Control Statements

If statement

Syntax:

```
If(condition)
{
----
----
}
```

```
class ControlStatement
{

public static void main (String args[])
	{

		int x=10;

		if( x==10)
		{
		System.out.println( "Value of x is equal to "+x);
		}
	}
}
```

If else statement

Syntax

```
if(condition)
{
----
----
}
else
{
---
---
}
```

```
class ControlStatement
{
public static void main (String args[])
	{
		int x=10;
		if( x==10)
		{
		System.out.println( "Value of x is equal to "+x);
		}
```

```
                else
                {
                System.out.println( "Value of x is not equal to "+x);
                }
}
}
```

if elseif

syntax

```
if (condition)
{
----
----
}
Elseif(condition2)
{
-----
-----
}
Else
{
-----
-----
}
```

```
class Ifelseif
{

public static void main (String args[])
        {
                int n=7;
                if(n<7)
                  {
                      System.out.println("Value of n is less than 7");
                   }

                else if(n>7)
                   {
                      System.out.println("Value of n is greater than 7");
                   }
                else
                   {
                      System.out.println("Value of n is equal to 7");
                   }
        }
}
```

If a programme contains multiple if statements then each and every if is executed.

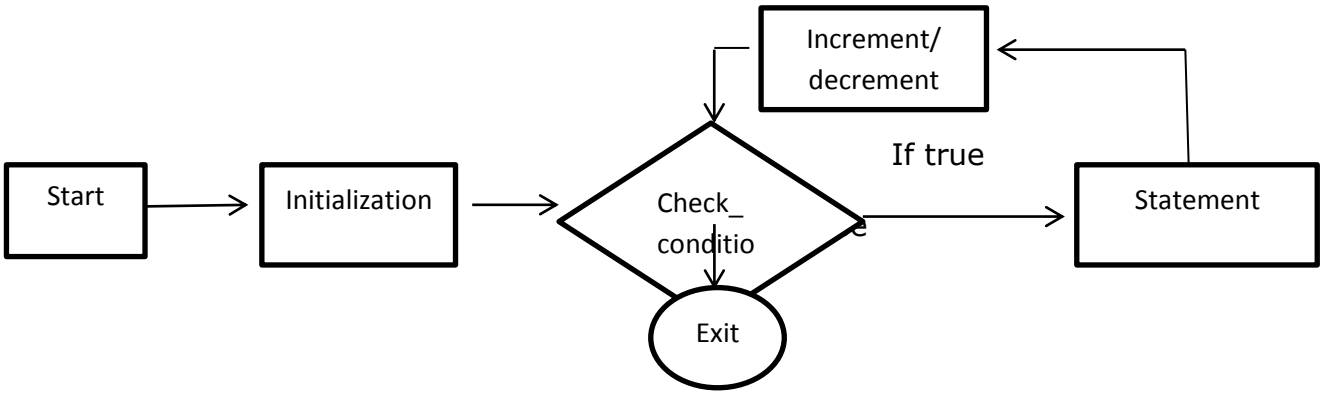
Nested if else

Syntax

```
If(condition1)
{
        If(condition2)
        {
        -------
        -------
        }
        Else
        {
        --------
        --------
        }
}
else
        {
        ----
        ----
}
```

For Loop

```
for(initialization;condition;decrement/increment)
{
-----
-----
-----
}
```



1. Write a program to display number 5 to 1

```
class ForLoop
{
	public static void main (String args[])
	{
		for(int i=5;i<=1;i--)
		{
			system.out.println(i);
		}
	}
}
```

2. Write a program to print multiplication of table 2

```
class ForLoop2
{
	public static void main (String args[])
{
		for(int i=1;i<=10;i++)
		{
		System.out.println(2+"*"+i+ "=" + (2*i));
		}
	}
}
```

3. Write a program to print factorial of 4

```
class ForLoop4
{
	public static void main (String args[])
	{
		int fact=1;
		for(int i=1;i<=4;i++)
		{
			fact=fact*i;
		}
		System.out.println("Factorial of 4 is "+fact);
	}
}
```

4. Write a prog to print sum of even numbers and sum of odd numbers

```
// sum of even numbers and odd numbers

class ForLoop6
{
	public static void main (String args[])
	{
		int even=0;
		int odd=0;
		for(int i=1;i<=10;i++)
		{
```

```
                        if(i%2==0)
                        {
                                even=even+i;
                        }
                        else
                        {
                                odd=odd+i;
                        }

                }
                System.out.println("Sum of even number" + even);
                System.out.println("Sum of odd number" + odd);
        }
}
```

5. Write a program to print squares of all numbers between 20 to 30.

```
class ForLoop3
{
        public static void main (String args[])
        {
                for(int i=20;i<=30;i++)
                {
                System.out.println("Square of" +i + "is" + (i*i));
                }
        }
}
```

Nested For loop

Syntax

```
for(initialization;condition1;increment/decrement)
{
        for(initialization;condition2;increment/decrement)
        {

         ------

         -------

        }

}
```

6. Write a program to print factorial of all numbers from 1 to 4

```
class ForLoop5
{
public static void main (String args[])
{
for(int i=1;i<=4;i++)
```

```
{
int fact=1;
for (int j=1;j<=i;j++)
{
fact=fact*j;
}
System.out.println("Factorial of "+i+"is"+fact);
}
}
}
```

Pattern Programs

1. Write a program to print data in following format:
   111
   222
   333

```
class PatternLoop1

{
   public static void main(String args[])
{

   for (int i=1;i<=3;i++)

{

for (int j=1;j<=3;j++)
{
System.out.print(i);
}

 System.out.println("");

}
}
}
```

2. Write a program to print data in following format:
   1234
   1234
   1234
   1234

```
class PatternLoop2

{
public static void main(String args[])
{
for (int i=1;i<=4;i++)
{
for (int j=1;j<=4;j++)
{
System.out.print(j);
}
System.out.println("");
}
}
}
```

3. Write a program to print data in following format

```
54321
55555
44444
33333
22222
11111
```

```
class PatternLoop3
{
public static void main(String args[])
{
for (int i=5;i>=1;i--)
{
for (int j=5;j>=1;j--)
{
System.out.print(i);
}
 System.out.println("");
}
}
}
```

4. Write a program to print data in following format

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

```
class PatternLoop4
{
public static void main(String args[])
{
for (int i=1;i<=5;i++)
{
for (int j=1;j<=i;j++)
{
System.out.print("*");
}
 System.out.println("");
}
}
}
```

5. Write a prog to print data in following format

```
1
10
101
1010
10101
```

```
class PatternLoop5
{
public static void main(String args[])
{
for (int i=1;i<=5;i++)
{
for (int j=1;j<=i;j++)
{
if( j%2==0)
{
System.out.print("0");
}
else
{
System.out.print("1");
}
}
System.out.println("");
}
}
}
```

6. Write a prog to print data in following format:

```
1
2 3
4 5 6
7 8 9 10
11 12 13 14 15

class PatternLoop6
{
public static void main(String args[])
{
int n=1;
for (int i=1;i<=5;i++)
{
for (int j=1;j<=i;j++)
{
System.out.print(n);
n++;
}
System.out.println("");
}
}
}
```

7. Write a prog to print data in following format

```
1
2*
3*4
5*6*
7*8*9*

class PatternLoop7
{
public static void main(String args[])
{
int n=1;
for (int i=1;i<=5;i++)
{
for (int j=1;j<=i;j++)
{
if( j%2==0)
{
System.out.print("*");
}
```

```
else
{
System.out.print(n);
n++;
}
}
System.out.println("");
}
}
}
```

8. Write a prog to print data in following format

```
a
b c
d e f
g h I j
k l m n o
```

```
class PatternLoop8
{
        public static void main(String args[])
        {
                char ch='a';
                for (int i=1;i<=5;i++)
                {
                        for (int j=1;j<=i;j++)
                        {
                        System.out.print(ch);
                        ch++;
                        }
                  System.out.println("");
                }
        }
}
```

9. Write a prog to print data in following format:

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

```
class PatternLoop9

{
		public static void main(String args[])
		{
			char ch='a';
			for (int i=1;i<=5;i++)
			{
				for (int j=1;j<=5;j++)
				{
				if(i==1||i==5||j==1||j==5)
				{
				System.out.print("*");
				}
				else
				{
				System.out.print(" ");
				}
				}

			  System.out.println("");
			}

		}
}
```

13. Write a prog to print data in following format:

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

```
class PatternLoop13
{
   public static void main(String args[])
{
int n=5;
  for(int i=0;i<n;i++)
   {
    for(int j=1;j<=(n-1-i);j++)
		{
```

```
                    System.out.print(" ");
                }
          for(int k=0;k<=i;k++)
                {
                  System.out.print("*");
                }
                System.out.println(" ");

                }
           }
       }
```

14. Write a prog to print data in following format:

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

```
class PatternLoop14
{
   public static void main(String args[])
{
int n=5;
for(int i=0;i<n;i++)
   {
    for(int j=1;j<=(n-1-i);j++)
    {
  System.out.print(" ");
    }
    for(int k=0;k<=(2*i);k++)
{
  System.out.print("*");
}
System.out.println(" ");
}
}
}
```

16. Write a prog to print data in following format:

Write a prog to print data in following format:

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

```
class PatternLoop15
{

public static void main(String args[])
{

for(int i=1;i<=5;i++)
{
  for(int j=1;j<=5;j++)
   {
     if(i==1||i==3||j==1||j==5)
     {
                    System.out.print("*");
                    }
                    else
                    {
                     System.out.print(" ");
                    }
    }
                    System.out.println(" ");
}
}
}
```

17. Write a prog to print data in following format:

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

```
class PatternLoop16
{

public static void main(String args[])
{

for(int i=1;i<=5;i++)
{
  for(int j=1;j<=5;j++)
```

```
   {
     if(i==1||i==3||j==1||j==5)
     {
                        if(i==1&&j==1||i==1&&j==5)
                        {
                        System.out.print(" ");
                        }
                        else
                        {
                        System.out.print("*");
                        }
                        }
                        else
                        {
                         System.out.print(" ");
                        }
    }
                        System.out.println(" ");
}
}
}
```

18. Write a prog to print data in following format:

```
  ***
*    *
*****
*    *
*    *
 class PatternLoop17
{

public static void main(String args[])
{

for(int i=1;i<=5;i++)
{
  for(int j=1;j<=5;j++)
   {
     if(i==1||i==3||j==1||j==5||i==5)
     {
                        if(i==1&&j==5||i==5&&j==5)
                        {
                        System.out.print(" ");
                        }
                        else
                        {
                        System.out.print("*");
                        }
                        }
                        else
                        {
```

```
                        System.out.print(" ");
                       }
    }
                       System.out.println(" ");
}
}
}
```

While loop

Syntax

```
while(condition)
{
-------
-------
-------
}
```

Eg:

```
int x=1;
while(x<=2)
{
System.out.println(x);
X++;
}
```

1. Write a program to display all even numbers between 10-20 using while loop

```
class While1
{
static int x=10;
public static void main(String args[])
{
while(x<=20)
{
if(x%2==0)
{
System.out.println("The vaue of" +x+" is even");
}
else
{
System.out.println("The vaue of" +x+" is odd");
}
x++;
}
}
}
```

2. Write a program to print factorial of number 4 using while loop
   // prog to print factorial of 4 using while loop

```
class While2
{
public static void main(String args[])
{
int x=1,fact=1;

while(x<=4)
{
fact=fact*x;

x++;
}
System.out.println(" The factorial of 4 is"+fact);
}
}
```

Do while loop

Syntax

```
do
{
-----
-----
}while(condition);
```

1. Write a program to print sum of odd and even number between 1 to 10 using do while

```
class Dowhile
{
static int oddsum=0,evensum=0,x=1;
public static void main(String args[])
{
do
{
if(x%2==0)
{
evensum=evensum+x;
}
else
{
oddsum=oddsum+x;
}
x++;
}while(x<=10);
System.out.println("The even sum is"+evensum);
System.out.println("The odd sum is"+oddsum);
}
}
```