Python Home-Work Day-1

-What is programming?

* “The process or activity of writing computer programs.”

-What are variables in Python?

* “A symbolic name that is a reference or pointer to an object.”

-Why do we use them? Why are they needed in a programming language?

* So programs can refer to objects in the programs function.

-What are the 9 data types you learned about today?

* Booleans
* Numbers
* Strings
* Bytes and byte arrays
* None
* Lists
* Tuples
* Sets
* Dictionaries

-Give me an example for each one.

* Booleans
  + Used to represent the truth value of an expression, 1 <=2
* Numbers
  + Int, float, and complex – 50, 50.5, (5+7j)
* Strings
  + Collection of words or other characters – “Hello”, ‘Hello’
* Bytes and byte arrays
  + Bytes() – returns an object that cannot be modified, and bytearray() – returns an object that can be modified.
* None
  + Used to define a null value, or no value at all – 0, False, or an empty string.
* Lists
  + Changeable ordered sequence of elements – numbers = [1, 2, 7]
* Tuples
  + Store multiple items in a single variable which are ordered and unchangeable – thistuple = ( 53, “banana” , 5.65, [1, 2, 3,] ) (‘58’: ‘string name’)
* Sets
  + Stores multiple items in a single variable – mixed\_set = {‘hello’ , 101, -2, ‘bye’}
* Dictionaries
  + Players = {

“ss”: “Correa”,

“2b”: “Altuve”,

“3b”: “Bregman”,

“DH”: “Gattis”,

“OF”: “Springer”,

}

-How do I assign a variable in Python?

* By first assigning a name and then using an “=” followed by a variable to store using “ “ or ‘ ‘

name = “Sally”

Print(name)

-Can I reassign a variable?

* You can replace or reassign a variable by using .replace()

-Create 3 different variables, each variable should be a different datatype.

* Meal\_completed = True
* Sub\_total = 100
* Tip = sub\_total \* 1/5

- How can I convert a number datatype into a string? How can I do it vice versa?

* Str(12)
* Int() or float()

-Why is indentation important in Python?

* It defines the blocks of statements for readability. It’s important to use white spaces instead of tabs

-Should I use 2 spaces or 4 spaces when trying to indent my code? Can I just say who cares and use "Tab" instead?

* Using 2 or 4 spaces is coder preference, either will work just fine. Using tab however is a bad habit as it won’t translate very well between programs using python. That’s why it is important to use spaces instead of tabs.

-What are 3 ways to add comments to your code?

* As a separate line
* Beside the corresponding statement of code
* As a muli-line comment block

-Give me an example of each way.

* # comment
* “””

Comment

“””

* Print(name) # comment at the end of line

-What is a monolithic Application Architecture?

* The entire system function is based on a single application

-What is a Microservice Application Architecture?

* Breaks the entire system into smaller systems that work together as a single application.

-Which one is better? Which is more widely used? When might I want to use one over the other?

* They both work best for different types of applications. Microservice applications is more widely used. Monolithic might be better for small teams while microservice would be better for a larger platform with more features.

-What are the benefits of Monolithic?

* Better for smaller companies with less coding engineers
* Easier to diagnose if a problem comes up
* Cheaper to build and maintain.
* Uses the same file system

-What are the benefits of a Microservice?

* Larger company with bigger platform
* Wider array of services with more options
* Each feature is its own application.
* If one part of application is down, the whole system doesn’t fail with it. People will still be able to use platform while the downed service is being fixed.

-How Do I escape something within a string? for example "let's"

* “let\’s”

-What are the differences between a single quote and a double quote?

* ‘this works’
* “this works too”
* “it’s much easier to write it this way”
* ‘but this way, it\’s possible to print out “quotes from other people”’

-What is the upper()/capitalize()/title/lower doing to our strings?

* Upper() – converts string to caps
* Capitalize() – converts first letter to caps
* Title() – converts first letter of each word to caps
* Lower() – converts string to lower case

BONUS: What is a function in Python? Why are they important to the python language or any other programming language? Can you write a function called "greeting" and returns "Hello World!"?

* A function in python is a section of code that performs a specific task.
* Python is a language that performs specific tasks. The way this language performs this is by using functions. while other languages use their code to present certain items, python is using code to calculate the given information that has been entered to give a specific outcome to its user.

Def greeting(“Hello World”)

Print(greeting)