

Python ka Chilla

With Bana Aammar

Basics of Python

01-My first Program in python

In [1]:

```
print("My First Program in Python")  
print()  
print("hello people")  
print(5+9)  
print("enjoyed")
```

My First Program in Python

hello people

14

enjoyed

02-Operators

In [2]:

```
print(2+3)  
print()  
print(3-2)  
print()  
print(2 + 3)  
print(2 + 3)  
print()
```

5

1

5

5

Spaces in Operators are meaningless

```
In [3]: print("Addition  + ")
print()
print(5+1)
print(2+2)
print()
print("Subtraction  - ")
print()
print(2-1)
print(3-5)
print()
print("Multiplication  * ")
print()
print(2*8)
print(2 * 4)
print(2.2*2)
print()
print("Division  /  will give answer in decimal numbers  whereas  //  will give answer in whole numbers  ")
print()
print(4/4)
print(5/2)
print(5//2)
print(10/3)
print(10/2)
print()
print("Remainder  % ")
print()
print(3%2)
print(10%3)
print(10%7)
print(2%2)
print()
print(" Exponential or Power ")
print()
print(2**2)
print(3**2)
print(4**2)
print(2**3)
print(2.2**3)
print()
print("Remember that these all operators except the exponent or power  **  doesn't works in terminal. Why?")
print("Its because first we have to initialize the python in the terminal and then use the ** ")
```

Addition +

6

4

Subtraction -

1

-2

Multiplication *

16

8

4.4

Division / will give answer in decimal numbers whereas // will give answer in whole numbers

1.0

2.5

2

3.3333333333333335

5.0

Remainder %

1

1

3

0

Exponential or Power

4

9

16

8

10.648000000000003

Remember that these all operators except the exponent or power ** doesn't works in terminal. Why?

Its because first we have to initialize the python in the terminal and then use the **

PEMDAS-----Parentheses, Exponents, Multiply, Divide, Add, Subtract----- left to right Sequence for multiplication, Division and Addition, subtraction

03-Strings

```
In [4]: print('This is how we write strings in python')
        print("Or like this")
        print('''and this way too!''')
```

```
This is how we write strings in python
Or like this
and this way too!
```

04-Comments

Ctrl + Shift + P and type select interpreter and select Python if the code doesn't run Ctrl + / for commenting the statements. its short cut. or you can write # one by one before each line

```
In [5]: print('This is how we write strings in python')
        # print("Or like this")
        print('''and this way too!''')
```

```
This is how we write strings in python
and this way too!
```

05-Variables

```
In [6]: *Varibales are objects containing specific values
```

File "C:\Users\rajaa\AppData\Local\Temp\ipykernel_9404\79753379.py", line 1

*Varibales are objects containing specific values

^

SyntaxError: invalid syntax

```
In [ ]: from re import T
```

```
x=5
```

```
print(x)
```

```
y="Raja Ali Dad"
```

```
print(y)
```

```
x=12  
print(x)
```

an update in value of x and new value will replace the previous one. update in code occurs from top to bottom.

```
In [ ]: x=14+x  
        print(x)  
        print(x,y)
```

multi varibales in single line

```
In [ ]: x,c= 22,21  
        print(x,c,y)
```

Types of Variables or Class of Variables

```
In [ ]: z=12.14
```

print(type(x,y,z)) we can't find multi types in signle line

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

*Rules to assign a Variable 1- A variable name must start with a letter or the underscore character. 2- A variable name cannot start with a number. 3- A variable name can only contain alpha-numeric characters and underscores (A-z, 0-9, and _). 4- Variable names are case-sensitive (name, Name and NAME are three different variables). 5- The reserved words(keywords) cannot be used naming the variable. or any functional keywords 6- Spaces are not allowed 7- short and descriptive for ease 8- Use lower case letters for ease

```
In [ ]: names_of_friends = "Ali", "Asad", "Mudassir"  
        print(type(names_of_friends))  
        del names_of_friends
```

del deletes the variables

```
In [ ]: print(names_of_friends)
```

06-Variables

```
In [7]: names_of_friends = "Ali", "Asad", "Mudassir"
        print(names_of_friends)
        print(type(names_of_friends))
```

```
('Ali', 'Asad', 'Mudassir')
<class 'tuple'>
```

input Function

```
In [8]: names_of_friends= input(" Name your Friends: ")
        print(names_of_friends)
        print(type(names_of_friends))
```

```
Name your Friends:  Raja ALi Dad
Raja ALi Dad
<class 'str'>
```

example

```
In [9]: books= "physics"
        print("is",books,"your favorite book?")
        print("No")
        print("Then write you favorite one")
        books= input()
        print("So",books, "is your favorite")
        y="yes"
        print(y,books,"is my favorite")
```

```
is physics your favorite book?
No
Then write you favorite one
Maths
So Maths is your favorite
yes Maths is my favorite
```

07_conditional_logics

*Logical Operators Equal to == Not Equal to != greater than > less than < less than or Equal to <= greater than or equal to >= -----

Logical Operators can be-----Ture or False-----Yes or No----- 0 or 1-----

is 2 equal to 100

```
In [10]: print(2==100)
```

False

= is used for assigne the value whereas == is for "equal to" is 2 not equal to 100

```
In [11]: print(2!=100)
```

True

*is 12=12

```
In [12]: print(12==12)
```

True

application of logical operators

```
In [13]: rule= "this video is restricted for age 18"
required_age=18
age= 18
print("Your age is perfect ")
print(required_age==age )
print("Video Starts ")
```

Your age is perfect

True

Video Starts

through input

```
In [14]: rule= "this video is restricted for age 18"
required_age=18
age =input("What is your age? ")
```

What is your age? 24

error here is due to the type/class of age. its string so convert it into integer first

```
In [15]: age = int(age)
```

```
print(required_age==age )
print("Video Starts ")
```

False

Video Starts

08_type_conversion

In [16]:

```
x=5                                #integer
y=13.14                            #float
z="Raja"                            #String
print(x,'its type is: ',type(x),y,'its type is: ',type(y),z,'its type is: ', type(z))
```

5 its type is: <class 'int'> 13.14 its type is: <class 'float'> Raja its type is: <class 'str'>

implicit type conversion

In [17]:

```
x=x+y
print(x,'its type is: ',type(x))
y=x*y
print(y,'its type is: ',type(y))
# z=x*z
# print(z,'its type is: ',type(z))          #can't multiply a numeric with a non numericb
```

18.14 its type is: <class 'float'>

238.35960000000003 its type is: <class 'float'>

explicit type conversion

In [18]:

```
age= input("What is your age? ")
age=int(age)
print(age, type(age))
#2nd way of this
age= input("What is your age? ")
print(age, type(int(age)))
```

What is your age? 22

22 <class 'int'>

What is your age? 20

20 <class 'int'>

09_if_elseelif_statements


```
In [19]: required_age_at_school= 5  
ali_age= 10
```

question: can Ali go to school?

```
In [20]: if ali_age==required_age_at_school:  
          print("Congrats! Ali acn join the school")  
elif ali_age>required_age_at_school:  
    print("Ali should join college")  
elif ali_age<=2:  
    print("You should take care of him, he's still too young")  
else:  
    print("Ali can't join the school")
```

Ali should join college

10_functions

```
In [21]: 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")  
print("We are Learning Python")  
print("We are Learning Python")  
print("We are Learning Python")
```

```
#defining a functions  
#def    function_name    () :  
#def    my_name          () :
```

We are Learning Python
We are Learning Python
We are Learning Python
We are Learning Python
We are Learning Python
We are Learning Python
We are Learning Python
We are Learning Python

1_ method to define a function

```
In [22]:
```

```
def my_name():  
    print("Raja")  
    print("Raja")  
    print("Raja")  
    print("Raja")
```

```
my_name()
```

Raja

Raja

Raja

Raja

2_ method to define a fuunction

In [23]:

```
def my_name():  
    name="Raja Ali"  
    print(name)  
    print(name)  
    print(name)  
    print(name)  
my_name()
```

Raja Ali

Raja Ali

Raja Ali

Raja Ali

3_ method to define a function

In [24]:

```
def my_name(name):  
    print(name)  
    print(name)  
    print(name)  
    print(name)  
my_name("Raja Ali Dad")
```

Raja Ali Dad

Raja Ali Dad

Raja Ali Dad

Raja Ali Dad

4_ defining a fucntion with if,elif, else statments

```
In [25]: def ask_a_question(ali_age):
    if ali_age==5:
        print("Congrats! Ali acn join the school")
    elif ali_age>10:
        print("Ali should join college")
    elif ali_age<=2:
        print("You should take care of him, he's still too young")
    else:
        print("Ali can't join the school")

ask_a_question(14)
```

Ali should join college

5_ defining a function of Future

```
In [26]: def future_age(age):
    new_age=age+5
    return(new_age)
predicted_age=future_age(24)
print(predicted_age)
```

29

11_loops

while and for loops 1_while loops A mother takes her child to school daily until the child is muture enough to go by himself. Hint: the maturity age is 10

```
In [27]: x=0
while (x<=10):
    print(x)
    x=x+1

for loop
for x in range(5,10):
    print(x)

#array
```

File "C:\Users\rajaa\AppData\Local\Temp\ipykernel_9404\2130049336.py", line 6
for loop

^

SyntaxError: invalid syntax

```
In [ ]: from ast import Continue

days = [ "Mon", "Tue", "Wed", "Thu", "Fri", "Sat", "Sun"]
for d in days:
    # if (d=="Fri"): break          #Loop stops
    # print(d)
    if (d=="Fri"):continue
    print(d)
```

12_import_libraries

```
In [ ]: # if you want to print the value of pi
import math
print("The value of Pi is ", math.pi)

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

#important libraries are below
#numpy, pandas
```

13_trouble_shooting

1_ error----syntax error

```
In [ ]: print(we are learning python)    #syntax error are ," errors"
```

2_ error -----Runtime error

```
In [ ]: print(25/0)                      #Runtime error are mathematical errors
```

3_ error-----Symentic error

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

```
print("Hello name")  
print("Hello",name)  
print("Hello"+name)
```

#Symentic error, here we want to print hello Ali but its not printing that. python is r
#Symentic errors are toughest to find
#omits space after hello

Till now we learned Intro operators strings comments in python variables input functions/variables conditional logics type coversion if, elif, else statements functions loops (for and while) libraries trouble_shooting important information