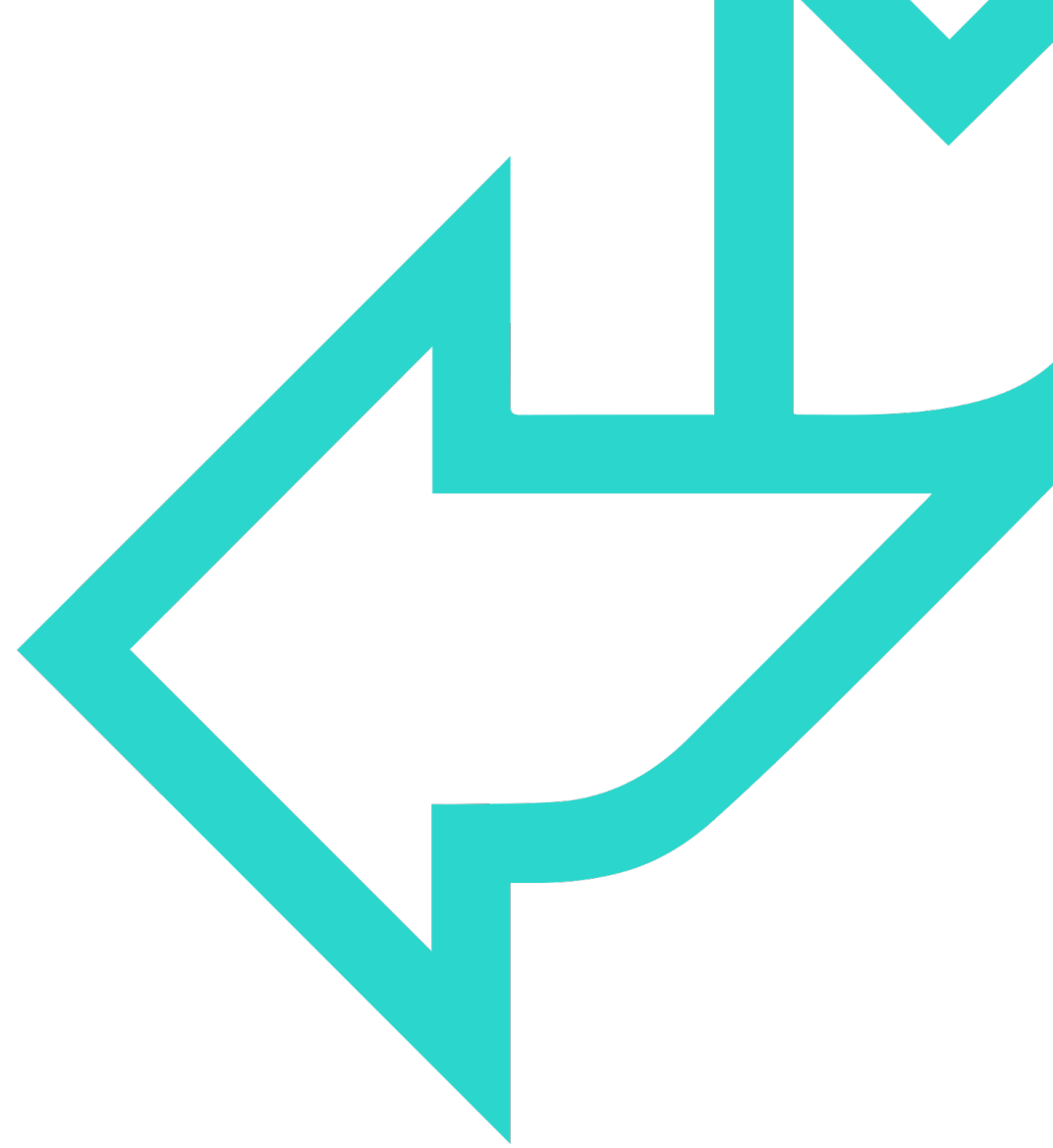




# **Control Flow - Selection**

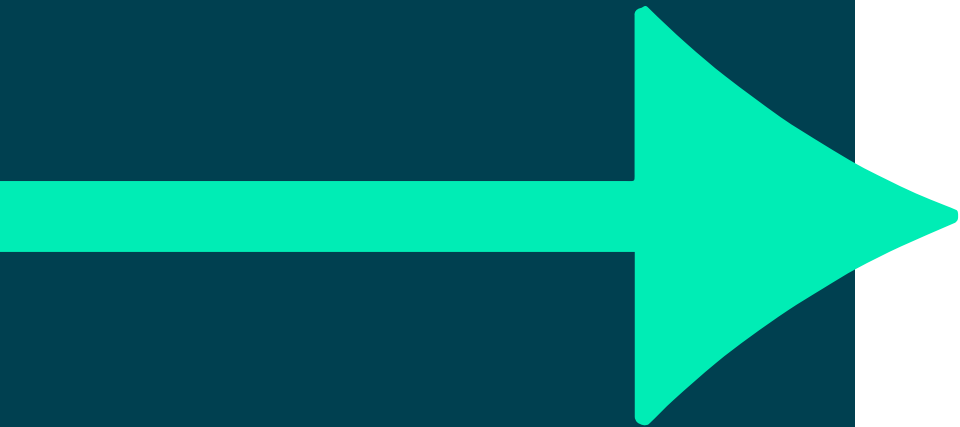




# LESSON OBJECTIVES

**In this chapter, you'll learn about:**

- Python Control Flow statements
  - if
  - else
  - elif
- Logical **OR** and **AND** operators





# WHAT IS CONTROL FLOW?

Control Flow controls the order in which 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

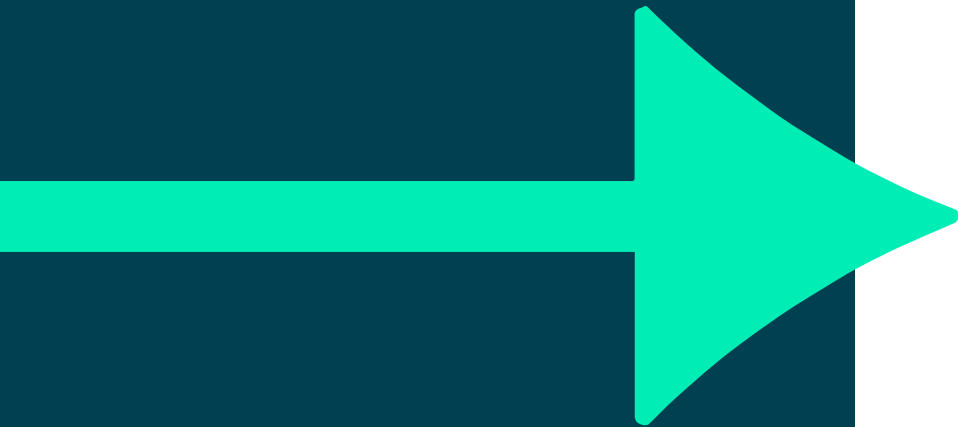


# CONTROL FLOW - SELECTION

Making decisions

**if:** do this

**else:** do something else





# 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!

== is not the same as =



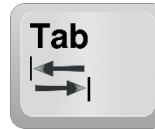
# SELECTION EXAMPLE – IF STATEMENT

x = 5

Condition  
Is x equal to 5?

if x == 5:  
↔ print("X equals 5")

Yes, it is  
... so do this



Use the Tab key to include  
lines in an IF statement

\* In Jupyter Notebooks it automatically tabs for you.



# SELECTION EXAMPLE – IF ... ELSE

X = 5

Is x equal to 5?

```
if x == 5:
```

```
    print("X equals 5")
```

```
else:
```

```
    print("X does not equal 5")
```

Yes, it is...  
so do this

No it isn't  
... so do this  
instead



# 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**

**The `if-elif` conditions must not overlap. Otherwise, the result will depend on their order, which is not a good practice.**





# 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!')
```

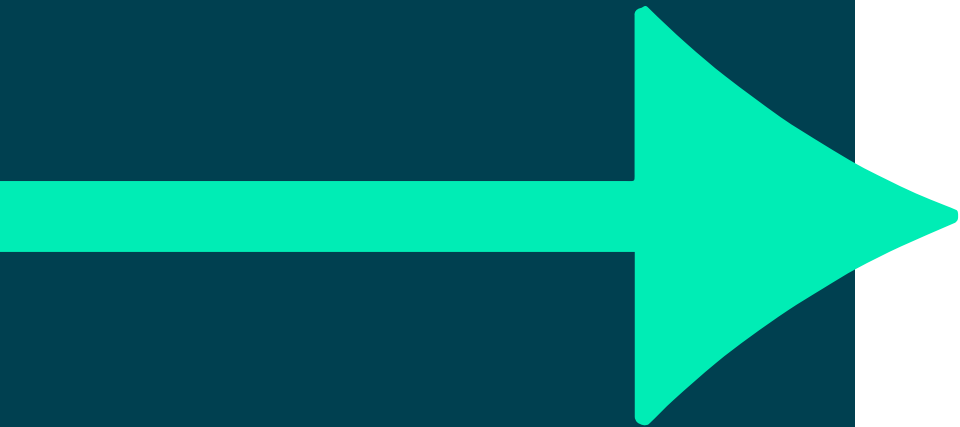
```
if course == 'Python' or age > 20:  
    print('Please start your', course, 'course!')
```

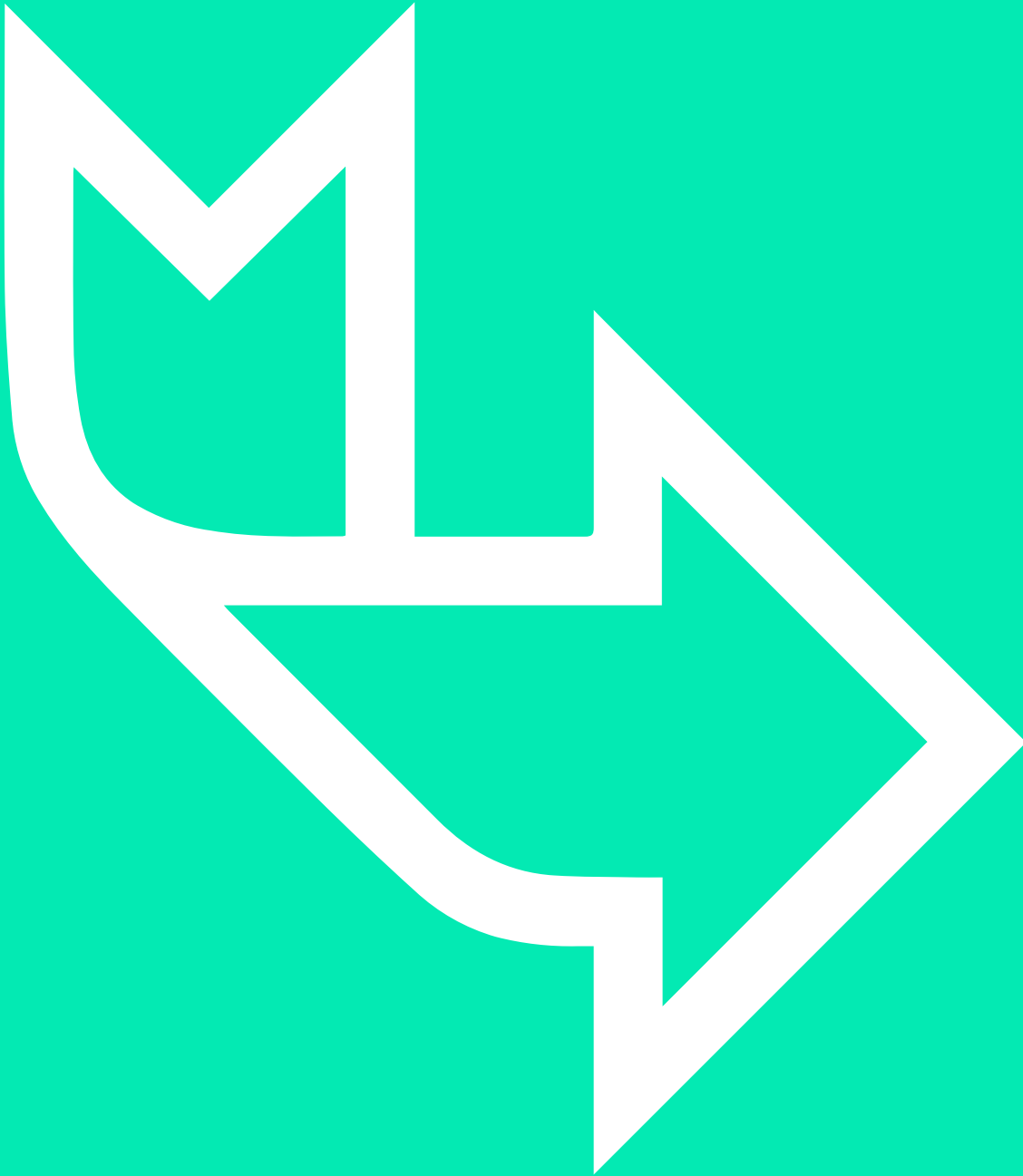


# SUMMARY

## In this chapter, you learned about:

- Python Control Flow statements
  - if
  - else
  - elif
- Logical **OR** and **AND** operators





## **Further Reading**

<https://www.python.org/>