

Ali Haider

14259

Mid Term Assignment

Course: Data Sciences

Submit to: Sir M.Ayub Khan

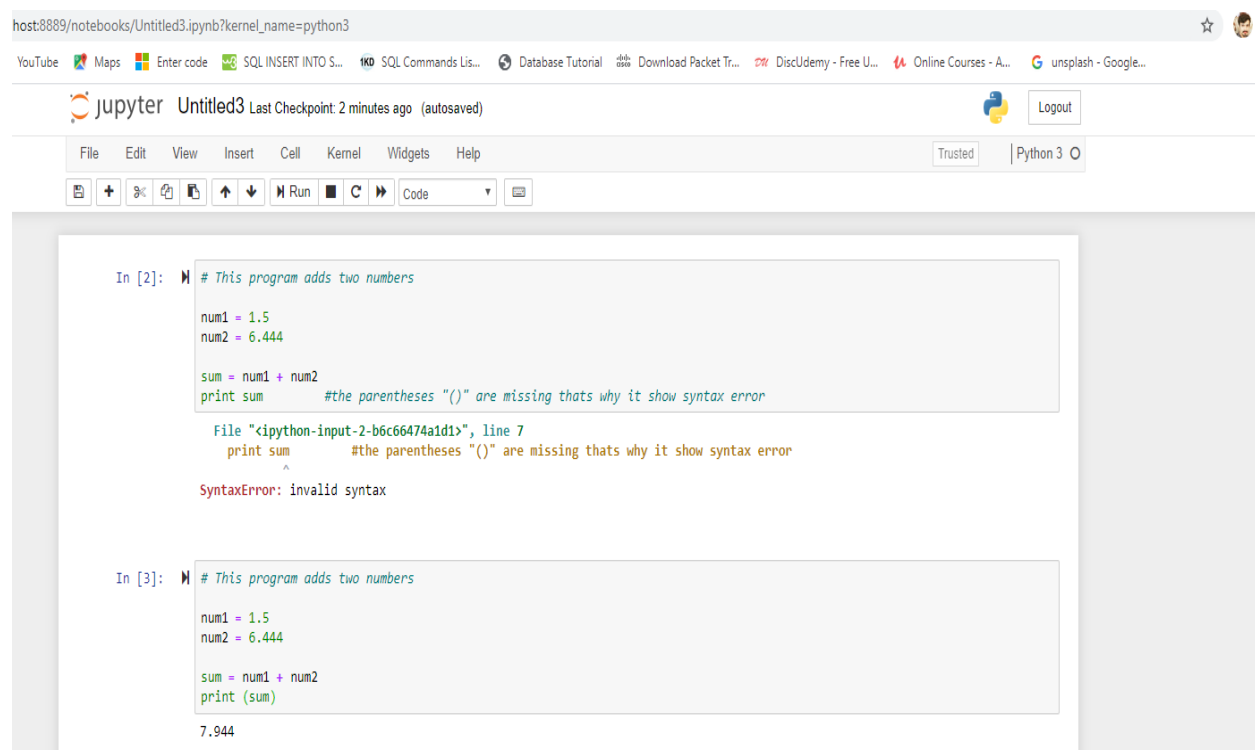
Deg & Sem: BS (SE) _5

Question No 1:

Syntax errors

Syntax errors are the most basic type of error. They arise when the Python parser is unable to understand a line of code. Syntax errors are almost always fatal, i.e. there is almost never a way to successfully execute a piece of code containing syntax errors. In IDLE, it will highlight where the syntax error is. Most syntax errors are typos, incorrect indentation, or incorrect arguments. If you get this error, try looking at your code for any of these.

Example



```
host:8889/notebooks/Untitled3.ipynb?kernel_name=python3
jupyter Untitled3 Last Checkpoint: 2 minutes ago (autosaved)
File Edit View Insert Cell Kernel Widgets Help Trusted Python 3 O
In [2]: # This program adds two numbers
num1 = 1.5
num2 = 6.444
sum = num1 + num2
print sum #the parentheses "()" are missing thats why it show syntax error
File "<ipython-input-2-b6c66474a1d1>", line 7
    print sum
      ^
SyntaxError: invalid syntax

In [3]: # This program adds two numbers
num1 = 1.5
num2 = 6.444
sum = num1 + num2
print (sum)
7.944
```

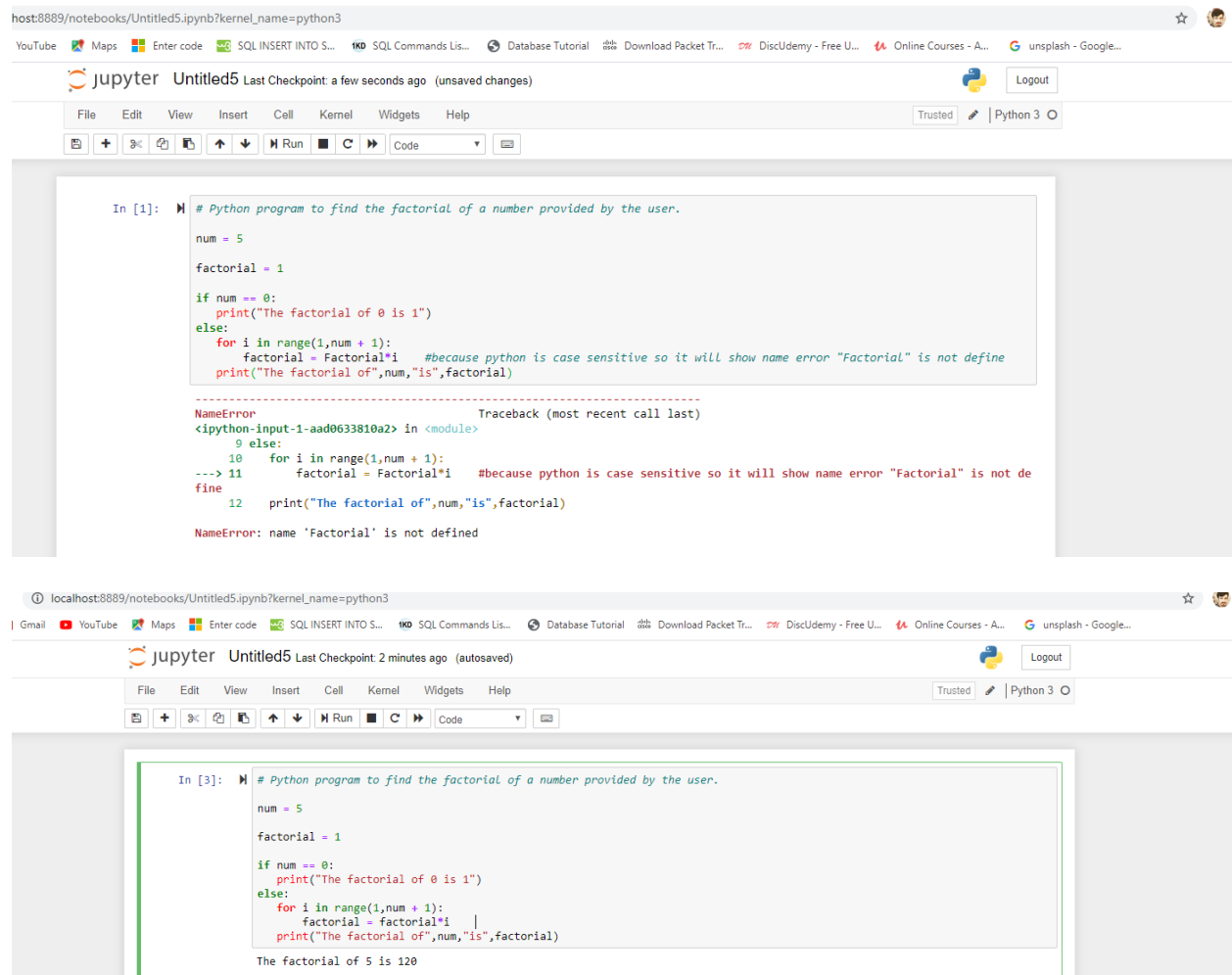
Name Error

Python knows the purposes of certain names (such as names of built-in functions like `print`). Other names are defined within the program (such as variables). If Python encounters a name that it doesn't recognize, we'll probably get name error.

Some common causes of this error include:

❑ Forgetting to give a variable a value before using it in another statement ❑ Misspelling the name of a built-in function (e.g., typing `"inpit"` instead of `"input"`)

Example



The first screenshot shows a Jupyter Notebook cell with a Python program to find the factorial of a number. The code is as follows:

```
In [1]: # Python program to find the factorial of a number provided by the user.

num = 5

factorial = 1

if num == 0:
    print("The factorial of 0 is 1")
else:
    for i in range(1,num + 1):
        factorial = Factorial*i #because python is case sensitive so it will show name error "Factorial" is not define
    print("The factorial of",num,"is",factorial)
```

The output shows a `NameError` traceback:

```
NameError                                Traceback (most recent call last)
<ipython-input-1-aad0633810a2> in <module>
      9 else:
     10     for i in range(1,num + 1):
--> 11         factorial = Factorial*i #because python is case sensitive so it will show name error "Factorial" is not define
     12     print("The factorial of",num,"is",factorial)

NameError: name 'Factorial' is not defined
```

The second screenshot shows the same Jupyter Notebook cell after the code has been corrected. The code is now:

```
In [3]: # Python program to find the factorial of a number provided by the user.

num = 5

factorial = 1

if num == 0:
    print("The factorial of 0 is 1")
else:
    for i in range(1,num + 1):
        factorial = factorial*i
    print("The factorial of",num,"is",factorial)
```

The output is now:

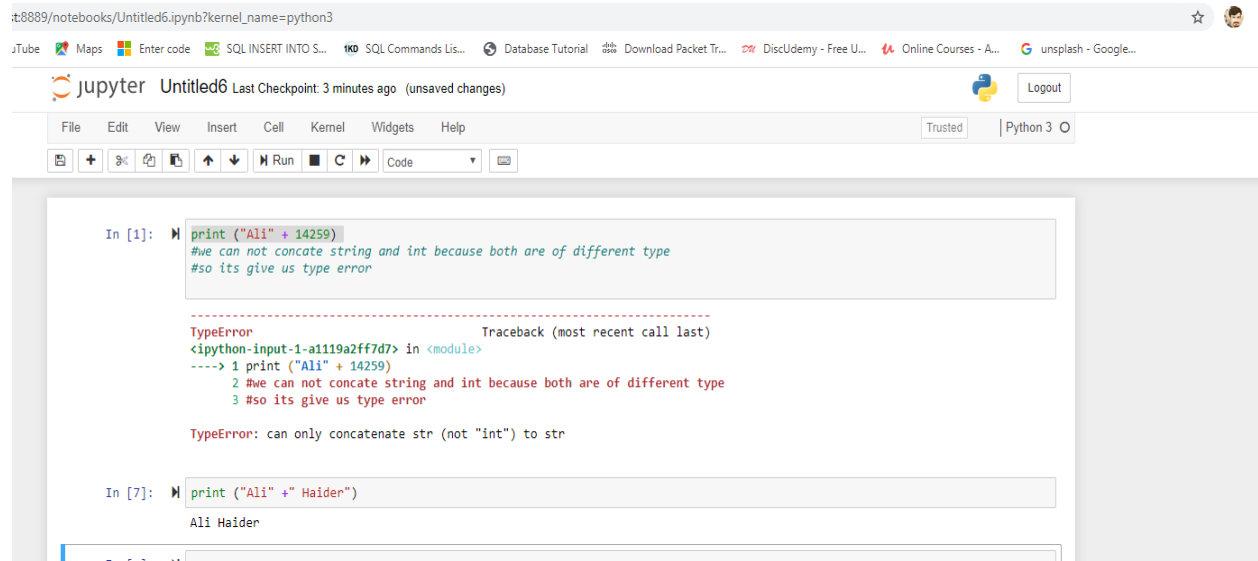
```
The factorial of 5 is 120
```

Type Error

Python variables 'know' the kinds of values they hold, which allows Python to tell you when you're trying to do something strange, such as use the addition operator to combine a number and a string (answer = `"Hello" + 1`).

A common cause of this error is forgetting to use `eval()` with `input()` when asking the user to enter a numeric value from the keyboard.

Example



The screenshot shows a Jupyter Notebook interface with the following content:

```
In [1]: print ("Ali" + 14259)
#we can not concate string and int because both are of different type
#so its give us type error

-----
TypeError                                 Traceback (most recent call last)
<ipython-input-1-a1119a2ff7d7> in <module>
----> 1 print ("Ali" + 14259)
      2 #we can not concate string and int because both are of different type
      3 #so its give us type error

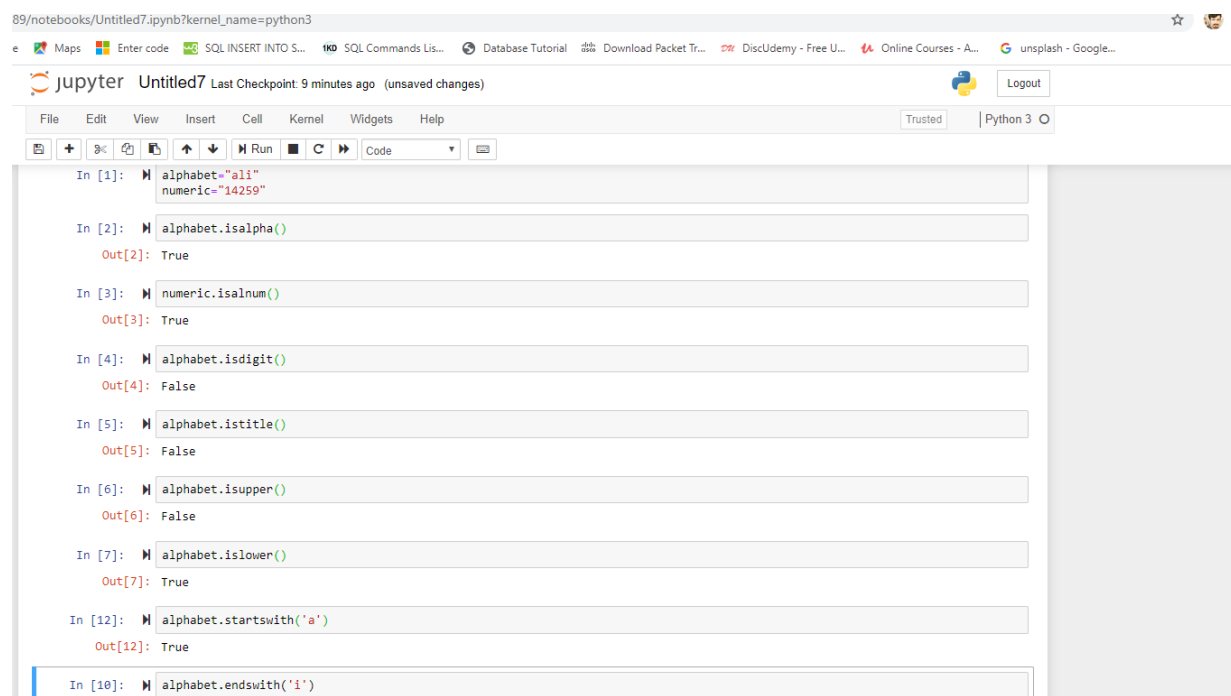
TypeError: can only concatenate str (not "int") to str

In [7]: print ("Ali" + " Haider")
Ali Haider
```

Question No 2:

Boolean String

A Boolean expression (or logical expression) evaluates to one of two states true or false. Python provides the Boolean type that can be either set to False or True. Many functions and operations returns Boolean objects. The not keyword can also be used to inverse a Boolean type.



The screenshot shows a Jupyter Notebook interface with the following content:

```
In [1]: alphabet="ali"
        numeric="14259"

In [2]: alphabet.isalpha()
Out[2]: True

In [3]: numeric.isalnum()
Out[3]: True

In [4]: alphabet.isdigit()
Out[4]: False

In [5]: alphabet.istitle()
Out[5]: False

In [6]: alphabet.isupper()
Out[6]: False

In [7]: alphabet.islower()
Out[7]: True

In [12]: alphabet.startswith('a')
Out[12]: True

In [10]: alphabet.endswith('i')
```

String Formatting Input

Following are the format that we can apply on string

- ### Example

19/notebooks/Untitled9.ipynb?kernel_name=python3

Maps Enter code SQL INSERT INTO S... SQL Commands Lis... Database Tutorial Download Packet Tr... DiscUdemy - Free U... Online Courses - A... unsplash - Google...

Jupyter Untitled9 Last Checkpoint: a minute ago (unsaved changes)

Python 3 Logout

File Edit View Insert Cell Kernel Widgets Help

Trusted Python 3

+ < > ↑ ↓ Run C → Code

```
In [1]: fav_game=input("What is your fav game?")
        print(fav_game.upper()) #here i write upper now what ever i give input it will change into uppercase

What is your fav game?Football
FOOTBALL

In [2]: your_age=input("how old are you?")
        print(your_age.lower()) #here i write Lower now what ever i give input it will change into Lowercase

how old are you?I AM 23 YEAR old
i am 23 year old

In [3]: name=input("what is you name").capitalize() #we can also use here
        print(name) #here i write capitalize now the first charter of string become capital

what is you nameaLI HAIDER
Ali haider

In [4]: swap_word=input("write you name ")
        print(swap_word.swapcase())

write you name ALI HaIdEr
aLI hAIDeR
```