Python_tutorial_1

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1 Python Tutorial: Introduction to PROGRAMMING

1.0.1 Variables

```
In [1]: a=2
        b=2.0
        c= 'Iaman'
        d= "iitian"
        print(type(a),type(b), type(c), type(d))
        print(a,b,c,d)

<class 'int'> <class 'float'> <class 'str'> <class 'str'>
2 2.0 Iaman iitian
```

assignment

```
In [2]: a=2
        print(a)
        a= a + 7
        print(a)
        a= a + 5
        print(a)
        a= a - 4
        print(a)

2
9
14
10
```

1.0.2 Typecasting

```
In [3]: a= 2.0
        print(type(a))
        print(a)
```

```
<class 'float'>
2.0
```

```
In [4]: a=int(a)
        print(type(a))
        print(a)

<class 'int'>
2
```

This type of type casting is invalid. Because the string "a123" can't be coverted to integer as it contains a non-numeric data(alphabet).

```
In [5]: b="a123"
        b = int(b)


        ------------------------------------------------------------------------

        ValueError                                 Traceback (most recent call last)

        <ipython-input-5-1dcac0f40c5a> in <module>()
          1 b="a123"
    ----> 2 b = int(b)


        ValueError: invalid literal for int() with base 10: 'a123'
```

```
In [6]: c=1.88

        c= int(c)
        print(c)

1
```

Poperties of string

```
In [7]: c="A234"
        d=" sachin"
        print(c)
        print(d)
        print(c+d)

A234
 sachin
A234 sachin
```

2

```
In [8]: print(c) # Prints string c
        print(c[0]) #Prints first element of c
        print(c[1]) #Prints second element of c
        print(c[2]) #Prints third element of c

        # c[i] denotes i+1 th element of c

        i=3
        print(c[i])
        i=3
        print(c[i])
        print(type(c[i]))
        print(len(c))

A234
A
2
3
4
4
<class 'str'>
4
```

Book1: Dive into Python
Book2: think like a Computer Scientist

```
In [9]: f= "s a c h i n"
        print(f)

s a c h i n
```

```
In [10]: g= "19234"
         h="19 2 3 4" #separate out these integers
         print(g)
         print(h)
         print(c[i])
         print(type(c[i]))

19234
19 2 3 4
4
<class 'str'>
```

```
In [11]: print(h.split())
         print(g.split())
```

```
['19', '2', '3', '4']
['19234']
```

LIST

```
In [12]: a=[1, "abc", "iit", "1", "student", 0.007]
         print(a)
         print(a[2])
         print(len(a))

[1, 'abc', 'iit', '1', 'student', 0.007]
iit
6
```

Taking Input

```
In [13]: temp = input()

23
```

```
In [14]: type(temp)

Out[14]: str

In [15]: temp= int(temp)

In [16]: type(temp)

Out[16]: int

In [17]: temp1= int(input())
         type(temp1)

90


Out[17]: int

In [18]: temp1=int(input())
         temp2=int(input())

78
43


In [19]: print(temp1, temp2)

78 43
```

equality checking in programming

```
In [20]: 2==3

Out[20]: False

In [21]: 2==2

Out[21]: True

In [22]: a=2

In [23]: a==2

Out[23]: True

In [24]: a==8

Out[24]: False

In [25]: a!=2

Out[25]: False

In [26]: a!=3

Out[26]: True
```

Conditional Statements

```
In [27]: a=8
         b=3.0
         if a ==2:
             print(a)
         if b==2.0:
             print("HHH")
         if a!=2:
             print(b)

3.0


In [28]: if a!=2:
             print(a)
         if a==2:
             print(b)

8
```

```
In [29]: if a!=2:
             print(a)
         else:
             print(d)

8


In [30]: if a==5:
             print(a)
         elif a==4:
             print(c)
         else:
             print(d)

 sachin


In [31]: if a==5:
             print(a)
         elif a==5:
             print(c)
         else:
             print(d)

 sachin


In [32]: if a==4:
             print(a)
         elif a==5:
             print(c)
         else:
             print(d)

 sachin


In [33]: if a==4:
             print(a)
         elif a==6:
             print(c)
         else:
             print(d)

 sachin
```

1.1 Que1: Write a programme to take input two numbers *a* and *b* A ND check if they are equal or not.

1.2 Que2: Given three numbers *a*, *b*, and *c* any two of them are equal. write a programme to find those two equal numbers.

```
In [34]: print(a)

8


In [35]: a==3

Out[35]: False

In [36]: a==5

Out[36]: False

In [37]: if True:
             print(a)

8


In [38]: if False:
             print(b)
         else:
             print(d)

  sachin


In [39]: 3>2

Out[39]: True

In [40]: 2>3

Out[40]: False

In [41]: 2<=3

Out[41]: True

In [42]: 2>=3

Out[42]: False
```

```
In [43]: if 3>2:
             print(d)
         if 2>3:
             print(c)
         if 2>=3:
             print(b)
         if 2<=3:
             print(a)


 sachin
8
```

1.2.1   Que3: Given two numbers a and b, find which one is greater.

Operators

- **+**: Addition
- **-**: Subtraction
- **/**: division
- *****: multiplication
- **%**: % is knowns as modulus operator.If we write c= a %b, then c is the **remainder** left after dividing a by b.

```
In [44]: 2+3
         3+2

Out[44]: 5

In [45]: 2-3

Out[45]: -1

In [46]: 3-2

Out[46]: 1

In [47]: 4/2

Out[47]: 2.0

In [48]: 4.0/2

Out[48]: 2.0

In [49]: 5/2

Out[49]: 2.5

In [50]: 5.0%2
```

```
Out[50]: 1.0

In [51]: 2%5

Out[51]: 2

In [52]: 2%2

Out[52]: 0

In [53]: 5.0//2

Out[53]: 2.0
```