# Week 1

Intro to Python

https://www.python.org/downloads/

# What is Python?

- Python is an open-source programming language designed for general purpose programming, known for its design philosophy that emphasizes code readability and simplicity
- Known as "executable pseudocode"
- Allows for a focus on learning programming instead of getting bogged down by syntax

# What can you do with Python?

- Research
  - Bioinformatics
  - Linguistics (NLP)
  - Scientific Computing (NumPy, SciPy)
- Webapps
  - Frameworks such as Django and Flask
  - Instagram, YouTube, Reddit
- Machine Learning & Data Science
- And more!

# The Scope of This Course

- Simple data types, lists, dictionaries, control structures/loops, user input, and functions
- Planning on a project at the end

# Chapter 1

Today we will talk about:

- Print statements
- Variables
- Simple data types

# Rules for naming variables

- Can only contain letters, numbers, and underscores
- Cannot start with a number
- No spaces allowed

# Strings

A sequence of characters and can include text and numbers. String values are enclosed in matching single quotes (') or double quotes (").

What if we wanted to include double quotes in our print statement? We can use escape sequences.

Python Escape Sequences

| Character Escape Sequence | Name |
|---|---|
| \b | Backspace |
| \t | Tab |
| \n | Linefeed |
| \f | Formfeed |
| \r | Carriage Return |
| \\ | Backslash |
| \' | Single Quote |
| \" | Double Quote |

We can convert a number to string using the *str()* function:

```
# float to string
str(3.4)

# int to string
str(32)
```

To concatenate strings we can use the String Concatenation Operator or the + Operator

```
# The following will give you an error
print("The instructor said "Python is fun!"")

# Correct way to print this
print("The instructor said \"Python is fun!\"")
```

[https://tinyurl.com/Fa18IntroPy1](https://tinyurl.com/Fa18IntroPy1)

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