In this course, you will:

- Define what a programming language is and why Python is used by data scientists
- Create python scripts to display data and perform operations
- Manipulate and create strings, lists, dictionaries, and dataframes
- Import and use Python modules to access powerful functions and methods
- Demonstrate object-oriented programming using classes and objects

Module 1

transistors
- understand in binary terms, but with many can create complex instructions

low level vs high level language
- binary vs syntax

Argument: information given to function in its parentheses
Attribute: value associated w/ obj or class which is reference by name using do notation
class: an object's data type that bundles data and functionality together
dynamic typing: variable that can point to obj of any data type
object: instance of class

Module 2

Branching

Module 3

string slicing

Module 4

- tuples
- zip
- unzip
- list comprehension
    - my_list = [expression for element in iterable if condition]
- dictionary

    - keys()
    - values()
    - items()
- set
    - intersection()
    - union()
    - difference()
    - symmetric_difference()
- numpy
    - np.array()
    - dtype, shape, ndim
    - reshape()
- pandas
    - dataframe: 2D spreadsheet
    - series: 1D labelled array
    - iloc[]
    - loc[]
- boolean masking: filter to dataframe
- grouping and aggregation
    - groupby()
        - combined all the items into groups based on their type and returned a DataFrame object
    - agg()
        - apply multiple functions to a dataframe
- concat()
    - combine data
- merge()
    - extends horizontally on axis 1
    - how: inner, outer, left, right