**Python**

Python supports structured and object oriented programming language

Variable rules

* A variable name must start with a letter or the underscore character.
* A variable name cannot start with a number.
* A variable name can only contain alpha-numeric characters and underscores (A-z, 0-9, and \_ )
* Variable names are case-sensitive (age, Age and AGE are three different variables)

Single line comments = Start with # (Ctrl + / )

Multi Line comments = Start and end with ““” or ‘’ (3 Double slash or single slash) (Ctrl +Shift+/)

Python is a dynamically typed programming language -Reasons

Data type we don’t need to specify

Variable can have any type of data (E.g.: String, int, float etc..) it is possible to change the assigned value of the variable later.

Logical Operators are :- and or not(Always return a Boolean value)

**Looping Statements are**

While loop and For loop

Loops are a block of statement that we can execute multiple times that basically called a loop

Loop conditions =Initialization (Starting point) + Condition (Where to stop) + Incrementation (how much to add or subtract)

**Numbers and Strings**

s =” Welcome”

s = ‘Welcome’

s = str(“Welcome”)

s = str(‘Welcome’)

Empty String

S = ” ”

S = ’ ‘

These are the four ways we can define Strings in Python

Stings are immutable

We can use single quotes in double quotes E.g.: “This is a ‘Baljeev’ Malayil Radha”

We can use double quote sin single quotes E.g.: ‘This is “Baljeev” Malayil Radha’

List =A list is a collection that is ordered and indexed data. [ ] It is starting and ending with square brackets List is mutable

* sort (): Sorts the list in ascending order.
* type(list): It returns the class type of an object.
* append (): Adds one element to a list.
* extend (): Adds multiple elements to a list.
* index(): Returns the first appearance of a particular value.
* max(list): It returns an item from the list with a max value.
* min(list): It returns an item from the list with a min value.
* Len(list): It gives the overall length of the list.
* clear (): Removes all the elements from the list.
* insert (): Adds a component at the required position.
* count (): Returns the number of elements with the required value.
* pop (): Removes the element at the required position.
* remove (): Removes the primary item with the desired value.
* reverse (): Reverses the order of the list.
* copy ():  Returns a duplicate of the list.

Tuple =A tuple is a collection that is ordered and indexed data. ( ) It is starting and ending with open brackets. Tuple is immutable

Set = A set is a collection that is unordered and unindexed. { } it is starting and ending with curly brackets, Set is a mutable object

Dictionary =A dictionary is a collection that is unordered changeable (Mutable) and indexed data that stores data in key and value pairs. { } it is starting and ending with curly braces.

**Functions**

Functions means set of statement that will perform a task

1.Function declaration or creation

2. Calling the Function or invoking the function

**Def**  -- to create a function

There are 2 types of arguments/parameters that we can pass to the functions

1.Positional Arguments

2.Keyword Arguments

Global and Local Variable in functions

The variable that is created outside of the function is called as a global variable

The variable that is created inside of the function is called as a local variable

**Class & Objects**

**Class** -class is a collection of variables(attributes) and methods (Behavior)

A class is a blueprint

A class is a logical entity

Class doesn’t occupy space in the memory

**Object** -An object is an instance of class

Object is a physical entity

Object do occupy certain space in the memory

With one class we can create multiple objects, but objects are independent…

**Functions vs Methods**

**Function** -We can create without class

**Methods** – Create inside the class

2 types of methods we can define with in the class

1.Instance method (We can call only through an object)

2.Static method (We can directly call using class)

@Staticmethod –is called as Annotations

**Method & Constructor**

**Method** –

We can give any name to a method

Return the value/values

Method can take arguments or parameters

We must use an object to invoke the method

**Constructor**

Constructor name is fixed def\_\_init\_\_(self)

Constructor will not return any value

Constructor also can take arguments or parameters

Constructor will be called at the time of object creation itself

**Links**

Internal Links

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