python notebook will works by using python kernal

- python kernal dot , if dot is white color : idle state, ready to execute to code
- python kernal black ======= > it is busy
- python kernal will run the codes step by step
- if you see kernal balck color , do not run any codes
- python kernal is red ========= kernal is dead

plus sign

click on plus sign ==== it will create new cells

new cell is used to provide some input

input means write some code

when you run it will provide output

markdown shor cut:esc+m at a time

whenever if you are seeing IN which means the cell is in code mode

code mode ====== In at cell both are same

if you want write any story change code mode Markdown mode

select the cell double click

In [ ]:
```
a=20
a

# shift+enter at a time
# esc-y to return the code
```

python

Python

In [7]:
```
a=20  # 20 value saved in a variable a
a
```

Out[7]:
```
20
```

- python is easy
  - hello
  - how do you do
- python is my friend
- python is used DS and AI

- code mode
- markdown mode

In [ ]:
```
# packages

# package name: Random

#import <package_name>
#dir(<package_name>)   # It will return methods
#help(<package_name>.<method_name>)
```

In [8]:
```
import random
```

In [9]:
```
random.randint(1,100)   # shift+tab curosr should be inside the bracket
```

Out[9]:
```
67
```

In [10]:
```
import random
random.randint(1,100)
```

Out[10]:
```
89
```

In [11]:
```
import math
math.sin(90)  # shift+tab at a time
```

Out[11]:
```
0.8939966636005579
```

In [12]:
```
import math
```

In [13]:
```
import math
math
```

Out[13]:
```
<module 'math' (built-in)>
```

In [14]:
```
import random
random

# .py
# vscode
# pycharm
# notepad++
```

Out[14]:
```
<module 'random' from 'C:\\Users\\omkar\\anaconda3\\Lib\\random.py'>
```

In [17]:
```
import random
random.randint(1,200)
```

Out[17]:
```
30
```

In [16]:
```
dir(random)
```

Out[16]:
```
['BPF',
 'LOG4',
 'NV_MAGICCONST',
 'RECIP_BPF',
 'Random',
 'SG_MAGICCONST',
 'SystemRandom',
 'TWOPI',
 '_ONE',
 '_Sequence',
 '_Set',
 '__all__',
 '__builtins__',
 '__cached__',
 '__doc__',
 '__file__',
 '__loader__',
 '__name__',
 '__package__',
 '__spec__',
 '_accumulate',
 '_acos',
 '_bisect',
 '_ceil',
 '_cos',
 '_e',
 '_exp',
 '_floor',
 '_index',
 '_inst',
 '_isfinite',
 '_log',
 '_os',
 '_pi',
 '_random',
 '_repeat',
 '_sha512',
 '_sin',
 '_sqrt',
 '_test',
 '_test_generator',
 '_urandom',
 '_warn',
 'betavariate',
 'choice',
 'choices',
 'expovariate',
 'gammavariate',
 'gauss',
 'getrandbits',
 'getstate',
 'lognormvariate',
 'normalvariate',
 'paretovariate',
 'randbytes',
 'randint',
 'random',
 'randrange',
 'sample',
 'seed',
 'setstate',
```

```
 'shuffle',
 'triangular',
 'uniform',
 'vonmisesvariate',
 'weibullvariate']
```

In [ ]:
```
# we imported package
# we have seen where the package is located
```

In [18]:
```
# package name:  keyword
import keyword
```

In [19]:
```
dir(keyword)
```

Out[19]:
```
['__all__',
 '__builtins__',
 '__cached__',
 '__doc__',
 '__file__',
 '__loader__',
 '__name__',
 '__package__',
 '__spec__',
 'iskeyword',
 'issoftkeyword',
 'kwlist',
 'softkwlist']
```

In [21]:
```
# read the kwlist

# <pname>.<method name>
keyword.kwlist
```

Out[21]:
```
['False',
 'None',
 'True',
 'and',
 'as',
 'assert',
 'async',
 'await',
 'break',
 'class',
 'continue',
 'def',
 'del',
 'elif',
 'else',
 'except',
 'finally',
 'for',
 'from',
 'global',
 'if',
 'import',
 'in',
 'is',
 'lambda',
 'nonlocal',
 'not',
 'or',
 'pass',
 'raise',
 'return',
 'try',
 'while',
 'with',
 'yield']
```

In [ ]:
```
#package name:  cv2

#cv2= computer vision

ModuleNotFoundError

because the package is not there in our pc

we need to install the package

we need to take the help of google


# shift + enter

search python organization


pip install opencv-python

where will install ========== anaconda command prompt
```

In [22]:
```
import cv2
```

In [23]:
```
!pip install opencv-python
```

```
Requirement already satisfied: opencv-python in c:\users\omkar\anaconda3\l
ib\site-packages (4.8.1.78)
Requirement already satisfied: numpy>=1.21.2 in c:\users\omkar\anaconda3\l
ib\site-packages (from opencv-python) (1.24.3)
```

In [24]:
```
cv2
```

Out[24]:
```
<module 'cv2' from 'C:\\Users\\omkar\\anaconda3\\Lib\\site-packages\\cv2
\\__init__.py'>
```

In [ ]: