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 saves object code for future

a._age

a._1234

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