Day 2:

-What is an "index" in something like a string or a list?

* An index() helps find the position of an element in a string or list of characters.

-What is a "Zero-based numbering system"?

* A zero based numbering system starts at zero instead of one e.g. 0, 1, 2, 3 etc.

-Why is it important to understand/remember that computers count starting from 0?

* It encourages computers and programs to use asymmetric ranges to express intervals.

-The string "Terry is lame, and that's okay." is assigned to the variable "name".

* + name = “Terry is lame, and that\’s okay.”

-I want the letter 'o' stored in a variable called "single\_char"

* + single\_char = name[26]

-I want the word lame stored in a variable called "single\_word"

* + single\_word = name[9:13]

-I want the words "and that's okay" stored in a variable called "phrase"

* + phrase = name[15:30]

- I want you to print all of these created variables to the console.

* + name = "Terry is lame, and that\'s okay."
  + single\_char = name[26]
  + single\_word = name[9:13]
  + phrase = name[15:30]

-What is a Range in python? Why is it useful?

* Range() is a built in function that returns a sequence of numbers starting from zero and incremented by 1 by default.
* It helps the user decide where a series of numbers/characters will begin and end.

-Take the sentence from the question above and redo the "phrase" step using a range. (If you've already done this, then give me a different example)

* name = "Terry is lame, and that\'s okay."
* for phrase in range(15, 30):
* print(name[phrase])

-What is a "heredoc"?

* Multi-line strings

-What is the "strip" function doing for us? What are the "strip" and "lstrip" doing for us?

* The strip() function removes or truncates the given characters from the beginning and the end of the original string.
* The lstrip() method returns a copy of the string with leading characters removed.

-How do I import a library into my code? Give me a few available python libraries.

* For (subject) Import (Library)
  + Math library
  + NumPy library
  + Pandas library
  + Keras library

-What is the "operator "library we were introduced to today used for?

* It provides functions such as add(x, y), floordiv(x, y) etc.

-What is the "functools" library we were introduced to today used for?

* It provides features to make it easier to work with high order functions.

-What is a "Collection" in python? Give me a few different examples of some we can use.

* A Collection is a built-in Python module that implements specialized container datatypes providing alternatives to Python’s general purpose built-in containers such as dict, list, set, and tuple.
* Collection = {
  + List – [‘variable’, ‘variable’, ‘variable]
  + Tuple – (‘variable’, ‘variable,’ ‘variable’)
  + Dictionary – {“ss” : “Correa”, “2b” : “Altuve”, “3b” : “Bregman”}
  + }

-Give me an example of you storing data in each collection you provided.

* List-

teams\_players =

["Altuve", "Correa", "Bregman"]

* Tuple –

teams =

("Altuve", "Correa", "Bregman")

-What is a Dictionary?

* A dictionary consists of a collection of key-value pairs. i.e. – “yankees”: (“Judge”, “Stanton”),

-What is a list?

* A list is a data structure in Python that is a mutable or changeable, ordered sequence of elements.

-What is the reduce function doing for us?

* Python’s reduce() is a function that implements a mathematical technique called folding or reduction

-What is a lambda function? Why are they useful?

* Lambda is a keyword in Python for defining the anonymous function. Arguments is a placeholder, that is a variable that will be used to hold the value you want to pass into the function expression. A lambda function can have multiple variables depending on what you want to achieve

-Write a lambda function.

* X = lambda a : a + 10

print(x(5))

-What are the differences between "Functional" & "Manual" Programming?

* Functional programming is a programming paradigm in which we try to bind everything in pure mathematical functions style.
* Manual is used to program variables

-What does the "repr" function do?

* Returns a printable representation of an object.

-What is "String Interpolation"?

* String interpolation is substituting values as placeholders in a string.

-Why is it super useful when developing applications? Why does it save us time when writing code?

* String interpolation is useful for cleaning up code and keeping everything organized and precise.

-Give me an example: Create two different variables and write me a greeting that uses those variables and string interpolation.

name = 'Kristine'

product = 'Python elearning course'

email\_content = f"""

Hi {name}

Thank you for purchasing {product}

Regards,

Sales Team

"""

print(email\_content)

-What is a "substring" in python?

* A Substring is a sequence of characters within another string.

-Why would I want to use the "find" function or the "index" method?

* To find a variable in an index easier.

-Why would I want to use the "replace" method?

* To replace a variable in an immutable sequence.

-What is "In" doing for us in the code? How is it helping us? Give me an example of when you personally think it might be useful to use "In"

* The ‘in’ operator is used to check if a value is present in a sequence.
* num = 1, 2, 3, 4

if 3 in num:

Print(“Right number”)

BONUS: What is the difference between a "Function" and a "Method" in programming? This is a useful question to research, it will be important across multiple coding languages.

* Methods associated with an object whereas functions are not.

Write a program that prompts the user for a number and subtracts 15% from it, storing everything in a single variable.

* product = 10

discount = 0.15

quantity = 5

total\_for\_each = 8.5

discount\_amount = product \* discount

sale\_price = product - total\_for\_each

grand\_total = total\_for\_each \* quantity

Write a program that asks the user to enter two words, which will be stored in two different variables. It then stores in a variable the concatenation of the first word, plus a space, plus the second word. Show this result on the screen.

role = 'guest'

auth = 'can access' **if** role == 'admin' **else** 'cannot access'

**if** role == 'admin':

auth = 'can access'

**else**:

auth = 'cannot access'

print(auth)

* cannot access

Write a program to prompt the user to input an integer and then print a truth value depending on whether the number is even or not. Remember that a number is even if the remainder, when divided by 2, is 0.

num\_list = **range**(1, 11)

**for** num **in** num\_list:

**if** num % 2 == 0:

even\_numbers.append(num)

even\_numbers = [num **for** num **in** num\_list **if** num % 2 == 0]

print(even\_numbers)

Write a program that displays the sum of all numbers between 0 and 100 using a while loop and another using a for loop

nums = **list**(**range**(1, 101))

**while** **len**(nums) > 0:

print(nums.pop())

Write a program that, given a sentence by the user, displays the total number of letters (both uppercase and lowercase) it contains.

* alphabet = (“abcdefg”)

for letter.upper in alphabet:

print(letter)

* alphabet = (“abcdefg”)

for letter.lower in alphabet:

print(letter)

Create a function that always returns the same name, regardless of user input