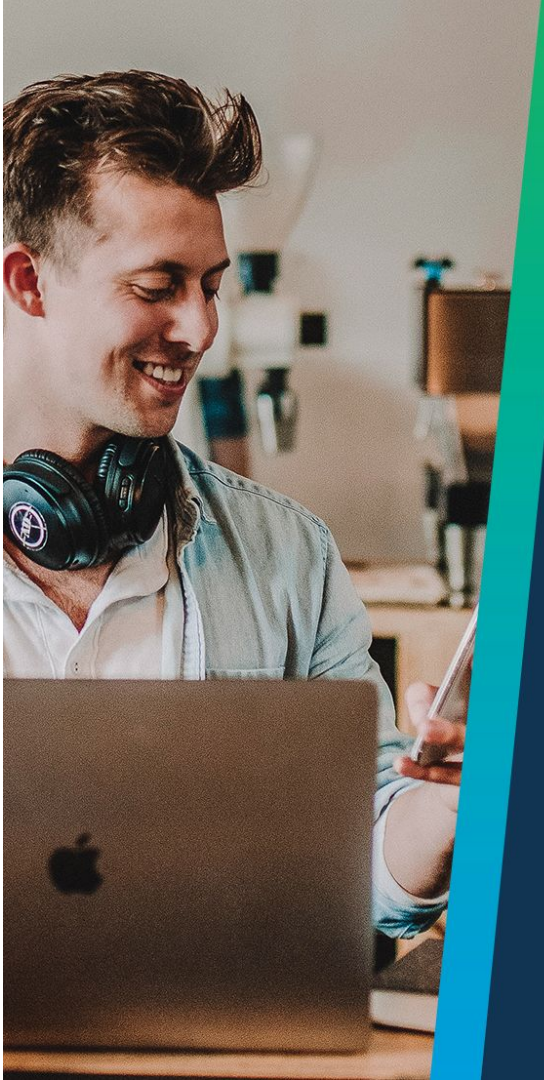

Cyber Security Bootcamp

Hyperiondev

Numerical Data Types

Welcome

Your Lecturer for this session

Joshua van Staden

Objectives

- Explore the different types of numbers used in the Python programming language.

Numbers in Python

- ★ Here we will mention 3 different types of numbers used in Python:
  - Integers: whole numbers that are either positive or negative:
    - e.g. -32, 0, 600, 177013, etc.
  - Floats: are decimal numbers that are also either positive or negative:
    - e.g. 6.2, -27.157, 33.3333, etc.
  - Complex: numbers that have a real and imaginary part, both of which are floats.

Declaring Numeric Variables

Python is able to determine what data type a variable is based on the data's characteristics:

- ★ num_one = 7 → no decimal point, no quotation marks, meaning it has to be integer.
- ★ avg_grade = 8.3 → decimal point, no quotation marks, meaning it has to be float.

Arithmetic Operations

Similarly, with real world mathematics, we are able to apply math to our numeric variables.

However, note that Python has a different way of interpreting the operation symbol, meaning that multiplication in Python is not written as “x”. The same goes for division and exponents.

Arithmetic Operations Example

```
addition = 6 + 2
# Result >> 8

subtraction = 6 - 2
# Result >> 4

multiplication = 9 * 3
# Result >> 27

division = 12 / 3
# Result >> 4

modulus = 9 % 3
# Result >> 0

exponential = 6 ** 2
# Result 36
```

Mathematical Functions

num = 64.235

math.floor(num)	Result : 64.0
math.ceil(num)	Result : 65.0
math.trunc(num)	Result : 64.0
math.sqrt(64)	Result : 8.0
math.pi	Result : 3.141592...

Casting Data Types

- ★ In Python, we can convert variables into other data types should we so wish. This is known as casting.
- ★ Cast to String → str()
- ★ Cast to Integer → int()
- ★ Cast to Float → float()

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Q & A Section

Please use this time to ask any questions relating to the topic, should you have any.

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Thank You for Joining Us