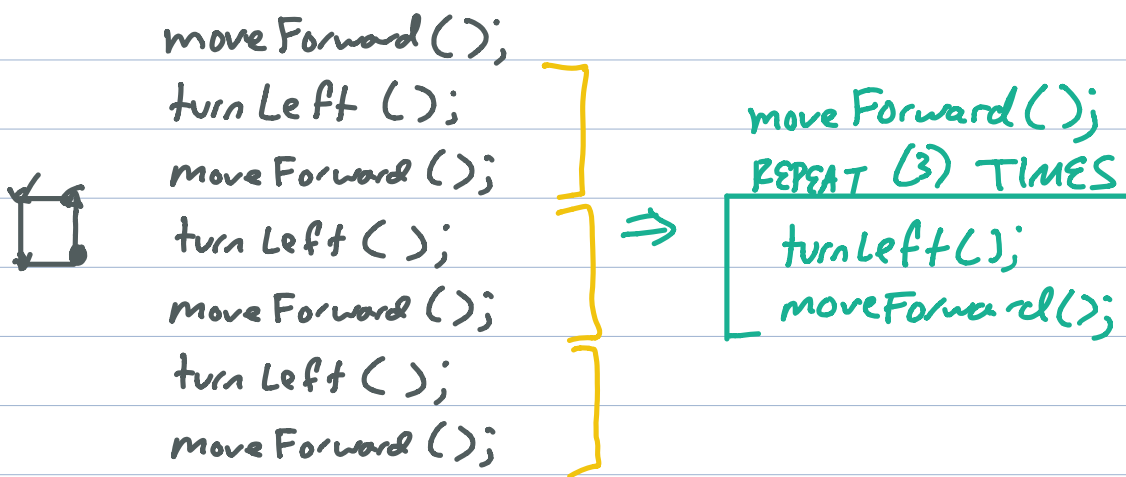


Iteration → Repetition of a process

★ We can use iteration to repeat code to make it more concise and less repetitive.



★ LOOPS ★

Code structures that allow us to repeat processes (iterate)

While Loop

- Repeat code

while a certain condition is true.

↳ boolean expressions

↳ evaluates

For loop

- Repeats code

for a certain number of times

<div style="display: flex; align-items: center; justify-content: center;"> <div style="text-align: center; margin-right: 10px;"> </div> <div> <code>while (condition) {</code> <div style="text-align: center; margin: 5px 0;">// repeated code here</div> <code>}</code> </div> </div>	<div style="border-left: 1px dashed black; height: 100px; margin: 0 auto; width: 2px;"></div>	<div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 10px;"> to either true or false </div> <div> <code>for (</code> <div style="display: flex; gap: 10px; margin: 0 5px;"> <div style="text-align: center;">① <small>counter init</small></div> <div style="text-align: center;">② <small>condition</small></div> <div style="text-align: center;">③ <small>increment</small></div> </div> <code>); {</code> <div style="text-align: center; margin: 5px 0;">// repeating code here</div> <code>}</code> </div> </div>
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WHILE LOOP EXAMPLES

```
boolean hasInternet = false;
```

```
while (hasInternet == false) {
    boolean flag = checkInternet();
```

```
    if (flag == true) {
        hasInternet = true;
        System.out.println("Has Internet!");
    }
    else
```

```
        System.out.println("None, checking again");
    }
}
```

<pre>int i = 0; ← initializing counter variable</pre> <pre>while (i < 5) { ← condition for counter variable // code blocks i++; ← increment for counter variable }</pre>	<div style="border-left: 1px dashed black; height: 100px; margin: 0 auto; width: 2px;"></div>	<pre>for (int i = 0; i < 5; i++) { // code blocks }</pre>
---	---	--

FOR LOOP EXAMPLES

```
for (int i = 0; i < 10; i++) {
```

```
    System.out.print ("* ");
```

} ** note: System.out.print() doesn't add a line break every time it repeats at the end*

** * * * **

i=0 i=1 i=2 i=3 i=4 i=5 i=6 i=7 i=8 i=9 i=10
Repeats 10 times

```
for (int i = 10; i > 0; i -= 2) {
```

```
    System.out.print ("* ");
```

} ** * * * **

i=10 i=8 i=6 i=4 i=2 i=0

nested loop

```
    for (int i = 0; i < 3; i++) {  
        for (int j = 0; j < 4; j++) {  
            System.out.print ("* ");  
        }  
        System.out.println();  
    }
```

4 times *3 times* ** prints a new line*

* * * *

* * * *

* * * *