

Week4 Notes

Switch Statement

- Syntax:

```
switch(expression) {
```

```
  case x:
```

```
    //code
```

```
    break; //break is optional but very common if you want to do one code block for each case
```

```
  case y:
```

```
    //code
```

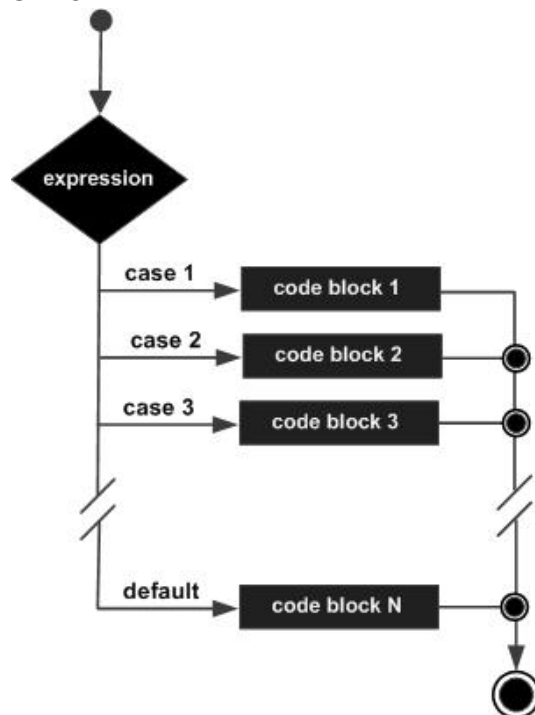
```
    break;
```

```
  default: //default is optional
```

```
    //code
```

```
    break;
```

- Switch:



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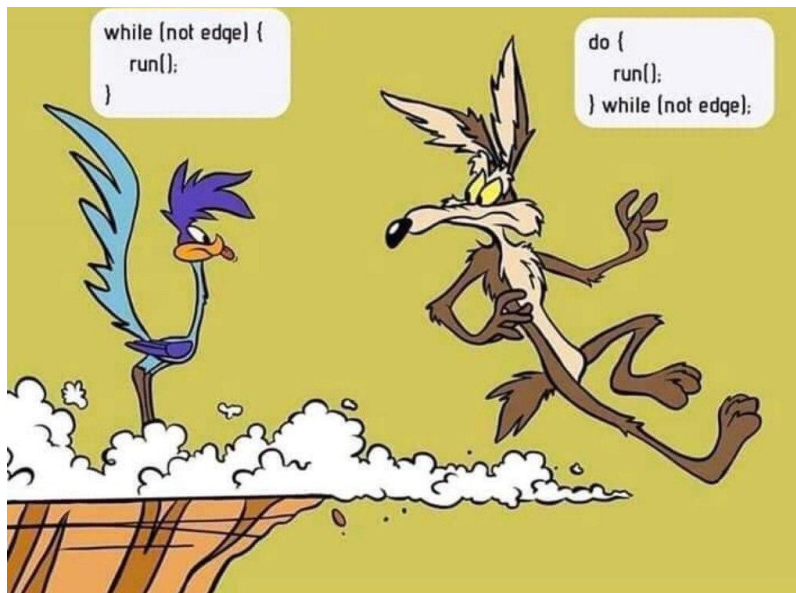
- If you don't use break, it executes every statement till the break statement. Break is optional.

- Default can be interpreted as else, i.e., when none of the above cases applies (or they are taken and no break is included). Default is optional.
- "enum" is special class that represents a group of constants. To create "enum", use the enum keyword instead of class and separate the constants with a comma.
Syntax:

```
enum -enumname- {  
  
-CONSTANT(1)- , -CONSTANT(2)- , ... , -CONSTANT(N)-  
  
}
```

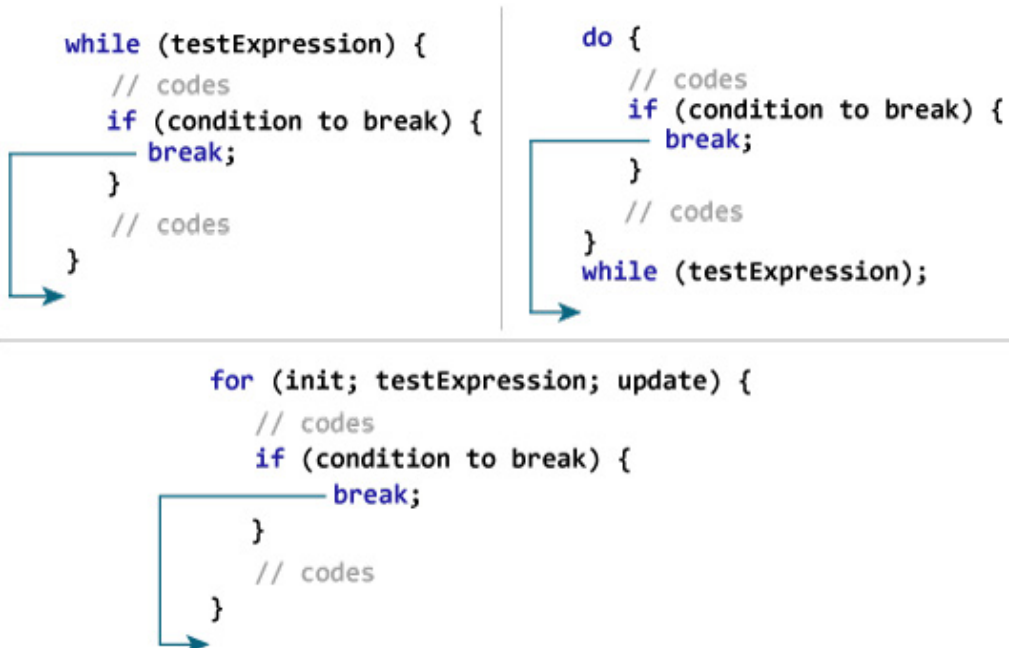
While, Break and Continue

- While Syntax:
while(statement) {
 // "while" statement is true, executes the code
}
- Do-While Syntax:
do{
 //executes the code
} while(statement) //loop will continue "while" statement is true
- Difference? While vs. do-while:



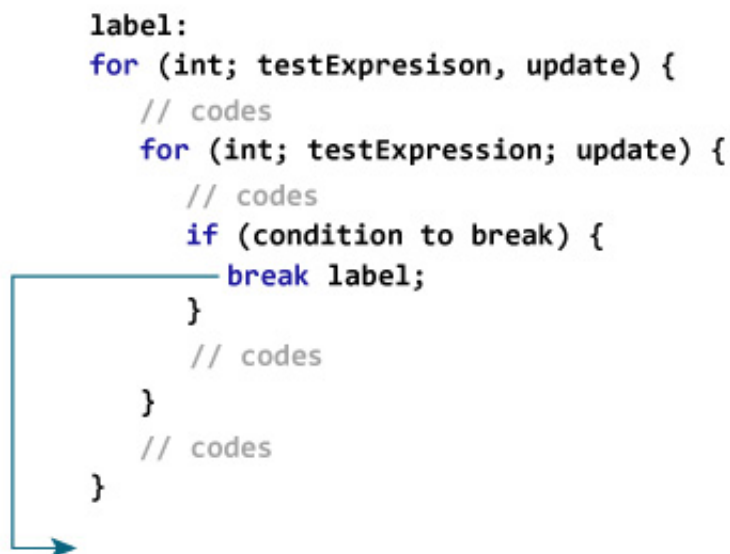
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- Break kicks you out of the inner loop.
- Break:



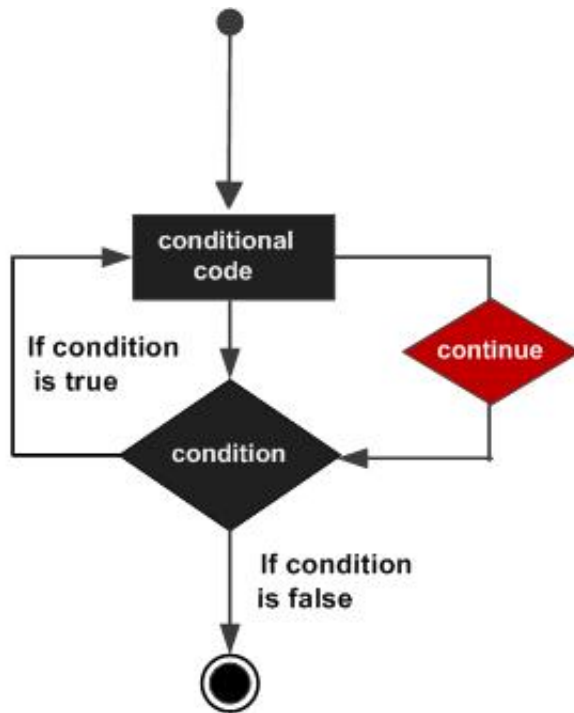
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- You can define code blocks and use the break (break out of defined scope):



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- Continue: If condition is true, “continue” to the inner loop. (It will skip the rest of the code block within the loop).



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Arrays

- Array is vector(one-dimensional array) and matrix(multi-dimensional array) in mathematics.
- Syntax(one-dimensional):
 -datatype- [] -arrayname- = new int [-length of array-];
 -arrayname- [-index-] = -value-; //Assign values
- Syntax(multi-dimensional with fixed length arrays):
 -datatype- [] [] -arrayname- = new int [-length of array-] [-length of array-];
 -arrayname- [-index-] [-index-] = -value-; //Assign values
- Since the multi-dimensional array is the array of an array, you can specify the length of the arrays separately:
 -datatype- [] [] -arrayname- = new int [-length of array-] [];
 -arrayname- [-index-] = new int [-length of array-] []; //Creates array for given index.
- Alternative definition:
 -datatype- [] -arrayname- = { -value(0)-, -value(1)- , ... , -value(n)- } //Creates array length of (n+1)

- Initialize arrays when you declare.
- Array(one-dimensional):

40	55	63	17	22	68	89	97	89
0	1	2	3	4	5	6	7	8

<- Array Indices

Array Length = 9

First Index = 0

Last Index = 8

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- Array(multi-dimensional with same length arrays)

	Column 0	Column 1	Column 2
Row 0	x[0][0]	x[0][1]	x[0][2]
Row 1	x[1][0]	x[1][1]	x[1][2]
Row 2	x[2][0]	x[2][1]	x[2][2]

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- Pseudocode: Half code half definition. A code-like explanation of an algorithm, without worrying about the syntax. All that matters is the logic and flow of algorithm and clarity.

Timer

Use `import java.util.concurrent.TimeUnit;` at the beginning of your code and use `System.currentTimeMillis()` to access the current cpu time as a long integer.

Enhanced For

`for(type variable_name:array_name)` gives you immediate iterative access to the values of an array, rather than iterating over indices.