

Loops in Java

In This Lecture

1. for loop ✓
2. while loop ✓
3. do-while loop ✓
4. break & continue statements ✓
5. Nested loops ✓
6. Labeled break & continue statements ✓

Java for Loops

① Table of n

$$3 \times 1 = 3$$

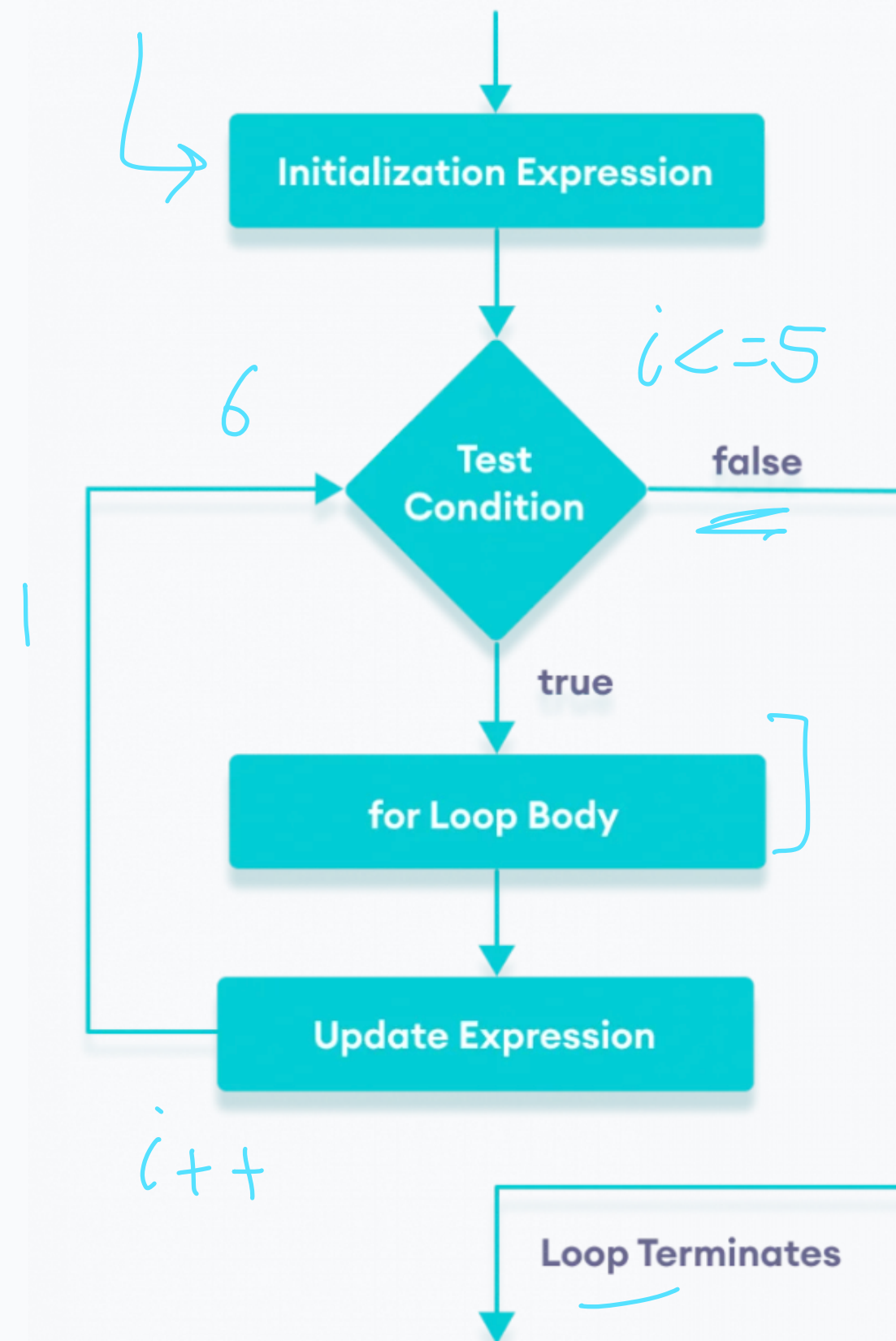
$$3 \times 2 = 6$$

⋮

② Sum of N natural numbers

$$= \frac{N(N+1)}{2}$$

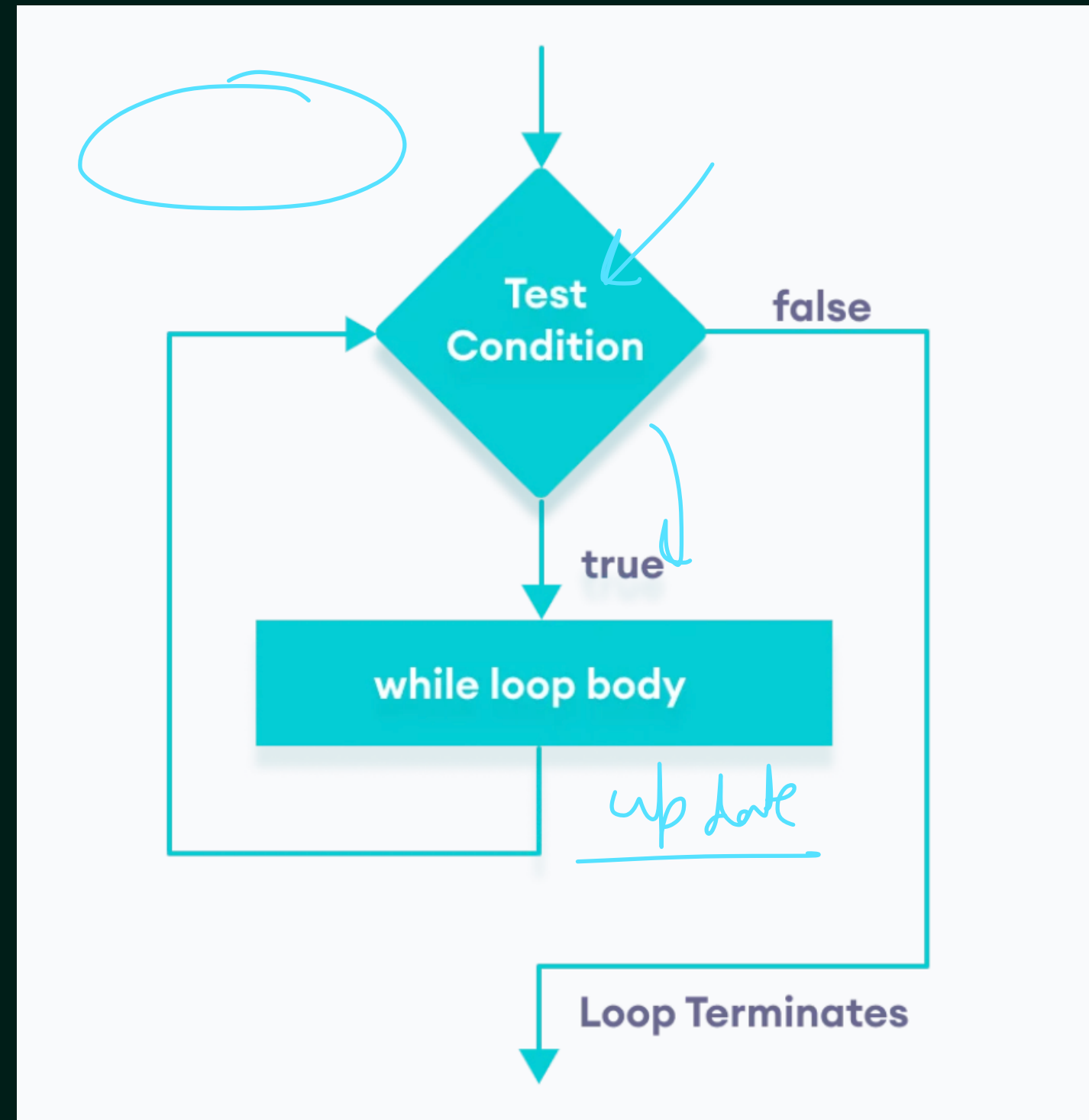
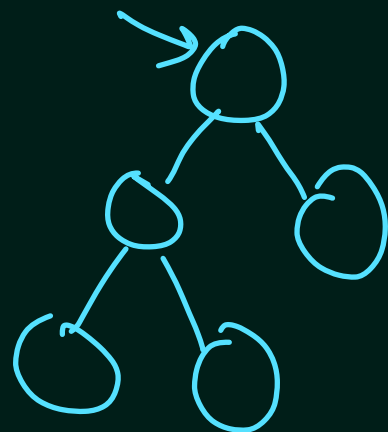
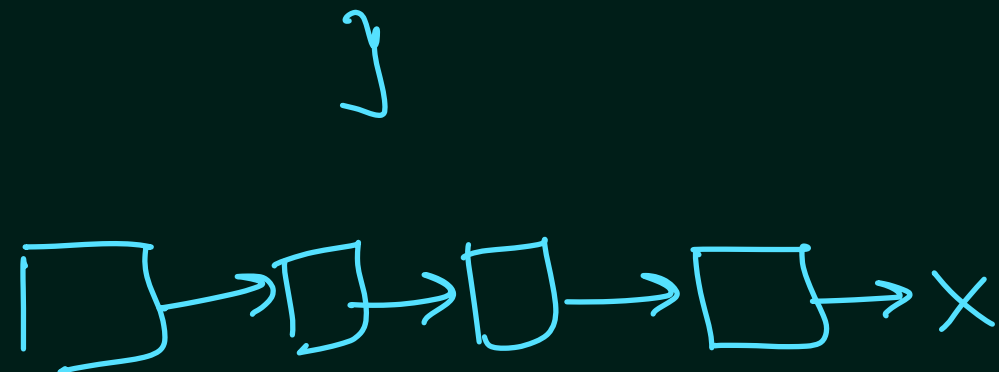
$i = 0$



$n = 5$
 $(1 + 2 + 3 + 4 + 5)$
 $\rightarrow 2 + 4 + 6 + 8 + 10$

Java while Loops

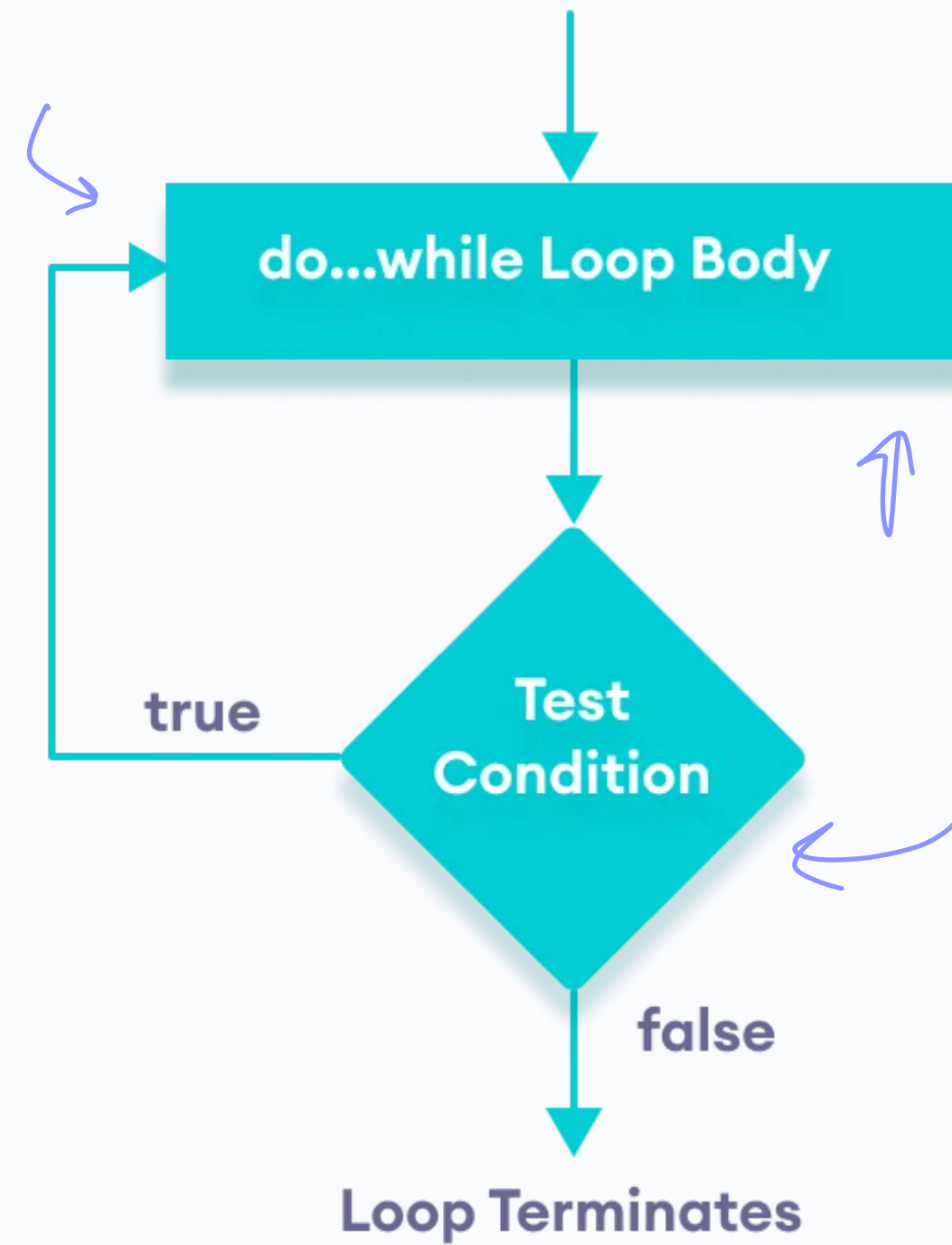
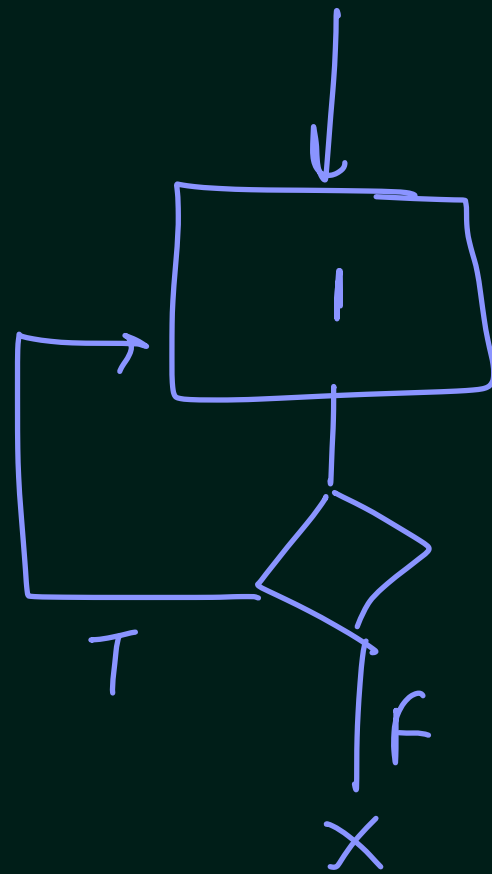
\nearrow
`while (not understood) {`
`go to school`
`}`



Java do-while Loops



at least 1 time



break statements in Java

break switch
{

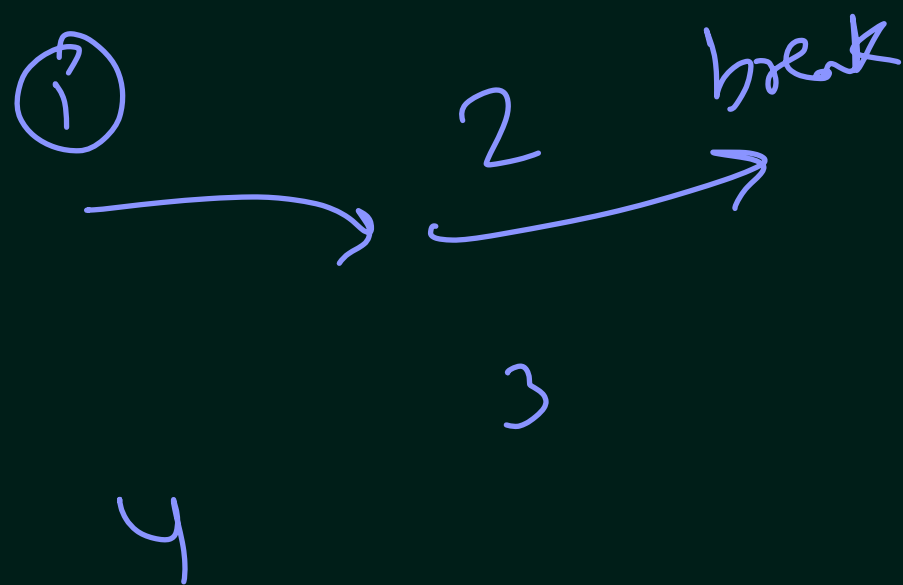
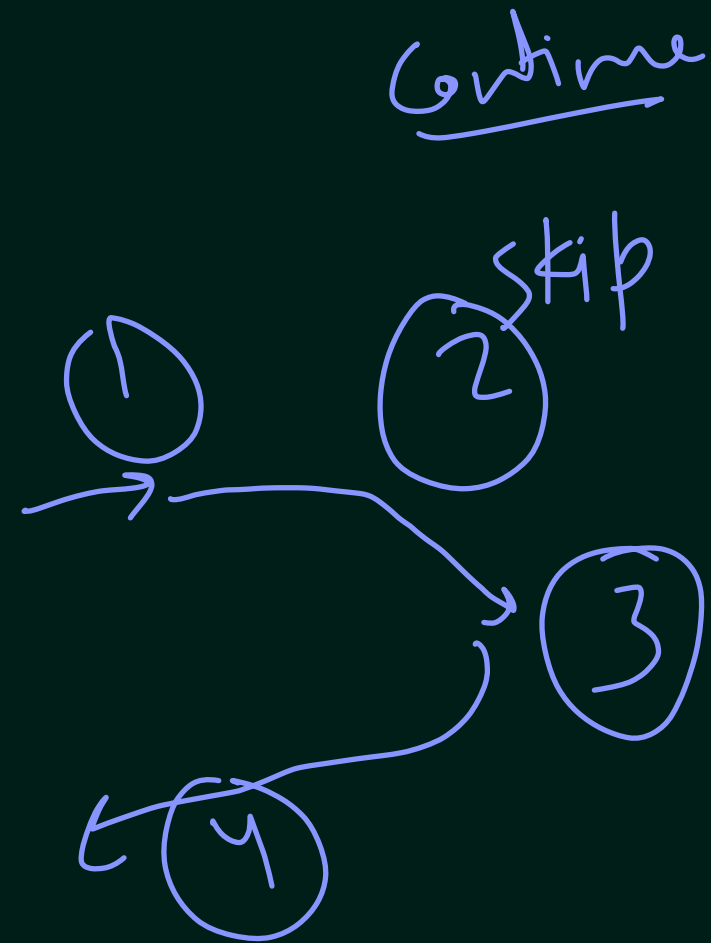
}

```
while (testExpression) {  
    // codes  
    if (condition to break) {  
        break;  
    }  
    // codes  
}
```

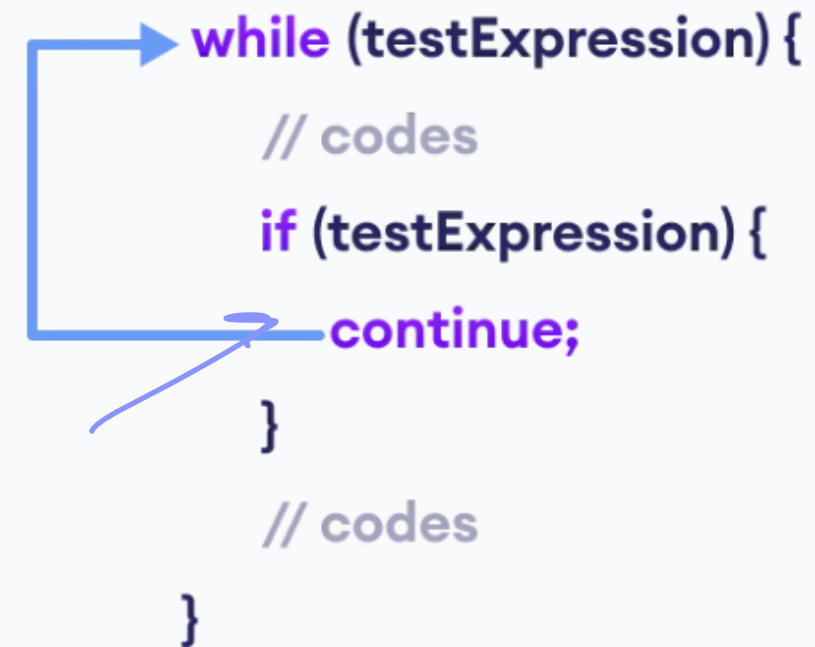
```
do {  
    // codes  
    if (condition to break) {  
        break;  
    }  
    // codes  
} while (testExpression);
```

```
for (init; testExpression; update) {  
    // codes  
    if (condition to break) {  
        break;  
    }  
    // codes  
}
```

continue statements in Java



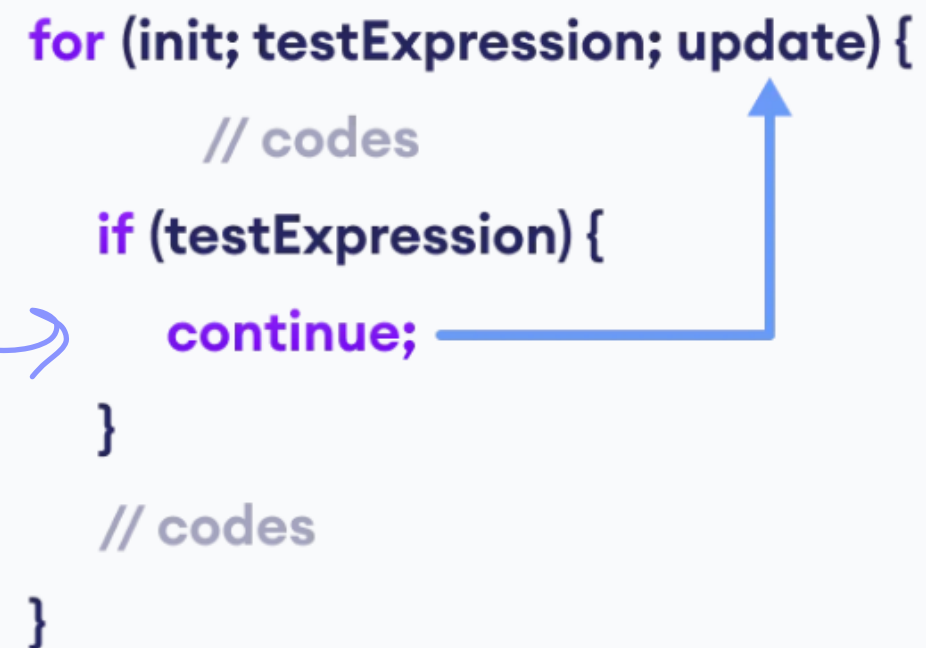
```
while (testExpression) {
    // codes
    if (testExpression) {
        continue;
    }
    // codes
}
```



```
do {
    // codes
    if (testExpression) {
        continue;
    }
    // codes
} while (testExpression);
```

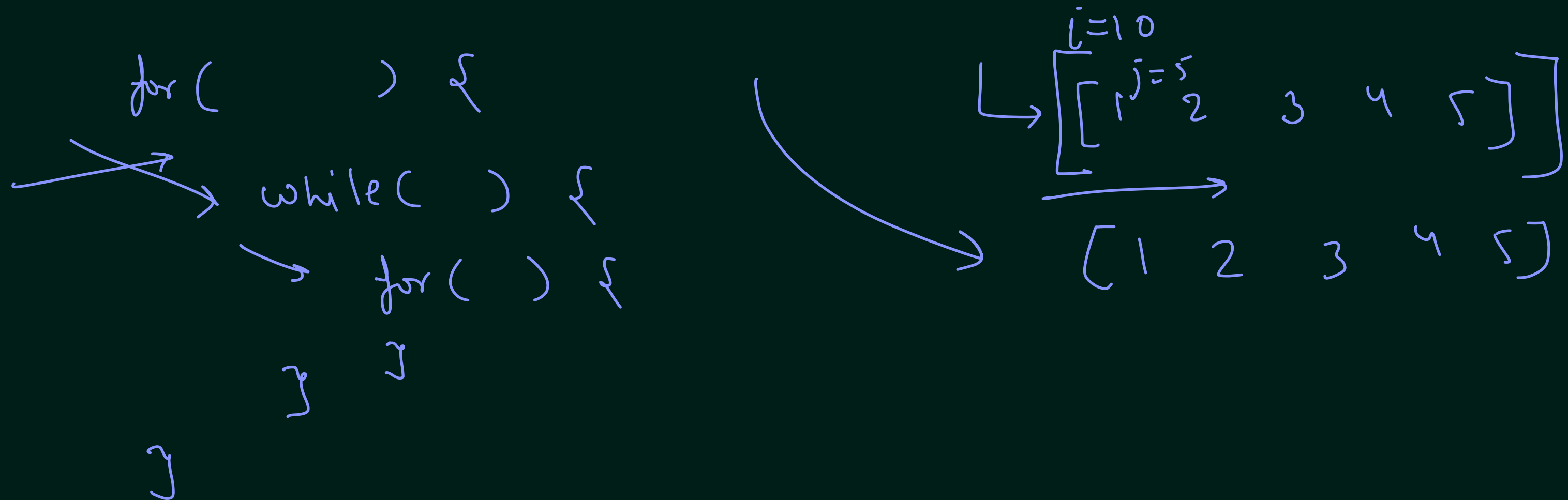


```
for (init; testExpression; update) {
    // codes
    if (testExpression) {
        continue;
    }
    // codes
}
```



Nested loops

If a loop exists inside the body of another loop, it's called a nested loop.



Labeled break & continue statements

