In [1]:

```
x=5
print(x)
```

```
5
```

In [2]:

```
y=2.6
print(x*y)
```

```
13.0
```

nurheuibuigueunrinuej

In [3]:

```
d=6 +5j
print(type(d))
print(d)
```

```
<class 'complex'>
(6+5j)
```

In [4]:

```
a="hello from python"
```

In [5]:

```
a.upper()
```

Out[5]:

```
'HELLO FROM PYTHON'
```

In [6]:

```
a.split()
```

Out[6]:

```
['hello', 'from', 'python']
```

In [7]:

```
b=6 - 8j
```

In [9]:

```
b.real
```

Out[9]:

```
6.0
```

In [11]:

```
b.imag
```

Out[11]:

```
-8.0
```

In [12]:

```
x=[3,4,5,'efjpwoj','oiewh',5]
print(type(x))
```

```
<class 'list'>
```

In [13]:

```
len(x)
```

Out[13]:

```
6
```

In [14]:

```
print(x[0])
```

```
3
```

In [16]:

```
#indexing
print(x[3])
print(x[-2])
```

```
efjpwoj
oiewh
```

In [18]:

```
#slicing
print(x[1:4])
print(x[0:3])
```

```
[4, 5, 'efjpwoj']
[3, 4, 5]
```

In [19]:

```
#customizing
x[1]=90
print(x)
```

```
[3, 90, 5, 'efjpwoj', 'oiewh', 5]
```

In [21]:

```
x.append(2)
print(x)
```

```
[3, 90, 5, 'efjpwoj', 'oiewh', 5, 2, 2]
```

In [22]:

```
x.remove(2)
print(x)
```

```
[3, 90, 5, 'efjpwoj', 'oiewh', 5, 2]
```

In [23]:

```
x.append(1)
print(x)
```

```
[3, 90, 5, 'efjpwoj', 'oiewh', 5, 2, 1]
```

In [25]:

```
x.remove(5)
print(x)
```

```
[3, 90, 'efjpwoj', 'oiewh', 2, 1]
```

In [26]:

```
#tuples
t=(4,2,3,5,'hii','hello',15)
type(t)
```

Out[26]:

```
tuple
```

In [27]:

```
print(t[1])
```

```
2
```

In [28]:

```
#set = unordered data type, used for set theory operations
f={4,6,3,5,2,8,9,0}
type(f)
```

Out[28]:

```
set
```

In [29]:

```
f
```

Out[29]:

```
{0, 2, 3, 4, 5, 6, 8, 9}
```

In [30]:

```
m={7,4,5,6,7,3}
f.union(m)
```

Out[30]:

```
{0, 2, 3, 4, 5, 6, 7, 8, 9}
```

In [32]:

```
f.intersection(m)
```

Out[32]:

```
{3, 4, 5, 6}
```

In [33]:

```
#dictionary= key:value pair
d={"name":"Ujjawal","age":18,"laptop":"MSI"}
type(d)
```

Out[33]:

```
dict
```

In [35]:

```
d["country"]="India"
d
```

Out[35]:

```
{'name': 'Ujjawal', 'age': 18, 'laptop': 'MSI', 'country': 'India'}
```

In [36]:

```
d.pop("age")
```

Out[36]:

```
18
```

In [37]:

```
d
```

Out[37]:

```
{'name': 'Ujjawal', 'laptop': 'MSI', 'country': 'India'}
```

control Flow in Python

In [39]:

```
a=input("Enter age:")
print(a)
if age<18:
    print("its your childhood")
elif age>=18 and age<=25:
    print("enjoy college")
else:
    print("enjoy job,family")
```

```
Enter age:11
11
enjoy college
```

In [43]:

```
for i in range(5):
    print("hello from jaipur",i)
```

```
hello from jaipur 0
hello from jaipur 1
hello from jaipur 2
hello from jaipur 3
hello from jaipur 4
```

In [44]:

```
for i in range(2,12,3):
    print("hello",i)
```

```
hello 2
hello 5
hello 8
hello 11
```

In [46]:

```
for i in range(12,3,-2):
    print("hello",i)
```

```
hello 12
hello 10
hello 8
hello 6
hello 4
```

In [48]:

```
temp=[25,26,24,23,25,18,29]
for i in temp:
    if i>23:
        print(i)
```

```
25
26
24
25
29
```

In [49]:

```
f=[i for i in temp if i>23]#list comprehension
f
```

Out[49]:

```
[25, 26, 24, 25, 29]
```

In [51]:

```
#while
x = 5
while x<20:
    print("python is awesome",x)
    x = x + 1
```

```
python is awesome 5
python is awesome 6
python is awesome 7
python is awesome 8
python is awesome 9
python is awesome 10
python is awesome 11
python is awesome 12
python is awesome 13
python is awesome 14
python is awesome 15
python is awesome 16
python is awesome 17
python is awesome 18
python is awesome 19
```

In [52]:

```
k=5
while True:
    print("python is awesome")
    k = k + 1
    if k>20:
        break
```

```
python is awesome
python is awesome
python is awesome
python is awesome
python is awesome
python is awesome
python is awesome
python is awesome
python is awesome
python is awesome
python is awesome
python is awesome
python is awesome
python is awesome
python is awesome
python is awesome
```

Functions

In [53]:

```
x=[6,5,2,6,4,2,1,2,23,23,3]
```

In [54]:

```
max(x)
```

Out[54]:

```
23
```

In [56]:

```
sorted(x)
```

Out[56]:

```
[1, 2, 2, 2, 3, 4, 5, 6, 6, 23, 23]
```

In [57]:

```
round(6.99990,3)
```

Out[57]:

```
7.0
```

user defined function

In [60]:

```
def fun1():
    print("i am a function")
    print("thank you")
```

In [61]:

```
fun1()
```

```
i am a function
thank you
```

In [62]:

```
def fun2(a,b):
    c=a+b
    print(c)
```

In [63]:

```
fun2(5,4)
```

```
9
```

In [65]:

```
def fun3(a,b=4):
    c=a+b
    return c
```

In [66]:

```
fun3(8)
```

Out[66]:

```
12
```

In [1]:

```
round?
```

In [73]:

```
import code2
```

In [75]:

```
import ujjawal
```

In [77]:

```
ujjawal.myfun()
```

```
python is fun
```

In [78]:

```
import ujjawal as cd
cd.myfun()
```

```
python is fun
```

In [79]:

```
import datetime as dt
print(dt.datetime.now())
```

```
2020-03-03 16:01:38.947063
```

packages in python for data science

- numpy= mathematical computation on data
- pandas= data import/export, data cleaning, data manipulation, data visualization,

```
statictical analysis.
```

- matplotlib and seaborn = basic and advanced visualisation with data
- statsmodels = basic and advanced statistics, time series analysis
- scikit-learn(skilearn)= machin learning algorithm feature learning
- tensorflow,pytorch = Advance ML, Deep Learning
- opencv = powerful for image processing and computer vision
- scikit-image(skimage)

In [ ]: