

# Python Scripting Built in Functions

**Pay attention to the built-in functions in python. How many of them can you recognize?**

```

3  # CONCATENATE
4
5  # Changing data from one form to the other
6  # We are going to be changing str() to int() and int() to str()
7
8  Date_of_Birth = input("Which year were you born? ")
9  Age = 2022 - int(Date_of_Birth)
10 print(Age)

```

App ×

C:\Users\Forex\PycharmProjects\pythonProject\HelloWorld\venv\Scripts\python.exe C:/Users/Forex/PycharmProjects/pythonProject/HelloWorld/App.py

Which year were you born? 1901

121

## Exercise #2

Concatenate the age of the customer with this short information.

“This is my age:”

How do we accomplish this?

Program input

```

# CONCATENATE

# Changing data from one form to the other
# We are going to be changing str() to int() and int() to str()

Date_of_Birth = input("Which year were you born? ")
Age = 2022 - int(Date_of_Birth)
print("This is my age:" + Age)

```

Let run this short program on our terminals

Terminal Output

```

1  # CONCATENATE
2
3  # Changing data from one form to the other
4  # We are going to be changing str() to int() and int() to str()
5
6  Date_of_Birth = input("Which year were you born? ")
7  Age = 2022 - int(Date_of_Birth)
8  print("This is my age:" + Age)

```

App ×

C:\Users\Forex\PycharmProjects\pythonProject\HelloWorld\venv\Scripts\python.exe C:/Users/Forex/PycharmProjects/pythonProject/HelloWorld/App.py

Which year were you born? 2019

Traceback (most recent call last):

File "C:\Users\Forex\PycharmProjects\pythonProject\HelloWorld\AppData\Local\Temp\pycharm-python\python.exe", line 8, in <module>

print("This is my age:" + Age)

TypeError: can only concatenate str (not "int") to str

Process finished with exit code 1

Program crashed

Why?

Pay attention to the TypeError

The program crashed because are trying to concatenate a str() with an int().

Like this

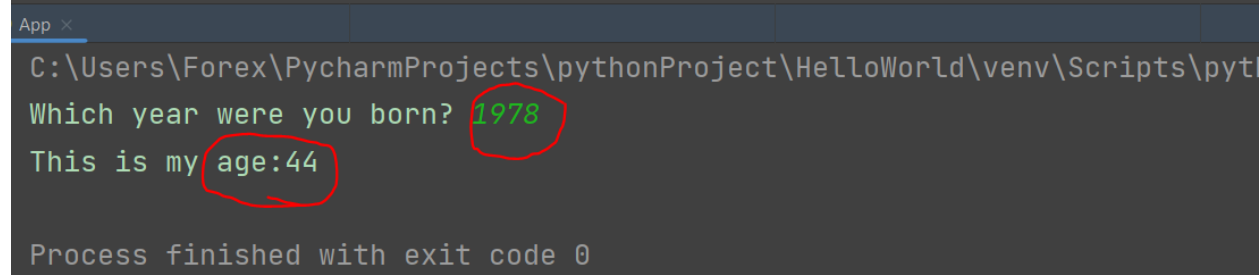
“This is my age: “ + Age → this is not going to work

## Python Scripting – Session 3

We can only combine ➔ `str() + str()` or `int() + int()`

Solution

```
3 # Changing data from one form to the other
4 # We are going to be changing str() to int() and int() to str()
5
6 Date_of_Birth = input("Which year were you born? ")
7 Age = 2022 - int(Date_of_Birth)
8 print("This is my age:" + str(Age))
9
```



App ×

C:\Users\Forex\PycharmProjects\pythonProject\HelloWorld\venv\Scripts\pyt

Which year were you born? 1978

This is my age:44

Process finished with exit code 0

Another Exercise - **PAY A LOT OF ATTENTION TO** `str()` and `int()`, especially when concatenating.

Paul Biya was born in 1933. He became the president of Cameroon in year 1982.

Steps 1

- Create input variables to store the information obtained from “Which year was president Biya born?”
- Create input variables to store the information obtained from “Which year did president Biya become the president of Cameroon?”

Create a python program that will calculate The\_Number\_Of\_Years President Biya has been in power.

Step 2

- The\_Number\_Of\_Years = ? + ?
- Print (“President Biya has been in power for this number of years:” + The\_Number\_Of\_Years)

Create an INPUT that is going to capture the opinion of the Cameroonians on whether they are going to vote “Yes” or “No” for President Biya in the coming general election.

Step 3

```
Voting_Choice = input("Are you going to be voting for President Biya  
this coming general election? ")
```

Create a Boolean statement that will print a specific message in accordance with the dynamic feedback from each Cameroonian citizen.

If the answer of the citizen is yes,

Step 4

Print ( “ I am happy with the current state of things in Cameroon for the last:” + Concatenate  
Number\_of\_Years\_In\_Power + “years”)

Step 5

If the answer of the citizen is no,

Print ( “Welcome to the new Cameroon. I am not happy with the current state of Cameroon for the last:” +  
Concatenate Number\_of\_Years\_In\_Power + “years”)

```
# CONCATENATE

# Changing data from one form to the other
# We are going to be changing str() to int() and int() to str()
```

## Python Scripting – Session 3

```
Cameroon_President_Year_Of_Birth = input("Which year was president Biya born? ")
Biya_Year_Of_Election = input("Which year was president Biya elected to become the president? ")
Number_Of_Years_In_Power = 2022 - int(Biya_Year_Of_Election)

print("President Biya has been in power for this number of years: " + str(Number_Of_Years_In_Power))

Voting_Choice = input("Are you going to be voting for President Biya this coming general election? ")

if (bool(Voting_Choice=="yes")):

    print("I am happy with the way cameroon is for the last : " + str(Number_Of_Years_In_Power )+"years")
else:
    print("Welcome to the new Cameroon. I am not happy with Cameroon for the last: " + str(Number_Of_Years_In_Power ) + "years")
```

Different ways to convert data

```
2  Var1 = int(input("First_Number: "))
3  Var2 = int(input("Second_Number: "))
4
5  sum = Var1 + Var2
6
7  print(sum)
8
```

App ×

C:\Users\Forex\PycharmProjects\pythonProject\HelloWorld\venv\Scripts\python.exe

First\_Number: 10

Second\_Number: 10

20

Process finished with exit code 0

Or

## Python Scripting – Session 3

```
1
2  Var1 = input("First_Number: ")
3  Var2 = input("Second_Number: ")
4
5  sum = int(Var1) + int(Var2)
6
7  print(sum)
8
```

App x

C:\Users\Forex\PycharmProjects\pythonP

First\_Number: 10

Second\_Number: 10

20

## Strings

Python strings are immutable. This means that when written, they do not change and trying to modify them usually leads to the creation of a new string.

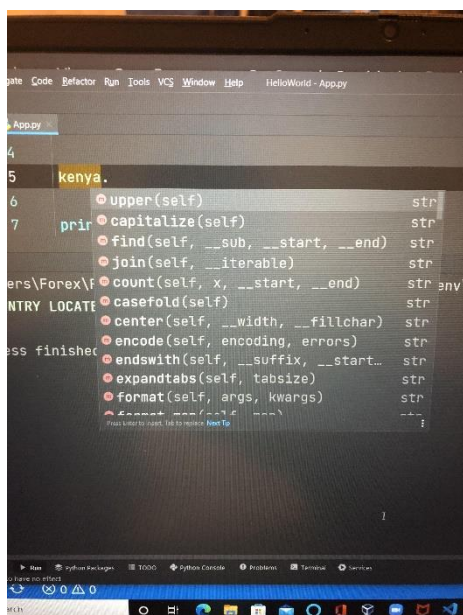
Let start with an exercise

“A country located in East Africa” is an object.

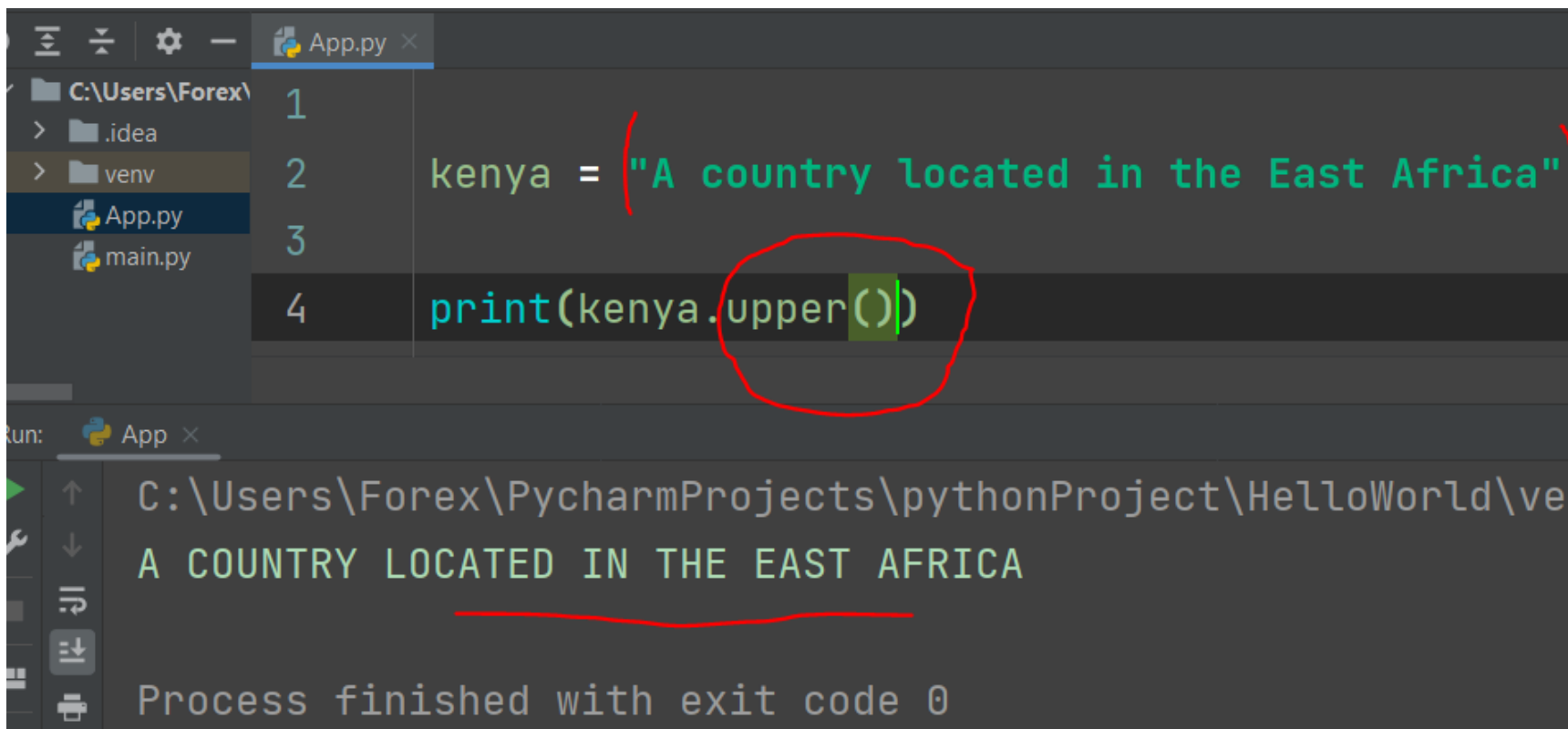
Why is it an object?

The variable Kenya has multiple functionalities and cannot be changed.

For instance, let see the multiple functionalities of the kenya



### Python Scripting – Session 3



The screenshot shows the PyCharm IDE with a file named `App.py` open. The code in the editor is as follows:

```
1  
2 kenya = "A country located in the East Africa"  
3  
4 print(kenya.upper())
```

The `print(kenya.upper())` line is circled in red. Below the editor, the Run console shows the output:

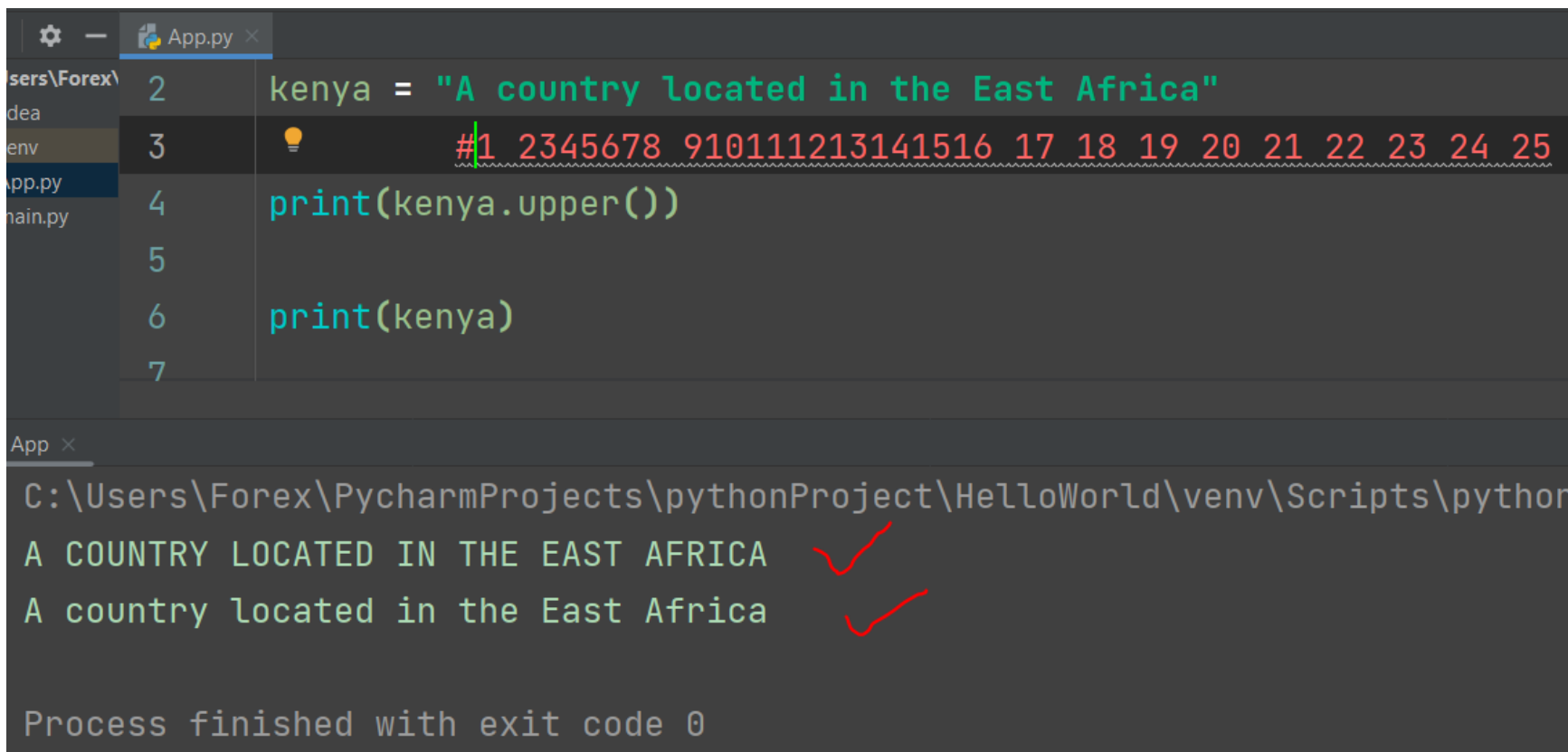
```
C:\Users\Forex\PycharmProjects\pythonProject\HelloWorld\venv\Scripts\python.exe C:\Users\Forex\PycharmProjects\pythonProject\HelloWorld\venv\Scripts\python.exe  
A COUNTRY LOCATED IN THE EAST AFRICA  
Process finished with exit code 0
```

The output string is underlined in red.

We are going to use `kenya.upper()` method

This method does not alter the string().

If we `print(kenya)`



The screenshot shows the PyCharm IDE with a file named `App.py` open. The code in the editor is as follows:

```
2 kenya = "A country located in the East Africa"  
3 #1 2345678 910111213141516 17 18 19 20 21 22 23 24 25  
4 print(kenya.upper())  
5  
6 print(kenya)  
7
```

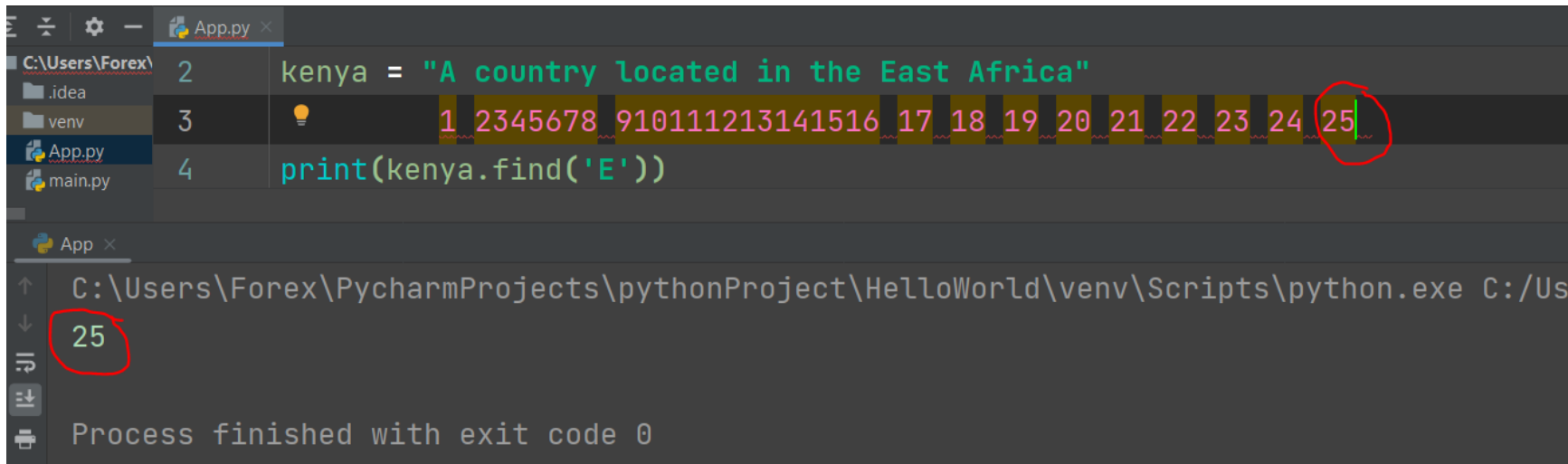
The output in the Run console is as follows:

```
C:\Users\Forex\PycharmProjects\pythonProject\HelloWorld\venv\Scripts\python.exe C:\Users\Forex\PycharmProjects\pythonProject\HelloWorld\venv\Scripts\python.exe  
A COUNTRY LOCATED IN THE EAST AFRICA ✓  
A country located in the East Africa ✓  
Process finished with exit code 0
```

Red checkmarks are placed next to the two lines of output.

We are going to use `kenya.find()` method

We are going to find E in our string



The screenshot shows the PyCharm IDE with a file named `App.py` open. The code in the editor is as follows:

```
2 kenya = "A country located in the East Africa"  
3 #1 2345678 910111213141516 17 18 19 20 21 22 23 24 25  
4 print(kenya.find('E'))
```

The output in the Run console is as follows:

```
C:\Users\Forex\PycharmProjects\pythonProject\HelloWorld\venv\Scripts\python.exe C:\Users\Forex\PycharmProjects\pythonProject\HelloWorld\venv\Scripts\python.exe  
25  
Process finished with exit code 0
```

The output `25` is circled in red.

Let use the `lower()` method

# Python Scripting – Session 3

```
App.py ×
1
2  kenya = "A country located in the East Africa" ✓
3      #1 2345678 910111213141516 17 18 19 20 21 22 23 24 25
4
5  print(kenya.lower()) ✓
6
7  print(kenya) ✓
```

```
App ×
C:\Users\Forex\PycharmProjects\pythonProject\HelloWorld\venv\Scripts\python
a country located in the east africa →
A country located in the East Africa →

Process finished with exit code 0
```

Find() method

```
App.py ×
1
2  kenya = "A country located in the East Africa"
3      #1 2345678 910111213141516 17 18 19 20 21 22 23 24 25
4
5  print(kenya.find('u'))
6
7  print(kenya)
```

```
App ×
C:\Users\Forex\PycharmProjects\pythonProject\HelloWorld\venv\Scripts\python.
4 ✓
A country located in the East Africa
```

Find() method – Let find something that does not exist

```
App.py ×
1
2  kenya = "A country located in the East Africa"
3      #1 2345678 910111213141516 17 18 19 20 21 22 23 24 25
4
5  print(kenya.find('R'))
6
7  print(kenya)
```

```
App ×
C:\Users\Forex\PycharmProjects\pythonProject\HelloWorld\venv\Scripts\pythor
-1 ✓
A country located in the East Africa

Process finished with exit code 0
```

-1 is returned because “R” does not exist



# Python Scripting – Session 3

Let use find() method to find the ‘located’

Space is also counted

Replace() method

App.py

1

2

3

4

5

6

7

kenya = "A country located in the East Africa"  
#1 2345678 910111213141516 17 18 19 20 21 22 23 24 25  
  
print(kenya.replace("located", "situated"))  
  
print(kenya)

App

C:\Users\Forex\PycharmProjects\pythonProject\HelloWorld\venv\Scripts\python  
A country situated in the East Africa  
A country located in the East Africa

Replace() method for a word that does not exist

Nothing changes

App.py

1

2

3

4

5

6

7

kenya = "A country located in the East Africa"  
#1 2345678 910111213141516 17 18 19 20 21 22 23 24 25  
  
print(kenya.replace("x", "situated"))  
  
print(kenya)

App

C:\Users\Forex\PycharmProjects\pythonProject\HelloWorld\venv\Scripts\python  
A country located in the East Africa  
A country located in the East Africa

Concatenate

App.py

1

2

3

4

5

6

kenya = "A country located in the East Africa |"  
Uganda = "and is neighbored by uganda"  
#1 2345678 910111213141516 17 18 19 20 21 22 23 24 25  
  
print(kenya + Uganda)

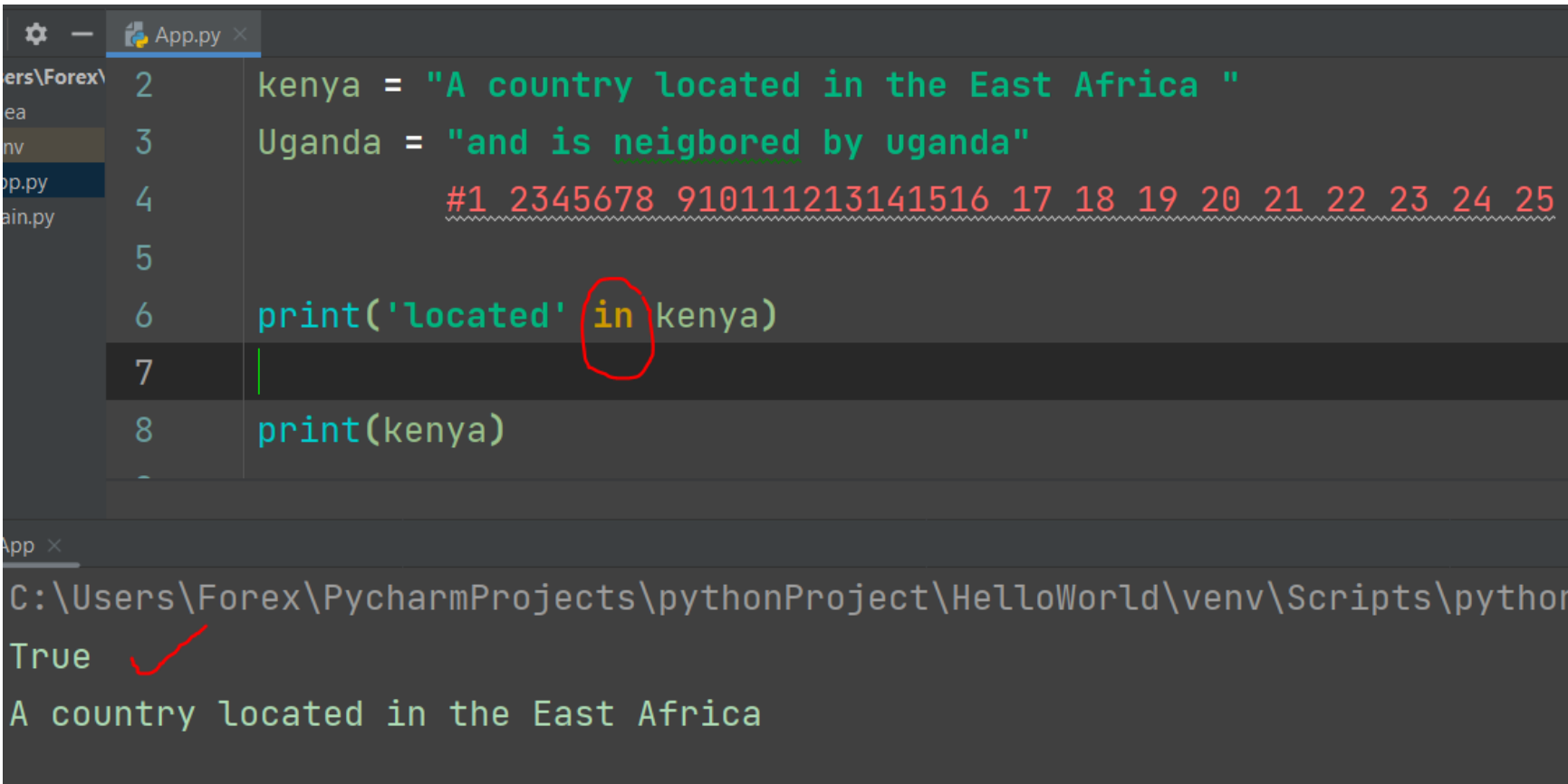
App

C:\Users\Forex\PycharmProjects\pythonProject\HelloWorld\venv\Scripts\python  
A country located in the East Africa and is neighbored by uganda  
A country located in the East Africa

## Python Scripting – Session 3

In() in python

Let find whether **located** exists in the object string “ A country **located** in the East Africa”



```
1  #1 2345678 910111213141516 17 18 19 20 21 22 23 24 25
2  kenya = "A country located in the East Africa "
3  Uganda = "and is neighbored by uganda"
4
5
6  print('located' in kenya)
7
8  print(kenya)
```

The output of the script is shown in the console:

```
C:\Users\Forex\PycharmProjects\pythonProject\HelloWorld\venv\Scripts\python
True
A country located in the East Africa
```

This is very readable just like plain English

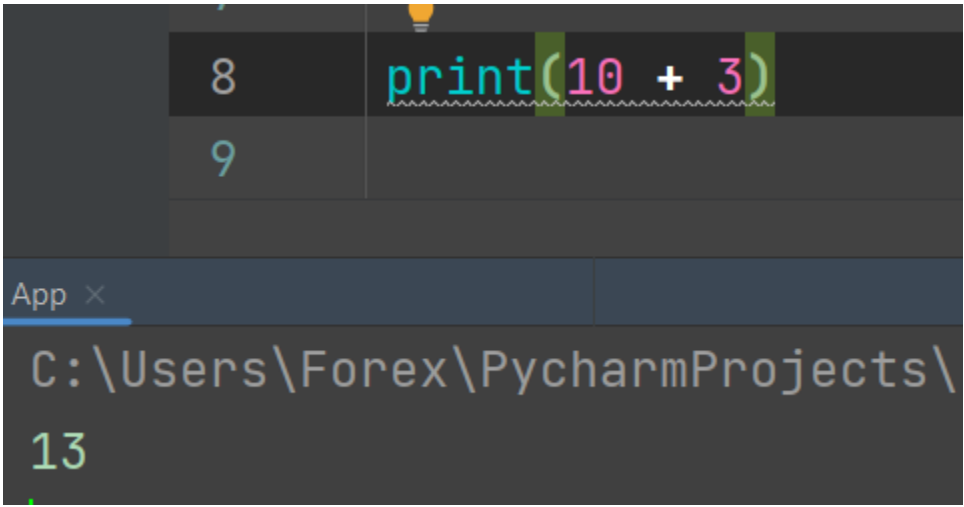
Print(‘located’ in kenya)

## Arithmetic Operators

Arithmetic operators are very similar to what we have in mathematics

Print(10+3)

Run



```
1  print(10 + 3)
```

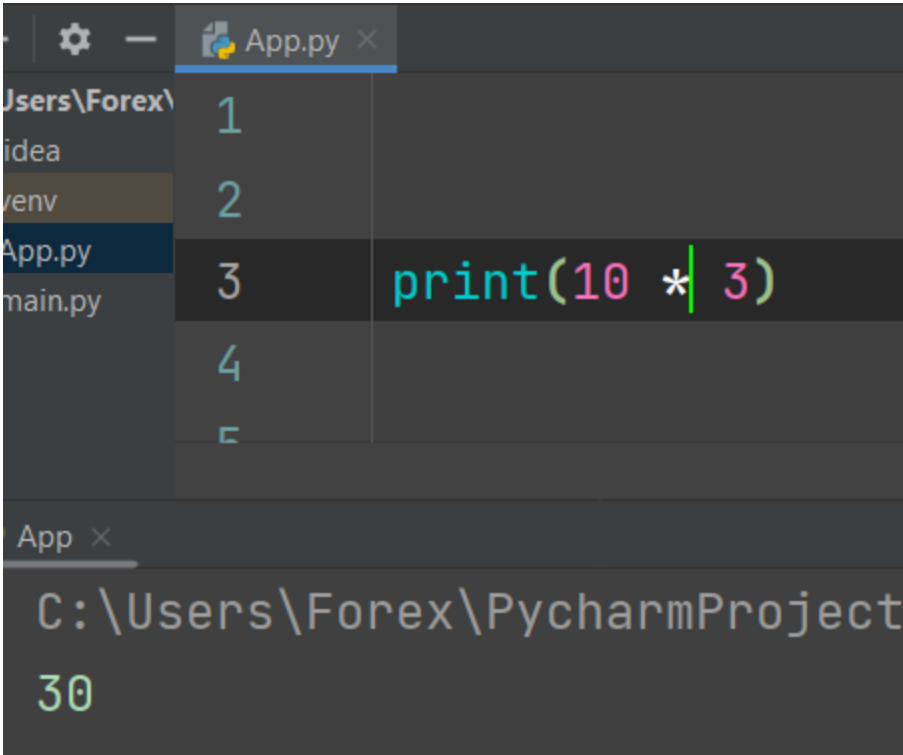
The output of the script is shown in the console:

```
C:\Users\Forex\PycharmProjects\
13
```

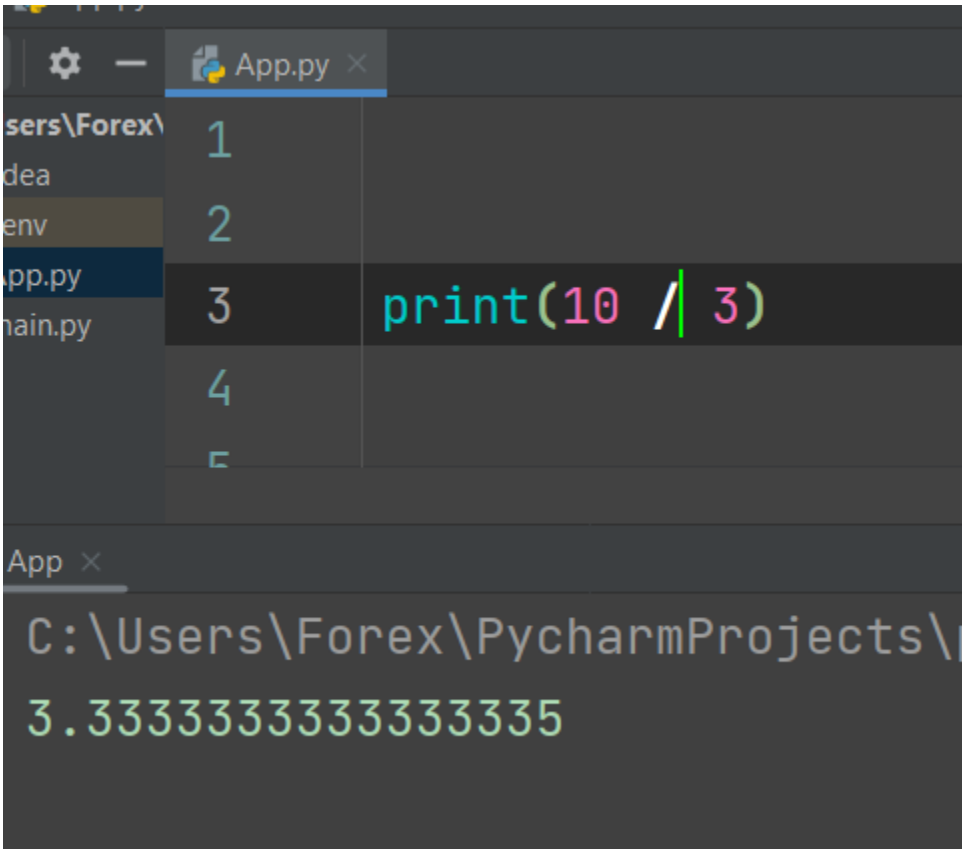
Multiplication



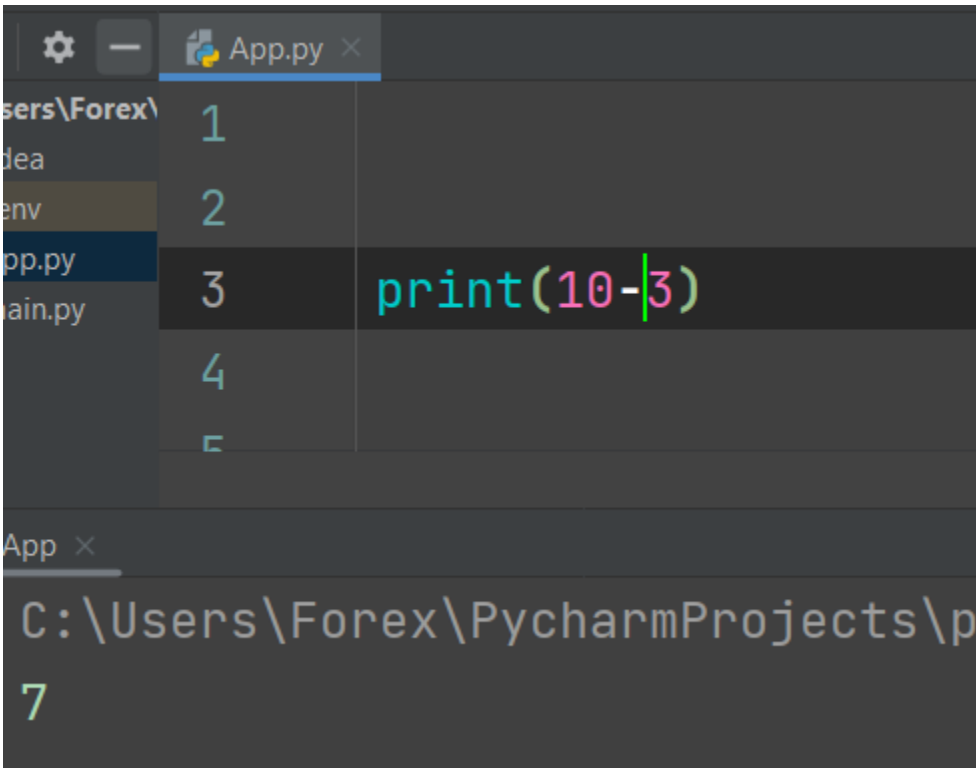
Python Scripting – Session 3



Division

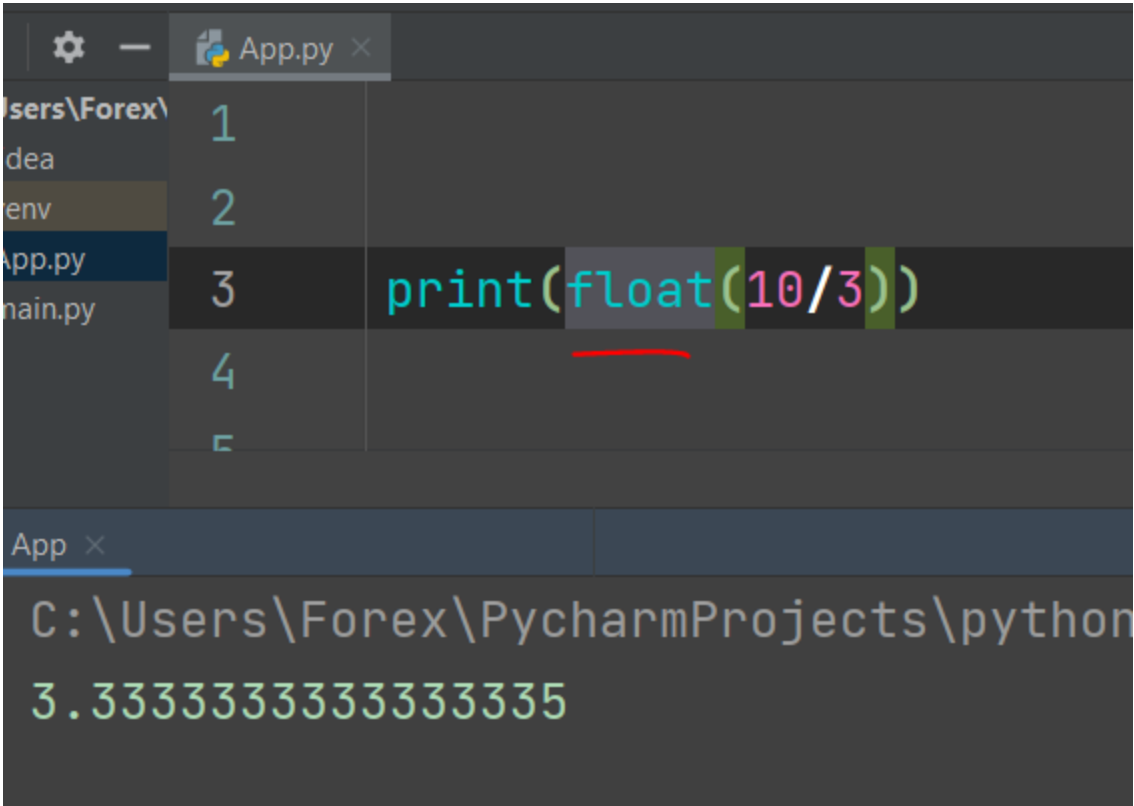


Subtraction

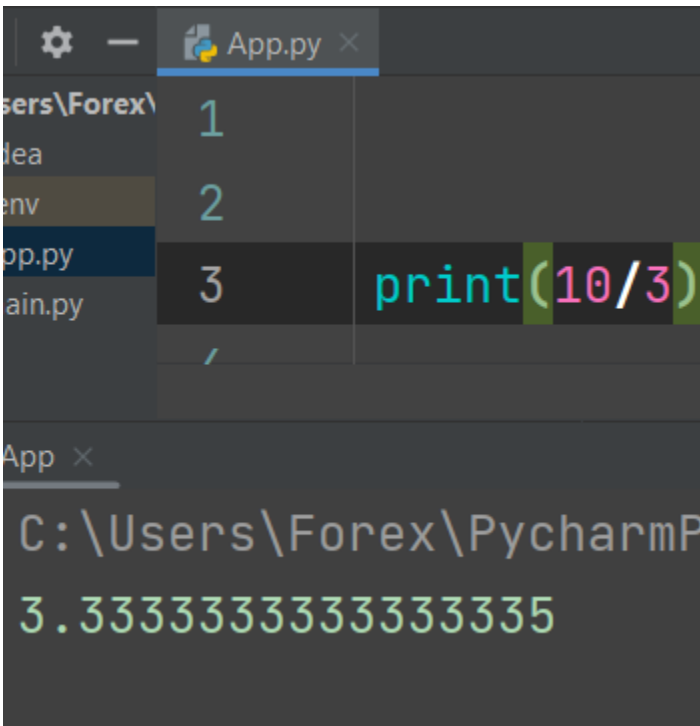


Changing float() to int()

Python Scripting – Session 3

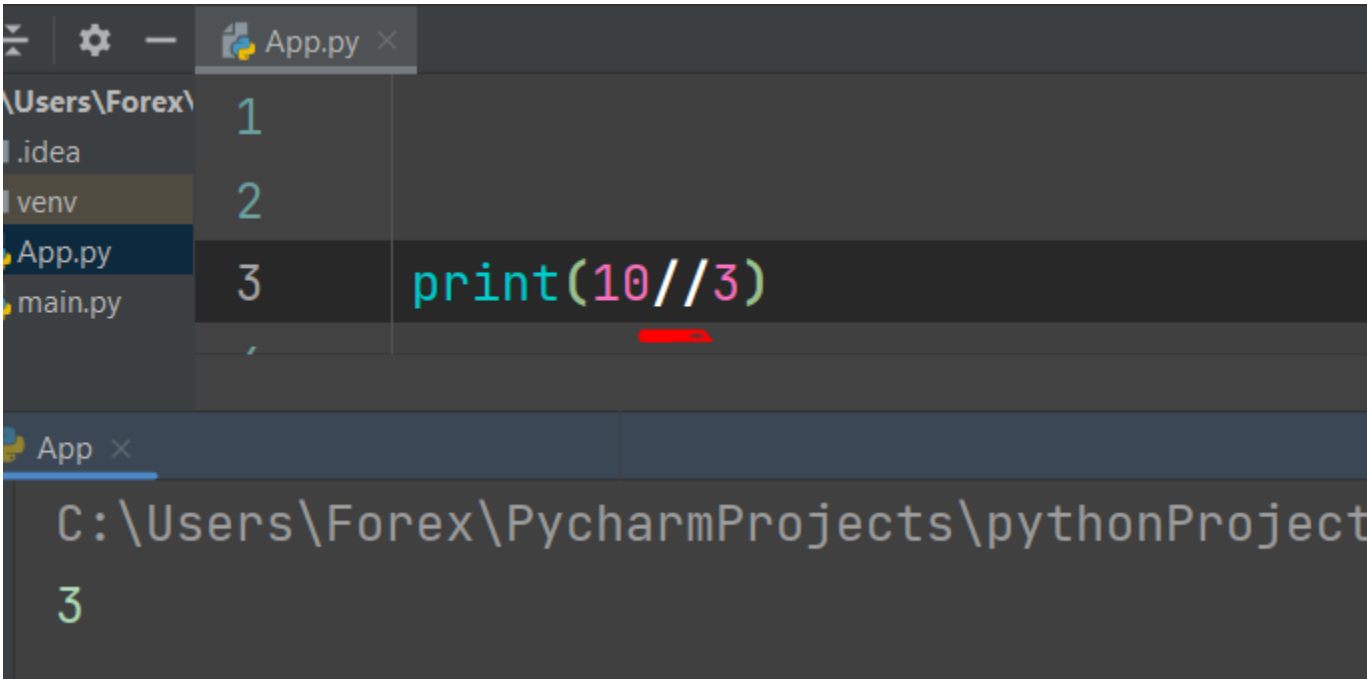


or



Int()

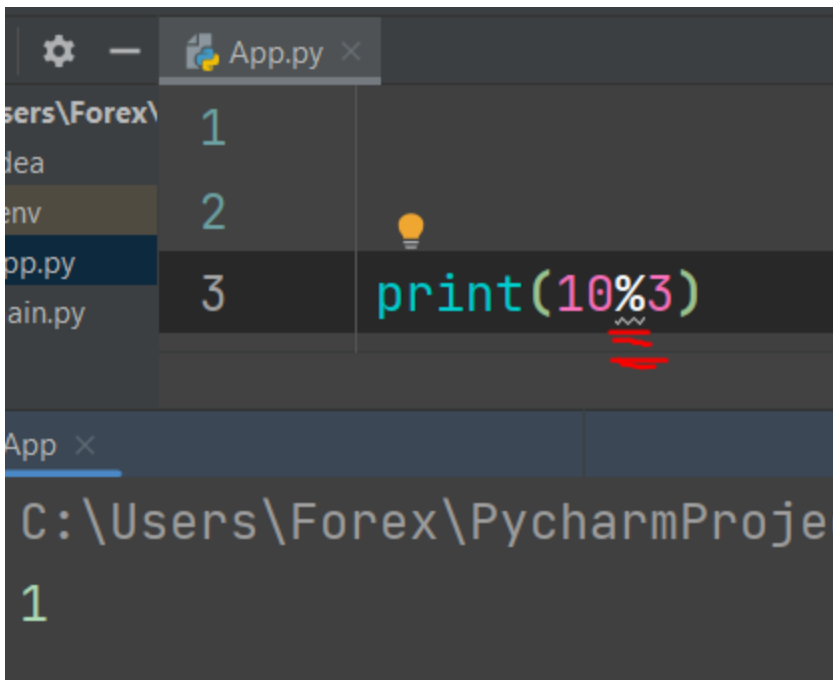
Using double // will convert float to an int()



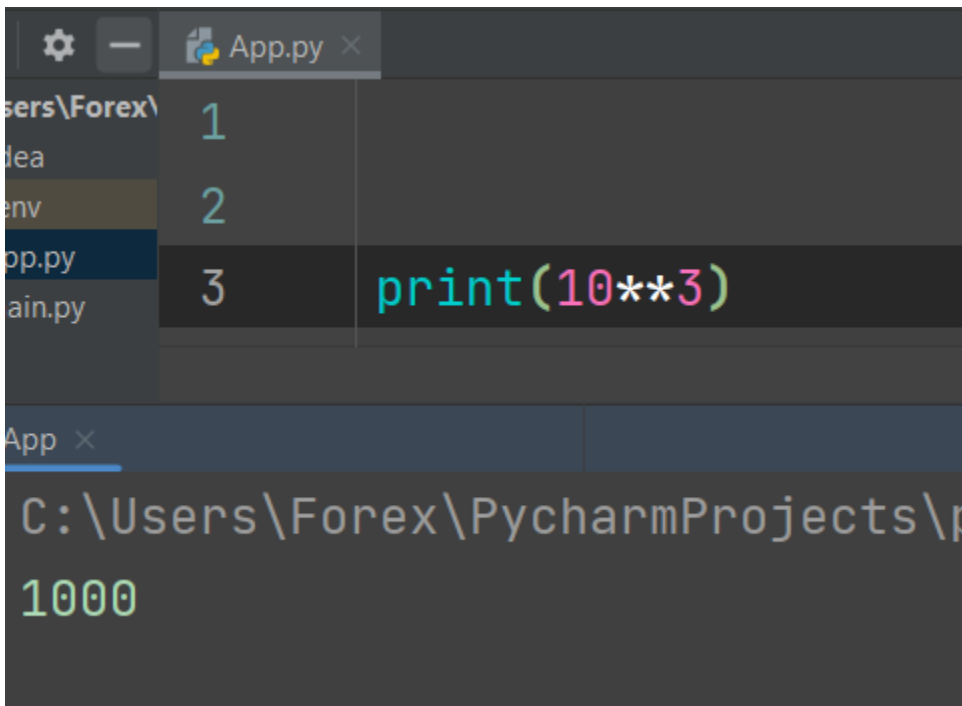
Reminder

%

Python Scripting – Session 3



Exponentials \*\*



Augmented Assignment Operators in Python

x = 10

x = x +10

this is an enhanced x

