**Python(**Day1**)**

Dare:26-Apr-18

Session:Morning

Instructor:

**Topics of the Course:**

* Python
* Data structure,Java(core)
* HTML,CSS,JS
* Django/Flask
* Mini Project
* Difference Between Programming Language and Scripting Language
* In Programming language if we change the code the entire application will be modified
* In Scripting Language if we change the script there will be minor change but the funtionality will not be changed
* Types of Scrpitings
  + Client side:Client Side scripting is viewed by Browser
  + Server side:Server side scripting is viewed by server
  + Os Level: is used to create and add new modules
* Features of Python
  + Oops:it is pure object oriented programming language,Because we declared each and every thing is consider as an object without any declare of class, we can create object without an class in the code.
  + Interpreter:it is one of the interpreted language i.e., it executes the code line by line.
  + Dynamic Typed:the variable types are checked at the run time
  + Strictly indentation:it is strictly indented it is necessary to represent the programming structure.
* Application and Uses cases
  + Web applications: these are the applications that are dependent on network
    - youtube,flicker,torrentz,dropbox,google these are some the applications that are bulid on python.
    - Why python is choosen instead of other Because from day to day life the storage and analysis of the data increased. For fast accessing of the web page
    - But some of the website like banking we still face the slow reterivel of day because of the security
    - Most of the programming languages are less concerned about security
    - But in python if speed is 70% the security is 30%
    - To develop a web application we require a webframe work like Django,flask.
  + Scripting Os:Shell scripting is being replaced by python most of the recent versions of linux os are developed with python.
    - But it requires some modules to script
  + GUI App Development:it is independent of network.
    - But the data is locally stored
    - example is billing machines in hotels and malls
  + Scientific Computation:
    - python consists of lot of algorthims inbuilt which will be used to compute the difficult problems very simple by simple use of those algorthims
    - pattern maching
    - analysis of data for future predications
* Versions
  + python 2.7 is earlier version.
  + python 3.6 is the latest version.
* Installation of Python
  + for Windows: Goto Python.org Download python3.6 and install it.

Set Path in Environment Variables

* + for Linux: Open Terminal type the command “sudo apt-get install python3.6”
* Inbuilt we will get IDLE and IDE to run the code
* We are also having several other editors like *subline* and *pycharm ce*
* For running the python program firstly save the source file with .py ,pyc extension
* then open terminal or command prompt then type *python filename.py*

NUMBERS AND VARIABLES

* VARIABLE is an entity to store data with some name,it is an identifer that is used to retrieve the particular data by using the name of the variable.
* We can define a variable in 4 types, they are
  + Integer
  + String
  + Float
  + Complex
* These data types are called primitive data types.
* Coming to integer we have a number system.we can represent a number in formats, they are
  + Binary: we only 0’s and 1’s . Base is 2
  + Decimal:the values ranges from 0 to 9. Base is 10
  + HexDecimal: the values ranges from 0 to F.Base is 16
  + Octal: the values ranges from 0 to 8. Base is 8
* Memory oraganization of a variable in python. Let us consider an example i.e.,
* >>>a=1(Let address be 207)
* >>>b=1
* >>>c=a+b(Let address be 208)
  + here as the value of b is also same as a therefore the same address location is assigned to b.
* Now String data type basically in c and c++ we use character is data type,we use a character array to represent a string.
* But in python every character is cosidered as a string
* It also has a special feature of indexing
  + Forward indexing:index number ranges from 0 to n
  + Backward indexing:index number ranges from -1 to -(n+1).
* ord( ) function is used to know the ASCII code of a character.
* type( ) function is used to know the type of a variable.
* id( ) function is used to know the address of an variable.
* # is used to define single line comment
* “’ ‘” is used to define multiple lines of comment. This is also called DocString
* float is used to store the fractional values
* Complex type is used to store complex numbers

OPERATORS:

1.arithmetic(+,-,\*,/,%,//)

2.logical(and,or,not)

3.relational(<,>,≤,≥,=,!=)

4.assignment operators(=,+=,-=,\*=,/=)

5.bitwise operators(&,|,^)

6.conditional operators

7.special operators

8.boolean operators

STRINGS

**Slicing**:it can be done by using colon operator(:).

Eg:

X=[‘digitallync’]

Print(x[2:4])

* Reverse of a string can be determined by [::-1].
* Length of a string can be determined by len().
* We can convert a string into lowercase by using lower().

Eg:c.lower().

* We can convert a string into uppercase by using upper().

Eg:c.upper().

* If we want to take input from user use input().

Eg:a=input(‘enter a value’)

**String conversions:**

Int()

Float()

Str()

Complex()

* If we want to print keywords follow the below code.

Import keywords

Print(keyword kwlist)

**String functions:**

* String functions are 2 types.

1.attribute fetching functions(.).

Eg:c.len()

2.parametrized functions(dont use .)

Eg:len(‘tech)

* String functions are

**capitalize():**to capitalize the string.

Eg:s.capitalize()

**Upper():**

To convert the string into upper letters.

x.upper()

**lower():**

to convert the string in lower case letters.

x.lower()

**swapcase():**

to swap lower case letters with uppercase and vice versa

eg:x.swapcase()

**find():**

it returns the position of particular character.

Eg:s.find(‘a’)

If the element is not present in that string it returns -1.

It works only in forward index.

**Zfill:**

Used to maintain uniformity.

Eg:char=’a’

Char.zfill(4)

The output is 000a.

**Finding biggest possible integer in python:**

Import sys

Print(sys.maxint)for 2.7 version

Print(sys.maxsize)for 3.6 version

* In 2.7 version if we increment biggest integer it returns o/p with L.
* In 3.6 version it returns only incremented value.

**Split():**

to split a string

eg:ab=[‘i am in python session’]

ab.split()

the o/p is [‘i’,’am’,’in’,’python’,’session’]

* by defaultly it splits upto space.
* It takes delimeter for splitting a string.

Eg:ab.split(‘i’)

* it splits the string based on given delimeter.
* The delimeter maybe anything like number,symbol etc.
* Split is used in text analytics and NLP.

**Join():**

It can be used to add a given element inb/w all the characters in a string.

Eg:

s=”anusha”

‘\*’.join(s)

The o/p is ‘a\*n\*u\*s\*h\*a’

Join() Is used in excel.

**Count():**

It returns how many times that a particular element present in the given string.

Eg:s.count(‘a’)

**Strip():**

Used to remove white spaces.

Eg:

a=” digital lync “

Print(a.strip)

* It removes spaces from both left andright parts.
* We can remove anything by using strip.
* Lstrip() removes spaces on left side and rstrip removes spaces on right side.

**Replace():**

It can be used to replace an existing value with new value.

Eg:a.replace(‘l’,’L’)

**Rawstring:**

It doesnot add benifits to the output.

It can be used in routing paths.

**Unicode strings:**

Used to retrieve ascii codes.

Eg:if we want to know the ascii value of ∑ follow as

Special=u” ∑”.

Chr() method is used to covert ascii to char and ord() is used to covert char to ascii.