بِسۡمِ ٱللَّهِ ٱلرَّحۡمَٰنِ ٱلرَّحِيمِ

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Chapter-2

Variables & Datatypes

- **Variables:**

```
 9
10  # Creating Variables
11
12  x = 4       # x is of type int
13  x = "Faria" # x is now of type str
14  print(x)
15
16  # Get the Type
17
18  x = 5
19  y = "John"
20  print(type(x))
21  print(type(y))
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL                    Python

PS C:\Users\Administrator\Desktop\python> & "C:/Program Files/Python311/python.exe" c:/Users/Administrator/Desktop/python/comments.py
Faria
PS C:\Users\Administrator\Desktop\python> & "C:/Program Files/Python311/python.exe" c:/Users/Administrator/Desktop/python/comments.py
Faria
<class 'int'>
<class 'str'>
PS C:\Users\Administrator\Desktop\python>
```

➢ Datatypes in Python:

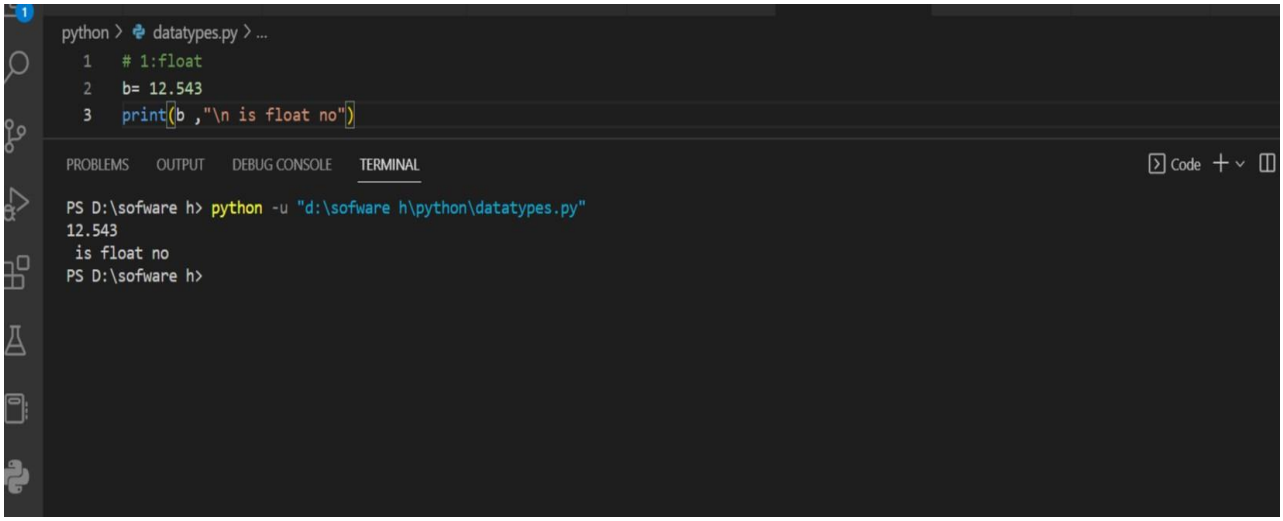
Data types are the classification or categorization of data items. It represents the kind of value that tells what operations can be performed on a particular data.

- **String Datatype:**

```
24  # In Python, the data type is set when you assign a value to a variable:
25
26
27  x = "Faria Safdar"
28
29  #display x:
30  print(x)
31
32  #display the data type of x:
33  print(type(x))
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL

PS C:\Users\Administrator\Desktop\python> & "C:/Program Files/Python311/python.exe" c:/Users/Administrator/Desktop/python/comments.py
Faria Safdar
<class 'str'>
PS C:\Users\Administrator\Desktop\python>
```

- **Float Datatype:**



Operator in python:

- **Arithmetic operator**

```python
# 1:Arithmetic opeartors
#input for user
a = int(input("enter 1st no :"))
b = int(input("enter 2nd no :"))
#sum
add = a + b
#sub
sub =a - b
#multiple
multiple = a * b
#div
divd =a / b
#modulas
modulas =a % b
print("sum is :" , add)
print("subtract is " ,sub)
print("multiple is:" , multiple)
print("divide is:" , divd)
print("modulus is:" , modulas)
```

```
enter 1st no :12
enter 2nd no :4
sum is : 16
subtract is  8
multiple is: 48
divide is: 3.0
modulus is: 0
PS D:\sofware h>
```

- **Assignment operator**

```python
# 1:Assignment  opeartors
#input for user
a = int(input("enter no :"))
a= a+5
print("assignment oper increment" , a)
a= a-15
print("assignment oper decrement " ,a)
a=25
print("assignment oper equal " ,a)
```

```
PS D:\sofware h> python -u "d:\sofware h\python\operators.py"
enter no :25
assignment oper increment 30
assignment oper decrement  15
assignment oper equal  25
PS D:\sofware h>
```

- **Logical operator:**

```python
#logical operator
# and ,not ,or
age= 25
#and opear
if age >=28 and age <12:
 print("you are eligible\n")
else:
   print("you are not eligible\n")

 #OR op
temp = 10
if temp <19 or temp >6:
   print("temprature is good\n")
else:
  print("temprature is not good\n")

# not op
cloud = False
if not cloud:
 print("whether is cloudly\n")
```

Output:

```
PS D:\sofware h> python -u "d:\sofware h\python\logical.py"
you are not eligible

temprature is good

whether is cloudly

PS D:\sofware h>
```

- **Comparison operator:**

```python
# comparison opeartor
# >, >= ,< <=, ==, !=
#we compare the value wil be boolean  data type ( true or false )
value = 25
#less than
print(value >23)

# less than equal
print (value >=12)

# greater than
print (value < 26)

# greater than equal to
print (value >=22)

# equal to
print (value == 26)

# != equal to
print (value != 45)
```

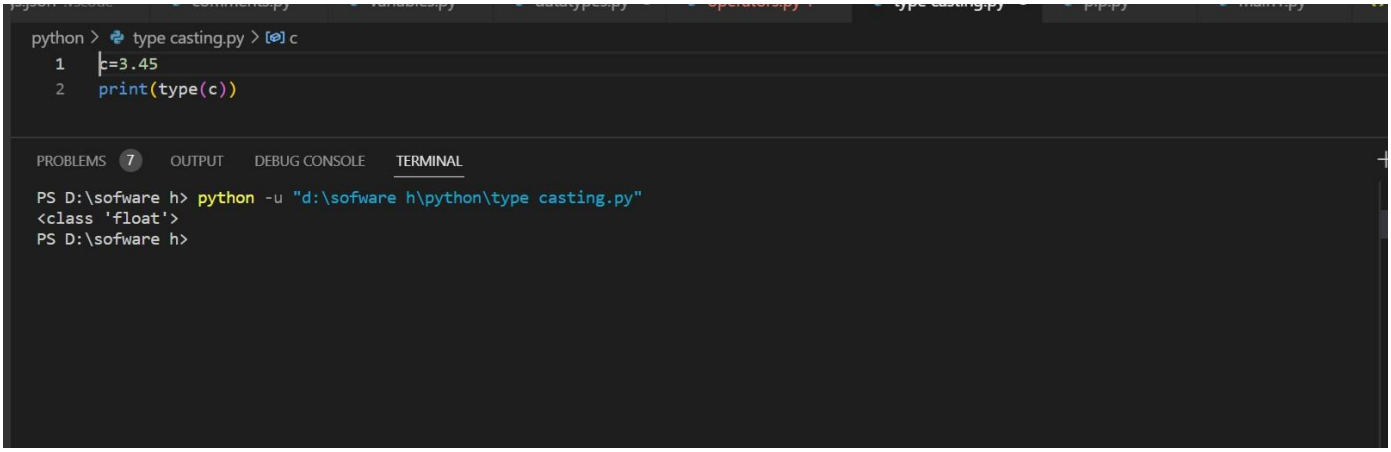
Output :

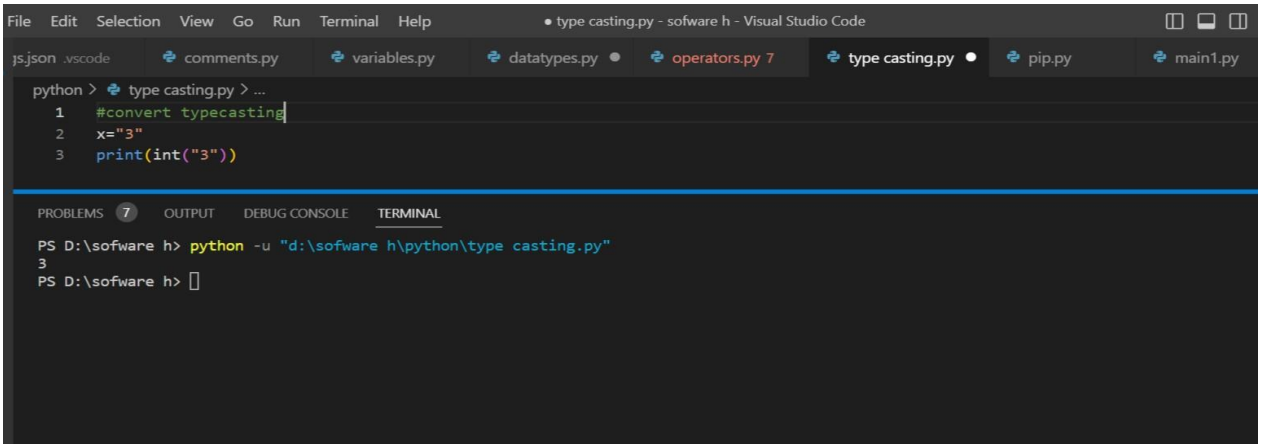
```
10
11  # greater than
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL

PS D:\sofware h> python -u "d:\sofware h\python\comparison.py"
True
True
True
True
False
True
PS D:\sofware h>
```

➢ Type ( ) function:

Python type() is a built-in function that returns the type of the objects/data elements stored in any data type .

- **EXAMPLE:**





➢ Type casting

Type Casting is the method to convert the variable data type into a certain data type

- Types of casting:
  I. - Explicit Conversion(Explicit type casting in python),
  II. Implicit Conversion(Implicit type casting in python)

- **string to int casting**