



# Flow Control Statements

# Objectives

At the end of this module, you will be able to work with :

- Selection statements
- Iteration statements
- Jumping statements

# Flow Control



# Control Statements

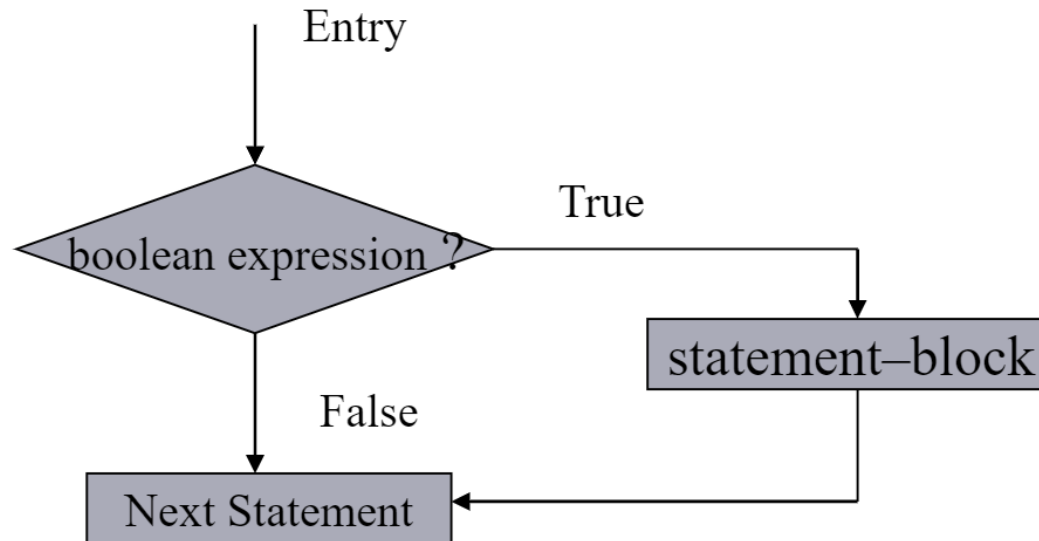
- Control statements are statements which alter the normal execution flow of a program.
- There are three types of Control Statements in java :

Selection statement	Iteration Statement	Jumping Statement
if	while	break
if – else	for	continue
switch	do – while	return

# Simple if statement

## **syntax :**

```
if(boolean expression)  
{  
    statement-block;  
}  
Next statement;
```



# If - Example

```
/* This is an example of a if statement */
```

```
public class Test {  
    public static void main(String args[]) {  
        int x = 5;  
        if( x < 20 ) {  
            System.out.print("This is if statement");  
        }  
    }  
}
```

Output:

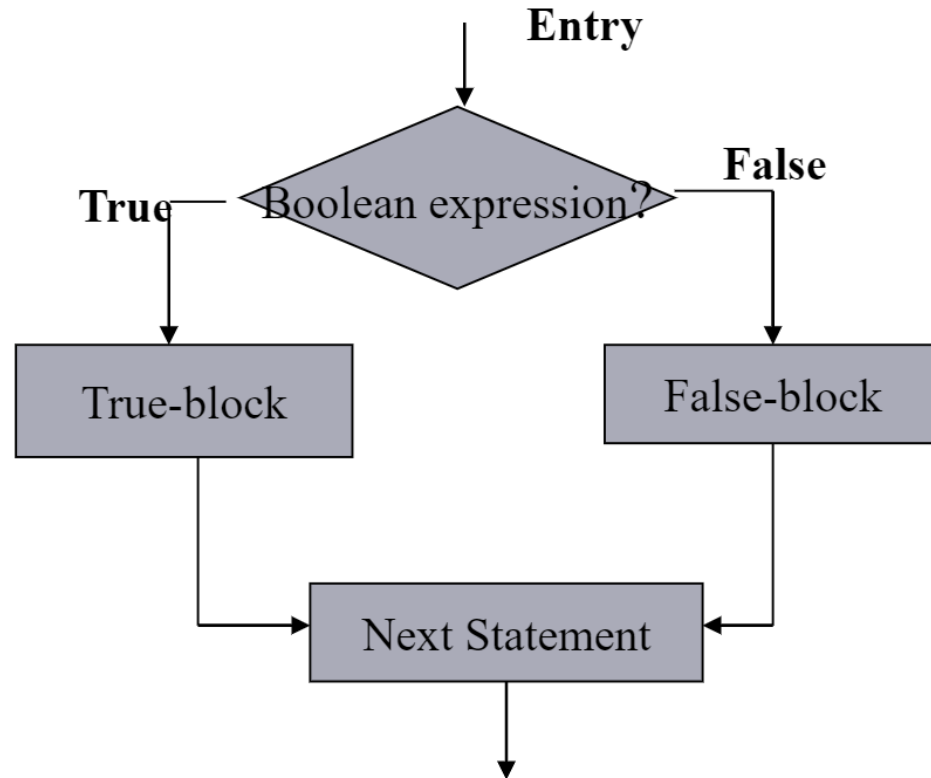
This is if statement

# If..else statement

The if....else statement is an extension of simple if statement.

## Syntax:

```
if(boolean expression)
{
    True-block statements;
}
else
{
    False-block statements;
}
Next statement;
```



# If – else Example

*/\* program to check given age input is eligible to vote or not using if- else\*/*

```
public class Check {  
    public static void main(String[ ] args) {  
        int age;  
        age = Integer.parseInt(args[0]);  
        if(age>18) {  
            System.out.println("Eligible to vote");  
        }  
        else {  
            System.out.println("Not eligible to vote");  
        }  
    }  
}
```



# Cascading if- else

- **Syntax:**

```
if (condition1) {  
    statement-1  
}  
  
... •  
else if(condition-n) {  
    statement-n  
}  
else {  
    default statement  
}  
next statement
```

# if - else if Example

*/\* program to print seasons for a month input using if & else if \*/*

```
public class ElseIfDemo {  
    public static void main(String[] args) {  
        int month = Integer.parseInt(args[0]);  
        if(month == 12 || month == 1 || month == 2)  
            System.out.println("Winter");  
        else if(month == 3 || month == 4 || month == 5)  
            System.out.println("Spring");  
        else if(month == 6 || month == 7 || month == 8)  
            System.out.println("Summer");  
        else if(month == 9 || month == 10 || month == 11)  
            System.out.println("Autumn");  
        else  
            System.out.println("invalid month");  
    }  
}
```

If args[0] is 6 then the Output is : Summer

# Switch Case

- The switch-case conditional construct is a more structured way of testing for multiple conditions rather than resorting to a multiple if statement.

## Syntax:

```
switch (expression) {  
    case value-1 : case-1 block  
                    break;  
    case value-2 : case-2 block  
                    break;  
    default    : default block  
                    break;  
}  
statement-x;
```

# Switch Case - Example

*/\* This is an example of a switch case statement\*/*

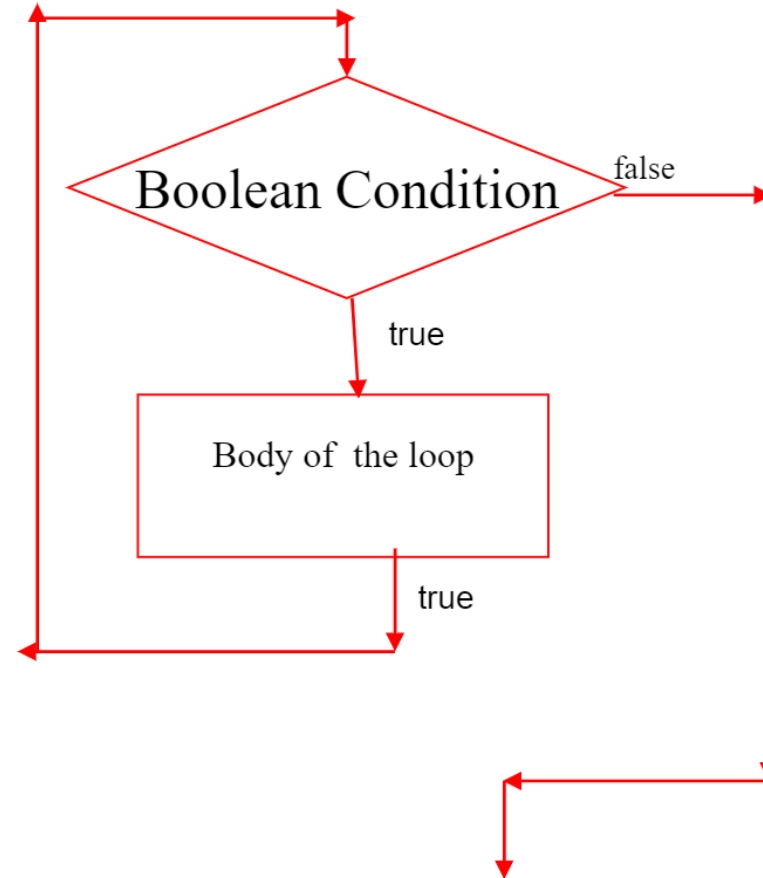
```
public class SwitchDemo {  
    public static void main(String[] args) {  
        int weekday = Integer.parseInt(args[0]);  
        switch(weekday) {  
            case 1:    System.out.println("Sunday");    break;  
            case 2:    System.out.println("Monday");    break;  
            case 3:    System.out.println("Tuesday");   break;  
            case 4:    System.out.println("Wednesday"); break;  
            case 5:    System.out.println("Thursday");  break;  
            case 6:    System.out.println("Friday");    break;  
            case 7:    System.out.println("Saturday");  break;  
            default:   System.out.println("Invalid day");  
        }  
    }  
}
```

If args[0] is 6 then the Output is : Friday

# While loop

- **Syntax**

```
while(condition)  
{  
    Body of the loop  
}
```



# while loop – Example

```
/* This is an example for a while loop */
```

```
public class Sample{  
    public static void main(String[] args) {  
        int i = 0;  
        while (i < 5) {  
            System.out.println("i: "+i);  
            i = i + 1;  
        }  
    }  
}
```

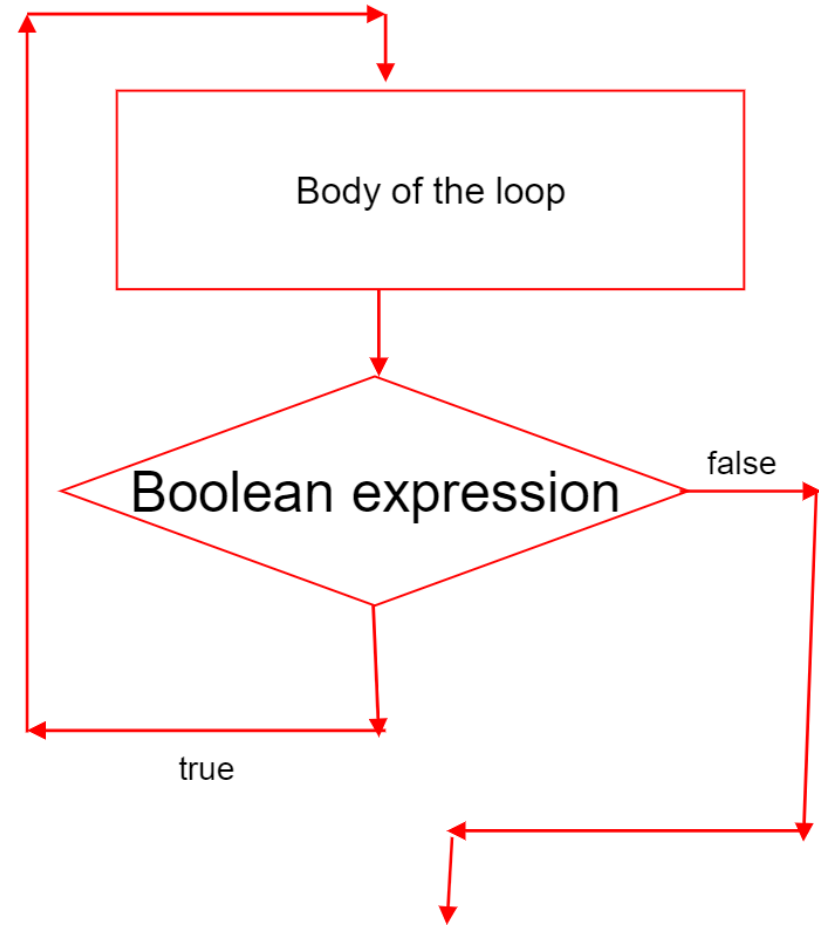
## Output:

```
i: 0  
i: 1  
i: 2  
i: 3  
i: 4
```

# do-while loop

- **Syntax:**

```
do  
{  
    Body of the loop  
} while(boolean expression);
```



# do...while loop – Example

```
/* This is an example of a do-while loop */
```

```
public class Sample {  
    public static void main(String[] args) {  
        int i =5;  
        do {  
            System.out.println("i: "+i);  
            i = i + 1;  
        } while (i < 5);  
    }  
}
```

Output:  
i: 5



# for loop

## Syntax

```
for(initialization; condition; increment/decrement)  
{  
    Body of the loop  
}
```

# for loop - Example

```
/* This is an example of a for loop */  
public class Sample {  
    public static void main(String[] args) {  
        for (int i=1; i<=5; i++ ) {  
            System.out.println("i: "+i);  
        }  
    }  
}
```

## Output:

i: 1  
i: 2  
i: 3  
i: 4  
i: 5

# Enhanced for loop

## Syntax:

```
for(declaration : expression)
{
    Body of loop
}
```

# Enhanced for loop - Example

*/\* This is an example of a enhanced for loop \*/*

```
public class Sample {  
    public static void main(String[] args) {  
        int [] numbers = {10, 20, 30, 40, 50};  
        for(int i : numbers ) {  
            System.out.println( "i: "+i );  
        }  
    }  
}
```

Output:

i:10  
i:20  
i: 30  
i:40  
i:50