In [1]:

```
# Install Anaconda , using anaconda navigator we select Jupyter notebook for sav
#We first created a folder and then made a file (.ipynb) with in that folder by
# Jupyter notebook has more options and more utility of the available options th
#markdown option should be selected for making headings
# m for mark down, y for code, ** for bold and * for italic, shift + click to se
# C:\Users\Lenovo Legion\Documents\Jupyter_ notebook
# Run cell is ctrl+Enter
# keyboard shortcuts ctrl+shift+H
```

Python ka chilla with #baba_Aammar

How to use Jupyter note book

Basics of Python

1- My first program

2- My second program

01_First_Program

In [4]:

```
# 01_First_Program
print(2+3)
print("2+3")
print("python_with_AH")
print("this is my first program")
print(2+3-6)
print(1+1)
```

```
5
2+3
python_with_AH
this is my first program
-1
2
```

02_operators

In [6]:

```
print(2+2)
print(3-2)
print(5*5)
print(20/2) #for floating numbers with decimels like 3.0
print(13%2) #modulus operator/variable
print(20//2) # for whole number like 3 without .0 or any other decimels
print(2**3)
print(3/6)
print(3**2/2*3/3+6-4)
```

```
4
1
25
10.0
1
10
8
0.5
6.5
```

PEMDAS paranthesis, Exponents, Multiply, Divide, Addition, substraction (sequence from left to right MD/AS)

3_strings

In [9]:

```
print("python_with_AH")
print("this is my first program")
print('test for single quotes')
print("Test for Double quotes")
print('''    test for triple quotes   ?????''')
print("double strings in case of apostrophies cases like he's or what's up other
print("What's up") # space outside inverted commas (string) has no impact on out

print('''He said, "I am sick today."''')
# print("He said, "I am sick today."") This gives syntax error as Python cannot
```

```
python_with_AH
this is my first program
test for single quotes
Test for Double quotes
    test for triple quotes   ?????
double strings in case of apostrophies cases like he's or what's up otherwise the
program will be consfused and stop at apostrophies  !!!!!!!!!!!!
What's up
He said, "I am sick today."
```

4_Comments

The shortcut to comments is **ctrl+/**

In [11]:

```
print("How are you?") #press ctrl+/ to comment out
print("We are learnig python with Aammar") #print a string
print(2+6) #print operators function with numbers
#comments are useful to refer back the code
```

```
How are you?
We are learnig python with Aammar
8
```

to run interpreter press ctrl+shift+P

05_Variables

In [14]:

```
#Variables: objects containing specific values
x = 5 #numeric/integer variable (type int)
print(x)
y="We are learning python with Aammar" #string variable (type str)
print(y)
```

```
x=x+10 # same as x=15 as in decending order from up to down the code/variables c
print(x)

#types/class of variables
# x=str(x)
type(x)
type(y)
print(type(x))
print(type(y)) #print must be used for showing the commands in output, otherwise

# Rules to assign variables
# 1- The variable should contain letters, numbers or underscores
# 2- Do not start with numbers like 1x,2y etc.
# 3- Spaces are not allowed
# 4- Do not use keywords used in python functions(google for list of keywords in
# 5- Short and descriptive variable names
# 6- Case sensitive (Lowercase, uppercase letters, better to use lowercase)


fruit_basket= "Mangoes", "oranges" # 2 separate string # class tuple
fruit_basket= "Mangoes, oranges" # in 1 string
fruit_basket= 8 # without string # fruit basket is used thrice the latest one is

type(fruit_basket)
print(type(fruit_basket))

# fruit_basket="Mangoes"
# del fruit_basket #this has nullified all the fruit baskets above as it is late
print(fruit_basket) #print should also be after variable change
# print(type(fruit_basket)) #print type should also be after variable change
print(fruit_basket, type(fruit_basket))
```

```
5
We are learning python with Aammar
15
<class 'int'>
<class 'str'>
<class 'int'>
8
8 <class 'int'>
```

06_input_variable

In [16]:

```
# fruit_basket="Mangoes"
# print(fruit_basket)

#we use input function to define
# fruit_basket=input("What is your favourite fruit? ")
# print(fruit_basket)

#input function of 2nd stage
# name= input("What is your name? ")
# greetings= "hello!"
# print(greetings, name)

# Another way of stage 2 input function
# name= input("What is your name? ")
# print("Hello!", name)

#3rd stage input function
```

```
# name= input("What is your name? ")
# Age= input("How old are you? ")
# greetings= "Hello!"

# print(greetings, name, "You are still young")

name= input("What is your name? ")
Age= input("How old are you? ")

print("Hello!", name, "You are still young") # print("Hello!", name, ", You are
```

```
Hello! Arslan You are still young
```

07_conditional_logics

In [18]:

```
# 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             >=

#is 4 equal to 4
# print(4==4)
# print(4!=4)
# print(4>3)
# print(3<6)
# print(3<=5)
# print(5>=4)

#application of logical operators
# Basim_age= 4
# age_at_school= 5
# print(Basim_age==age_at_school)

#input function and logical operator
age_at_school=5
basim_age=input("How old is basim? ") #input function originally string type the
basim_age=int(basim_age) # basim age is converted from string to integer (int) i
print(type(basim_age))
print(basim_age==age_at_school) #logical operator
```

```
<class 'int'>
True
```

08_type_conversion

In [20]:

```
# x=10
# y=10.2
# z="Hello"
# print(type(x)) #integer int
# print(type(y)) #float float
# print(type(z)) #string str
# #integer */+ float is always float type/class this is implicit type conversion

# #implicit type conversion
# x=x+y
# print(x, type(x))
```

```
#explicit type conversion
# age=input("What is you age? ")
# age=int(age) # method 1
# print(type(age))
# print(type(int(age))) # method 2
# print(age, type(int(age)))
# print(age, type(float(age))) # float is used for decimal ages like 18.5 as int

name=input("What is your name? ")
print(name, type(str(name)))    # you have to design program to place integers a
```

```
Arslan <class 'str'>
```

09_if_else_elif

In [22]:

```
# if, elif, else statements
required_age_at_school= 5
basim_age= 10

# question: can basim go to school
if basim_age==required_age_at_school:
    print("Congratulations! basim can join the school.") # with 'if' statement w
                                                          #if it is not true other
elif basim_age > required_age_at_school: #this is else if
    print("basim should join higher secondary school")
elif basim_age <= 2:                        # you can add as many elif statements as
    print("You should take care of basim, he is still a baby!")
else:
    print("basim cannot go to school")
```

```
basim should join higher secondary school
```

10_function

In [24]:

```
# defining a function - function is to get an intentional "output"   out of vari
#1
# def print_codanics():
#     print("We are learning python with Aammar")
#     print("We are learning python with Aammar")
#     print("We are learning python with Aammar")
# print_codanics()

#2 text is defined as variable with in a function
# def print_codanics(): #function
#     text="We are learning python with Aammar in codanics on youtube channel" #
#     print(text)
#     print(text)
#     print(text)
# print_codanics()

#3 text in the print of new function defined
# def print_codanics(text):
#     print(text)
#     print(text)
#     print(text)
# print_codanics("We are learning python with Aammar in codanics on youtube chan

# defining function with if, elif en else statements
# def school_calculator(age, text):
#     if age==5:
```

```
#         print("Basim can join the school")
#     elif age>5:
#         print("Basim should go to higher school")
#     else:
#         print("Basim is still a baby")
# school_calculator(2, "Basim")

# def school_calculator(age): # text is removed
#     if age==5:
#         print("Basim can join the school")
#     elif age>5:
#         print("Basim should go to higher school")
#     else:
#         print("Basim is still a baby")
# school_calculator(2)

# defining a function of future

def future_age(age):
    # age=input("What is your age? ") # with input variable age is filled in ter
    # age=int(age)
    new_age=age+20
    return new_age
    print(new_age)

future_predicted_age=future_age(10) # without input variable, it shows function
print(future_predicted_age)

# function creates output i.e print(new_age), then variable defines function i.e
# and ultimately we print variable which is print(future_predicted_age)
```

```
30
```

11_loops

In [26]:

```
# while Loops and For Loops

# while Loops
# x=0
# while (x<5):
#     print(x)
#     x=x+1

# For Loops
# for x in range(5,10):
#     print(x)

# array is a data set
days = ["Mon", "Tue", "Wed", "Thu", "Fri", "Sat", "Sun" ] # variable i.e day and
for d in days:
    # if(d=="Fri"):break #loop broken and stops on defined d in if with logical
    if(d=="Fri"): continue # loop continues after skipping d in if with logical
    print(d)
```

```
Mon
Tue
Wed
Thu
Sat
Sun
```

12_import_libraries

In [28]:

```
#Instead of defining functions on your own we can use open source funtions in av
#if you want to print the value of Pi

import math                               #this is important to write
print("The value of Pi is ", math.pi)

# import statistics                         #this is important to write

# x=[150,250,350,450]
# print(statistics.mean(x))

# numpy, pandas are some of the important libraries used for statistical analysi

# import math
# print(math.pi)
```

```
The value of Pi is  3.141592653589793
```

13_troubleshooting

In [30]:

```
# print(We are learning python with Aammar) # syntax error of commas (language e
# print(25/0)#zerodivision error - Run time error (general mathematical error) E

name = "Arslan"
# print("Hello name") #Semantic error Difficult troubleshooting as it not identi

# print("Hello", name) # somtimes if no space is needed the we use + instead of
print("Hello"+ name)
```

```
HelloArslan
```