Learning Python

How to use jupyter notebook

Goal, 3 months !

01- my first program

In [20]:
```
# My First program in python
print(2+4)

print("I am learning python yaay!!")
```

```
6
I am learning python yaay!!
```

02_operators

In [21]:
```
print(2+3)
print(4/2)
print(4-2)
print(3*2)
print(6//2)
print(4**2)
```

```
5
2.0
2
6
3
16
```

03_strings

In [22]:
```
print(2+4)
print("I am learning python yaay")
```

```
6
I am learning python yaay
```

04_comments

In [23]:
```
print("How are you ?")
print("Saad is Learning Python")
```

```
How are you ?
Saad is Learning Python
```

05_variables

In [24]:
```
x = 5
print(x)

y="Saad is learning python with aammar"   #string variable
print (y)

x= x+10
print(x)

# types/class of variables
type(x)
print("type(x)")

fruit_basket = 8
print (type(fruit_basket))
print(fruit_basket)
```

```
5
Saad is learning python with aammar
15
type(x)
<class 'int'>
8
```

(Variables) :

variables are **object containing specific value**

x = 5 is a **numeric *or* integer variable**

(Rules to assign a variable) :

1- The variable should contain letters, numbers or underscores

2- Do not start with numbers

3- Spaces are not allowed

4- Do not use keywords used in function (Break, mean, media, test etc.)

5- Short and Descriptive

6- Case sensitivity (Lowercase, uppercase letters, lower case letters should be used)

06_input_variables

In [25]:
```
name = input ( "What is your name ? ")
marks = input ( "How many marks you scored in FSC ?" )
year = input ( "In what year did you finish your FSC ? " )
greetings = "Hello there!!"
print (greetings, "name" , name, "," "numbers", marks, "," , "year" , year , "," "Thos
```

```
What is your name ? saad
How many marks you scored in FSC ?389
In what year did you finish your FSC ? 2021
Hello there!! name saad ,numbers 389 , year 2021 ,Those are bad numbers :(
```

07_conditional_logics

In [26]:
```
age_for_ride=5
saad_age=input("How old is Saad? ")
saad_age=int(saad_age)
print(type(saad_age))
print(saad_age==age_for_ride)
```

```
How old is Saad? 5
<class 'int'>
True
```

Rules :

logical operators are either "true or false" or "yes or no" or "0 or 1"

equal to ==

not equal to !=

less than <

greater than >

less than and equal to <=

greater than and equal to >=

08_type_conversion

-explicit type conversion

In [27]:
```
name=input("What is your name? ")
print(name, type(str(name)))
```

```
What is your name? saad
saad <class 'str'>
```

Types of variables

x = 10 **integer**

y = 10.2 **float**

z = "Hello" **string**

09_if_else_elif_statements

In [28]:
```
required_age_at_school = 4
hammad_age = 1
if hammad_age==required_age_at_school:
    print("Congratulations! hammad can join the school.")
elif hammad_age > required_age_at_school:
    print("Hammad should join college or higher secondary school")
elif hammad_age <= 2:
    print("You should take care of Hammad, he is still a baby")

else:
    print("hammad can not go to school")
```

```
You should take care of Hammad, he is still a baby
```

In [29]:
```
question: can hammad go to school ?

required_age_at_school = 4
hammad_age = 1
```

```
  Input In [29]
    question: can hammad go to school ?
                     ^
SyntaxError: invalid syntax
```

10_if_functions

In [ ]:
```
def future_age(age):
    new_age=age+20
    return new_age
    print(new_age)

future_predicted_age=future_age(18)
print(future_predicted_age)
```

defining a function:

def print_codanics():

print ("my name is saad")

print ("my name is saad")

print ("my name is saad")

print_codanics()

defining a function with if, else and elif statements

def school_calculator(age):

if age==5:

print("Saad can join the school")

elif age>5:

print("Saad should go to higher school")

else print("Saad is still a baby")

school_calculator(1)

11_loops

In [ ]:
```
for x in range(5,10):
    print(x)


days = ["Mon", "Tue", "Wed", "Thu", "Fri", "Sat", "Sun"]

for d in days:
    if(d=="Fri"):continue
    print(d)
```

while loops and for loops

array

days = ["Mon", "Tue", "Wed", "Thu", "Fri", "Sat", "Sun"]

12_import_libraries

In [ ]:
```
from array import array
import math
print("the value of pi is ", math.pi)

import statistics

x=[150,250,350,450]

print(statistics.mean(x))
```

import numpy, pandas

13_trouble_shooting

In [ ]:
```
name= "Saad"

print("Hello", name)
```

syntax error example:

print (Saad is learning python) #commas missing

runtime error example:

print(25/0) #mathematical error