Notebook No: 1

Python ka Chilla with Baba Ammar

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Basics of Python

01- My 1st-Program

In [3]:
```
print("I'm going to start python ka chilla with Baba Ammar")
print("I'm a student of Cholistan University of veterinary and Animal Sciences Bahawalp
```

```
I'm going to start python ka chilla with Baba Ammar
I'm a student of Cholistan University of veterinary and Animal Sciences Bahawalpur
```

02- Operators

In [4]:
```
print(90+88)            #Addition
print(89-43)            #Substraction
print(8*78)             #Multiplication
print(90/2)             #Division
print(64//4)            #Double Division
print(2**3)             #Power
print(9%2)              #Reminder
print(68//4*9+8-10)     #Equation
```

```
178
46
624
45.0
16
8
1
151
```

PEMDAS Parenthesis, Exponents, multiply, Divide, Addition & Substraction

Left to right sequence for M D & A S

03- Strings

we can write string in single qoutes(' '), in double qoiutes(" ") and In tripple qoutes(''' ''')

In [5]:
```
print('Single Qoutes')
print("Double Qoutes")
print('''Triple Qoutes''')
```

```
Single Qoutes
Double Qoutes
Triple Qoutes
```

now what is the difference

In [6]:
```
print("What's up")
```

```
What's up
```

agr hm ise single qoutes me likhainb gy to ye consider nhi kre ga

04- Comments

The shortcut keys to comments is **(Ctrl+/)**

In [7]:
```
print("How are you?")    #press these to comment out (Ctrl+/) or use (#) before stateme
```

```
How are you?
```

05- Variables

variables: objects containing specific values.

In [8]:
```
x=10    #Numeric or Integer Variable
print(x)

y="I'm Pakistani!"    #string variable
print(y)
x=40   #Here the valuae of x is updating by 40.It works same for 'y'..Only happen in Py
print(x)
x=x+10      #Another way to update value of x....
print(x)
z='?'
print(z)
```

```
10
I'm Pakistani!
40
50
?
```

Types/Class of Variables.

A Function to Check Types of Variables.

In [9]:
```
type(x)
print(type(x))
type(y)
print(type(y))
type(z)
print(type(z))
```

```
<class 'int'>
<class 'str'>
```

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

Rules to Assign a Variable

1. The variable should contain lettes, numbers or underscore..

2. Do not start with numbers.

3. Spaces are not allowed.

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

5. Short and discriptive

6. case senstivity (lower case and upercase letter shoul be used)

In [10]:
```
fruit_basket="mangoes"
print(fruit_basket)
print(type(fruit_basket))
```

```
mangoes
<class 'str'>
```

06- Input Variables

Simple Input Function

In [11]:
```
fruit_basket=input("what is your favourite fruit?  ")
print(fruit_basket)
```

```
what is your favourite fruit?  mango
mango
```

Input Function of 2nd Stage

In [12]:
```
name=input("what is your name? ")
greeting="Hello!"
print(greeting,name)
```

```
what is your name? Musharaf
Hello! Musharaf
```

Input Function of 3rd Stage

In [13]:
```
name=input("what is your name? ")
name=str(name)      #In this line we are changing the data type of variable
print(type(name))
age=input("what is your age? ")
greeting="Hello!"
print (greeting, name, "You are still young!")
```

```
what is your name? Ahsan
<class 'str'>
```

```
what is your age? 18
Hello! Ahsan You are still young!
```

07- Conditional Logics

Logical Operators are "TRUE/FALSE", "YES/NO" or "0/1"

1. equal to ==

2. not equal to !=

3. less than <

4. greater than >

5. less than and equal to <=

6. greater than equal to >=

is 4 equal to 4?

In [14]:
```
print(4==4)
print(4!=9)
print(4>3)
print(3<6)
print(3<=5)
print(5>=4)
```

```
True
True
True
True
True
True
```

Application of Logical Operators

In [15]:
```
ali_age=4
age_at_school=5
print(ali_age==age_at_school)
```

```
False
```

Input Function and Logical Operator

In [16]:
```
age_at_school=5
student_age=input("How old is student? ")    #INPUT FUNCTION
student_age=int(student_age)                 #CONVERTING string INTO int DATA TYPE
print (type(student_age))
print(student_age>=age_at_school)            #LOGICAL OPERTAOR
```

```
How old is student? 4
<class 'int'>
```

```
False
```

08- Type Conversion

In [17]:
```
x=10        #intiger
y=10.5      #float
z="Hello"   #string
```

Imlicit Type Conversion

In [18]:
```
x=10
y=10.5
x=x+y
print(x,"Data type of x is ",type(x))
```

```
20.5 Data type of x is  <class 'float'>
```

Explicit Type Conversion

In [19]:
```
age=input("What is your age? ")
# age=int(age)                      #1st method to convert data type
print(age,type(int(age)))           #2nd method to convert data type
name=input("what is your name? ")
print(name,type(name))
```

```
What is your age? 22
22 <class 'int'>
what is your name? Ahsan
Ahsan <class 'str'>
```

09- if,else & elif

In [20]:
```
student_age=input("How old is student? ")
student_age=int(student_age)
required_age_at_school=5
if student_age==required_age_at_school:
    print("Congrats sudent can join tha school.")
elif student_age > required_age_at_school:
    print("student should join Higher secondary school.")
elif student_age <= 2:
    print("you shoul take care of student he/she is a still baby")
else:
    print("student can't join the school.")
```

```
How old is student? 5
Congrats sudent can join tha school.
```

10- Functions

print("We are learning python")

print("We are learning python")

print("We are learning python")

print("We are learning python")

print("We are learning python")

Defining a Function by diffrent ways

=> 1

In [21]:
```
def print_code():
    print("We are learning python")
    print("We are learning python")
    print("We are learning python")
print_code()
```

```
We are learning python
We are learning python
We are learning python
```

=> 2

In [22]:
```
def print_code():
    text="We are learning python with baba ammar on youtube "
    print(text)
    print(text)
    print(text)
print_code()
```

```
We are learning python with baba ammar on youtube
We are learning python with baba ammar on youtube
We are learning python with baba ammar on youtube
```

=> 3

In [23]:
```
def print_code(text):

    print(text)
    print(text)
    print(text)
print_code("we are learning python with baba ammar")
```

```
we are learning python with baba ammar
we are learning python with baba ammar
we are learning python with baba ammar
```

Defining Function with if, elif and else statement

=> 4

In [24]:
```
def school_calculator(age):
    if age==5:
        print("Student can join the school")
```

```
    elif age>5:
        print("student shoul go higher secondary school")
    else:
        print("student is still a baby")
school_calculator(5)
```

```
Student can join the school
```

=> 5

In [25]:

```
def school_calculator(age=input("whta is the age of student? ")):    #Input from User
    age=int(age)
    if age==5:
        print("Student can join the school")
    elif age>5:
        print("student shoul go higher secondary school")
    else:
        print("student is still a baby")
school_calculator()
```

```
whta is the age of student? 4
student is still a baby
```

Defining a Function of Future

In [26]:

```
def future_age(age):
    new_age=age+20
    return new_age
    print(new_age)
futurre_prediction_age= future_age(18)
print(futurre_prediction_age)
```

```
38
```

11- Loops

While Loop

In [27]:

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

```
0
1
2
3
4
5
6
7
8
9
10
```

For Loop

In [28]:
```
for x in range(0,10):
    print(x)
```

```
0
1
2
3
4
5
6
7
8
9
```

Array

In [29]:
```
days=["mon","tue","wed","thu","fri","sat","sun"]
for d in days:
    # if (d=="fri"):
    #     break         #loop stops
    if (d=="fri"):
        continue        #skips d
    print(d)
```

```
mon
tue
wed
thu
sat
sun
```

12- Import Libraries

if you want to print the value of pi

In [30]:
```
import math
print("The value of PI is ",math.pi)
```

```
The value of PI is  3.141592653589793
```

We can also calculate Mode,Mean and many other values using "statistics" library

In [31]:
```
import statistics
x=[456,345,353,353,345,889]
print("Mode of x is ",statistics.mode(x))
```

```
Mode of x is  345
```

other important libraries are

numpy, pandas etc

13- Trouble Shooting

print(we are learning python with Ammmar) #Syntax Error missing ""

print(90/0) #ZeroDivisionError: division by zero # RUNTIME ERROR

In [32]:
```
name="Musharaf"
# print("Hello name") # Semantic Error /Logical error
print("Hello"+ name)
print("Hello", name)
```

```
HelloMusharaf
Hello Musharaf
```

In [ ]:
```

```