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WORKSHOP #01

Python review from A2Z

WHAT IS PYTHON ?

Python is an interpreted, high-level, general-purpose, object-oriented programming language.
It is well known for its simple syntax, which brought him very close to normal human speech, and for its large community.

HOW TO USE PYTHON

ANACONDA

Anaconda is an open-source distribution of the Python and R programming languages for data science

PYTHON

instal python then use the ide that sweets you

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WHAT IS VARIABLE

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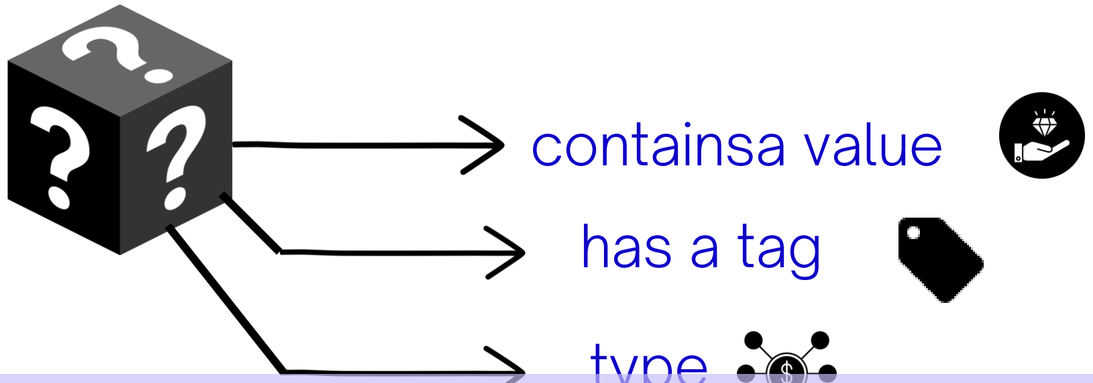
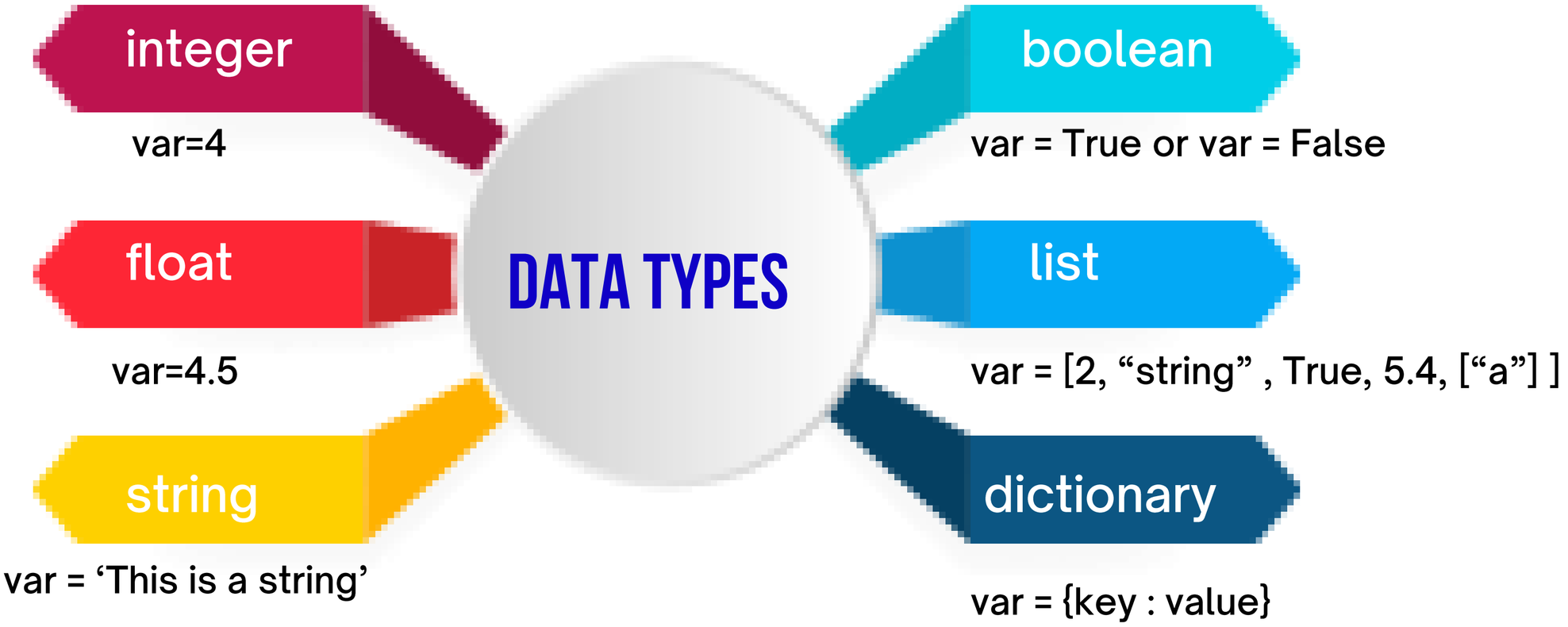
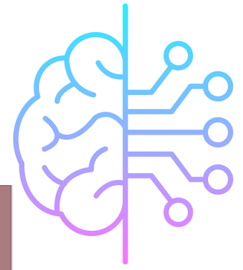
WHAT IS VARAIBEL

- In python, variables are defined the moment that a value has been assigned to them
- The type of the variable is determined by its content
- Everything is an object



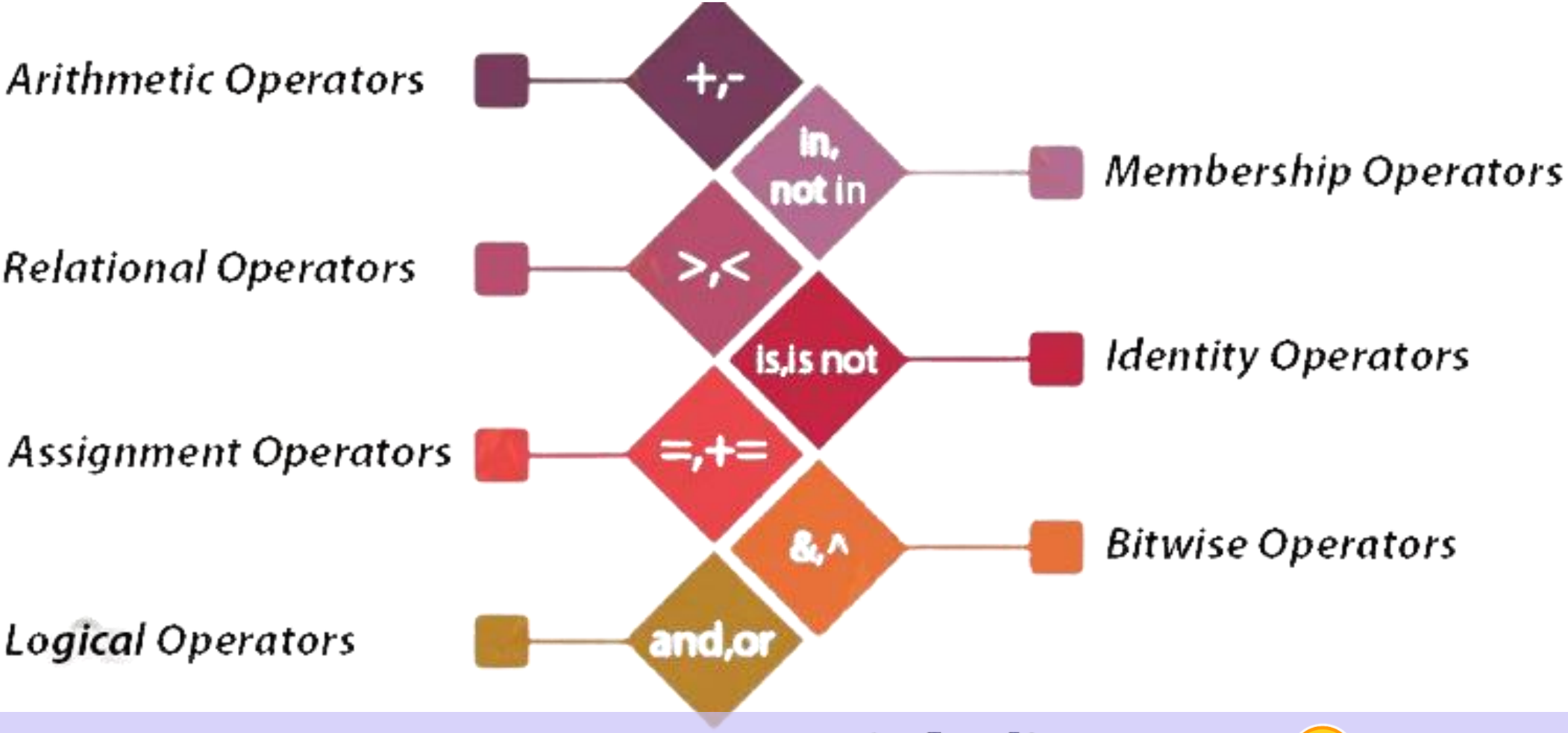
DATA TYPES


integer
var=4
float
var=4.5
string
var = ‘This is a string’
DATA TYPES
boolean
var = True or var = False
list
var = [2, “string” , True, 5.4, [“a”]]
dictionary
var = {key : value}

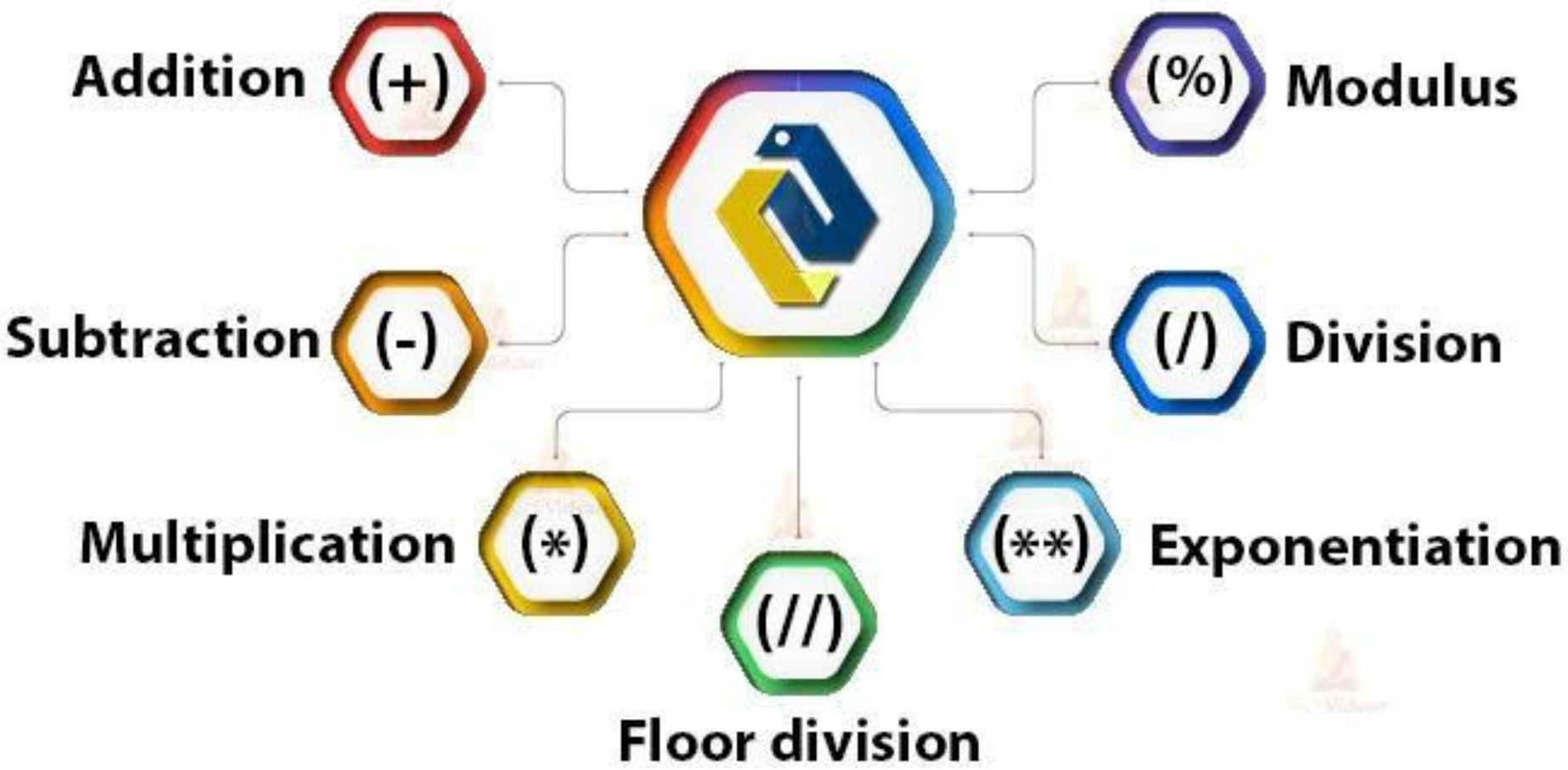


List	Dictionary
index value pair	key-value pairs.
List is initialized with [], and elements are separated by ','.	Dictionary is created by placing elements in {}, data is added as key-value pair, and each pair is separated by ','.
List values can be accessed by numeric indexes.	We can't edit the order of dictionary elements.
The order of elements in the list can be modified	doesn't allow duplicate values with the same key in it.
allows duplicate values.	Dictionary items can be accessed by using key values. Key values can be of any data type.

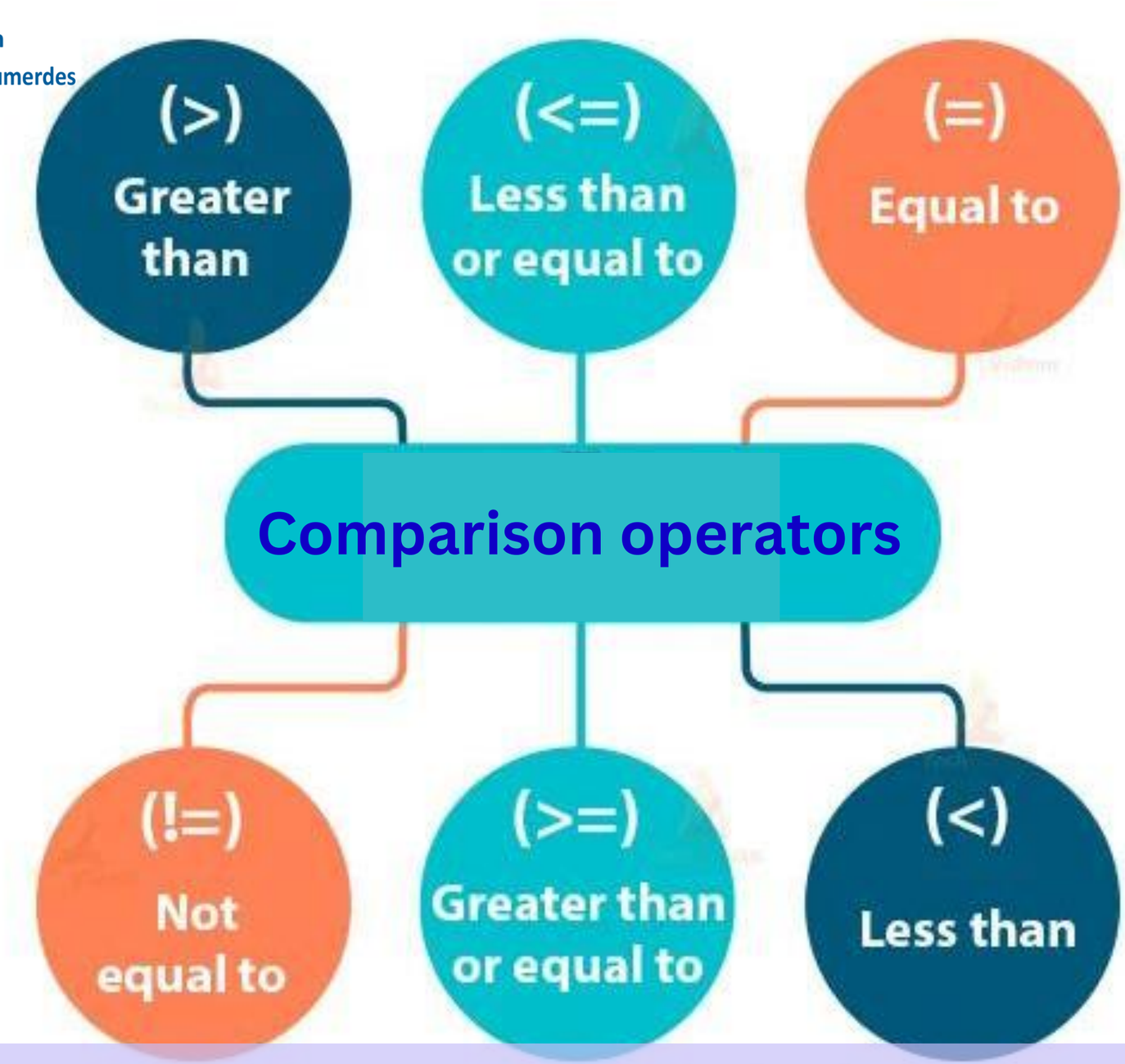
PYTHON OPERATORS



Python Arithmetic Operators



Python Assignment Operators


(>)
Greater than
(<=)
Less than or equal to
(=)
Equal to
Comparison operators
(!=)
Not equal to
(>=)
Greater than or equal to
(<)
Less than

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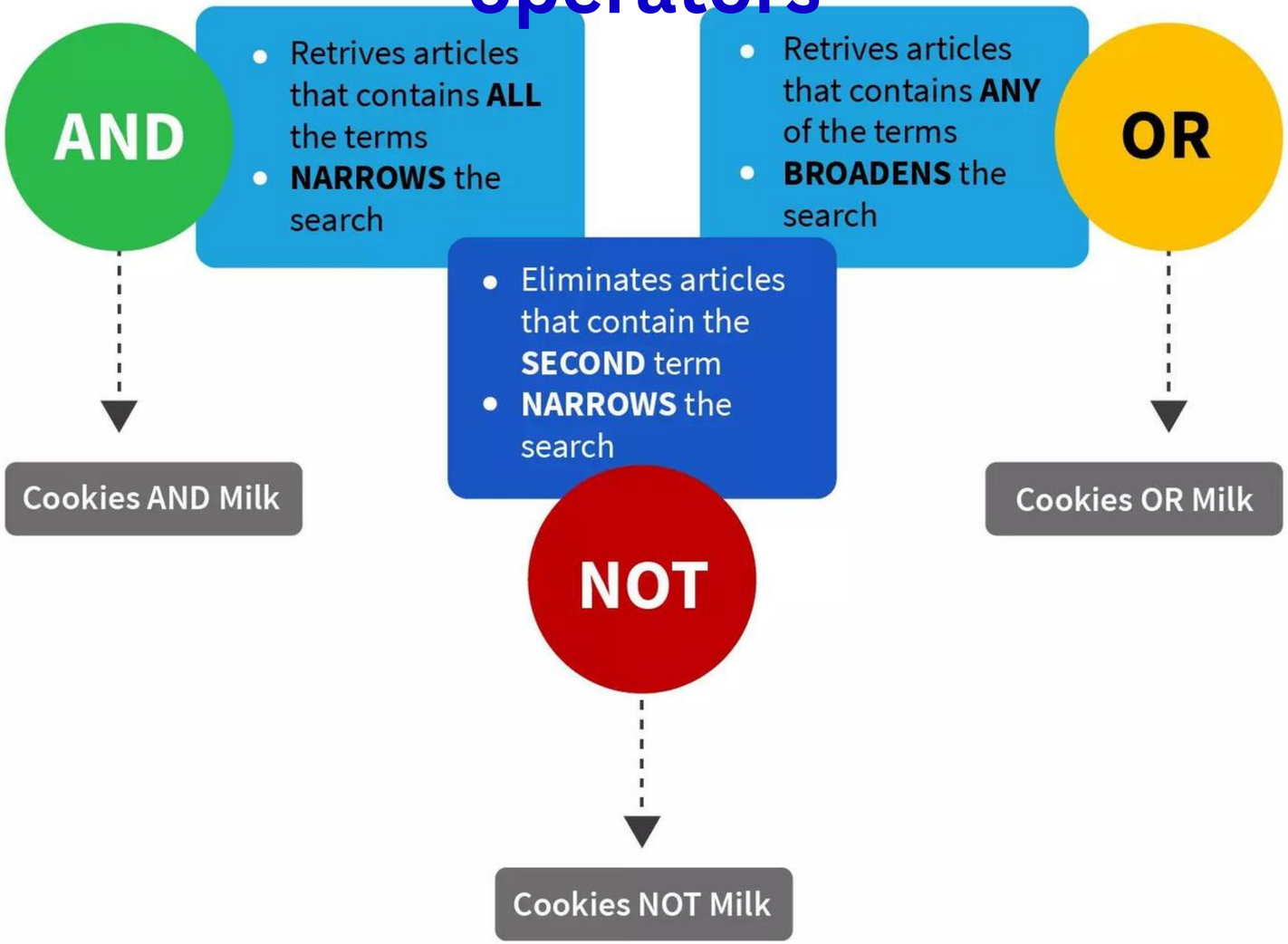
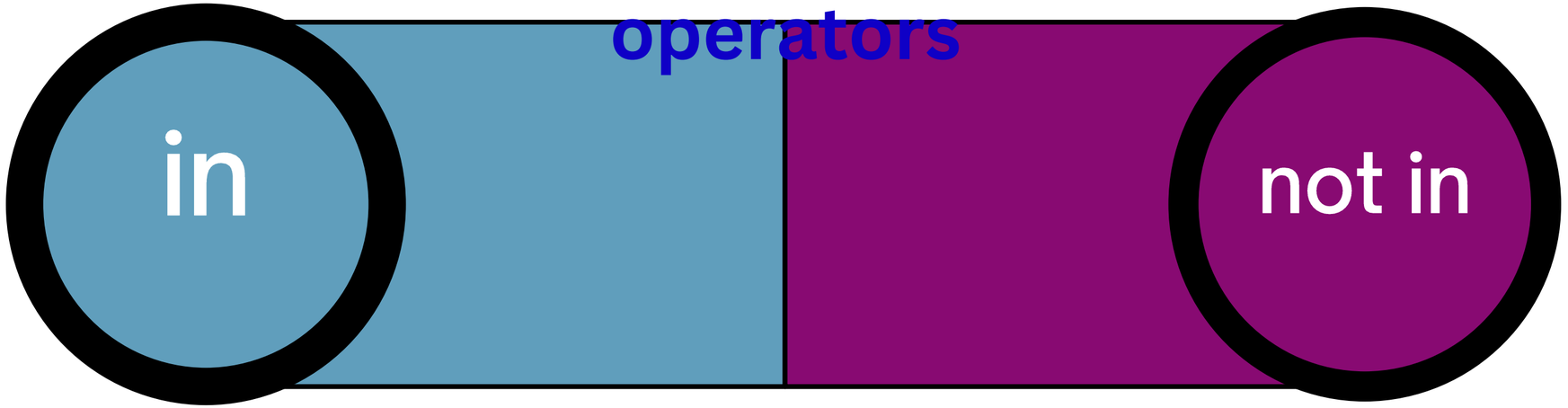
Logical operators



Membership operators



The in membership operator in Python is used to check the existence of a given element in the given sequence like string, list, tuple, or dictionary. for "not in" it is the inverse of the "in".

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PYTHON CONDITIONS STATEMENTS

IF STATEMENT

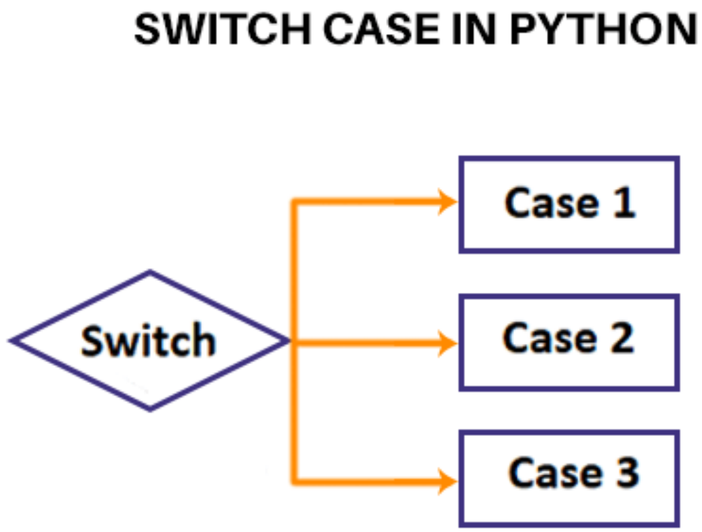
```
if condition :
    # do stuff
elif second condition :
    # do other stuff
elif third condition :
    # do other other stuff
else :
    # do the left stuff
```

NOTE :

Indentation in Python is used to define blocks of code and control the flow of execution within the code. It is a visual way of grouping statements and differentiating code blocks.

PYTHON CONDITIONS STATEMENTS

SWITCH CASE




```python
colour = (25, 56, 200)

match colour:
    case r, g, b:
        print("No alpha.")
    case r, g, b, alpha:
        print(f"Alpha is {alpha}")

# Prints 'No alpha.'
```

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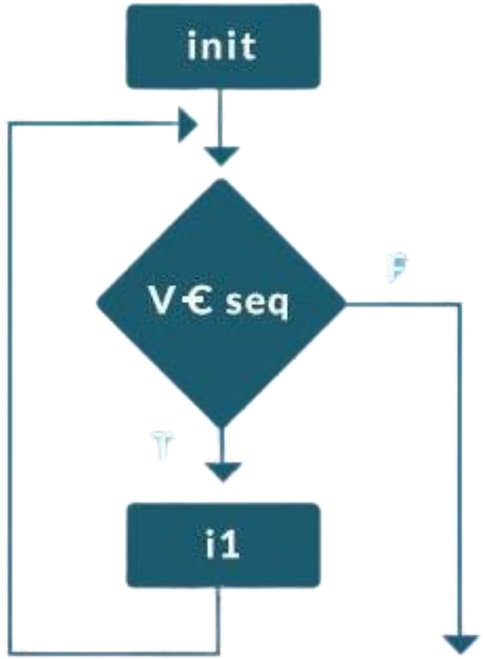
PYTHON LOOPS

FOR:




```
for i in range(start, end, step):
    # do some stuff here

# default start = 0
# default step = 1
# the condition is : i < end
```

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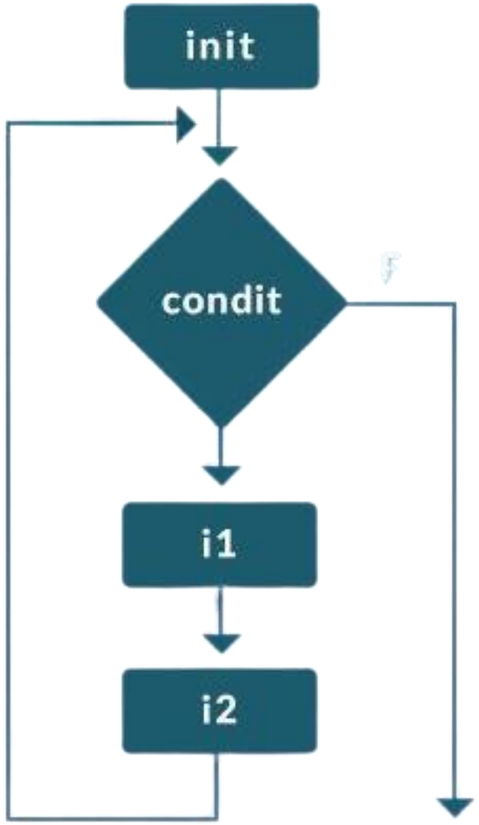
PYTHON LOOPS

WHILE:




```
while condition :
    # do things

i = 0
while i < 10 :
    print(i)
    i+=1
```

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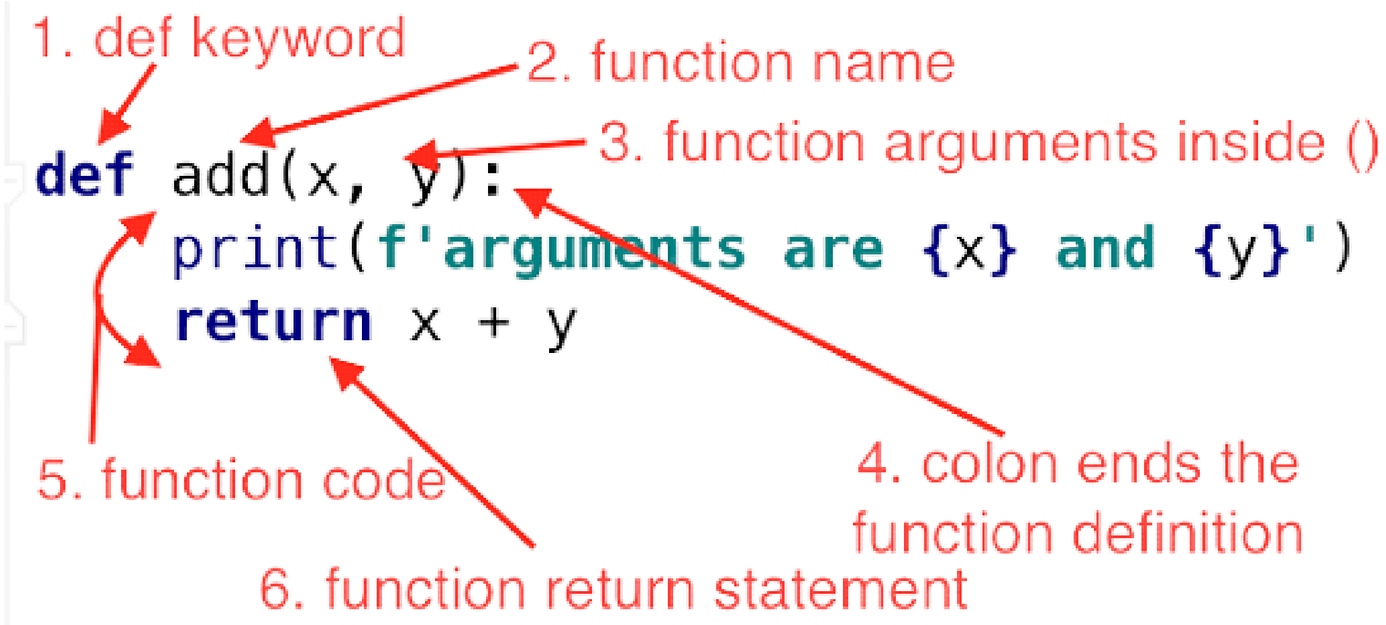
PYTHON FUNCTIONS

```
def function_name(arg1, arg2, arg3):
    # do some actions here
    # return something if necessary

# to call a function
function_name(arg1, arg2, arg3)
```

PYTHON FUNCTIONS



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PYTHON LIBRARIES

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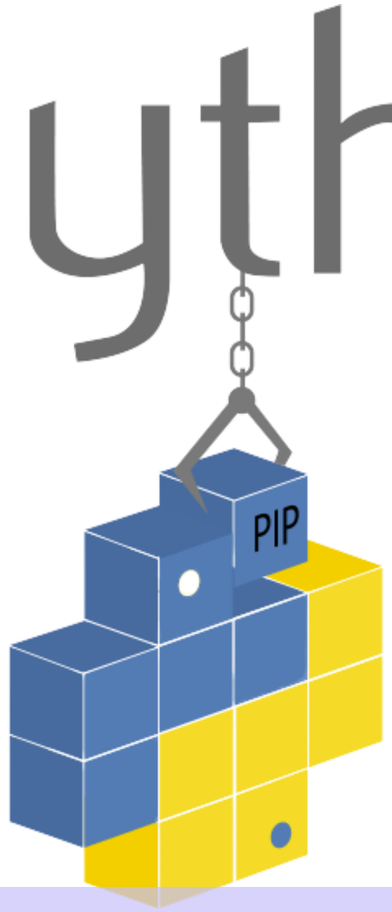
HOW TO INSTALL LIBRARIES

01 USING PIP

pip is the standard package manager for Python. It allows you to install and manage additional packages that are not part of the Python standard library.



python™ pip Installation

HOW TO INSTALL LIBRARIES

01 USING CONDA

Conda is an open-source, cross-platform, language-agnostic package manager and environment management system

HOW TO INSTALL LIBRARIES

COMPARISON:

pip	conda
pip search pyserial	conda search pyserial
pip install pyserial	conda install pyserial
pip install pyserial --upgrade	conda update python
pip list	conda list

HOW TO IMPORT LIBRARIES

we can just use it by importing that library and calling the method of that library

```
import numpy as np
import pandas as pd
import matplotlib.pylab as plt
%matplotlib inline
from matplotlib.pylab import rcParams
rcParams['figure.figsize']= 20,5
```

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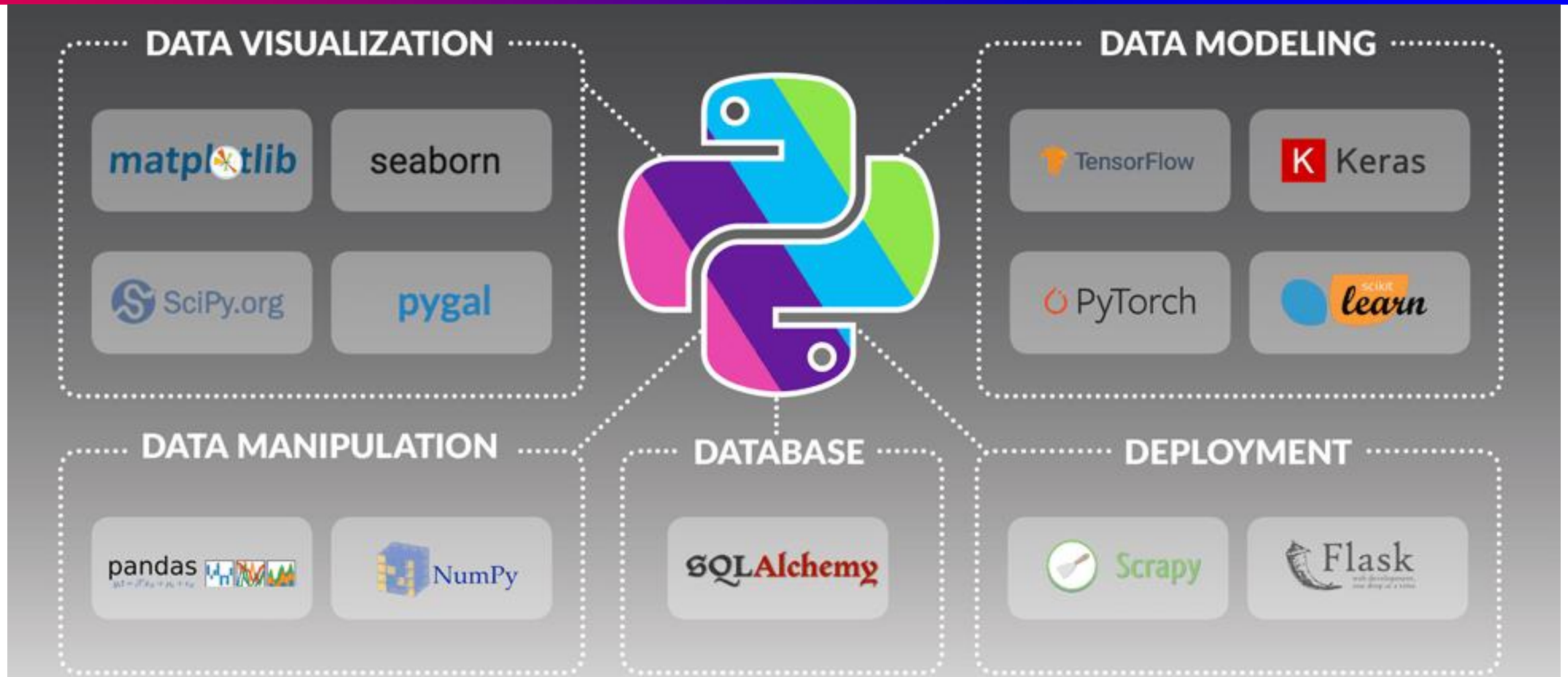
SOME FAMOUS LIBRARIES



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