



Module 5:

Introduction to Nested Loops



Nested Loops

- ❑ When a loop is placed inside another loop, it is called nested loop.
- ❑ There is no restriction on the type of nested loops.
- ❑ There is no restriction on the number of the nested loops.
- ❑ Syntax:-

```
for ( init; condition; increment )
```

```
{
```

```
    for ( init; condition; increment ) {
```

```
        //statement(s);
```

```
    }
```

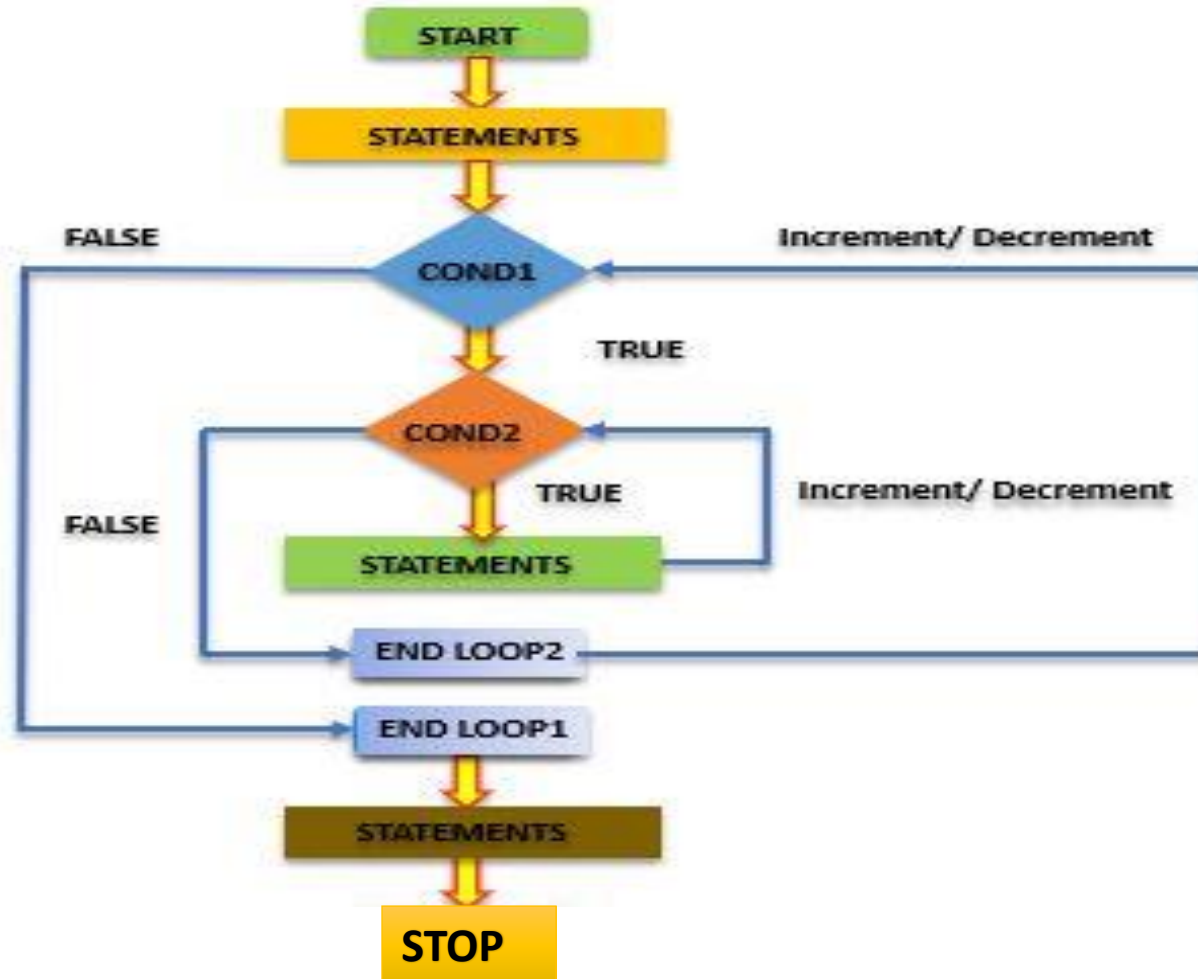
```
    statement(s);
```

```
}
```

Inner Loop Body

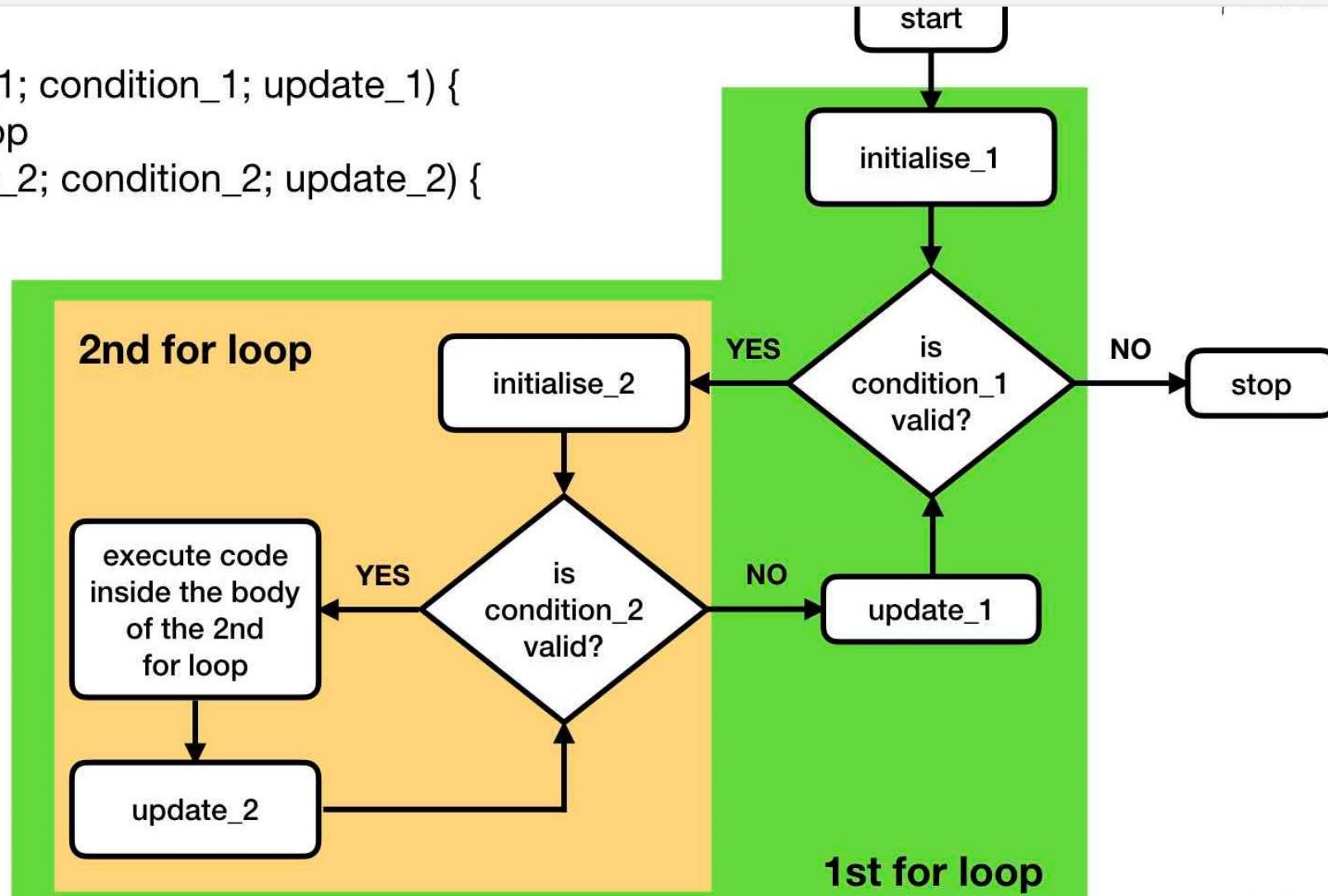
Outer Loop Body

Working Of Nested Loops



Working In Detail

```
//1st for loop
for (initialise_1; condition_1; update_1) {
  //2nd for loop
  for (initialise_2; condition_2; update_2) {
    //code...
  }
}
```



Example Of Nested Loops

Nested Loops	Output	Explanation
<pre>for (i = 1; i <= 3; i++) { for (j = 1; j <= 4; j++) { Print "*" } System.out.println(); }</pre>	<pre>**** **** ****</pre>	Prints 3 rows of 4 asterisks each.
<pre>for (i = 1; i <= 4; i++) { for (j = 1; j <= 3; j++) { Print "*" } System.out.println(); }</pre>	<pre>*** *** *** ***</pre>	Prints 4 rows of 3 asterisks each.

Programs To Practice

- **There are four categories of Nested Loop Programs:-**
 - Range Programs
 - Series Programs
 - Pattern Programs
 - Miscellaneous Programs