What is Anaconda

In [ ]:
```
#What is Anaconda?
Anaconda is a open source distribution packages built on python and R programming Along with
Inside anaconda we have alot of libraraies and packages that are widelt used
in machine learning, data science, deep learning etc
IDE --> Integrated Development Enviornment.
IDLE --> integrated development learning enviornment.
```

IDEs Present in Anaconda

In [ ]:
```
#Different IDE'S Present in Anaconda?
1.Jupyter notebook
2. Jupyter lab
3. Pycharm
4. Spyder
5. VS CODE
6. R Studio
Etc.......
```

Comments in Python

In [ ]:
```
#How to write comments in python?

Hash(#) is a symbol that is used for writing the comment.

Comments in Python are the lines in the code that are ignored by the interpreter during the
execution of the program
```

Installation of Anaconda

In [ ]:
```
#Installation of Anaconda
Link:
    https://github.com/edyoda/DS290922A/blob/main/(Python%20Installation)%20(1).pdf
```

Way to open Anaconda Navigator?

In [ ]:
```
#Way to open Anaconda Navigator?
Step 1: Go on Search Bar
Step 2: Type Anaconda Navigator
Step 3: Navigator will open(It will take some time)
Step 4: If you want to check the installed libraries and Packages you can check with the
        help of Enviorment Option that is present on the left side of Anaconda Navigator.
Step 5: If you want to open any python Editor than simply click on launch inside anaconda navigator
        you ide will automatically opened
```

Ways to open different IDEs

In [ ]:
```
#Ways to open different IDEs
1.You can open any IDE with the help of Anaconda Navigator(Just click on Launch button after opening
                                                            Anaconda Navigator)
2.You can open any IDE with the help of Anaconda Prompt(Just write the Ide Name like jupyter notebook)
```

Ways to Open Jupyter Notebook

In [ ]:
```
#Ways to Open Jupyter Notebook
1.Using Anaconda navigator(just launch jupyter notebook)
2.Using anaconda Prompt(Just type command :   jupyter notebook)
```

Write first code on jupyter notebook

In [ ]:
```
#Write first code on jupyter notebook
1.Open Juputer Notebook with the help of Anaconda Navigator or Anaconda Prompt.
2.On the Right Side a Button named as NEW click on it.
3.After Clicking on new button You will see the Python Option click on it.
4.After clicking on Python You will redirected to the new file of Jupyter notebook
5.If you want to rename your file you can simply click on the name on the file and after that you can
rename your file.
6.Cells are given to you Just write you code in the cell.

#For running the cell

7. For executing the cell you can use shift+enter or Run button is given on Top.
8. You code is running file


Note: Your code is automatically saved you need not to save your file again and again in case of
      Jupyter Notebook. and All the files are already saved on your default folder(C:\Users\user)
```

Variables

x=10 Here x is a variable that is holding the value 10

Datatypes

In [ ]:
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Data + Types -->Represents the type of Data that we are using in our program.That we are using
inside a variable
Note:In python we need not to define the data expliclity Internally PVM will automatically determine
    the datatype and based on that datatype memeory will be allocated at the runtime
```

In [ ]:
```
PVM --> Python virtual machine
```

Important Functions

In [ ]:
```
type()--> that is used to give the type of data that we are using inside our program
id() -->will give us the address of the variable
```

In [3]:
```
x=10
print(type(x))
print(id(x))
y="Pratyush Srivastava"
print(type(y))
print(id(y))
```

```
<class 'int'>
2369487661648
<class 'str'>
2369582360416
```

Types of Datatypes in Python

In [ ]:
```
Types of Datatype in Python?
1.Numeric Datatype: Int, Float , Complex
2.Sequence Datatype : List, String , tuples
3.Boolean Datatype: True and False
4.Dictionary
5.Set
```

Numeric Datatype

Numeric Datatype: Integer Datatype --> Represents the integral values Positive Intgerals --> 0,1,2,3,5,...................... Negative Integrals --> -1,-2,-3.-4,-5,-6,-7,-7 Note : If we want to represent any data without decimal point then we will use integer datatype. In python there is no any limit for declaring the integar datatype

Examples of Integer Datatype

In [5]:
```
x=2123333333333333333333333333333333333333333333333333333333333333333333333333333333333333333
type(x)
```

Out[5]:
```
int
```

In [6]:
```
x=-99
type(x)
```

Out[6]:
```
int
```

Float Datatype

In [ ]:
```
#Float Datatype --> represents that floating point values(decimal format)
float positive numbers--> 0.0,0.1.....;.
float negative numbers -->-1.0,0.2......
```

Examples of Float Datatype

In [7]:
```
x=10.98
type(x)
```

Out[7]:
```
float
```

In [8]:
```
x=-10.909090999999999999999999
x
```

Out[8]:
```
-10.909091
```

In [9]:
```
x=0.0
type(x)
```

Out[9]:
```
float
```

In [10]:
```
x=1.0
print(type(x))
```

```
<class 'float'>
```

Complex Datatype

In [ ]:
```
#Complex Number
A number which is in the form of:
    a+bj
a-> real part(real number)
b--> imaginary(imaginary number)

j^2-->-1
j --> (-1)*1/2
```

Example of Complex Datatype

In [17]:
```
x=10+20j
x.real
```

Out[17]:
```
10.0
```

In [ ]:
```
imag is used  to access imaginary part of complex number
real is used to access real part of complex number
```

In [ ]:
```
#Complex datatype are used in scitific application(scientific computations)
thatswhy nasa and drdo are usi are preferring python as there first programming language.
```

Boolean Datatype

In [ ]:
```
Boolean simple means either true or false.
Internally True is equal to 1
           False is equal to 0
```

In [18]:
```
x=True
print(type(x))
```

```
<class 'bool'>
```

In [19]:
```
x=True+True
print(x)
```

```
2
```

In [20]:
```
x=True+False+True+False-False+True
x
```

Out[20]:
```
3
```

In [ ]:
```

```