

Loops in Java :-

In programming languages, loops are used to execute a set of instructions / functions repeatedly when some conditions become true. There are three types of loops in Java:-

- (1) For Loop (2) While Loop (3) do-while loop

For Loop \Rightarrow A for loop is a repetition (control) structure that allows you to efficiently write a loop that needs to be executed a specific number of times.

"A for loop is useful when you know how many times a task is to be repeated."

Syntax \Rightarrow for (initialization; Boolean expression; update) {

Example \Rightarrow class Main {

```
public static void main(String[] args) {
    for (int i = 1; i <= 5; i++)
```

```
    System.out.println(i);
```

Output \Rightarrow

1
2
3
4
5

(2) While loop \Rightarrow A while loop in Java is a control flow statement that executes repeatedly based on a given Boolean expression.

Syntax \Rightarrow while (Boolean-expression)

{
 // Statement

 Updates (i++);

}

Example :- Class WhileLoopDemo {

 Public static void main (String [args])

{

 Int i = 1;

 while (i < 6) {

 System.out.println ("Hello world");

 i++;

 }

Output \Rightarrow Hello world

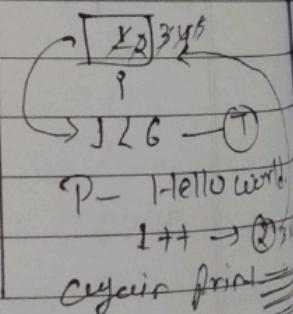
Hello world

Hello world

Hello world

Hello world

Hello world



(3) do-while loop \Rightarrow do-while loop is a control loop. A do-while loop first checks the condition after executing the statement of the loop body.

is a
executed code
each

Syntax :- do

{

Update expression

{

// Condition check

while (Boolean expression);

Example:- class M {

public static void main (String [] args)

{

int i = 0;

do {

System.out.println ("Point Statement");

i++;

{

while (i < 0);

{

{

O/P => Point Statement

Switch Case →

The Switch Case in Java

is used to select one of many code blocks
for execution.

Syntax:- switch (expression)

{

(case value):

break;

case value 2 :

// Code to be executed;

break;

default:

Code to be executed if all cases are
not matched;

}

Example

Java Methods :-

1. Methods are used to perform certain actions and they are also known as functions.
2. A Method is a block of code which only runs when it is called.
3. You can pass data, known as parameters, into a method.
4. Methods provide reusability of the code.
5. A method must be declared within a class.
6. Contains parentheses - ()
7. Methods can be pre-defined and user defined.

Example

```

class Example {
    public static void hello() {
        System.out.println("Hello... I just got
                           executed");
    }

    public static void main(String[] args) {
        myMethod();
    }
}

```

Program to print Calculation

import java.util.Scanner;

class Calculator {

public static int add(int a, int b)

{
 int c = a+b;
 }

return c;

public static int sub(int a, int b)

{
 int c = a-b;
 }

return c;

public static int product(int a, int b)

{
 int c = a*b;
 }

return c;

public static int div(int a, int b)

{
 int c = a/b;
 }

return c;
}

Public static void main (String [] args)
{

Scanner Obj = new Scanner (System.in);
System.out.println ("Enter the first number");
int a = Obj.nextInt();
System.out.println ("Enter the second number");
int b = Obj.nextInt();
System.out.println ("Addition = " + add(a,b));
System.out.println ("Subtraction = " + sub(a,b));
System.out.println ("Product = " + product(a,b));
System.out.println ("Division = " + div(a,b));
}

O/P => Enter the first number

12

Enter the second number

2

Addition = 14

Subtraction = 10

Product = 24

Division = 6

* Write a program in Java to calculate menu.

```
import java.util.Scanner;  
public class CafeMenu {  
    public static void main (String [ ] args) {  
        System.out.println ("Good Morning");  
        int tea = 15 RS;  
        int coffee = 30 RS;  
        int coldcoffee = 80 RS;  
        int sandwich = 60 RS;  
        int total = 0;  
        int ch;  
        char y;
```

```
Scanner obj = new Scanner (System.in);  
System.out.println ("What would you like to  
order?");
```

(while (true))

```
System.out.println ("1 for tea = 15 +\n2  
for coffee = 30\n3 for coldcoffee = 80\n4 for sandwich = 60");  
ch = obj.nextInt();
```

Switch (ch)

{

case 1:

```
System.out.println ("tea is ordered");  
total = total + tea;  
break;
```

Case 2:

```
System.out.println("Coffee is ordered");
total = total + coffee;
break;
```

Case 3:

```
System.out.println("Coldcoffee is ordered");
total = total + coldcoffee;
break;
```

Case 4:

```
System.out.println("Sandwich is ordered");
total = total + Sandwich;
break;
```

→ System.out.println ("Thank You! like to add
more in 'yes' or 'no'");
 γ = obj.next().charAt(0);
if (γ == 'n') {
 break;
}

```
System.out.println("Total = " + total);
obj.close();
}
```

* Write a program in Java to show whether the user entered number is even or not.

```
import java.util.Scanner;
class Project {
```

```
public static int evenOddNum(int) {
```

```
if (a % 2 == 0) {  
    System.out.println("This is even number");  
}  
else {  
    System.out.println("This is odd number");  
}  
return 0;  
}  
Public static void main (String [] args)  
{  
    Scanner obj = new Scanner (System.in);  
    System.out.println ("Enter the Value");  
    int ans = obj.nextInt();  
    System.out.println (evenOddNum(ans));  
}  
O/P : Enter the Value  
15  
This is odd number
```

Write a Program in Java to Show user
Entered year is a leap year or not.

```
import java.util.Scanner;  
class leap {  
    Public static void leapYear (int y) {  
        if (y % 4 == 0) {  
            System.out.println ("Leap Year");  
}  
        else {  
            System.out.println ("Not leap Year");  
}  
    }  
}
```

Public static void main (String [] args)

```

Scanner obi = new Scanner ( System.in );
System.out.println (" Enter the year ");
int year = obi.nextInt ();
System.out.println ( year );
obi.close ();
}

```

Output → Enter the year
2024
Leap Year.

* Programs to print ↴ *

import java.util.Scanner;

Public static class Pattern {

Public static void star
(int x) {

```

for ( int i = 1; i <= x; i++ ) {
    for ( int j = 1; j <= i; j++ ) {
        System.out.print ( "*" );
    }
    System.out.println ( " " );
}

```

System.out.println (" ");

}

Public static void main (String [] args)

Scanner sc = new Scanner (System.in);

System.out.println (" Enter a number for
asterisk ");

int x = sc.nextInt ();

star (*);

}

