PYTHON

**Characteristics of Python**

**1. Python is a general purpose :**

**-** Interpreted

-Interactive -*not need of header files, All the command available in python.*

-Object Oriented

-HLL.

**2. Create by Guido van Rossum during 1985-1990.**

**3. Solid foundation for cloud computing (*google drive, sharing machine).***

**4. Extension of python is py.**

**5. python have a python shell.**

**Features of Python**

1. Iterative mode.

2. Multi-paradigm programming - *POP and OOP.*

3. Potable - (*in linux, in windows* ).

4. Broad library spot - *adding new header libraries in software.*

*\*Django(web application framework ).*

*\*NumPY(numerical method, array processing).*

*\*SciPY(algorithm and mathematical tools ).*

*\*Pandas(statistics, date analysis ).*

*\*SciKit-learn(Machine learning & date mining ).*

*\*Scrapy(for web scraping ) - searching trains at different-different station .*

*\*Rpy(R-Programming)*

5. Open source - *modify source code*

6. Database connectivity .

7. Graphical user interface .

8. Data scientific.

9. Machine learning .

10. python have a python shell.

**Why Pthon**

1. code is 3-5 times shorter than java.

2. 5-10 times shorter then java.

3. Can be used in broad range of application like machine learning, data analysis , image processing .

4. Main language for Raspberry p: *to operate small computer.*

**Python variable**

\*can have A-Z, a-z, underscop(\_), 0-9.

\*python is case sensitive .

\*no data type required.

\*variable initialization *a,b,c=10,'abc',True.*

*\* a=b=c=23; among have same value.*

**Python string**

>> a=”Hello World”

>> print(a[1])

‘e’

>> print(a[2:4])

‘ll’

>> print(len(a))

11

>> print(a.lower())

‘hello world’

>> print(a.upper())

‘HELLO WORLD’

>> print(a.replace(“h”,”j”))

‘jello’

>> print(a.split(“,”))

[‘hello’, ‘world’]

>>

**Functions**

1. type()- show data type.

2. dI(a)- show address of variable a.

3. int(b)- covert variable b into integer

3. len(a)=8;

4. str(2) - a+str(2);

5. int(4)

6. input()- read value :

*>>> x=input("enter name");*

7. range function

>>> for i in range(5):

print(i)

0

1

2

3

4

>>>

8. here ‘a[]’ is directory type variable, ‘a[]’ have multiple values

>>> for i in range(len(a))

print(i,a[i])

0 Mary

1 Had

2 a

3 little

4 lamp

>>>

9. range(5,10)

>>> for i in range(5,10):

print(i)

5

6

7

8

9

>>>

10. List function with range function

>>> list(range(5))

[0,1,2,3,4]

>>> print(range(5))

range(0,5)

>>>

11. Enumerate function

>>> a=[‘Mohit’, ’Rohit’, ‘sohit’]

>>> list(enumerate(a))

[ (0, ’Mohit’, (1, ’Rohit’, (2, ’Sohit’ ]

>>> list(enumerate(a, start=1))

[ (1, ‘Mohit’, (2, ‘Rohit’, (3, ‘Sohit’ ]

>>>

12. formate specifier for thousands separator.

>>> Formate(1234567, ‘,d’)

‘1,234,567’

>>> Formate(1234567, ‘,.2f’)

‘1,234,567.00’

>>> Formate(1234567.87, ‘,.2f’)

‘1,234,567.87’

>>>

13. Other language changes

>>> n=37

>>> bin(37)

‘06100101’

>>> n.bit\_length()

6

>>>

14. format Strings

>>> ‘Sir {} of {}’.formate(‘Rohit’ of ‘Sohit’)

‘Sir Rohit of Sohit’

>>>

15. Complex function

>>> complex(real=3, imag=5)

(3+5j)

>>> complex(3,5)

(3+5j)

>>> complex(\*\*{‘real’:3, ‘image’:5})

>>> cmplex(\*(3,5))

(3+5j)

>>>

16. Date and time

>>> import time

>>> localtime = time.asctime(time.localtime(time.time(i)

>>> print(“local current time: “,localtime)

Local current time: Set Jun 6 18:21:41 2018-06-16

>>>

17. Getting calendar

>>> import calendar

>>> Cal = calendar.month(2008,1)

>>> print(“Here is the calendar: “)

>>> print(Cal)

>>>

18. del Operator

>>> a = 1

>>> del a

>>> print(a)

‘a is not defined’

>>>

**Operators**

1. a//b

2. a%b

3. a\*\*b

4. boolean

a=True

a=False

5. a=5+bj

6. a.real

**Other**

1. >>> print('''hello

hi

by ''')

**output**

hello

hy

by

2. if a='amit'

>>> a=’amit’

>>> a[0]

a

>>> a[1]

m

>>> a[-1]

t

>>> a[-2]

i

>>> a[2:4] #(a[2],a[3])

mi

>>> a.lower

amit

>>> a.upper

AMIT

**Statements**

1. if statement

if(a<b):

if(a<10):

print('amit')

else:

print('sharma')

else:

print('cse')

**Data Structure**

\*List[]

ex. if Fruit=['apple','mango','banana']

Fruit[0] = orange

Fruit append('orange')

Fruit[1:] = *1 to last*

Fruit[1:3] = *1to 2*

'mango' in Fruit = *for Searchinng*

\*Tupple()

ex. fruit=('apple','orange','banana')

\*Directory

student={'id':1001, 'rollno':101, 'name':'mohit', .......}

**1.** Adding new key

student[key name]=value

ex- student['class']='coe'

**2.** student.items() - get all items

**3.** student.keys() - get all keys

**4.** student.values() - all values