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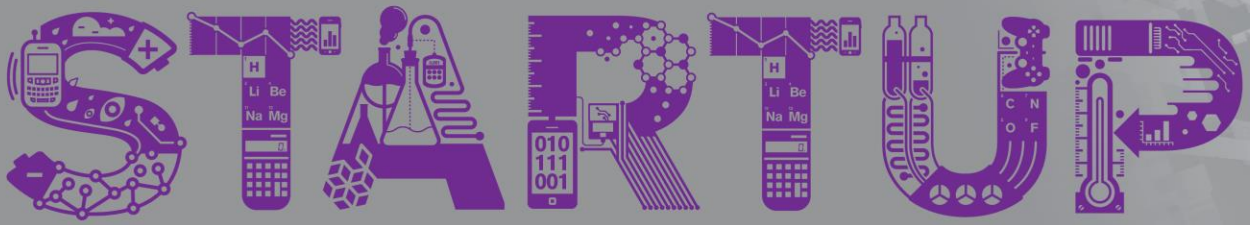

STARTUP

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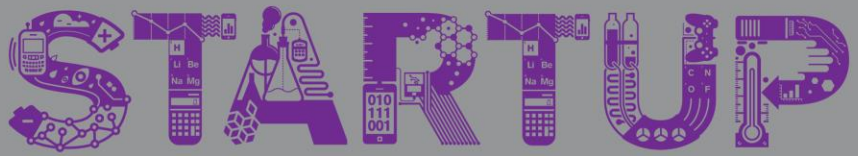

Python Lesson 3

Conditionals

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Review: What does this code do?

```
import random
num1 = random.randint(1, 100)
num2 = random.randint(1, 100)
print("I picked the random number", max(num1, num2))
```

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Conditionals: Introduction

If it rains tomorrow, I will bring an umbrella.

- What happens if it rains?
- What happens if it is sunny?

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Conditionals: Booleans

A boolean has the value of either True or False.

```
print(4 > 3)      True
print(4 > 5)      False
print(3 >= 3)     True
print(3 < 4)      True
print(3 < 2)      False
print(3 <= 3)     True
```

```
print(3 == 3)                    True
print(3 == 4)                    False
print(3 != 3)                    False
print(3 != 4)                    True
print("Hello" == "Hello")        True
print("Hello" == "World")        False
print("Hello" != "Hello")        False
print("Hello" != "World")        True
```

== and != tell the program you are comparing two values.
The comparison produces a Boolean value.

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Conditionals: Booleans

What does the following code do?

```
x = 10
y = 5
print(x == y)   False
print(x != y)   True
print(x < y)    False
print(x > y)    True
```

```
x = “apple”
y = “orange”
z = “apple”
print(x == y)    False
print(x != y)    True
print(x == z)    True
print(y == z)    False
```

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Conditionals: If Statements

What does this code do?

```
import random

print("Flipping coin!")
coinToss = random.randint(0,1)
if coinToss == 0:
    print("You flipped heads!")
```

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Anatomy of If Statements

if tells the program you are starting a conditional statement.

A condition that evaluates to either **True** or **False**.

: tells the program you are starting the statements block.

```
if coinToss == 0:
    print("You flipped heads!")
```

The statements must all be indented the same amount.

The statements get executed only if the condition is **True**.

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Conditionals: Else Statements

If it rains tomorrow, I will bring an umbrella. Otherwise, I will bring a pair of sun glasses.

- What happens if it rains?
- What happens if it is sunny?

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Conditionals: Else Statements

What does this code do?

```
import random

print("Flipping coin!")
coinToss = random.randint(0,1)
if coinToss == 0:
    print("You flipped heads!")
else:
    print("You flipped tails!")
```

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Anatomy of Else Statements

else tells the program you want to execute the statements if the condition is **False**.

: tells the program you are starting the statements block.

```
if coinToss == 0:
    print("You flipped heads!")
else:
    print("You flipped tails!")
```

The statements must all be indented the same amount.

The statements get executed only if the condition is **False**.

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Recap

- A Boolean has the value of either True or False.
- == is for comparison. = is for value assignment.
- To write conditional statements,

```
if Boolean expression:
    statements
else:
    statements
```

- All the statements inside a code block should be indented the same amount.