SECTION 3: PYTHON OBJECT AND DATA STRUCTURE BASICS, 2 hrs 2 mins, 33 parts

- **36/36 Python Objects and Data Structures Assessment Test Solutions**
  - -> solutions to the Python test (ipynb found on the github repo for the course)
  - **-> tuples are in the same syntax as coordinates**
  - **-> dictionaries look a bit like databases**
  - -> when you do maths, use brackets because of the order of operations
  - -> floating point (decimal) numbers vs entire integers
  - -> you can't sort a dictionary
  - **-> <= means 'is it less than or equal to'? (it's a boolean test)**
  - -> **dictionaries are unordered and use keys**
  - -> ** exponentials, there is also an exp function in the math / numpy module
  - **-> string_name[1] <- for the second letter in the string**
  - **-> string_name[::-1] <- go through the entire thing backwards, this is different to using a loop but would work as well**
  - **-> string_name[4] = string_name[-1] in this example -> you can count backwards and extract the same element as if you were counting forwards**
  - **-> [0]*3 is [0,0,0] -> times a single list, you get that list repeated that many times**
  - -> list[2][2] <- to access nested elements of lists
  - -> list4.sort() <- to sort lists
  - -> dictionaries -> d = {'simple_key':'hello'}
    - d['simple_key']
    - it's a similar example to the embedded lists -> extracting elements from a dictionary inside a dictionary can be done using the [][] notation
    - **-> you can combine many of these [][][]'s to extract items which are embedded in this example**
  - **-> you can't sort a dictionary -> they're mappings not sequences**
  - **-> ordered dictionaries vs normal dictionaries**
  - **-> tuples are immutable (coordinates syntax), can't change the elements in them**
  - **-> sets don't allow for duplicate items**
  - **3.0==3 is True in Python**
  - **-> != not equal (boolean)**
  - **-> >= is it greater than or equal to**