
Globant
we are ready

UI Engineering Studio. Day 4

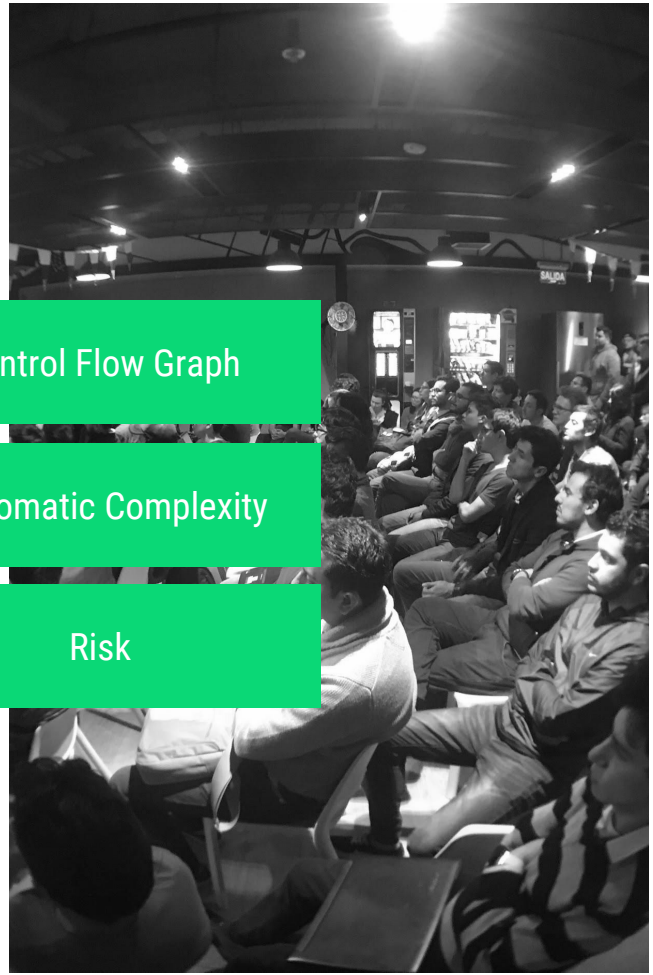
Bootcamp: Cyclomatic Complexity

Globant

Cyclomatic Complexity

Software metric, used to indicate the **complexity of a program**. It is a quantitative measure of the number of linearly independent paths through a program's source code.

- Wikipedia



Control Flow Graph

Cyclomatic Complexity

Risk

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Control Flow Graph

In a control flow graph each **node** in the graph represents a basic block, a straight-line piece of code without any jumps or jump targets; jump targets start a block, and jumps end a block. Directed edges are used to represent jumps in the **control flow**.

- Wikipedia

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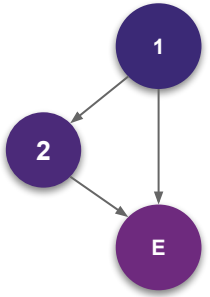
Control Flow Graph - IF

```
1   If (a) {
2       doSomething();
E   }
```



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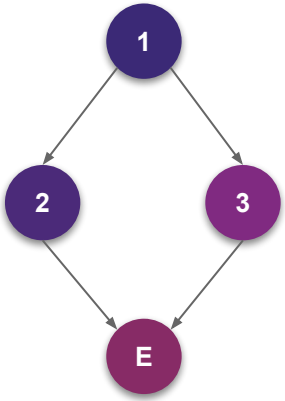
Control Flow Graph - IF ELSE

```
1   if (a) {
2       doSomething();
    } else {
3       doSomethingElse();
E   }
```



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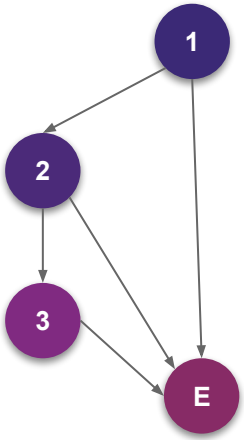
Control Flow Graph - AND

```
      1     2
    if (a && b) {
3       doSomething();
E   }
```



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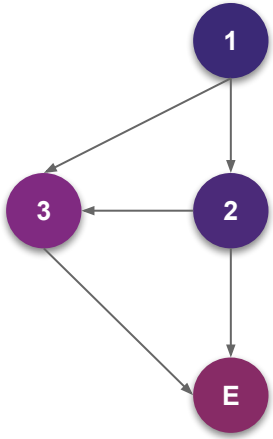
Control Flow Graph - OR

```
      1     2
    if (a || b) {
3       doSomething();
E   }
```



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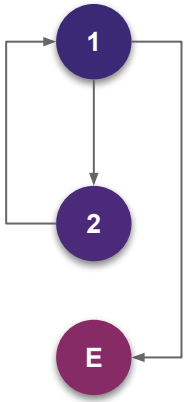
Control Flow Graph - WHILE

```
1   While (a) {
2         doSomething();
E   }
```



UI Boot Camp

Cyclomatic Complexity

Avoid complexity

Software Metric, used to indicate the **complexity** of a program. It is a **quantitative measure** of the number of linearly independent paths through a program's source code.

- Wikipedia

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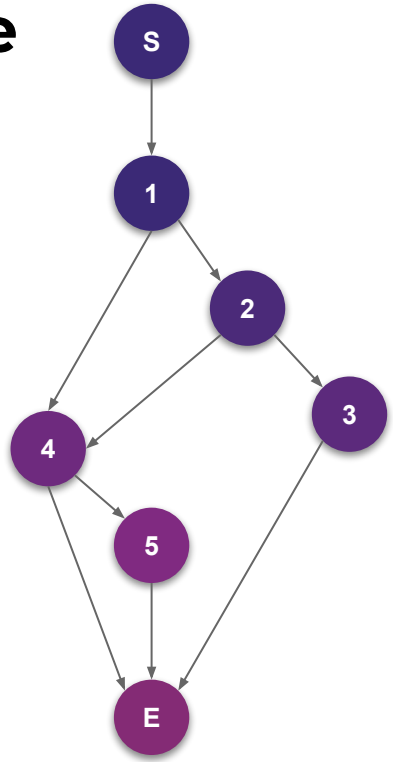
Metric - Sample code

```
S function aMethod(a) {
            1     2
        if (a && b) {
3               doSomething();
4       } else if (c){
5               doSthElse();
        }
E }
```



M Complexity Score

E number of edges of the graph.

N number of nodes of the graph.

P number of connected components.

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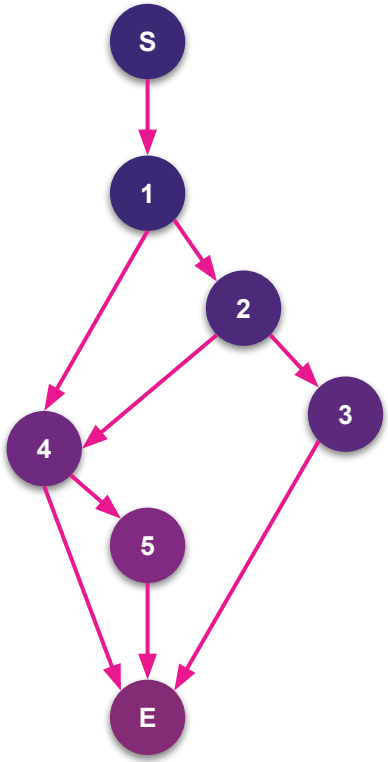
M = **Edges - Nodes** + 2

M = E - N + 2

9 - 7 + 2 = 4



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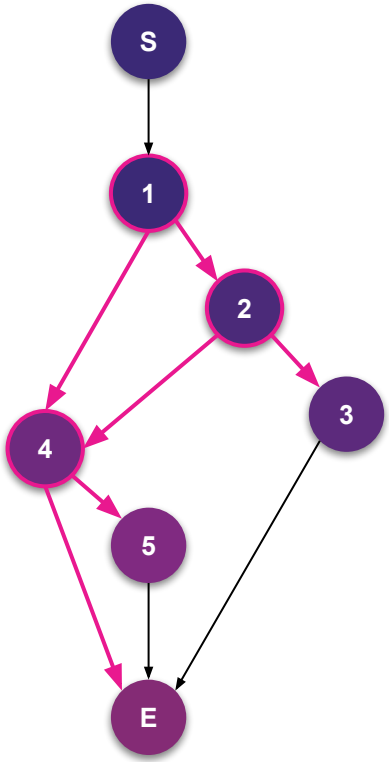
M = **connected components** + 1

M = P + 1

3 + 1 = **4**



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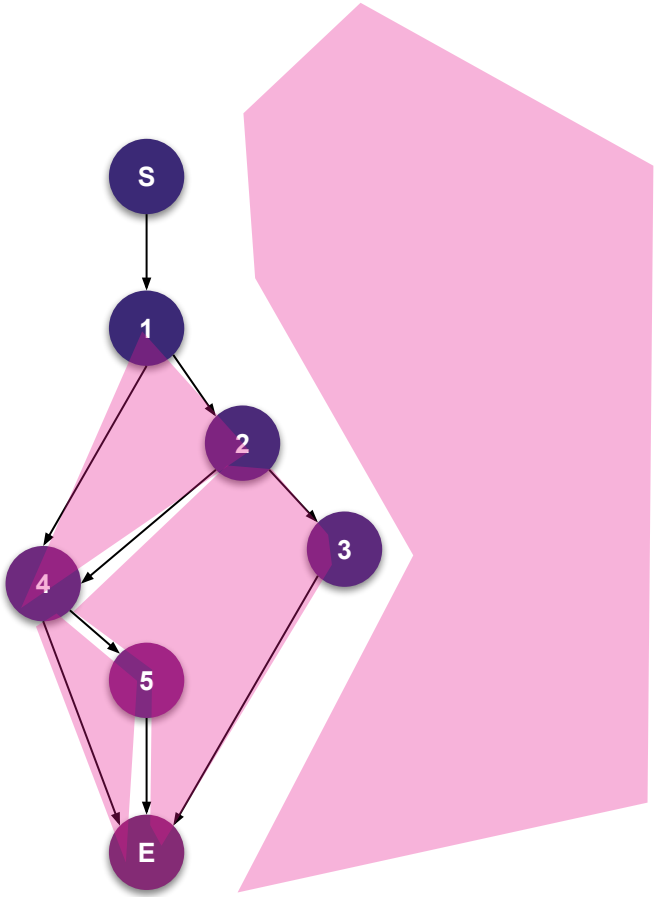
M = **Regions**

4



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Score & Risk

Score	Cyclomatic	Risk Type
1 to 10	Simple	Not much risk
11 to 20	Complex	Low risk
21 to 50	Too complex	Medium Risk, Attention
More 50	Too complex	Can’t test, **High Risk**

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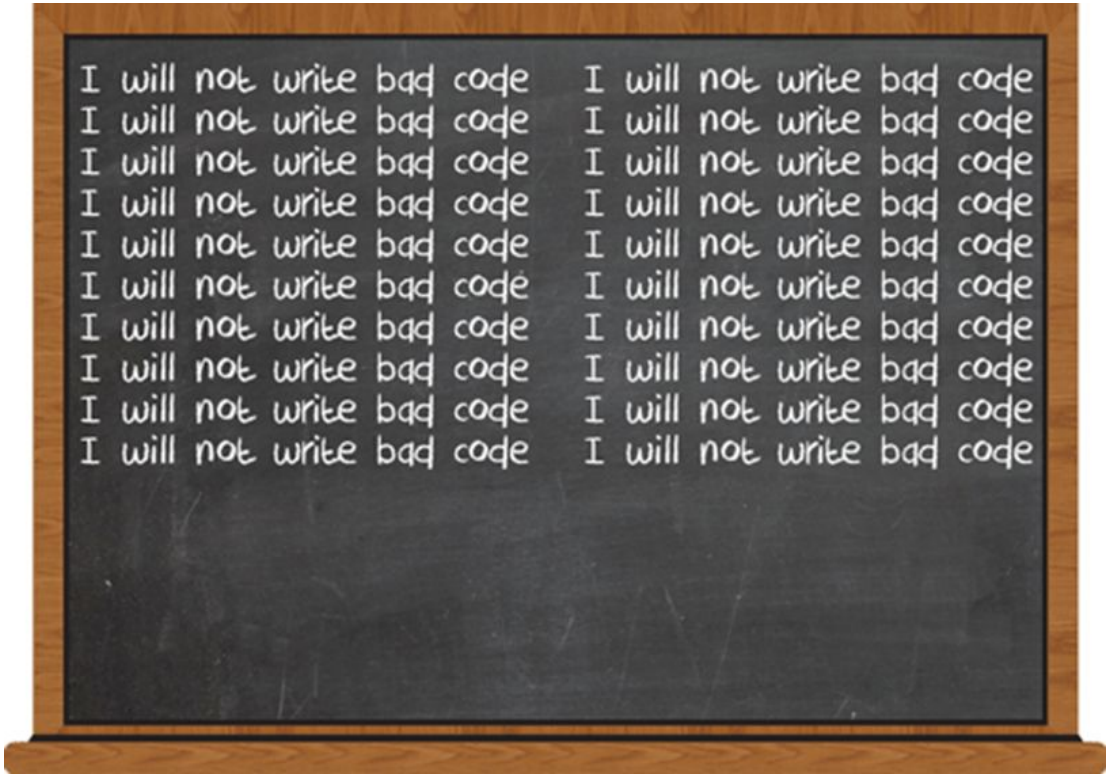

UI Boot Camp: CSS

Homework: Solve and calculate cyclomatic complexity

My grandfather always predicted how old people would get, and right before he passed away he revealed his secret!

In honor of my grandfather's memory we will write a function using his formula!

- Take a list of ages when each of your great-grandparent died.
- Multiply each number by itself.
- Add them all together.
- Take the square root of the result.
- Divide by two.

Example: predictAge(65, 60, 75, 55, 60, 63, 64, 45) === 86.

Note: the result should be rounded down to the nearest integer.

Code wars online **Kata**


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1
2
3
4
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