out.println("Enter Correct Income Details!");
        }
        System.out.println("Tax is = "+tax+" for Income = "+income);
        sc.close();
    }
}
```

# Largest or Greatest of 3 NO →

```
import java.util.Scanner;

class Largestof3 {
    public static void main(String[] args) {
        // input part
        Scanner sc = new Scanner(System.in);
        int n1, n2, n3;
        System.out.println("Enter Value of n1 = ");
        n1 = sc.nextInt();
        System.out.println("Enter Value of n2 = ");
        n2 = sc.nextInt();
        System.out.println("Enter Value of n3 = ");
        n3 = sc.nextInt();

        // conditional statements part
        if(n1>n2){
            if(n1>n3){
                System.out.println("n1 is the Greatest or Largest = n1 = "+n1);
            }
            else{
                System.out.println("n3 is the Greatest or Largest = n3 = "+n3);
            }
        }else{
            if(n2>n3){
                System.out.println("n2 is the Greatest or Largest = n2 = "+n2);
            }
            else{
                System.out.println("n3 is the Greatest or Largest = n3 = "+n3);
            }
        }

        sc.close();
    }
}
```

# Largest of 3 Alternative Solution

```
import java.util.Scanner;

class Largestof3Alt {
    public static void main(String[] args) {
        // input part
        Scanner sc = new Scanner(System.in);
        int n1, n2, n3;
        System.out.println("Enter Value of n1 = ");
        n1 = sc.nextInt();
        System.out.println("Enter Value of n2 = ");
        n2 = sc.nextInt();
        System.out.println("Enter Value of n3 = ");
        n3 = sc.nextInt();

        // conditional statements part
        if((n1 >= n2) && (n1 >= n3)){
            System.out.println("n1 is the Greatest or Largest = n1 = "+n1);
        }else if (n2 >= n3) {
            System.out.println("n2 is the Greatest or Largest = n2 = "+n2);
        }else{
            System.out.println("n3 is the Greatest or Largest = n3 = "+n3);
        }

        sc.close();
    }
}
```

## Ternary Operator (3 Operands)

Symbol used ? and : in ~~false~~ <sup>case</sup> assigned  
~~variable~~ = ~~Condition~~ <sup>assigned</sup> ? stat1 : stat2;  
 true  
 false

String isEven = (5 % 2 == 0) ? "even" : "odd";  
 true  
 false

Pass or Fail  $\Rightarrow$

marks  $\geq 33$

Pass  
Fail

marks < 33

String status = (marks  $\geq 33$ ) ? "Pass" : "Fail";  
 cout << status;  
 ? का साथ है , : नहीं तो प्यास

Switch (To Remove Complication of Else If Ladder) →

switch (choice) {

case 1 :  
    break;

case 2 :  
    break;

default :  
    break;

↳

[break;] → Key word to get out of Block of Switch Statement

Switch Statement Calculator →  
Calculator using Switch Statement →

- ① Input 2 NO
- ② Input Choice
- ③ Then switch Statement and different cases.

# Switch for Calculator

```
import java.util.Scanner;

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

        // Input 2 No.
        System.out.println("Enter the Value of Number 1 = ");
        int Number1 = input.nextInt();
        System.out.println("Enter the Value of Number 2 = ");
        int Number2 = input.nextInt();

        // Input Choice
        System.out.println("Enter your Choice = ");
        System.out.print("1 for Addition \n2 for Subtraction \n3 for Multiplication \n4 for Division
\n5 for Modulous(Remainder) = ");
        int Choice = input.nextInt();

        // Switch Statement
        switch (Choice) {
            case 1:
                System.out.println("Addition of Two Numbers is = "+(Number1+Number2));
                break;
            case 2:
                System.out.println("Subtraction of Two Numbers is = "+(Number1-Number2));
                break;
            case 3:
                System.out.println("Multiplication of Two Numbers is = "+(Number1*Number2));
                break;
            case 4:
                System.out.println("Division of Two Numbers is = "+(Number1/Number2));
                break;
            case 5:
                System.out.println("Modulous(Remainder) of Two Numbers is = "+(Number1%Number2));
                break;
            default:
                System.out.println("Enter Choice from 1 to 5 Only!");
                break;
        }

        input.close();
    }
}
```

```
import java.util.Scanner;

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

        // Input 2 No.
        System.out.println("Enter the Value of Number 1 = ");
        int Number1 = input.nextInt();
        System.out.println("Enter the Value of Number 2 = ");
        int Number2 = input.nextInt();

        // Input Choice
        System.out.println("Choice you can enter is +, -, *, /, % for Operations.");
        System.out.print("Enter your Choice = ");
        char Choice = input.next().charAt(0);

        // Switch Statement
        switch (Choice) {
            case '+':
                System.out.println("Addition of Two Numbers is = "+(Number1+Number2));
                break;
            case '-':
                System.out.println("Subtraction of Two Numbers is = "+(Number1-Number2));
                break;
            case '*':
                System.out.println("Multiplication of Two Numbers is = "+(Number1*Number2));
                break;
            case '/':
                System.out.println("Division of Two Numbers is = "+(Number1/Number2));
                break;
            case '%':
                System.out.println("Modulous(Remainder) of Two Numbers is = "+(Number1%Number2));
                break;
            default:
                System.out.println("Enter Correct Symbol!");
                break;
        }

        input.close();
    }
}
```