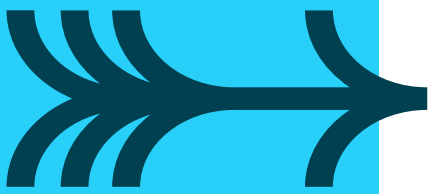
POWERING POTENTIAL

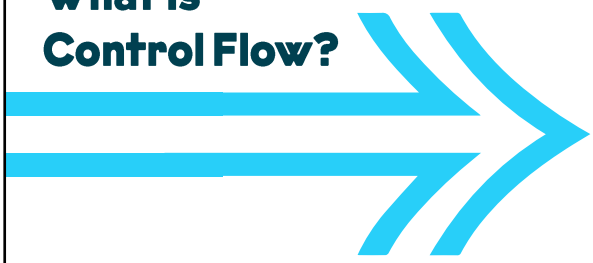
Control Flow - Selection

LESSON OBJECTIVES



- **In this chapter you'll learn about:**
- **Python Control Flow statements**
  - if
  - else
  - elif
- **Logical OR and AND operators**

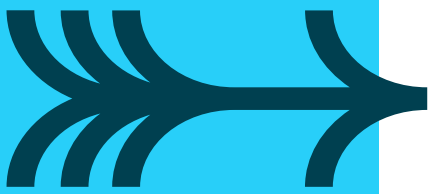
What is Control Flow?



Is for controlling the order we do things

- **Sequence**
  - Running code step by step, in order
- **Selection**
  - Deciding *which* lines of code should run
- **Iteration**
  - Doing the same thing many times, i.e. in a loop

CONTROL FLOW - SELECTION



Making decisions

if some condition :

do this

else:

do something else

What you are seeing is what is called *pseudocode* – not a specific programming language but more a description of what to do.

Comparing values

Relational operators for making a selection

>	Greater than
>=	Greater than or equal to
<	Less than
<=	Less than or equal to
==	Equal to comparison
!=	Not Equal to comparison

Note!

== not the same as **=**

Selection example – IF statement

```
X = 5

if x == 5:
    print("X equals 5")
```

Condition
Is x equal to 5?

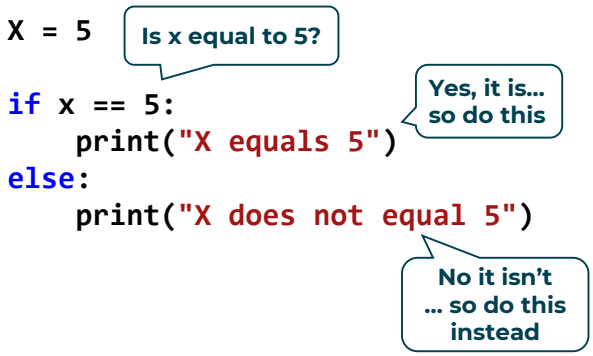
Yes, it is
... so do this

Use the Tab key to include lines in an IF statement

Note the colons (two dots, one above the other) – necessary!
Note the indenting – this isn't optional either. It shows where a block of code starts and finishes

Selection example – IF … ELSE

```
X = 5

if x == 5:
    print("X equals 5")
else:
    print("X does not equal 5")
```



This is the same thing in Python.
Note the colons (two dots, one above the other) – necessary!
Note the indenting – this isn't optional either. It shows where a block of code starts and finishes

Control flow using "else if" - elif

```
salary = 2500

if salary > 100000:
    print('Band A')
elif salary > 55000:
    print('Band B')
elif salary > 32000:
    print('Band C')
elif salary > 25000:
    print('Band D')
else:
    print('Band E')
```

Creates a chain of tests

When a test passes the other tests will not execute and the statement ends.

The last else is optional

This is the same thing in Python

Logical OR and AND

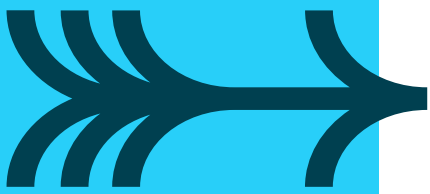
- What would you conclude from the following two IF statements?

```
course='Python'
age = 19

if course == 'Python' and age > 18:
    print('Welcome!')


if course == 'Python' or age > 20:
    print('Please start your', course, 'course!')
```

Python Fundamentals

- **In this chapter you learned about:**
- **Python Control Flow statements**
  - if
  - else
  - elif
- **Logical OR and AND operators**

EXERCISE



Please see your Exercise Guide

- 06-Selection.docx
- Duration: 2 hours

Further Reading

- https://www.python.org/
- https://www.python.org/dev/peps/pep-0008/#a-foolish-consistency-is-the-hobgoblin-of-little-minds

POWERING POTENTIAL

Thank you