Conditionals: Part 2

If / Else statements

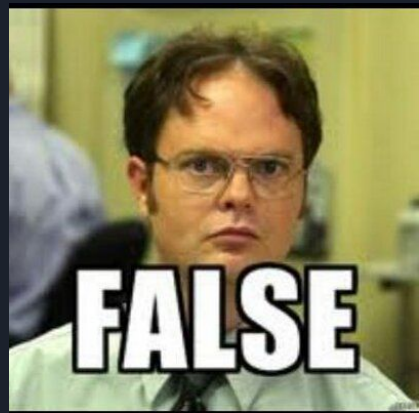
- Logic requires *at minimum* two answers:
  - True
  - False

- What if you want something to happen when your state of existence is False?

If / Else statements

- If / Else statements allow for this *false state* to have a specific action

```
if (num1 == 12) {
   /*Do something*/
} else {
   /*Do something else*/
}
```



If / Else statements

- The **else** term holds ALL OTHER POSSIBLE STATES
  - In this example, that is anything != 12

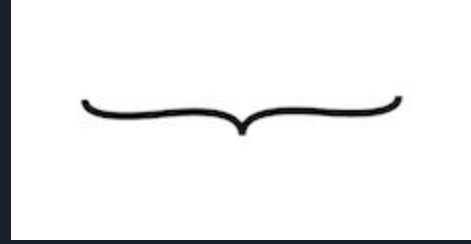
```
if (num1 == 12) {
   /*Do something*/
} else {
   /*Do something else*/
}
```

If / Else statements

- Therefore, no state of existence needs to be specified

```
if (num1 == 12) {
   /*Do something*/
} else {
   /*Do something else*/
}
```

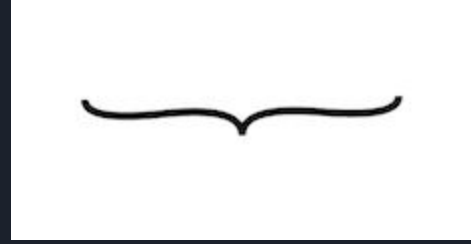
If / Else statements



- Includes brackets & no semicolon, just like an if statement

```
if (num1 == 12) {
   /*Do something*/
} else {
   /*Do something else*/
}
```

If / Else statements



- HAS to be connected to a preceding *if* statement
  - Otherwise, it will not follow logic

```
if (num1 == 12) {
   /*Do something*/
} else {
   /*Do something else*/
}
```

Coding Challenge: Part 1

- Minimum wage in Maryland is (currently) $9.25 per hour.

- Write a program that scans in a user's current pay per hour - state whether the pay is above or below minimum wage using *if/else* notation

If / Else if / Else statements

- Logic requires *at minimum* two answers:
  - True
  - False

- Can have more than that...

If / Else if / Else statements

- Logic requires *at minimum* two answers:
  - True*
  - True*
  - True*
  - True*
  - False

*Under certain circumstances

Else If

- Written in C as the *else if* clause

```
if (num1 == 12) {
        /*Do something*/
} else if (num1 == 15) {
        /*Do something*/
} else if (num1 > 10000) {
        /*Do something crazy*/
} else {
        /*Do something*/
}
```

Else If

- Written in C as the *else if* clause
  - Allows for multiples cases to be evaluated

```
if (num1 == 12) {
        /*Do something*/
} else if (num1 > 10000) {
        /*Do something crazy*/
} else {
        /*Do something*/
}
```

Else if - ranges of numbers

- Allows for ranges of numbers to be easily evaluated

Challenge

Create a program that scans in wind speed of a hurricane. The category of the hurricane should be printed to the screen based on the following conditions:

157+ winds : Category 5;	130-156 winds: Category 4	111-129 winds: Category 3
96-110 winds: Category 2	74 - 95 winds: Category 1	<74: Tropical Storm

Else if: Coding Challenge

- Calculate the tax owed from specific incomes using the chart below

Table 1. Single Taxable Income Tax Brackets and Rates, 2017

Rate	Taxable Income Bracket	Tax Owed
10%	$0 to $9,325	10% of Taxable Income
15%	$9,325 to $37,950	$932.50 plus 15% of the excess over $9325
25%	$37,950 to $91,900	$5,226.25 plus 25% of the excess over $37,950
28%	$91,900 to $191,650	$18,713.75 plus 28% of the excess over $91,900
33%	$191,650 to $416,700	$46,643.75 plus 33% of the excess over $191,650
35%	$416,700 to $418,400	$120,910.25 plus 35% of the excess over $416,700
39.60%	$418,400+	$121,505.25 plus 39.6% of the excess over $418,400