

Thursday, October 15, 2020 | **Class #4**

Control flow

**For loops, while loops,
list comprehensions, and if statements**

OCEAN 215 | Autumn 2020

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Review from Lesson #4: `if/elif/else` statements

```
if <CONDITION #1>:
```

```
    <ACTION #1>
```

```
elif <CONDITION #2>:
```

```
    <ACTION #2>
```

```
elif <CONDITION #3>:
```

```
    <ACTION #3>
```

```
else:
```

```
    <ACTION #4>
```

Note:

`elif` stands
for “else if”

Coding activity: calculating absolute values using `if/elif/else` statements

Recall that absolute value means the magnitude, or distance, of a number from 0 without regard to its sign. For example:

$$|5| = 5$$

$$|-5| = 5$$

$$|0| = 0$$

Use *if* and/or *elif* and/or *else* statements to calculate the absolute value of a variable 'x'. Store its absolute value in a variable called '**abs_value**' and print it.

Google Doc with activities (also accessible from Canvas Modules or Google Drive folder):

<https://tinyurl.com/OCEAN215-Class4>

Review from Lesson #4: for loops

for *<VARIABLE>* **in** *<ITERABLE>*:

<ACTION>

<ACTION>

etc.

Coding activity: converting units using for loops

Recall that 0°C (Celsius) = 273.15 K (Kelvin). In other words:

temp_kelvin = *temp_celsius* + (273.15 K)

Convert the temperatures in the following lists from $^{\circ}\text{C}$ to K. Print the list of converted temperatures.

```
1 # Part 1: Use a single for loop.
2 temps_celsius = [-4.9, -3.8, -2.3, -1.1, 0.2, 2.4, 5.3, 6.1, 12.7, 13.1, 15.1, 19.9] # units: °C
3
4 # Part 2: Use nested for loops (two for loops, one inside the other).
5 temps_celsius = [[-4.9, -3.8, -2.3, -1.1],
6                 [0.2, 2.4, 5.3, 6.1],
7                 [12.7, 13.1, 15.1, 19.9]] # units: °C
```

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