Java Fundamentals

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expleo

Control Flow Statements

Contents

Introduction

- Control flow is the **order in which individual statements or instructions** of a program are executed or evaluated.

Control flow statements

- **Branching (Conditional) /Decision Making** – To make **decisions** based on a given condition. If the condition evaluates to **True**, a **set of statements** is executed, **otherwise another set** of statements is executed. In Java, we have **five types** of decision making statements:
    - if
    - if…else
    - if-else-if
    - nested if
    - switch

Decision-Making : simple if

- **Simple if:** If the condition is true, the body of the if statement is executed. If it is false, the body of the if statement is skipped.

- **Syntax**

if is a Java reserved word

The ***condition*** must be a boolean expression.It must evaluate to either **true or false.**

```
if ( condition ){
        statement(s);
}
```

If the ***condition*** is **true**, the ***statement(s)*** is/are executed.

If it is **false**, the ***statement(s)*** is/are skipped.

Decision-Making : simple if

```
/**
  * The IfControlStructure class implements an application that
  * Illustrate the if decision Making control statement
*/
 class IfControlStructure{
        public static void main(String[] args){
             boolean isMoving=true;
              int currentSpeed=10;
              if(isMoving){
                   System.out.println(currentSpeed);
              }
        }
 }
```

Output:

10

Decision-Making : simple if

```
/**
  * The SimpleIf class implements an application that checks the seat availability status for movie ticket booking using
**simple if decision Making control statement
*/
import java.util.Scanner;
public class SimpleIf {
        public static void main(String[] args){
                boolean  isAvailable = true;                            //Seat Available Status
                Scanner input = new Scanner(System.in);                 //Scanner class object creation
                System.out.println("Enter the Seat Number : ");
                String SeatNumber = input.next();                       //get Seat Number from User
```

Decision-Making : simple if

```
            if(isAvailable){                                    //Check the availability of seat
                System.out.println("Your have booked the seat number : "+SeatNumber);
            }
            input.close();
        }
}
```

Output:

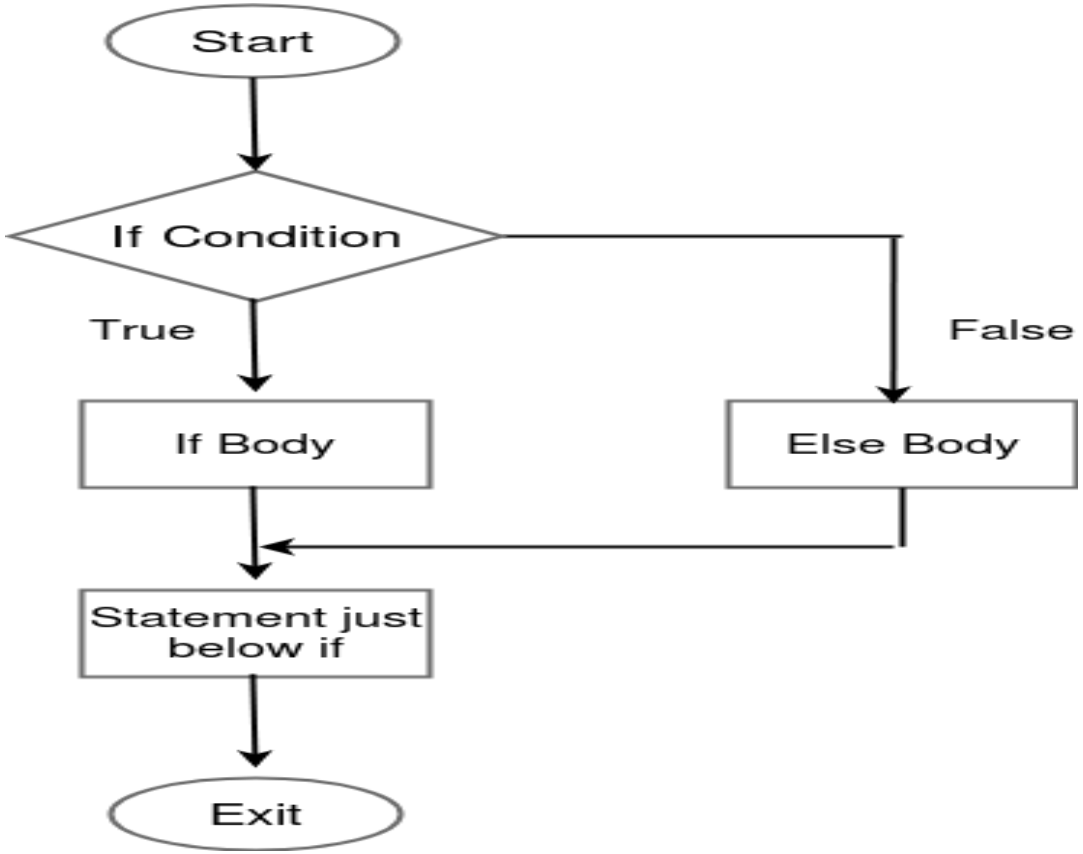
```
Enter the Seat Number : A32
Your have booked the seat number : A32
```

Decision-Making : simple if - else

- **if –else**: If the *condition* is true, the body of the if *statement* is executed. If it is false, the body of the false *statement* is executed.

- **Syntax**

```
if ( condition ){
        if Body;
}
else{
        else Body;
}
```



Decision-Making : simple if - else

```
/** * The IfEsleControlStructure class implements an application that  Illustrate
    the if ..else decision Making control statement */
 class IfElseControlStructure{
        public static void main(String[] args){
              boolean isMoving=true;
                    int currentSpeed=10;
                    if(isMoving){
                          currentSpeed--;
                          System.out.println("The bicycle speed got reduced!");
                     }
                     else{
                           System.out.println(“The bicycle has already stopped!”);
                     }
        }
 }
```

Output:

The bicycle speed got reduced!

Decision-Making : simple if - else

```
/** * The SimpleIfElse class implements an application that  that checks the seat availability status for movie ticket booking using the if ..else decision-Making control statement */

public class SimpleIfElse {
	public static void main(String[] args){
		boolean isAvailable = false;		//Seat Available Status
		Scanner input = new Scanner(System.in); //Scanner class object creation
		System.out.println("Enter the Seat Number : ");
		String SeatNumber = input.next();		// get Seat Number from User
		if(isAvailable){			//Check the availability of seat
		    System.out.println("Your have booked the seat number : "+SeatNumber);
		}
```

Decision-Making : simple if - else

```
        else {                                  //if seat not available then display
            System.out.println("Seat Numer "+SeatNumber+" is already booked");
        }
        input.close();
    }
}
```

Output:

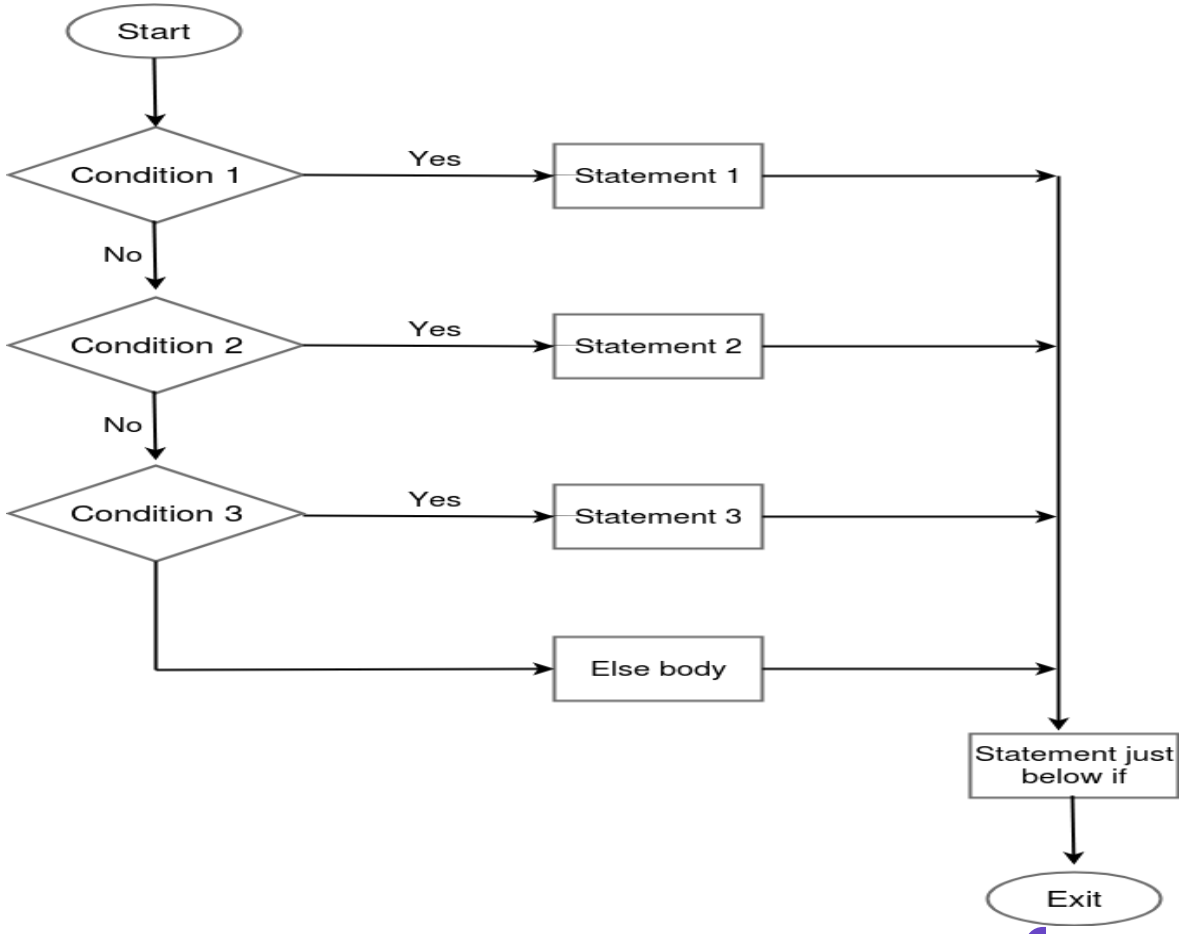
```
Enter the Seat Number :  A22
Seat Numer A22 is already booked
```

Decision-Making : simple if – else – if

- **if-else-if:** It is also called **else-if ladder**. Here execute any one block of statements among many blocks.

- **Syntax**

```
if ( condition 1){
    statement 1;
}else if ( condition 2 ){
    statement 2;
}else if (condition 3){
    statement 3;
} else {
        else Body
}
```



Decision-Making : simple if – else - if

```
/**
 * The IfEsleIFControlStructure class implements an application that
 * Illustrate the if ..elseif decision Making control statement */
class IfElseIFControlStructure{
        public static void main(String[] args){
                int colorValue=2;
                        if(colorValue==1)
                                System.out.println(“Color Blue!”);
                         else if(colorValue==2)
                                System.out.println(“Color Red!”);
                         else
                                System.out.println(“Color Green!”);
                 }
}
```

Output:

Color Red!

Decision-Making : simple if – else - if

```
/**
  * The IfElseIf class implements an application that display the cost of the specific seat category in movie ticket
     booking using if ..elseif decision Making control statement for fixing the cost based on Movie Type */
import java.util.Scanner;
public class IfElseIf {
    public static void main(String[] args){
        String seattype;
        System.out.println(“Type of seats Available\nREGULAR\nPREMIUM\nEXECUTIVE\nVIP\ choose any one of the
option : ");
        Scanner input = new Scanner(System.in); //Scanner class object creation
        seattype = input.next(); // get Seat Number from User
        if (seattype.equals("REGULAR")) {    //Display detail for REGULAR type
              System.out.println("You have selected Regular Seat and cost is Rs.80");
        }
```

Decision-Making : simple if – else - if

```
        else if (seattype.equals("PREMIUM")) {                    //Display detail for PREMIUM type
            System.out.println("You have selected Premium Seat and cost is Rs.100");
        }
        else if (seattype.equals("EXECUTIVE")) {                  //Display detail for EXECUTIVE type
            System.out.println("You have selected Execitive Seat and cost is Rs.120");
        } else if (seattype.equals("VIP")) {                      //Display detail for VIP type
            System.out.println("You have selected VIP Seat and cost is Rs.150");
        } else {
            System.out.println("You have not selected any type");
        }
        input.close();
    }
}
```

Decision-Making : simple if – else - if

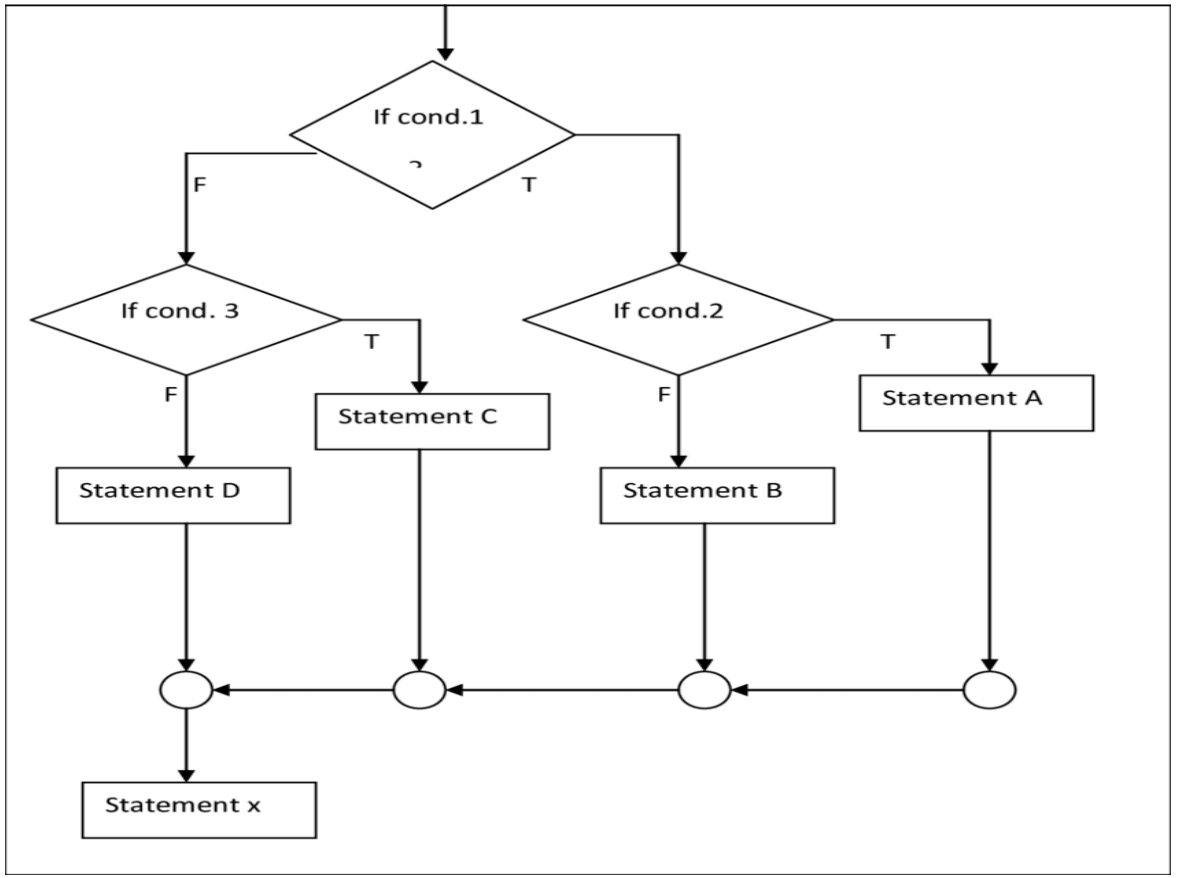
Output:

```
Type of seats Available
REGULAR
PREMIUM
EXECUTIVE
VIP
Choose any one of the option : PREMIUM
You have selected Premium Seat and cost Rs.100
```

Decision-Making : Nested if

- **Nested if:** Use more than if statement inside another if statement. The outer if statement condition true means inside if statements execute.
- **Syntax**

```
if ( condition 1){
    if ( condition 2 ){
        Nested if Body
    }else{
        Nested else Body
        }
}else
    else Body
}
```



Decision-Making : Nested if

```
/*  * The NestedIfControlStructure class implements an application that
 * Illustrate the nestedif decision Making control statement */
class NestedIFControlStructure{
        public static void main(String[] args){
                int age=15;
                        int weight=50;
                        if(age>18) {
                                if(weight>50)
                                        System.out.println("You are eligible to denote blood");
                                 else
                                        System.out.println("Not eligible because you are under weight");
                         } else
                                System.out.println("Not eligible because you are under age");
        }
}
```

Output:

Not eligible because you are underage

Decision-Making : Nested if

```
/*  * The Booking class implements an application that validates the login and check for the seat availability
  * using nestedif decision Making control statement */
import java.util.*;
public class NestedIf {
    public static void main(String[] args){
        String username = "Sarvesh",password = "sarvesh@123",usernameentered,passwordentered;
        boolean isAvailable = true;
        String seatNumber;
        Scanner input = new Scanner(System.in);                //Scanner class object creation
        System.out.println("Enter the Username : ");
        username = input.next();                                 //getting the username
        System.out.println("Enter the Password : ");
        password = input.next();                                 //getting the username
```

Decision-Making : Nested if

```
    if (usernameentered.equals(username) && password.equals(password)) {       //validate the user login
            System.out.println("You have logged in and you can book a ticket now");
            System.out.println("Enter the Seat Number : ");
            seatNumber = input.next();                          // get the seat number from the user
            if (isAvailable) {                                  // check for seat availability status
                    System.out.println("Seat Number "+seatNumber+" you have chosen is available");
            } else{
                System.out.println("Your expected Seat Number  "+seatNumber+" is not available");
            }
        } else{
            System.out.println("You have to login for booking the ticket");
        }        input.close();
    } }
```

Decision-Making : Nested if

Output:

Enter the Username : Sarvesh

Enter the Password : sarvesh@123

You have logged in and you can book a ticket now

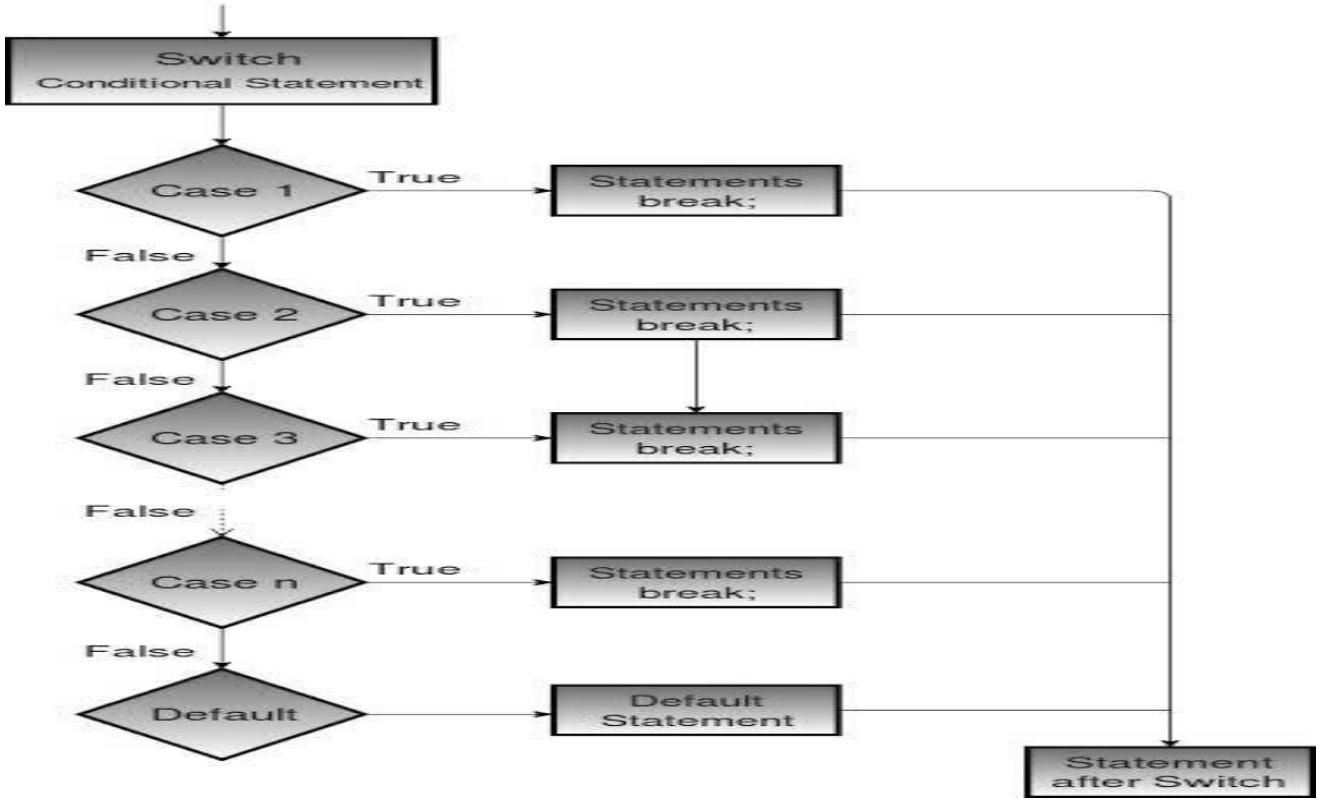
Enter the Seat Number : A10

Seat Number A10 you have chosen is available

Decision-Making : switch - case

- **switch-case:** Select one of many possible statements to execute. It gives alternate for long if..else..if ladders which improves code readable.
- **Syntax**

```
switch ( expression ) {
   case value1 :
      statement-list1;
       break;
   case value2 :
      statement-list 2;
       break;
   default:
       statement-list 3;
       break;
}
```



Decision-Making : switch - case

Note:

- In switch, Case value must be in **expression type** only and case values must be **unique**.
- Expression must be of **byte, short, int, long, enums and string.**
- Each case **break statement is optional**. It helps **terminate from switch expression**. If a break statement is not found, it executes the next case.
- The case value can have a **default label** which is **optional.**

Decision-Making : switch - case

```
/**  The SwitchControlStructure class implements an application that
 * Illustrate switch decision Making control statement */
class SwitchControlStructure{
        public static void main(String[] args){
    int letter='A';
                        switch(letter){
                                case 'a':
                                        System.out.println("Lowercase Letter");
                                        break;
                                case 'A':
                                    System.out.println("Uppercase Letter");
                                    break;
```

Decision-Making : switch - case

```
                default:
                    System.out.println("Invalid Letter");
                    break;
            }
        }
```

Output:

Uppercase Letter

Decision-Making : switch - case

```
/**  The SwitchCase class implements an application that demonstrate the movie searching by different types of languages
  * using switch decision Making control statement Searching the Movie detail by Title, Language, ReleaseDate, Genre*/
import java.util.Scanner;
public class SwitchCase {
      public static void main(String[] args){
            System.out.println("Enter the type to be search \n1. Search by Title \n2. Search by Language \n3. Search by Release Date \n4. Search by Genre \nEnter the Choice (1/2/3/4)");
            Scanner input = new Scanner(System.in); //Scanner class object creation
            int choice = input.nextInt();                    //getting the choice from user
            switch(choice){
                case 1:
                    System.out.println("Your searching choice is Movies by Title");
                    break;
                case 2:
```

Decision-Making : switch - case

```
                System.out.println("Your searching choice is Movies by Language");
                break;
            case 3:
                System.out.println("Your searching choice Movies by Release Date");
                break;
            case 4:
                System.out.println("Your searching choice Movies by Genre");
                break;
            default:
                System.out.print("Your choice is wrong. Please enter the correct choice ");
        }
        input.close();
    }
}
```

Decision-Making : switch - case

Output:

```
Enter the type to be search
1. Search by Title
2. Search by Language
3. Search by Release Date
4. Search by Genre
2
Your searching choice is Movies by Language
```

Looping - Introduction

- **Loop/ iterative** statements are used for **executing a block of statements repeatedly** until a particular condition is satisfied.
- **In Java, we have following loop statements:**
    - while
    - do…while
    - for
    - for…each
    - Nested loops (for, while, do…while)

Looping - Introduction

Four Looping Elements

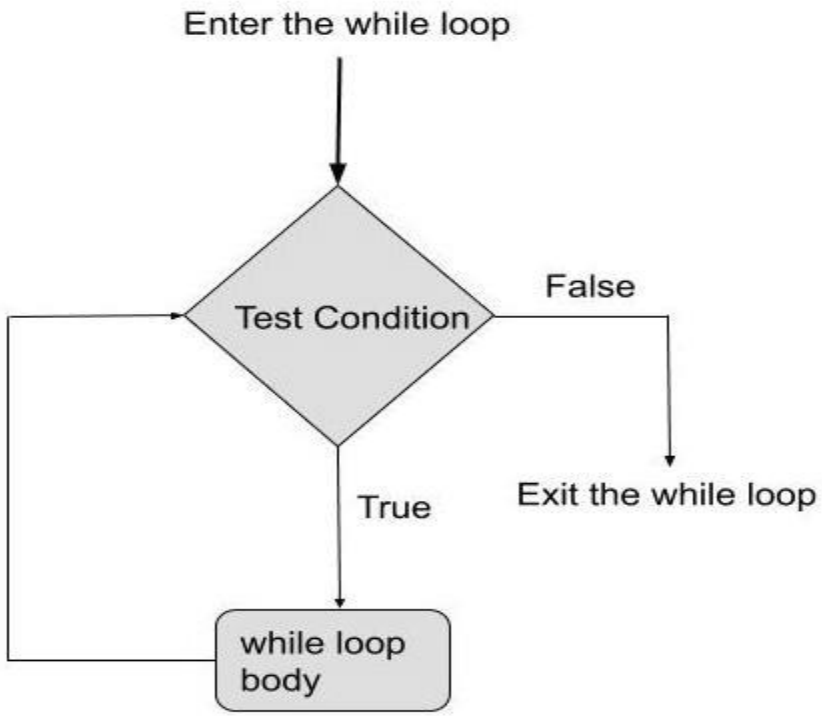
- **Initialization:** To **set initial value** to the iteration variable at the very start of the loop.
- **Condition:** Test condition is evaluate and give **boolean** (0 or 1) value as a result.
- **Loop-body:** If the test condition is true, the **body of the loop runs once**.
- **Updation: Increment/decrement** statement executes just after executing the body, and then the program goes back to the test condition.

Looping - while

- **while:** It is used to rrepeat a **specific block of code.** It is **preferable** while we do **not know the exact number of iterations** of loop beforehand.

- **Syntax**

```
while (condition){
    statement(s)
}
```



Looping - while

```
/**
  * The WhileStructure class implements an application that
  * Illustrate While Looping control statement
*/
 class WhileStructure{
        public static void main(String[] args){
                int counter = 1;
                while (counter < 11)
                {
                        System.out.println("Count is: " + counter);
                        counter++;
                }
           }
}
```

Looping - while

Output:

```
Count is: 1
Count is: 2
Count is: 3
Count is: 4
Count is: 5
Count is: 6
Count is: 7
Count is: 8
Count is: 9
Count is: 10
```

Looping - while

```
/**
  * The ShowSeat class implements an application that display the current seat availability
  * using While Looping control statement
*/
public class ShowSeat {
        public static void main (String args[]){
             int maxSeatCount = 10, seatCount = 0;
             while(seatCount < MaxSeatCount){
                System.out.println("Current Seat Availability : "+(MaxSeatCount-seatCount));
                seatCount++;
             }
            System.out.println("Seats are Filled");
        }
}
```

Looping - while

Output:

Current Seat Availability : 10

Current Seat Availability : 9

Current Seat Availability : 8

Current Seat Availability : 7

Current Seat Availability : 6

Current Seat Availability : 5

Current Seat Availability : 4

Current Seat Availability : 3

Current Seat Availability : 2

Current Seat Availability : 1

Seats are Filled

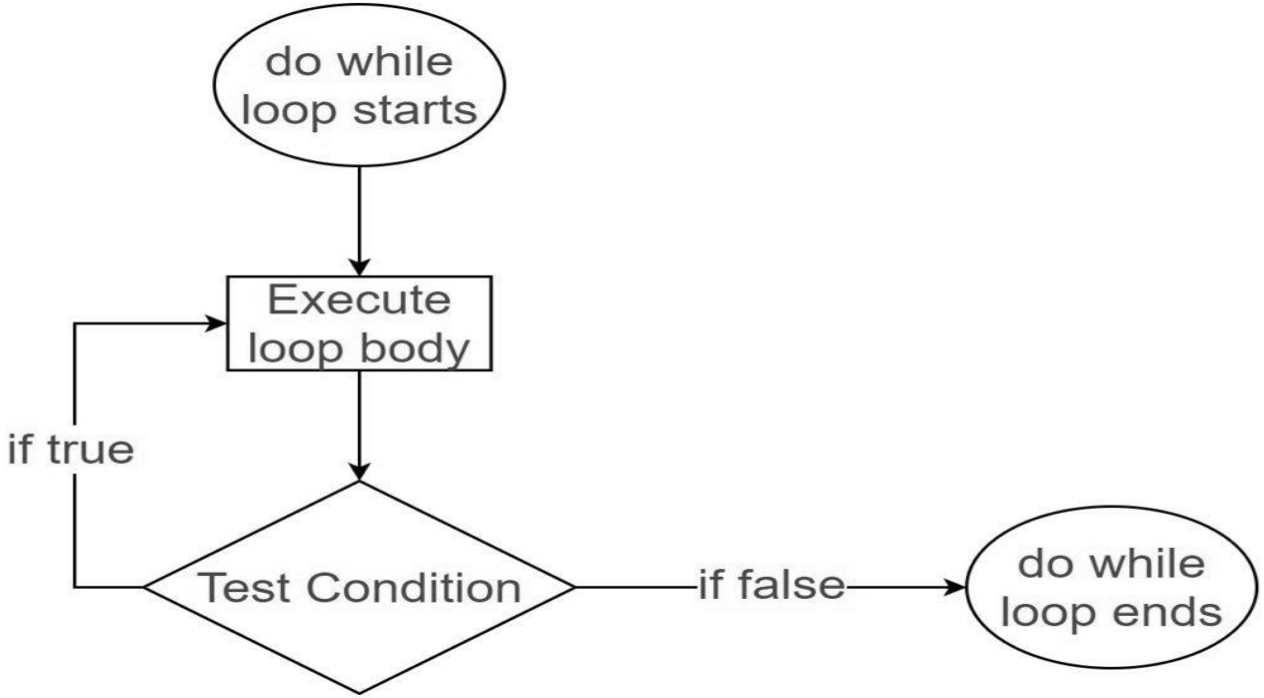
Looping : do – while

- **do-while**: Executes the statement first and then checks for the condition. It is also called an **exit-controlled loop.**

- **Syntax**

```
do {
        statement(s)

} while (condition);
```



Looping : do – while

```
/**
  * The DoWhileStructure class implements an application that that checks the seat availability
* status for movie ticket booking and Illustrate do..while Looping control statement
*/
 class DoWhileStructure{
        public static void main(String[] args){
                int counter = 1;
                do {
                        System.out.println("Count is: " + counter);
                        counter++;
                } while (counter < 11)
            }
}
```

Looping : do – while

Output:

Count is: 1

Count is: 2

Count is: 3

Count is: 4

Count is: 5

Count is: 6

Count is: 7

Count is: 8

Count is: 9

Count is: 10

Looping : do – while

```
/**
  * The ShowSeat class implements an application that that checks the seat
  * availability status for movie ticket booking using do.. while Looping control statement */
public class ShowSeat {
    public static void main (String args[]){
        int maxSeatCount = 5, seatCount = 0;
        do{
            System.out.println("Current Seat Availability : "+(MaxSeatCount-seatCount));
            seatCount++;
        } while(seatCount < maxSeatCount);
        System.out.println("Seats are Filled");
   }
}
```

Looping : do – while

Output:

Current Seat Availability : 5

Current Seat Availability : 4

Current Seat Availability : 3

Current Seat Availability : 2

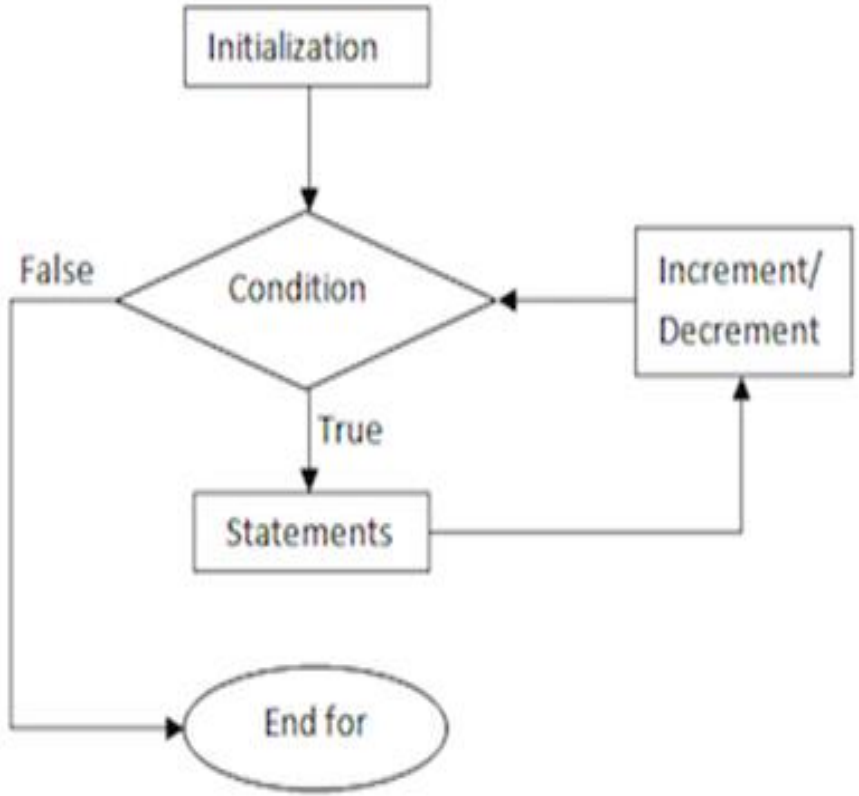
Current Seat Availability : 1

Seats are Filled

Looping : for

- **for:** When you know exactly how many times you want to loop through a block of code, use the for loop instead of a while loop
- **Syntax**

```
for (initialization; condition ; updation) {
    statement(s)
}
```



Initialization : Initializes the loop; it's executed once.

Condition : Evaluates till the condition becomes false.

Updation : Increment / Decrement the value. Executed (every time) after the code block is executed.

Looping : for

```
/**
 * The ForStructure class implements an application that
 * Illustrate ForLooping control statement
*/
class ForStructure{
        public static void main(String[] args) {
                for(int count = 1; count<10; count++) {
                System.out.println("Count is: " + count);
                }
        }
```

Looping : for

Output:

```
Count is: 1
Count is: 2
Count is: 3
Count is: 4
Count is: 5
Count is: 6
Count is: 7
Count is: 8
Count is: 9
```

Looping : for

```
/**
 * The ShowSeat class implements an application that that checks the seat availability status for
 * movie ticket booking using For Looping control statement
*/
class ShowSeat{
    public static void main (String args[]){
        int maxSeatCount = 5, seatCount = 0;
        for(seatCount=0;seatCount < maxSeatCount;seatCount++){
            System.out.println("Current Seat Availability : "+(maxSeatCount-seatCount));
        }
        System.out.println("Seats are Filled");
    }
}
```

Looping : for

Output:

Current Seat Availability : 5

Current Seat Availability : 4

Current Seat Availability : 3

Current Seat Availability : 2

Current Seat Availability : 1

Seats are Filled

Looping : for - each

- **for-each:** It's **commonly used** to iterate over an **array or a Collections** class. It is also called **enhanced for loop**.
- **Syntax:**

```
for (type var : arrayName) {
    statements;
}
```

- It is used **to iterate over the elements** of a collection **without** knowing the **index** of each element.
- It is **immutable** which means the values which are **retrieved during the execution** of the loop are read only

Looping : for - each

```
/**
  * The ForEachApp class implements an application that
  * illustrate foreach looping Structure
*/
 class ForEachApp{
     public static void main (String args[]){
                int[] marks = { 125, 132, 95, 116, 110 };
                int maxSoFar = marks[0];
                        //for each loop
```

Looping : for - each

```
                    for (int indexValue : marks){
                    if (indexValue > maxSoFar){
                            maxSoFar = indexValue;
                            }
                    }
            System.out.println("The highest score is " +maxSoFar);
    }
}
```

Output:

The highest score is 132

Nested Loop

- **Nested Loop:** A loop inside another loop is called a nested loop. The number of loops depend on the requirement of a problem. It contains outer loop and inner loop. For each iteration of outer loop the inner loop executes completely.

- **Syntax**

```
while(condition) {
        statements(s)
        while(condition) {

        statement(s)
                .....
        }
        ..........
}
```

```
for (initialization; condition; updation)  {
        ........
        for (initialization; condition; updation) {
                statement(s)
                .....
        }
        ..........
}
```

```
do {        ..........
        statement(s)
        do {
                statement(s)
                .....
        } while(condition);
        ..........
} while(condition);
```

Nested Loop

```
/**
  * The NestedWhileApp class implements an application that
  * illustrate nested while loop */
class NestedWhileAPP{
    public static void main (String args[]){
            int outerLoop=1,innerLoop=1;
            whlie(outerLoop<=5){
                    while(innerLoop<=5){
                            System.out.print(“*”);
                              innerLoop++;
                    }
```

Nested Loop

```
                    System.out.println(" ");
                        outerLoop++;
                        innerLoop=1;
                }
        }
}
```

Output:

```
*****

*****

*****

*****

*****
```

Nested Loop

```
/**
  * The NestedWhile class implements an application that demonstrate the seat availability while the seats are getting
     booked in multiple screens using nested while loop */
class NestedWhile{
      public static void main (String args[]){
            int MaxSeatCount = 5, TotalScreenCount = 2, seatCount = 0, screenCount = 0;
            while(screenCount < TotalScreenCount){
                  seatCount = 0;
                   System.out.println("Screen "+(screenCount+1)+" Availability details");
                    while(seatCount < MaxSeatCount){
                              System.out.println("Current Seat Availability : "+(MaxSeatCount-seatCount));
                               seatCount++;
                     }
```

Nested Loop

```
                System.out.println("Seats Filled in Screen "+(screenCount+1));
                screenCount++;
            }
        }
}
```

Output:

```
Screen 1 Availability details
Current Seat Availability : 5
Current Seat Availability : 4
Current Seat Availability : 3
Current Seat Availability : 2
Current Seat Availability : 1
Seats Filled in Screen 1
Screen 2 Availability details
Current Seat Availability : 5
Current Seat Availability : 4
Current Seat Availability : 3
Current Seat Availability : 2
Current Seat Availability : 1
Seats Filled in Screen 2
```

Nested Loop

```
/**
 * The Nested DoWhileApp class implements an application that  illustrate nested do…while loop */
class NestedDoWhileApp {
    public static void main (String args[]){
            int outerLabel= 1;
            do {
                    int innerLabel = 1;
                    do{
                            System.out.print(outerLabel);
                            innerLabel++;

                    } while (innerLabel <= 3);
                    outerLabel++;
            } while (outerLabel <= 3);
    }
}
```

Output:

```
111222333
```

Nested Loop

```
/**
 * The NestedDoWhile class implements an application that  demonstrate the seat availability while the seats are
   getting booked in multiple screens using nested do…while loop */
class NestedDoWhile{
    public static void main (String args[]){
        int MaxSeatCount = 10, TotalScreenCount = 2, seatCount = 0, screenCount = 0;
      do{
            System.out.println("Screen "+(screenCount+1)+" Availability details");
            seatCount = 0;
           do{
                    System.out.println(“Current Seats Availability : "+(MaxSeatCount-seatCount));
                    seatCount++;
            } while(seatCount < MaxSeatCount);
```

Nested Loop

```
                System.out.println("Seats Filled in Screen "+(screenCount+1));
                screenCount++;
            } while(screenCount < TotalScreenCount);
    }
}
```

Output:

```
Screen 1 Availability details
Current Seat Availability : 5
Current Seat Availability : 4
Current Seat Availability : 3
Current Seat Availability : 2
Current Seat Availability : 1
Seats Filled in Screen 1
Screen 2 Availability details
Current Seat Availability : 5
Current Seat Availability : 4
Current Seat Availability : 3
Current Seat Availability : 2
Current Seat Availability : 1
Seats Filled in Screen 2
```

Nested Loop

```
/**
  * The Nested ForApp class implements an application that
  * illustrate nested for looping structure
*/
 class NestedForApp
{
    public static void main (String args[])
    {
            int rows = 5;
            // outer loop
```

Nested Loop

```
            for (int i = 1; i <= rows; ++i){
                                // inner loop to print the numbers
                    for (int j = 1; j <= i; ++j) {
                                System.out.print(j + " ");
                    }
                     System.out.println("");
            }
    }
}
```

Output:

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

Nested Loop

```
/**
  * The NestedFor class implements an application that  demonstrate the seat availability while the seats are getting
     booked in multiple screens and illustrate nested for looping structure
*/
class NestedFor{
        public static void main (String args[]){
        int MaxSeatCount = 5, TotalScreenCount = 2, seatCount = 0, screenCount = 0;
        System.out.println("Screen "+(screenCount+1)+" Availability details");
        for(screenCount=0;screenCount < TotalScreenCount;screenCount++){
             for(seatCount=0;seatCount < MaxSeatCount;seatCount++){
                  System.out.println("Current Seat Availability "+(MaxSeatCount-seatCount));
```

Nested Loop

```
            }
            System.out.println("Seats Filled in Screen "+(screenCount+1));
        }
    }
}
```

Output:

```
Screen 1 Availability details
Current Seat Availability : 5
Current Seat Availability : 4
Current Seat Availability : 3
Current Seat Availability : 2
Current Seat Availability : 1
Seats Filled in Screen 1
Screen 2 Availability details
Current Seat Availability : 5
Current Seat Availability : 4
Current Seat Availability : 3
Current Seat Availability : 2
Current Seat Availability : 1
Seats Filled in Screen 2
```

Branching – Unconditional

- **Branching (Unconditional) -** To **transfers** the control from **one part of the program** to another part **without any condition.**
- In Java, we have the following **unconditional statements:**
    - break
    - continue

Branching - Unconditional

- **break**: When a **break** statement is encountered inside a loop, the **loop** is immediately **terminated** and the program control resumes at the **next statement** following the **loop**.
- The Java break is used to **break loop or switch statement**. It **breaks the current flow of the program** at specified condition. In case of **inner loop**, it **breaks only inner loop**.
- Break statement use **all types of loops** such as for loop, while loop and do-while loop.
- **Syntax**

```
break;
```

Branching - Unconditional

```
/**
  * The BreakApp class implements an application that
  * illustrate Break branching statement
*/
 class BreakApp{
     public static void main (String args[]){
                for(int count = 1;count<10;count++) {
                                    if(count ==5)
                                                break;    //exit from the current loop
                                System.out.println("Count is: " + count);
                            }
}
```

Output:

Count is: 1

Count is: 2

Count is: 3

Count is: 4

Branching - Unconditional

```
/**
 * The UnconditionalBreak class implements an application that demonstrate the seat availability while the seats are
   getting booked assuming that the VIP seats are already reserved using Break branching statement
*/
class UnconditionalBreak {
      public static void main (String args[]){
            int premiumSeat = 5, vipSeat = 5, seatBooked = 0;
            int totalSeat = premiumSeat + vipSeat;
            for(seatBooked = 0;seatBooked < totalSeat;seatBooked++) {
                  if(seatBooked > premiumSeat) {
```

Branching - Unconditional

```
                        System.out.println("All PREMIUM Seats Booked ");
                        System.out.println("All VIP Seats 1 to 5 are Reserved ");
                         break;    //exit from the current loop
                    }
                    else {
                        System.out.println(“PREMIUM Seat Availability : "+(premiumSeat - seatBooked));
                    }
            }
        }
}
```

Branching - Unconditional

Output:

PREMIUM Seat Availability : 5

PREMIUM Seat Availability : 4

PREMIUM Seat Availability : 3

PREMIUM Seat Availability : 2

PREMIUM Seat Availability : 1

All PREMIUM Seats Booked

All VIP Seats 1 to 5 are Reserved

Branching - Unconditional

- **continue:** When you need to **jump to the next iteration** of the loop immediately.
- It **continues the current flow** of the program and **skips the remaining code** at the specified condition. In case of an inner loop, it continues the inner loop only.
- Continue statement use **all types of loops** such as for loop, while loop and do-while loop.
- Syntax:

```
continue;
```

Branching - Unconditional

```
/**
  * The ContinueApp class implements an application that
  * illustrate Continue branching statement
*/
 class ContinueApp {
     public static void main (String args[]) {
                for(int count = 1;count<10;count++) {
                                    if(count ==5)
                                                continue;
                                System.out.println("Count is: " + count);
                            }
}
```

Output:

```
Count is: 1
Count is: 2
Count is: 3
Count is: 4
Count is: 6
Count is: 7
Count is: 8
Count is: 9
```

Branching - Unconditional

```
/**
  * The UnconditionalContinue class implements an application that demonstrate the seat availability while the seats are
    getting booked assuming that the VIP seats are already reserved using Continue branching statement
*/
class UnconditionalContinue {
   Public static void main (String args[]){
      int executiveSeat = 5, premiumSeat = 5, vipSeat = 5, seatBooked = 0;
      int totalSeat = regularSeat + executiveSeat + premiumSeat + vipSeat;
      for(seatBooked = 0;seatBooked < totalSeat;seatBooked++) {
            if(seatBooked < (vipSeat)){
                        System.out.println("All VIP Seats 1 to 5 are Reserved ");
                          continue;
            }
```

Branching - Unconditional

```
            if(seatBooked < vipSeat + premiumSeat) {
                        System.out.println(“PREMIUM Seat No : "+(seatBooked+1));
            }
            if(seatBooked < (vipSeat + premiumSeat + executiveSeat)) {
                        System.out.println("EXECUTIVE Seat No : "+(seatBooked+1));
            }
      }
   }
}
```

Output:

```
All VIP Seats 1 to 5 are Reserved
All VIP Seats 1 to 5 are Reserved
All VIP Seats 1 to 5 are Reserved
All VIP Seats 1 to 5 are Reserved
All VIP Seats 1 to 5 are Reserved
PREMIUM Seat No : 6
PREMIUM Seat No : 7
PREMIUM Seat No : 8
PREMIUM Seat No : 9
PREMIUM Seat No : 10
Executive Seat No : 11
Executive Seat No : 12
Executive Seat No : 13
Executive Seat No : 14
Executive Seat No : 15
```

Quiz

1. What do you call a statement that executes a certain statement(s) ,if the condition is true, and executes a different statement(s) if the condition is false?

a) if statement

b) if else statement

c) if elseif statement

d) None of the Above

b) if else statement

Quiz

2. From the given if-else statement, what will be displayed if the value of num is 6?

```
if (num>0)
    System.out.println("Positive Number\n");
else
    System.out.println("Negative Number\n");
    System.out.println("The number is %d",num);
```

a) Positive Number

b) Negative Number

c) Positive Number
The number is 6

d) The number is 6

c) Positive Number
The number is 6

Quiz

3. In switch case statement, what will be executed if there is no case matched?

a) case

b) break

c) default

d) All the above

c) default

Quiz

4. What is a java keyword used in switch statements that causes immediate exit or that terminates the switch statement?

a) The case keyword

b) The switch keyword

c) The default keyword

d) The break keyword

d) The break keyword

Quiz

5. Which of the following loops will execute the statements at least once, even though the condition is false initially?

a) while

b) do...while

c) for

d) All the options

b) do...while

Quiz

6. What value is stored in index at the end of this loop?

```
for(int index =1;index<=10;index++)
```

a) 1

b) 9

c) 10

d) 11

b) 11

Quiz

7. Which of the following are true about the enhanced for loop?

A. It can iterate over an array or a Collection but not a Map.

B. Using an enhanced for loop prevents the code from going into an infinite loop

C. Using an enhanced for loop on an array may cause infinite loop.

D. An enhanced for loop can iterate over a Map.

E. You cannot find out the number of the current iteration while iterating.

a) A,B,E

b) A,B,C

c) B,C,E

d) A,D,E

a) A,B,E

(expleo)

Quiz

8. What is printed as a result of the following code segment?

```
for (int k = 0; k < 20; k+=2)
 {
        if (k % 3 == 1)
                System.out.print(k + " ");
 }
```

a) 0 2 4 6 8 10 12 14 16 18

b) 4,6

c) 4,10,16

d) 0,6,12,18

c) 4,10,16

Quiz

9. What is the output after the following code has been executed?

```
class FlowControl1 {
                public  static void main(String[] args){
        int  value1= 10, value2 = 20;
        if (value1 < value2 ){
                if (value2 > value2 )
                        System.out.println("Hello Friend");
                else
                        System.out.println(" Happy Day!");
        }
  }
}
```

Quiz

10. What is stored in the variable result after the following code has been executed?

```
class FlowControl2{
        public static void main(String args[]){
                int index = 0;
                int result = 1;
                while ( true ){
                        ++index;
                        if ( index % 2 == 0 )
                                continue;
                        else if ( index % 5 == 0 )
                                break;
                        result *= 3;
                }
        }
 }
```

Quiz

11. What is the output after the following code has been executed?

```
class FlowControl3 {
    public static void main(String[] args){
        boolean b = true;
        if (b = false) {
            System.out.println("HELLO");
        } else {
            System.out.println("BYE");
        }
    }
}
```

Quiz

12. What is stored in the result after the following code has been executed?

```
class FlowControl4 {
    publicstatic void main(String[] args){
            for (int i = 0;  ; i++) {
                    System.out.println("HIII");
            }
            System.out.println("BYE");
    }
}
```

Quiz

13. What is stored in the result after the following code has been executed?

```
class Test {
        public static void main(String[] args){
                do {
                        System.out.print(1);
                        do {
                                System.out.print(2);
                         } while (false);
                        } while (false);
            }
        }
```