JAVA

Class 8

Agenda

Loops in JAVA:

- for loop
- while loop
- Do while loop

for loop

The Java for loop is used to iterate a part of the program several times. If the number of iteration is **fixed**, it is recommended to use for loop.

Syntax:

```
for (initialization;condition;increment/decrement) {
      block of code
  }
```

(or)

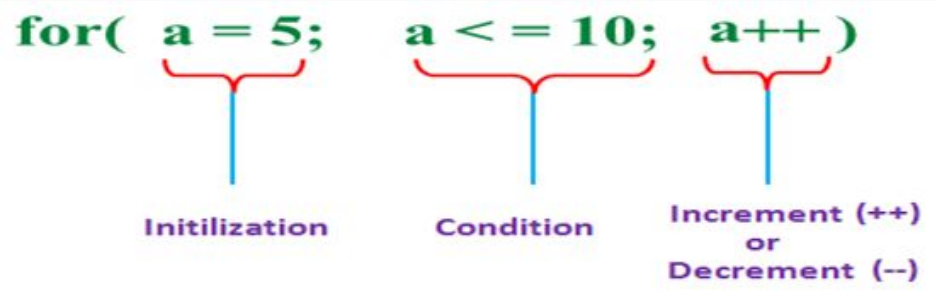
```
for (start Value;endValue;increment/decrement) {
      block of code
  }
```

for(initialization;condition;increment/decrement{ block of code}

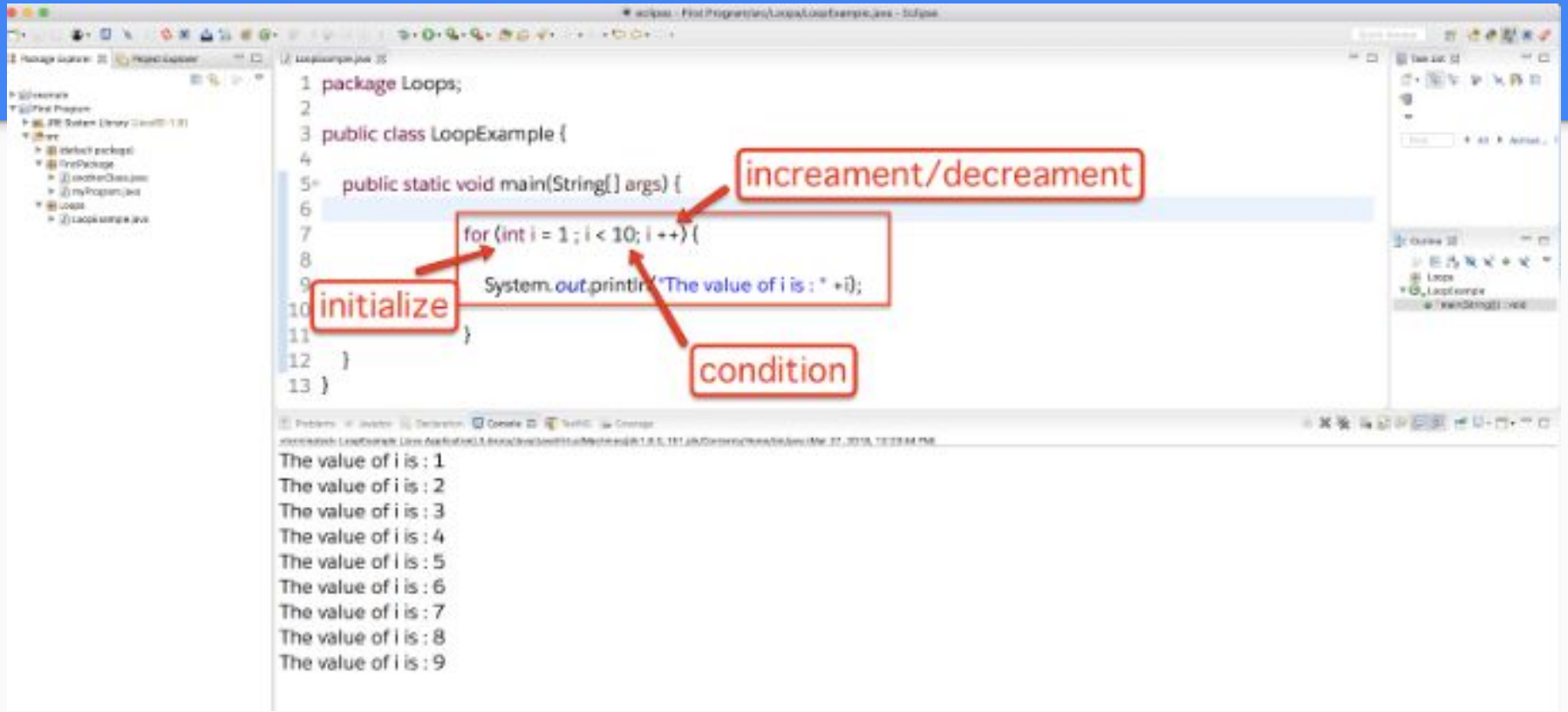
Initialization: This step executes first and is executed only once when we are entering into the loop for the first time. This step is used to declare and initialize any loop control variables.

Condition: This is the next step after initialization, if it is true, the body of the loop is executed, if it is false the body of the loop does not execute and flow of control goes outside of the for loop.

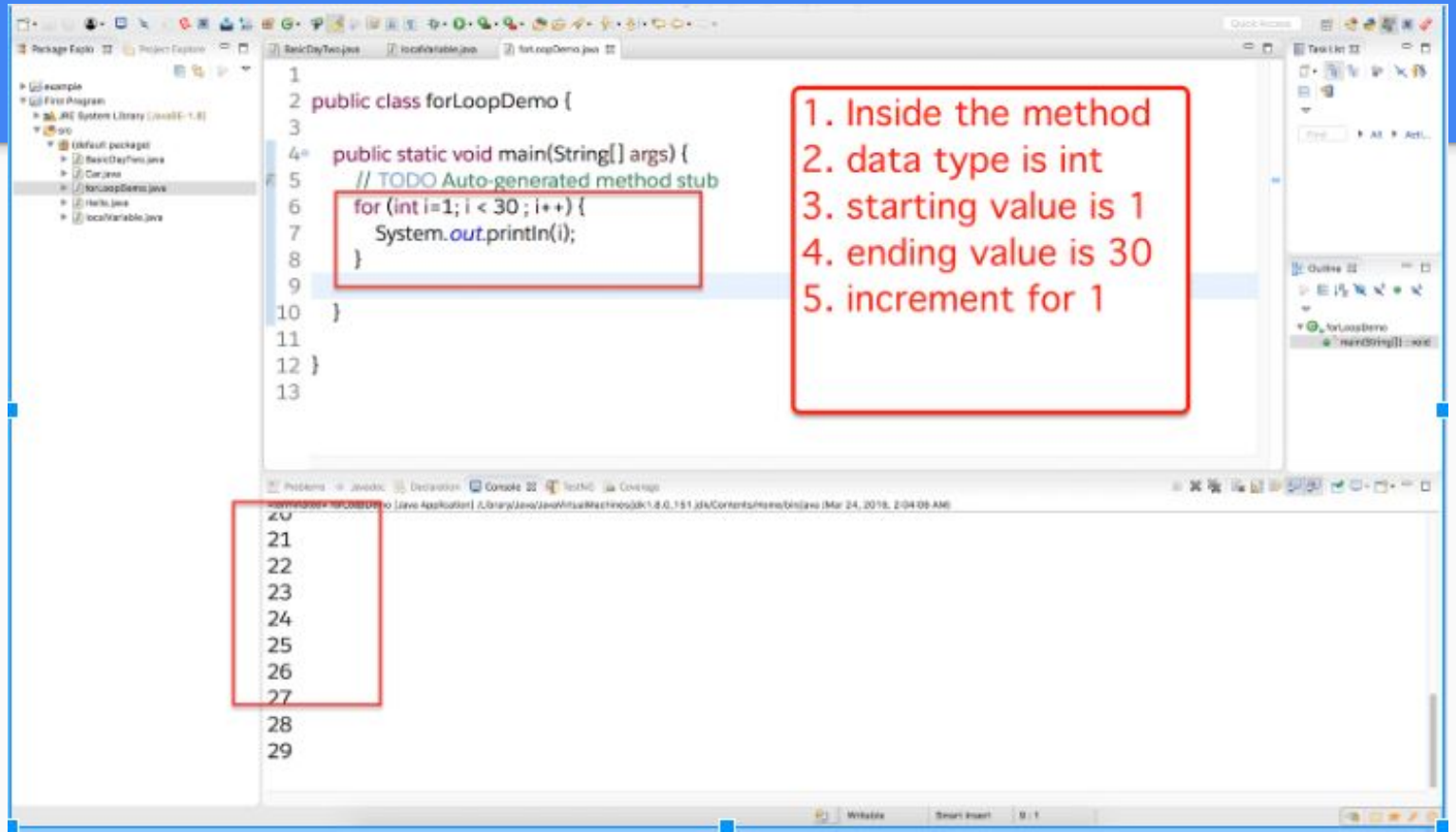
Increment or Decrements: After completion of Initialization and Condition steps loop body code is executed and then Increment or Decrements steps is executed. This statement allows to update any loop control variables.



for(initialization;condition;increment/decrement
{ block of code }



for(start value;end value;increment/decrement)
{block of code }



Task

1. Print numbers from 1 to 100
2. Print numbers from 100 to 1
3. Print odd numbers from 1 to 20 (2 ways)
4. Print even numbers from 20 to 1 (2 ways)
5. Print even numbers between 20 and 50 (2 ways)
6. Print odd numbers between 20 and 50 (2 ways)

Break Statement

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.

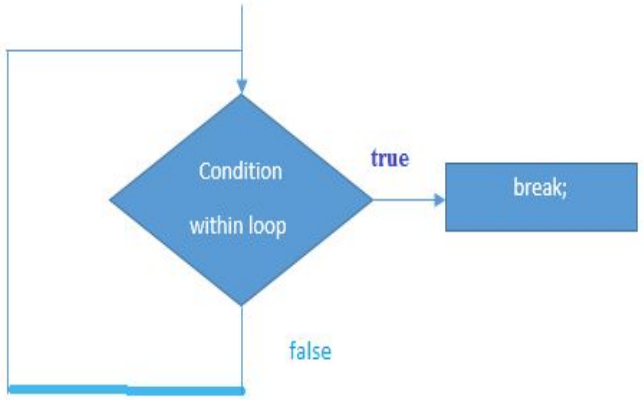
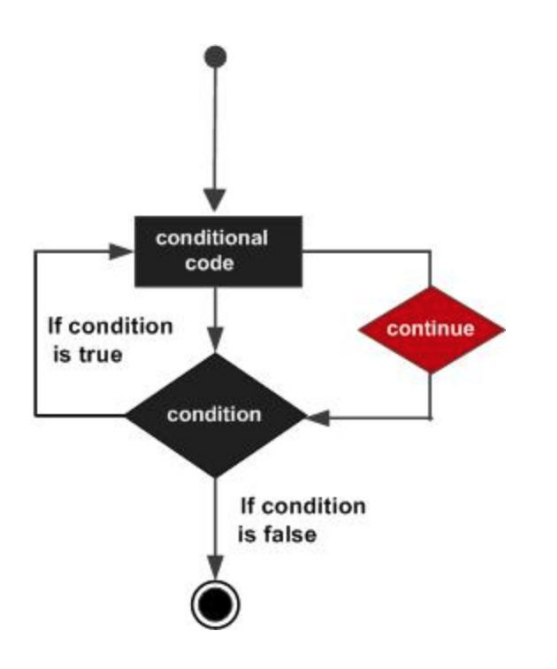


Figure: Flowchart of break statement

```
for (int i = 0; i < 10; i++) {
        if (i == 4) {
          break;
        }
      System.out.println(i);
}
```

Continue Statement

The Java ***continue*** keyword can be used in any of the loop control structures. It causes the loop to **immediately jump** to the next **iteration** of the loop.




```
for (int i = 0; i < 10; i++) {
        if (i == 4) {
          continue;
        }
      System.out.println(i);
}
```