Lab 4: A Method to the Madness of Strings

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Objectives

- Learn built in methods of strings
- Learn to index strings
- Use len() function

What is a method

- It’s a function that only works with a specific kind of data/object/class
- We can call methods using <data type>.<method>
  - Examples
    - [1,2,3].append()
    - 1.is_integer()
    - “ABC”.count(‘B’)
  - Note with the last one we can pass data to the method to change it’s behavior
- To see more use the live editor, enter a data type followed by a dot and hit tab for autocomplete.

String Methods of Note

- lower()
- upper()
- count()
- find()

Upper and Lower

- Let x = ‘AbCdEf’
- x.lower() will return
  - ‘abcdef’
- x.upper() will return
  - ‘ABCDEF’
- Note the value of x will not change because strings are immutable
  - Immutable means they can’t mutate ie change

Count

- Let x = “AUGUCCUGA” #Some Genetic Sequence
  - x.count(‘U’) will return 3 because there are 3 U’s
  - x.count(‘UG’) will return 2 because there are 3 UG’s
- When we put some information between the parentheses to change how the program works we call the passing in a value
  - So in example 1 we pass in the value of ‘U’

String Indexing

- Strings are indexed from zero and each character has a number
- Let x = “Hello World”
  - print(x[0]) would print H
  - print(x[4]) would print o
- This allows us to easy define the position of every character using a single integer.

String Indexing Ranges

- We can use indexes to get ranges of strings
  - <string>[start:stop:step]
- Let x = “Chocolate”
  - x[0:4] = “Choc”
  - x[3:8] = “colat”
  - X[::2] = Cooae

Find

- Let x = “AUGUCCUGA” #Some Genetic Sequence
  - x.find(‘A’) will return 0 because there is an ‘A’ in the zeroth position
    - Note there is also an ‘A’ in the last position but find only returns the first one
  - x.find(‘CU’) will return 5 because the C in ‘CU’ is in the fifth position

A	U	G	U	C	C	U	G	A
0	1	2	3	4	5	6	7	8

Len

- Len if a function that returns the length of an iterable
  - This is different from a method because it doesn’t require a specific data type
- Let x = “Chocolate” and let y = [‘A’,’B’,’C’]
  - len(x) # returns 9
  - len(y) # returns 3
- Note that this works well with exclusive ranges