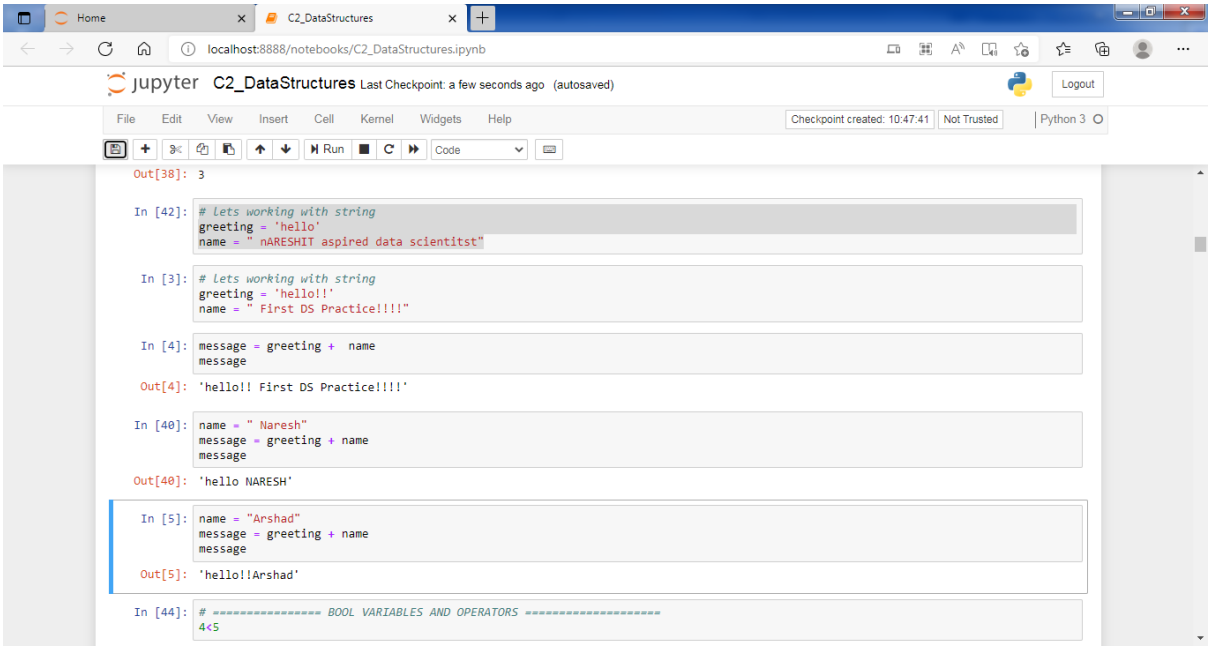
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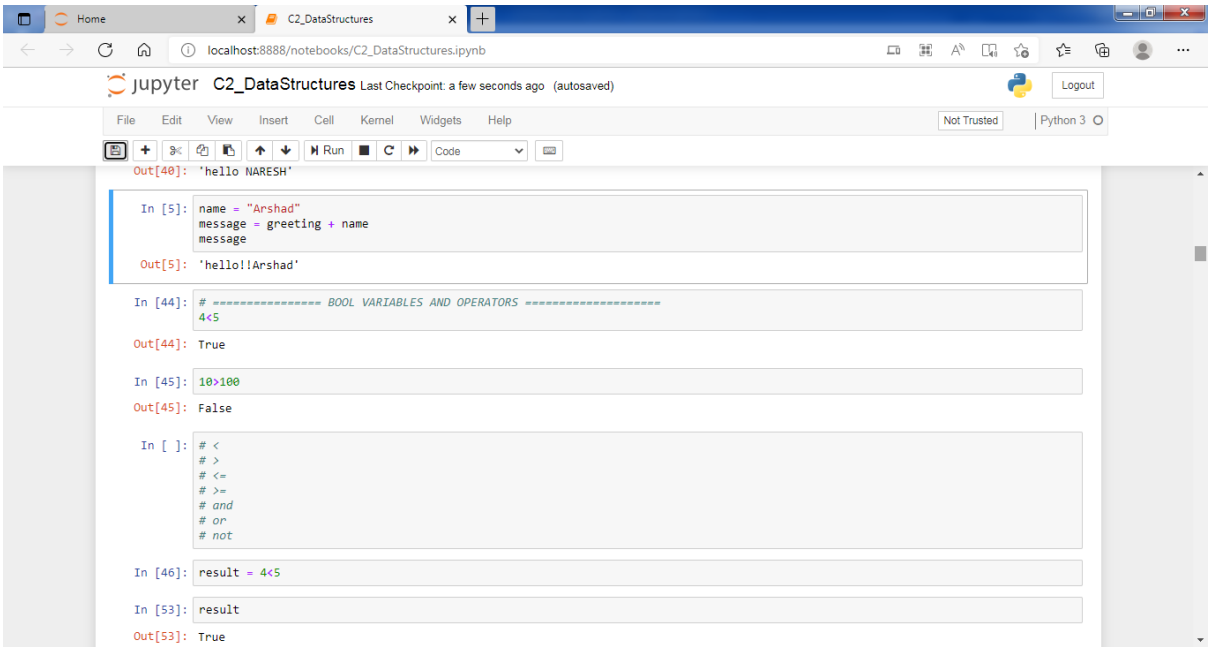
Not Trusted
Python 3
Run
Code
Out[38]: 3
In [42]: # Lets working with string
greeting = 'hello'
name = " nARESHIT aspired data scientitst"
In [3]: # Lets working with string
greeting = 'hello!!'
name = " First DS Practice!!!!"
In [4]: message = greeting + name
message
Out[4]: 'hello!! First DS Practice!!!!'
In [40]: name = " Naresh"
message = greeting + name
message
Out[40]: 'hello NARESH'
In [5]: name = "Arshad"
message = greeting + name
message
Out[5]: 'hello!!Arshad'
In [44]: # ================ BOOL VARIABLES AND OPERATORS ====================
4<5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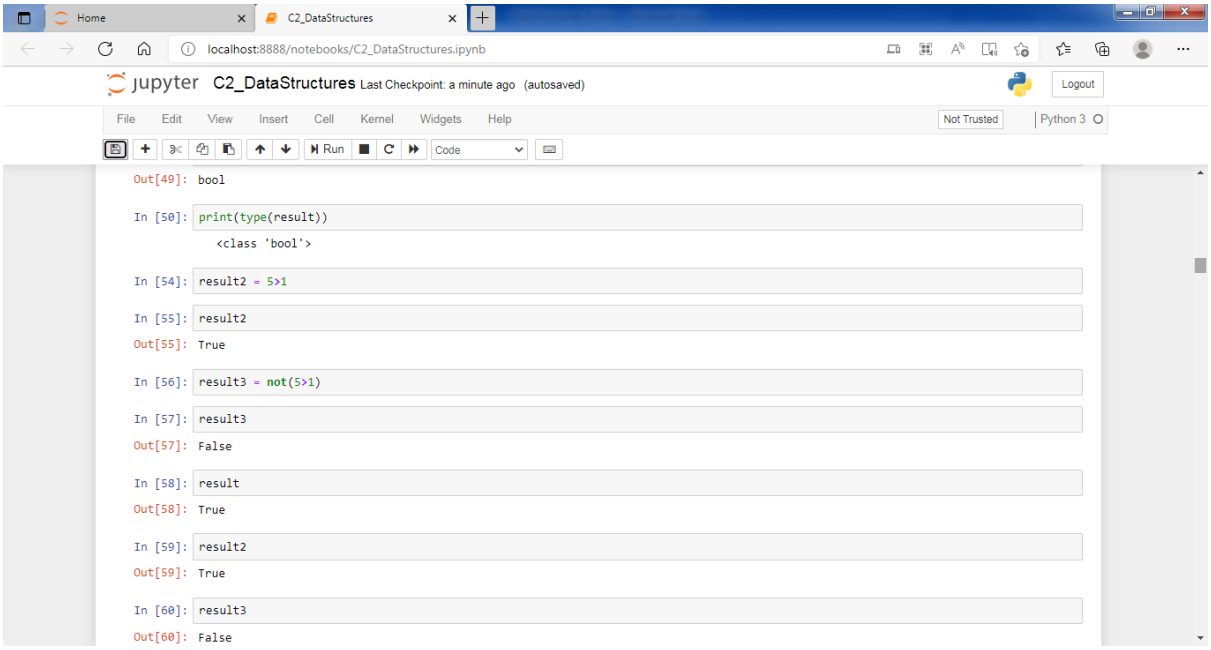
Python 3
Run
Code
Out[40]: 'hello NARESH'
In [5]: name = "Arshad"
message = greeting + name
message
Out[5]: 'hello!!Arshad'
In [44]: # ================ BOOL VARIABLES AND OPERATORS ====================
4<5
Out[44]: True
In [45]: 10>100
Out[45]: False
In [ ]: # <
>
<=
>=
and
or
not
In [46]: result = 4<5
In [53]: result
Out[53]: True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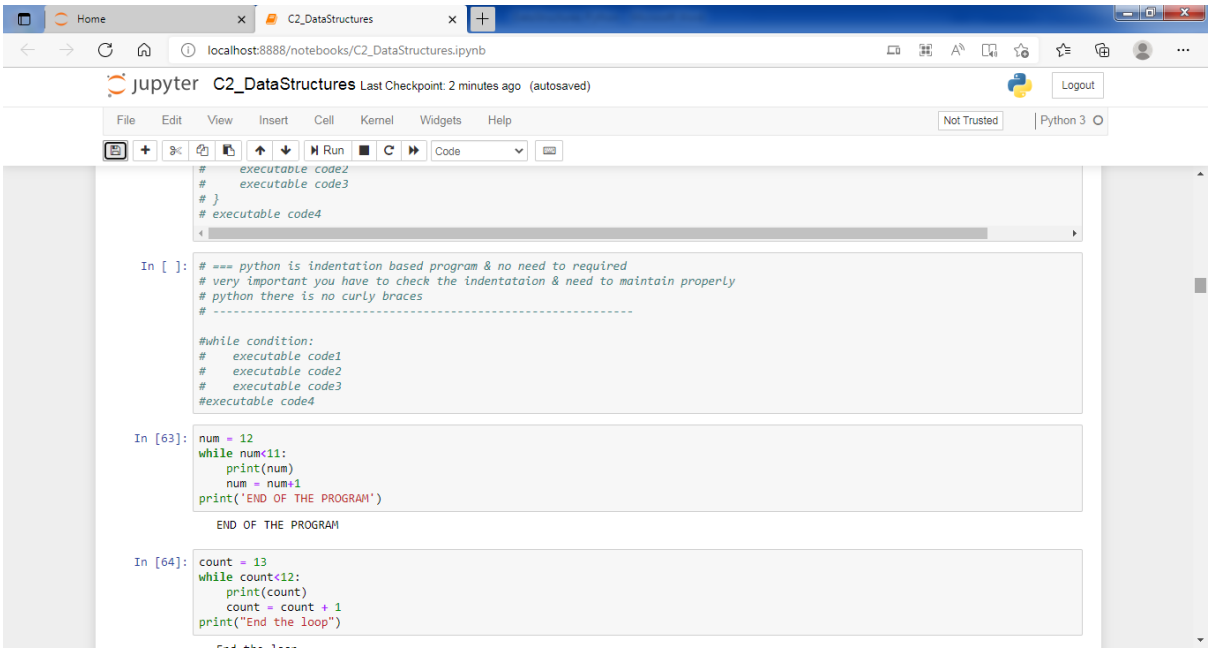
Python 3
Run
Code
Out[49]: bool
In [50]: print(type(result))
<class 'bool'>
In [54]: result2 = 5>1
In [55]: result2
Out[55]: True
In [56]: result3 = not(5>1)
In [57]: result3
Out[57]: False
In [58]: result
Out[58]: True
In [59]: result2
Out[59]: True
In [60]: result3
Out[60]: False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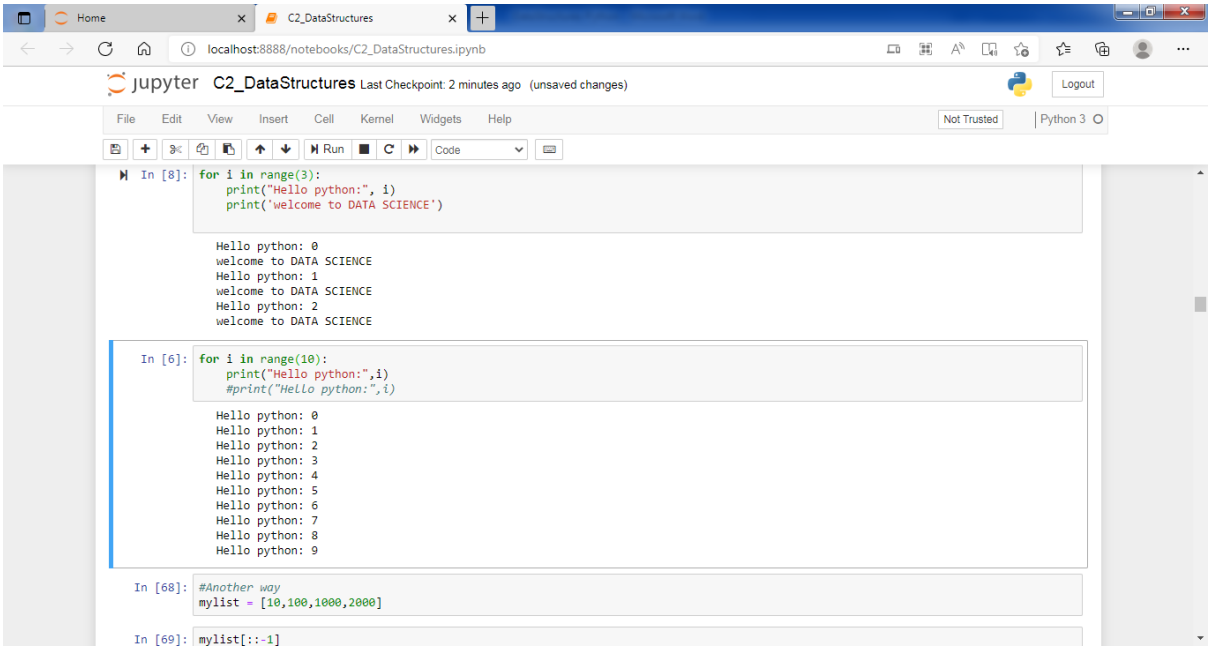
Python 3
Run
Code
executable code2
executable code3
}
executable code4
In [ ]: # === python is indentation based program & no need to required
very important you have to check the indentataion & need to maintain properly
python there is no curly braces

#while condition:
executable code1
executable code2
executable code3
#executable code4
In [63]: num = 12
while num<11:
print(num)
num = num+1
print('END OF THE PROGRAM')
END OF THE PROGRAM
In [64]: count = 13
while count<12:
print(count)
count = count + 1
print("End the loop")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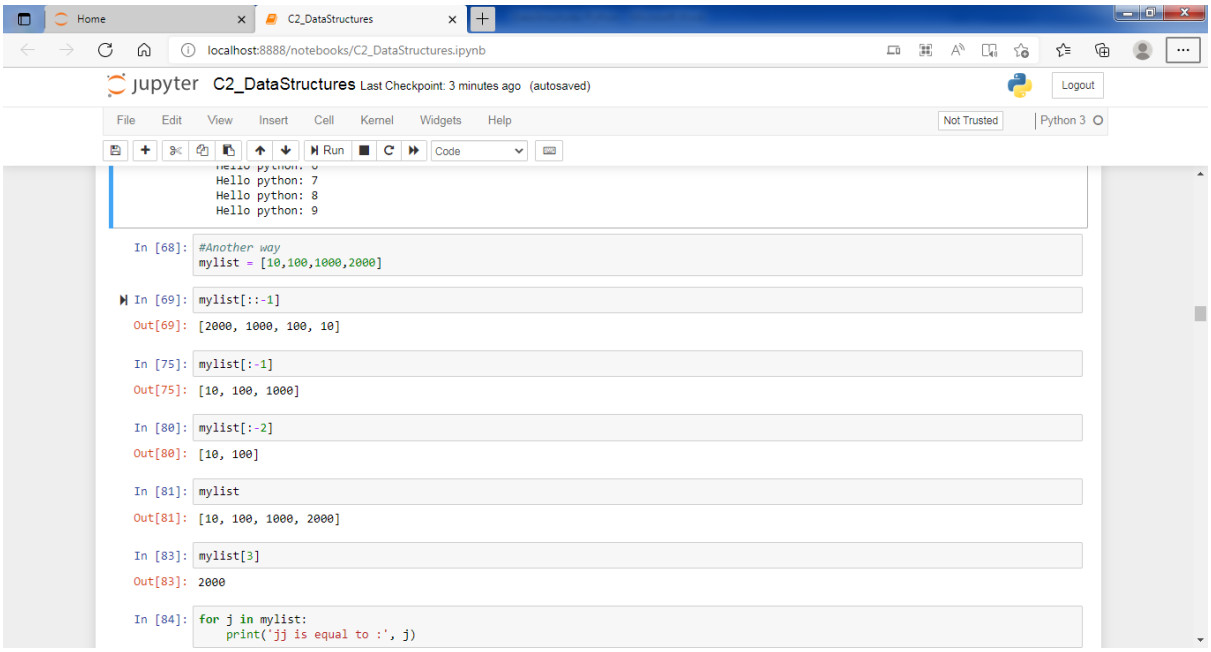
Not Trusted
Python 3
Run
Code
In [8]:
for i in range(3):
print("Hello python:", i)
print('welcome to DATA SCIENCE')
Hello python: 0
welcome to DATA SCIENCE
Hello python: 1
welcome to DATA SCIENCE
Hello python: 2
welcome to DATA SCIENCE
In [6]:
for i in range(10):
print("Hello python:",i)
#print("Hello python:",i)
Hello python: 0
Hello python: 1
Hello python: 2
Hello python: 3
Hello python: 4
Hello python: 5
Hello python: 6
Hello python: 7
Hello python: 8
Hello python: 9
In [68]:
#Another way
mylist = [10,100,1000,2000]
In [69]:
mylist[::-1]

Lists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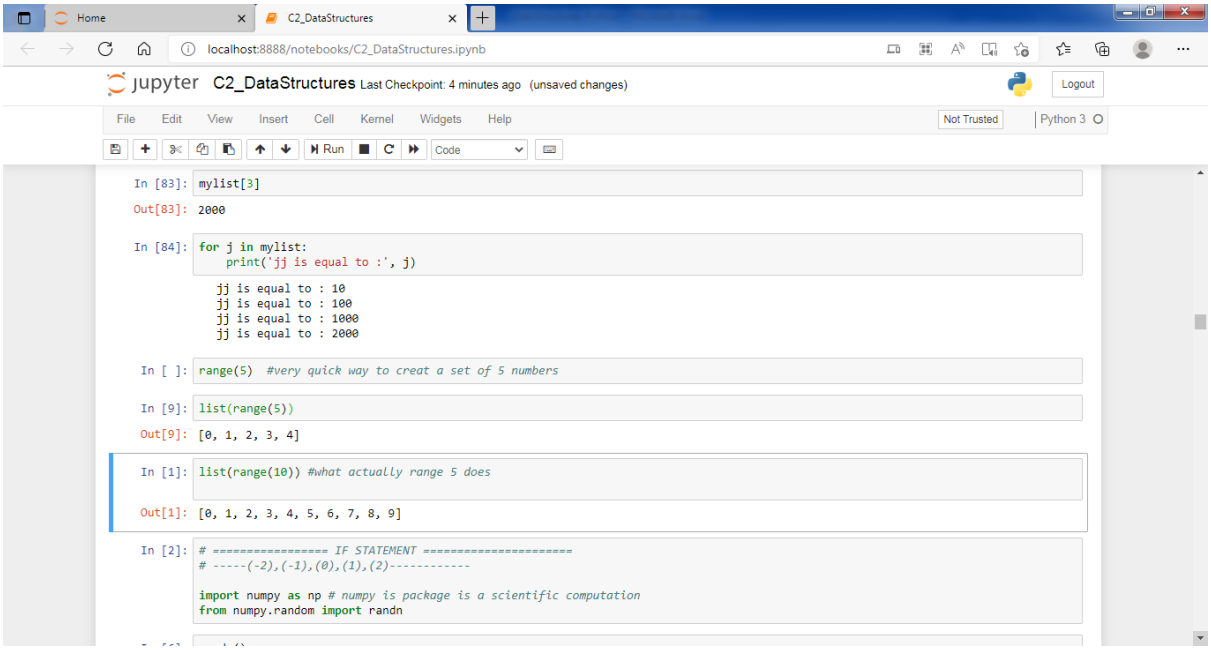
Not Trusted
Python 3
Run
Code
Hello python: 7
Hello python: 8
Hello python: 9
In [68]:
#Another way
mylist = [10,100,1000,2000]
In [69]:
mylist[::-1]
Out[69]:
[2000, 1000, 100, 10]
In [75]:
mylist[:-1]
Out[75]:
[10, 100, 1000]
In [80]:
mylist[:-2]
Out[80]:
[10, 100]
In [81]:
mylist
Out[81]:
[10, 100, 1000, 2000]
In [83]:
mylist[3]
Out[83]:
2000
In [84]:
for j in mylist:
print('jj is equal to :', j)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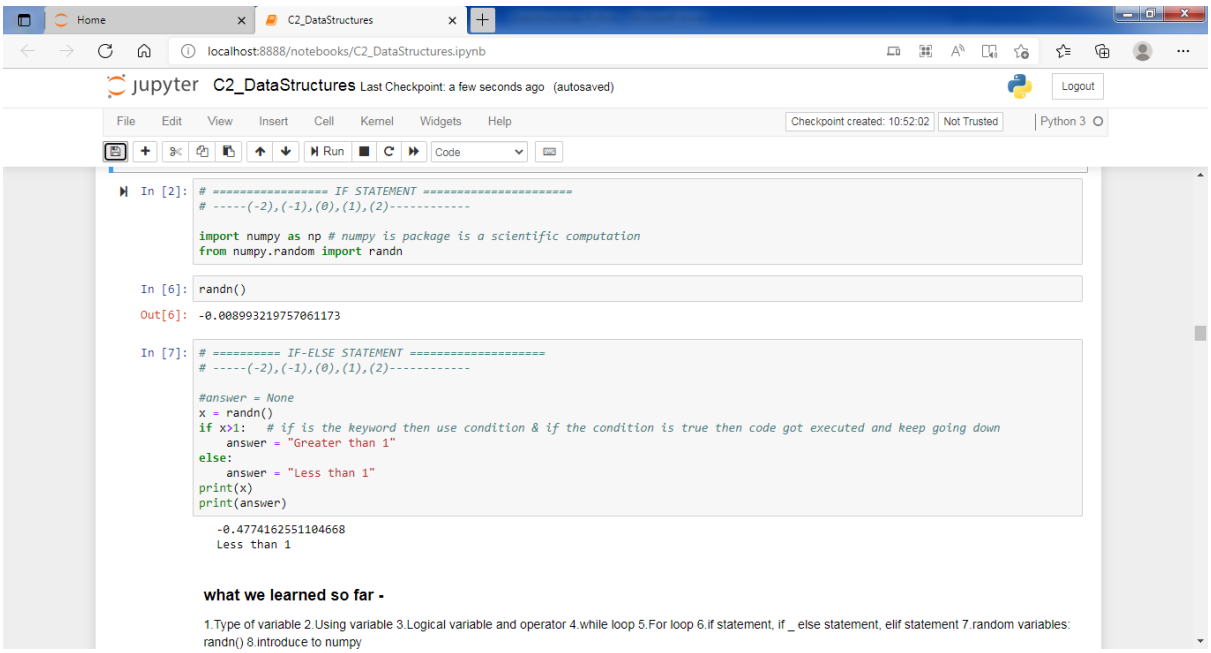
Not Trusted
Python 3
Run
Code
In [83]: mylist[3]
Out[83]: 2000
In [84]: for j in mylist:
print('jj is equal to :', j)
jj is equal to : 10
jj is equal to : 100
jj is equal to : 1000
jj is equal to : 2000
In [ ]: range(5) #very quick way to creat a set of 5 numbers
In [9]: list(range(5))
Out[9]: [0, 1, 2, 3, 4]
In [1]: list(range(10)) #what actually range 5 does
Out[1]: [0, 1, 2, 3, 4, 5, 6, 7, 8, 9]
In [2]: # ================ IF STATEMENT ======================
# -----(-2),(-1),(0),(1),(2)------------
import numpy as np # numpy is package is a scientific computation
from numpy.random import randn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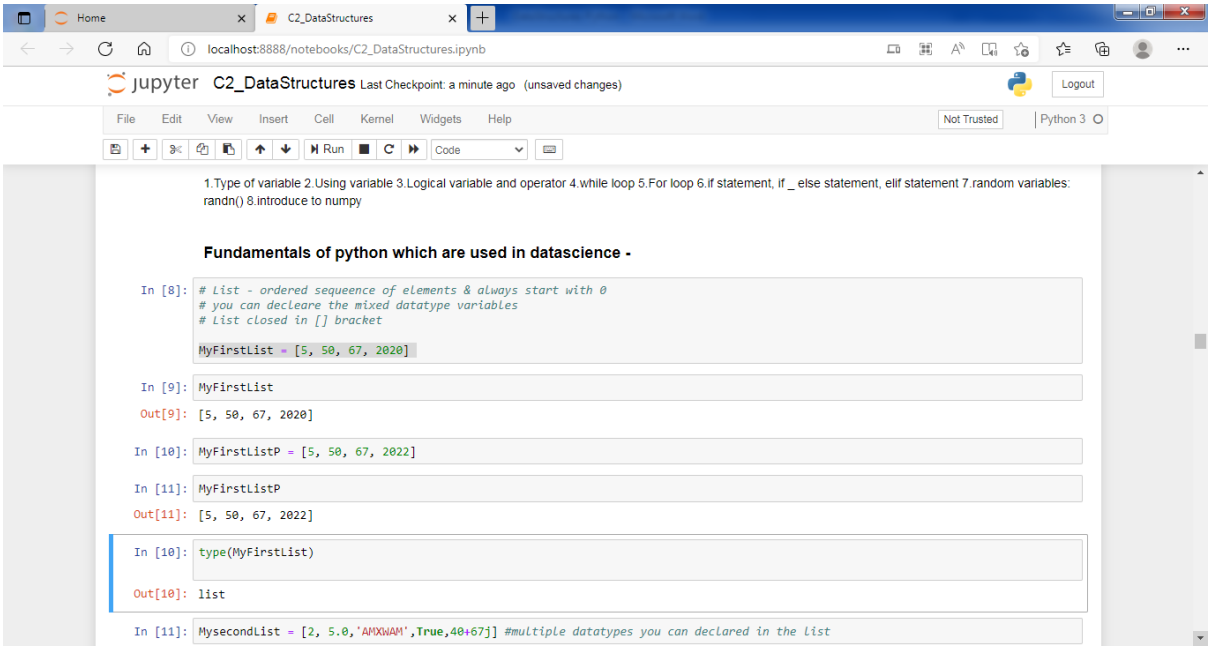
Python 3
Run
Code
In [2]: # ================ IF STATEMENT ======================
# -----(-2),(-1),(0),(1),(2)------------
import numpy as np # numpy is package is a scientific computation
from numpy.random import randn
In [6]: randn()
Out[6]: -0.008993219757061173
In [7]: # ========== IF-ELSE STATEMENT ====================
-----(-2),(-1),(0),(1),(2)------------
#answer = None
x = randn()
if x>1: # if is the keyword then use condition & if the condition is true then code got executed and keep going down
answer = "Greater than 1"
else:
answer = "Less than 1"
print(x)
print(answer)
-0.4774162551104668
Less than 1
what we learned so far -
1.Type of variable 2.Using variable 3.Logical variable and operator 4.while loop 5.For loop 6.if statement, if _ else statement, elif statement 7.random variables: randn() 8.introduce to numpy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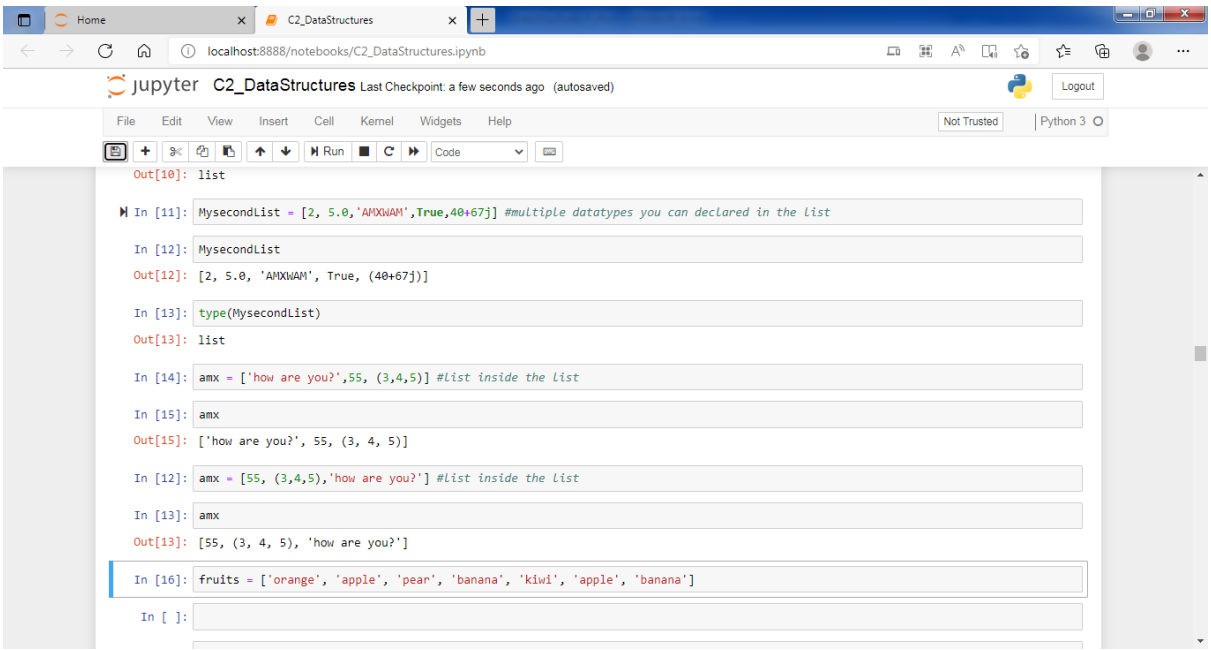
Python 3
Run
Code
1.Type of variable 2.Using variable 3.Logical variable and operator 4.while loop 5.For loop 6.if statement, if _ else statement, elif statement 7.random variables: randn() 8.introduce to numpy
Fundamentals of python which are used in datascience -
In [8]: # List - ordered sequence of elements & always start with 0
# you can decleare the mixed datatype variables
# List closed in [] bracket
MyFirstList = [5, 50, 67, 2020]
In [9]: MyFirstList
Out[9]: [5, 50, 67, 2020]
In [10]: MyFirstListP = [5, 50, 67, 2022]
In [11]: MyFirstListP
Out[11]: [5, 50, 67, 2022]
In [10]: type(MyFirstList)
Out[10]: list
In [11]: MysecondList = [2, 5.0,'AMXWAM',True,40+67j] #multiple datatypes you can declared in the list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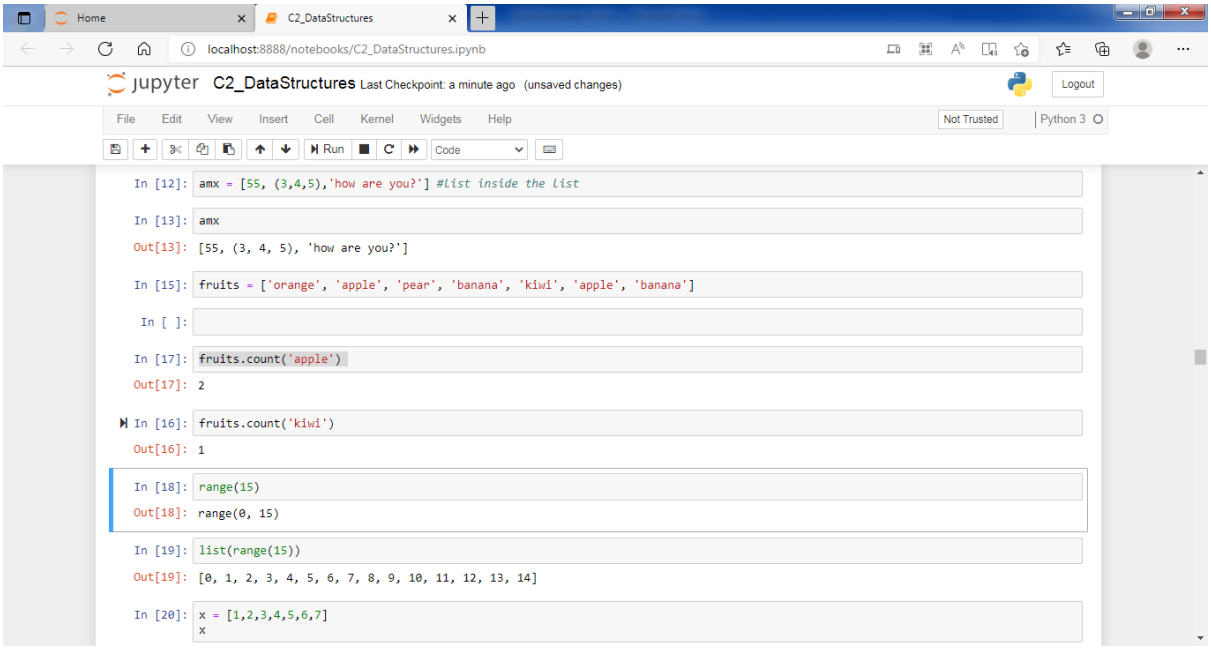
Python 3
Run
Code
Out[10]: list
In [11]: MysecondList = [2, 5.0,'AMXWAM',True,40+67j] #multiple datatypes you can declared in the list
In [12]: MysecondList
Out[12]: [2, 5.0, 'AMXWAM', True, (40+67j)]
In [13]: type(MysecondList)
Out[13]: list
In [14]: amx = ['how are you?',55, (3,4,5)] #List inside the list
In [15]: amx
Out[15]: ['how are you?', 55, (3, 4, 5)]
In [12]: amx = [55, (3,4,5),'how are you?'] #list inside the list
In [13]: amx
Out[13]: [55, (3, 4, 5), 'how are you?']
In [16]: fruits = ['orange', 'apple', 'pear', 'banana', 'kiwi', 'apple', 'banana']
In [ ]: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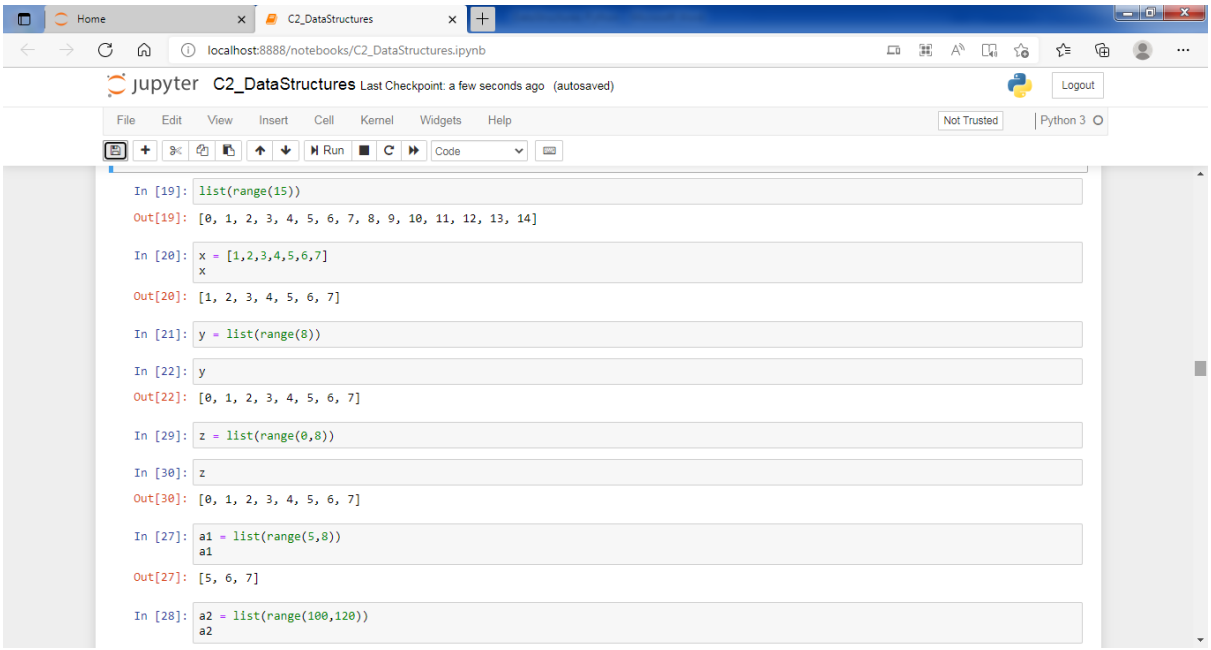
Python 3
Run
Code
In [12]: amx = [55, (3,4,5),'how are you?'] #list inside the list
In [13]: amx
Out[13]: [55, (3, 4, 5), 'how are you?']
In [15]: fruits = ['orange', 'apple', 'pear', 'banana', 'kiwi', 'apple', 'banana']
In [ ]:
In [17]: fruits.count('apple')
Out[17]: 2
In [16]: fruits.count('kiwi')
Out[16]: 1
In [18]: range(15)
Out[18]: range(0, 15)
In [19]: list(range(15))
Out[19]: [0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14]
In [20]: x = [1,2,3,4,5,6,7]
x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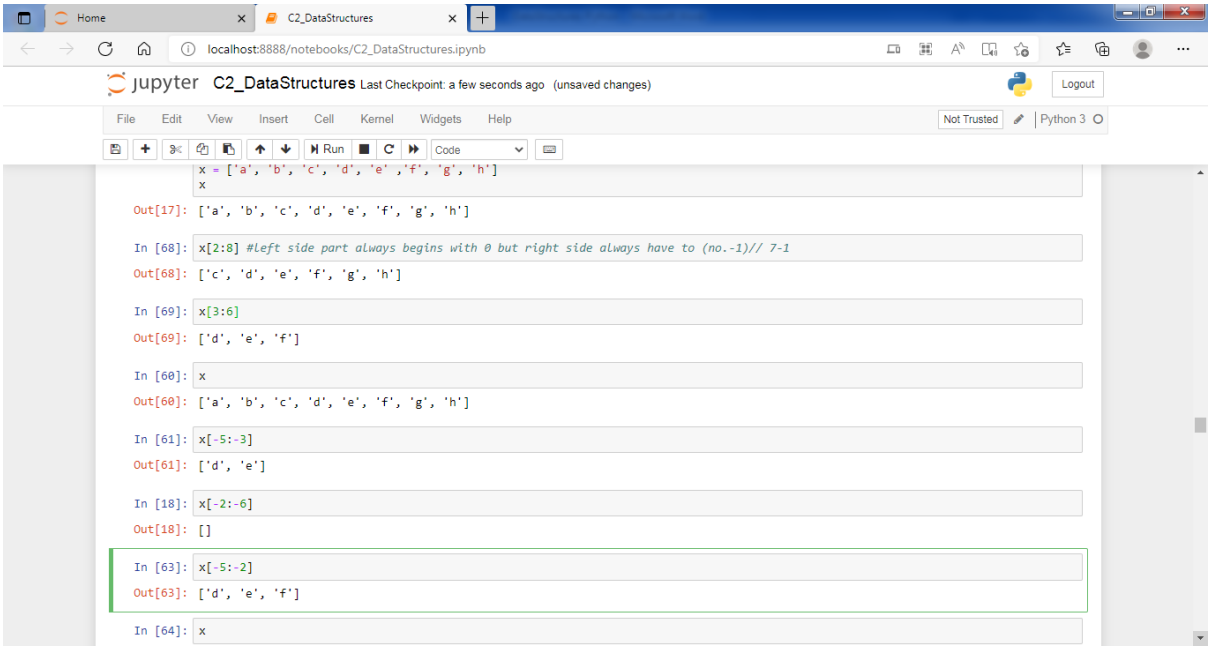
Python 3
Run
Code
In [19]: list(range(15))
Out[19]: [0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14]
In [20]: x = [1,2,3,4,5,6,7]
x
Out[20]: [1, 2, 3, 4, 5, 6, 7]
In [21]: y = list(range(8))
In [22]: y
Out[22]: [0, 1, 2, 3, 4, 5, 6, 7]
In [29]: z = list(range(0,8))
In [30]: z
Out[30]: [0, 1, 2, 3, 4, 5, 6, 7]
In [27]: a1 = list(range(5,8))
a1
Out[27]: [5, 6, 7]
In [28]: a2 = list(range(100,120))
a2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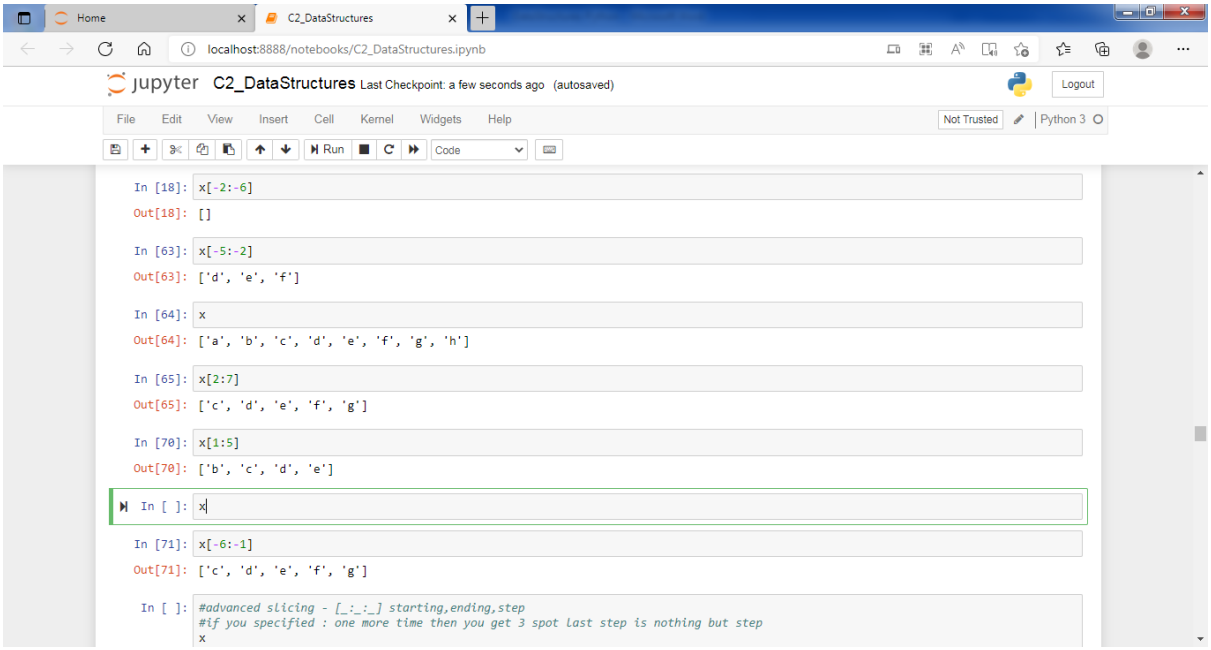
Python 3
Run
Code
x = ['a', 'b', 'c', 'd', 'e' ,'f', 'g', 'h']
x
Out[17]: ['a', 'b', 'c', 'd', 'e', 'f', 'g', 'h']
In [68]: x[2:8] #Left side part always begins with 0 but right side always have to (no.-1)// 7-1
Out[68]: ['c', 'd', 'e', 'f', 'g', 'h']
In [69]: x[3:6]
Out[69]: ['d', 'e', 'f']
In [60]: x
Out[60]: ['a', 'b', 'c', 'd', 'e', 'f', 'g', 'h']
In [61]: x[-5:-3]
Out[61]: ['d', 'e']
In [18]: x[-2:-6]
Out[18]: []
In [63]: x[-5:-2]
Out[63]: ['d', 'e', 'f']
In [64]: x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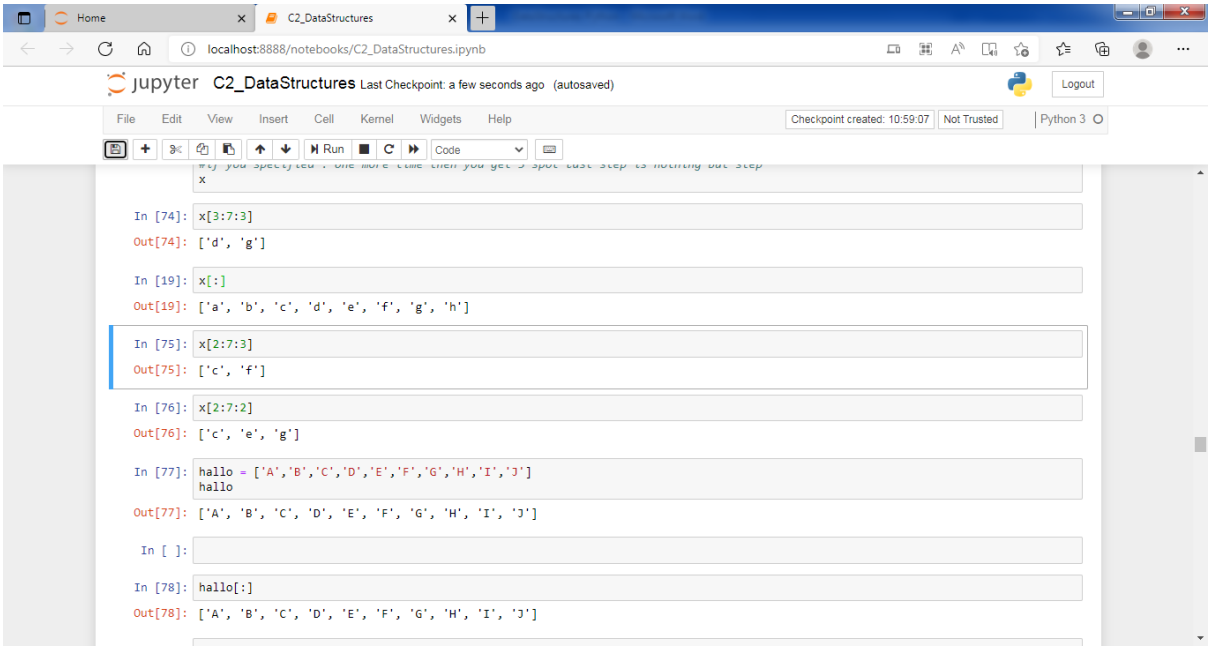
Python 3
Run
Code
In [18]: x[-2:-6]
Out[18]: []
In [63]: x[-5:-2]
Out[63]: ['d', 'e', 'f']
In [64]: x
Out[64]: ['a', 'b', 'c', 'd', 'e', 'f', 'g', 'h']
In [65]: x[2:7]
Out[65]: ['c', 'd', 'e', 'f', 'g']
In [70]: x[1:5]
Out[70]: ['b', 'c', 'd', 'e']
In [ ]: x
In [71]: x[-6:-1]
Out[71]: ['c', 'd', 'e', 'f', 'g']
In [ ]: #advanced slicing - [_:_:_] starting,ending,step
#if you specified : one more time then you get 3 spot last step is nothing but step
x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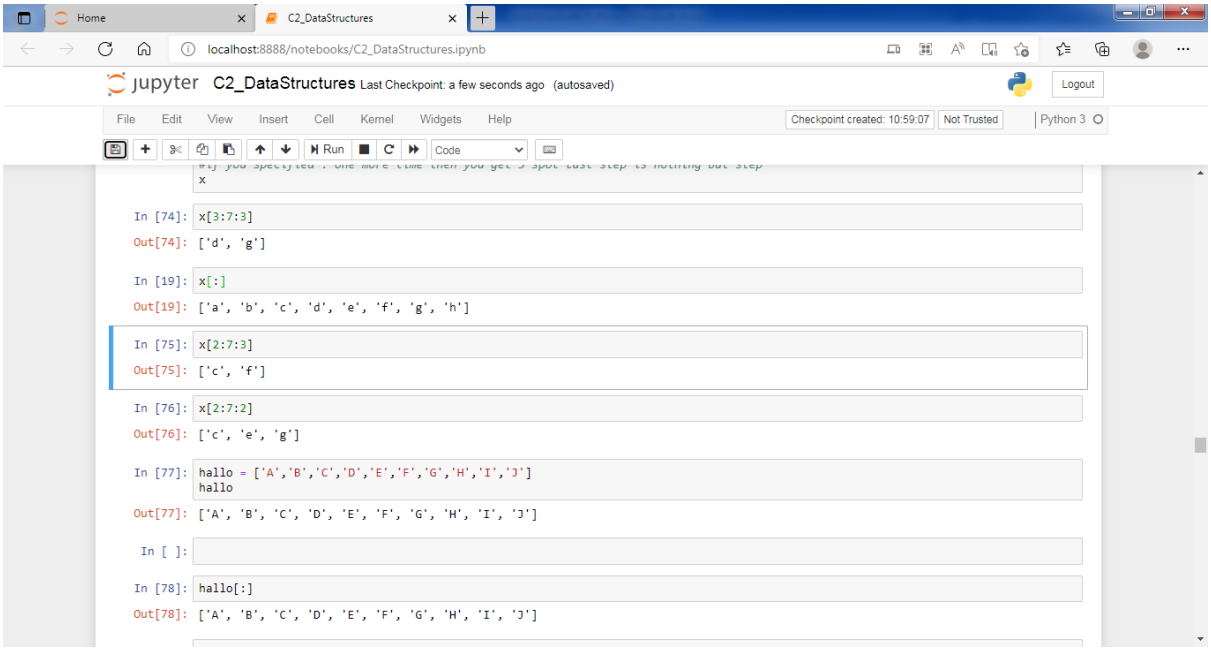
Python 3
Run
Code
x
In [74]: x[3:7:3]
Out[74]: ['d', 'g']
In [19]: x[:]
Out[19]: ['a', 'b', 'c', 'd', 'e', 'f', 'g', 'h']
In [75]: x[2:7:3]
Out[75]: ['c', 'f']
In [76]: x[2:7:2]
Out[76]: ['c', 'e', 'g']
In [77]: hallo = ['A','B','C','D','E','F','G','H','I','J']
hallo
Out[77]: ['A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J']
In [ ]:
In [78]: hallo[:]
Out[78]: ['A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J']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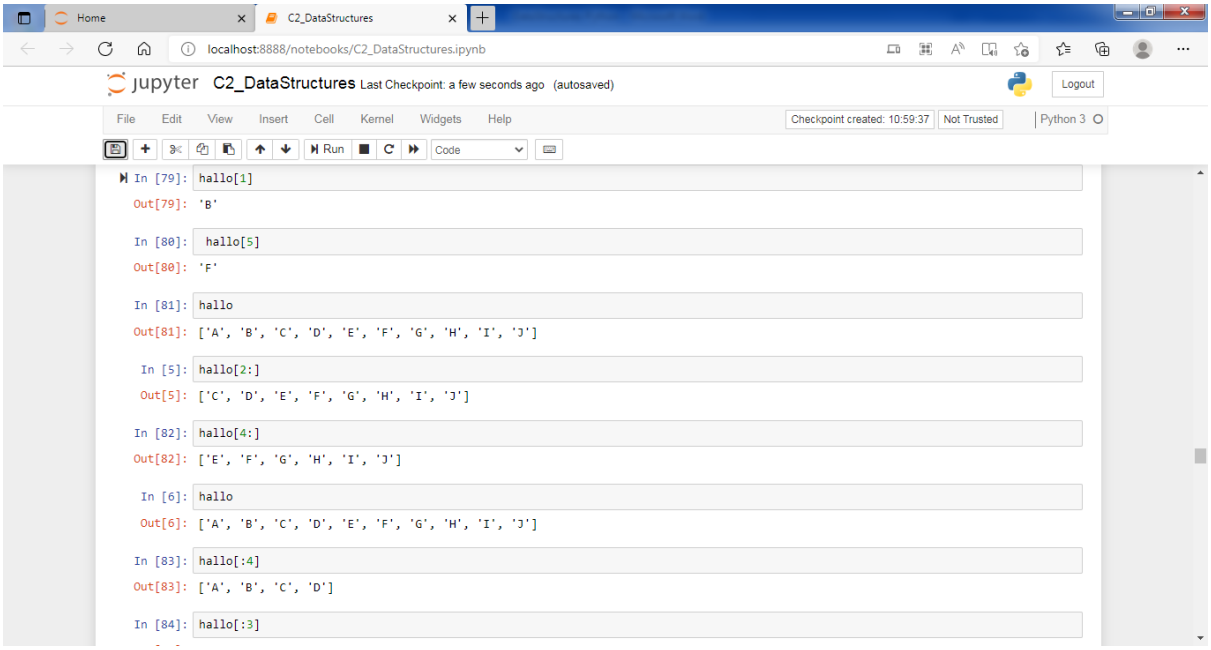
Python 3
Run
Code
x
In [74]: x[3:7:3]
Out[74]: ['d', 'g']
In [19]: x[:]
Out[19]: ['a', 'b', 'c', 'd', 'e', 'f', 'g', 'h']
In [75]: x[2:7:3]
Out[75]: ['c', 'f']
In [76]: x[2:7:2]
Out[76]: ['c', 'e', 'g']
In [77]: hallo = ['A','B','C','D','E','F','G','H','I','J']
hallo
Out[77]: ['A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J']
In [ ]:
In [78]: hallo[:]
Out[78]: ['A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J']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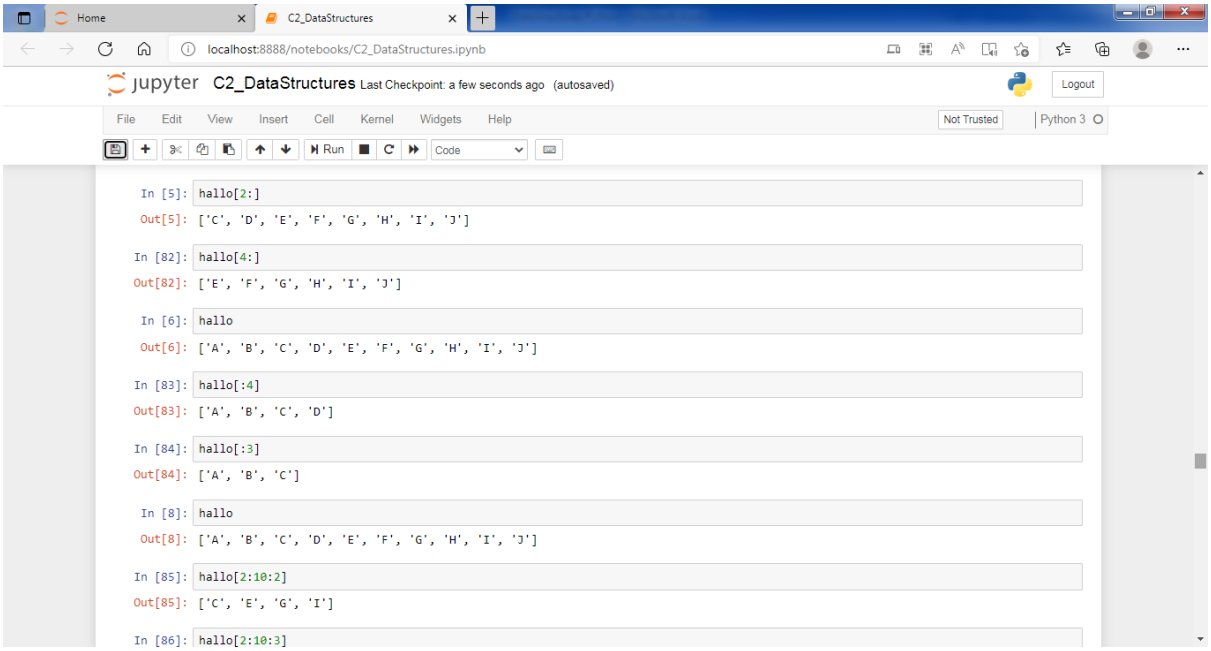
Python 3
Run
Code
In [79]: hallo[1]
Out[79]: 'B'
In [80]: hallo[5]
Out[80]: 'F'
In [81]: hallo
Out[81]: ['A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J']
In [5]: hallo[2:]
Out[5]: ['C', 'D', 'E', 'F', 'G', 'H', 'I', 'J']
In [82]: hallo[4:]
Out[82]: ['E', 'F', 'G', 'H', 'I', 'J']
In [6]: hallo
Out[6]: ['A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J']
In [83]: hallo[:4]
Out[83]: ['A', 'B', 'C', 'D']
In [84]: hallo[:3]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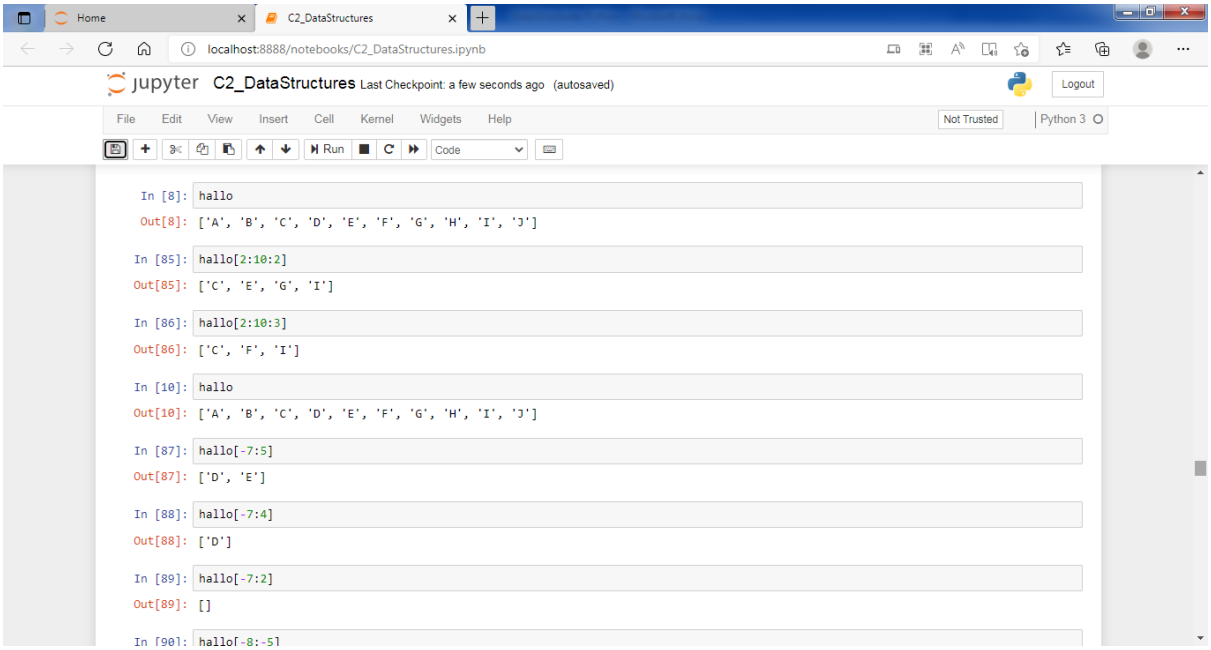
Python 3
Run
Code
In [5]: hallo[2:]
Out[5]: ['C', 'D', 'E', 'F', 'G', 'H', 'I', 'J']
In [82]: hallo[4:]
Out[82]: ['E', 'F', 'G', 'H', 'I', 'J']
In [6]: hallo
Out[6]: ['A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J']
In [83]: hallo[:4]
Out[83]: ['A', 'B', 'C', 'D']
In [84]: hallo[:3]
Out[84]: ['A', 'B', 'C']
In [8]: hallo
Out[8]: ['A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J']
In [85]: hallo[2:10:2]
Out[85]: ['C', 'E', 'G', 'I']
In [86]: hallo[2:10:3]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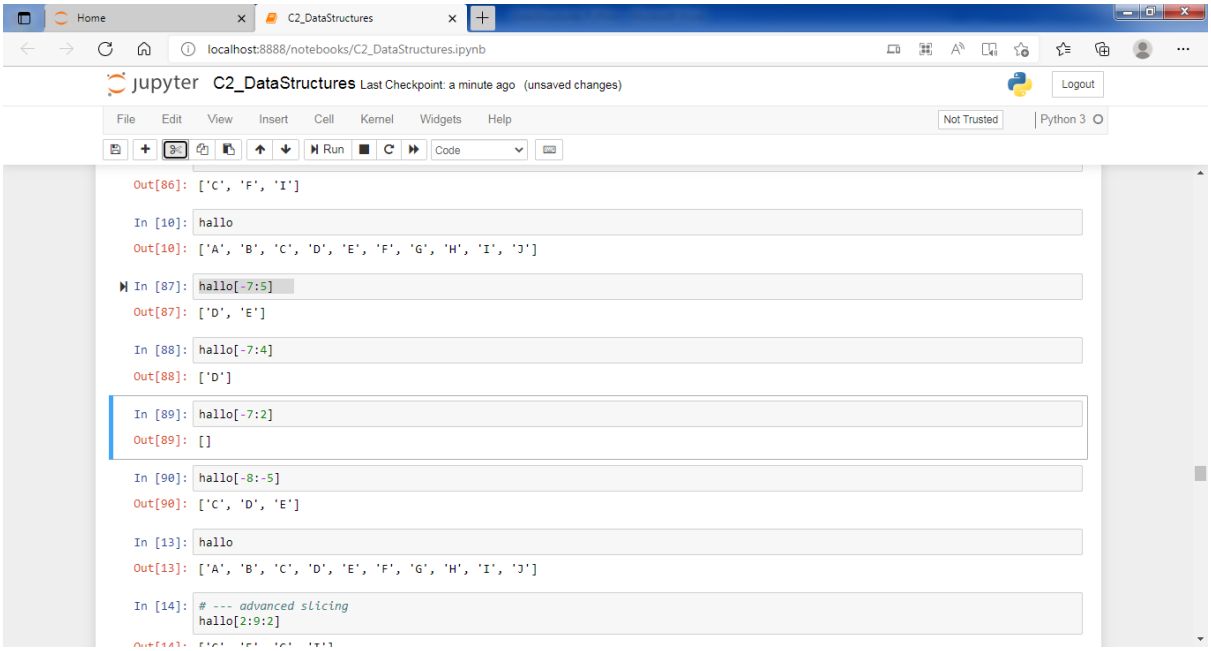
Python 3
Run
Code
In [8]: hallo
Out[8]: ['A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J']
In [85]: hallo[2:10:2]
Out[85]: ['C', 'E', 'G', 'I']
In [86]: hallo[2:10:3]
Out[86]: ['C', 'F', 'I']
In [10]: hallo
Out[10]: ['A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J']
In [87]: hallo[-7:5]
Out[87]: ['D', 'E']
In [88]: hallo[-7:4]
Out[88]: ['D']
In [89]: hallo[-7:2]
Out[89]: []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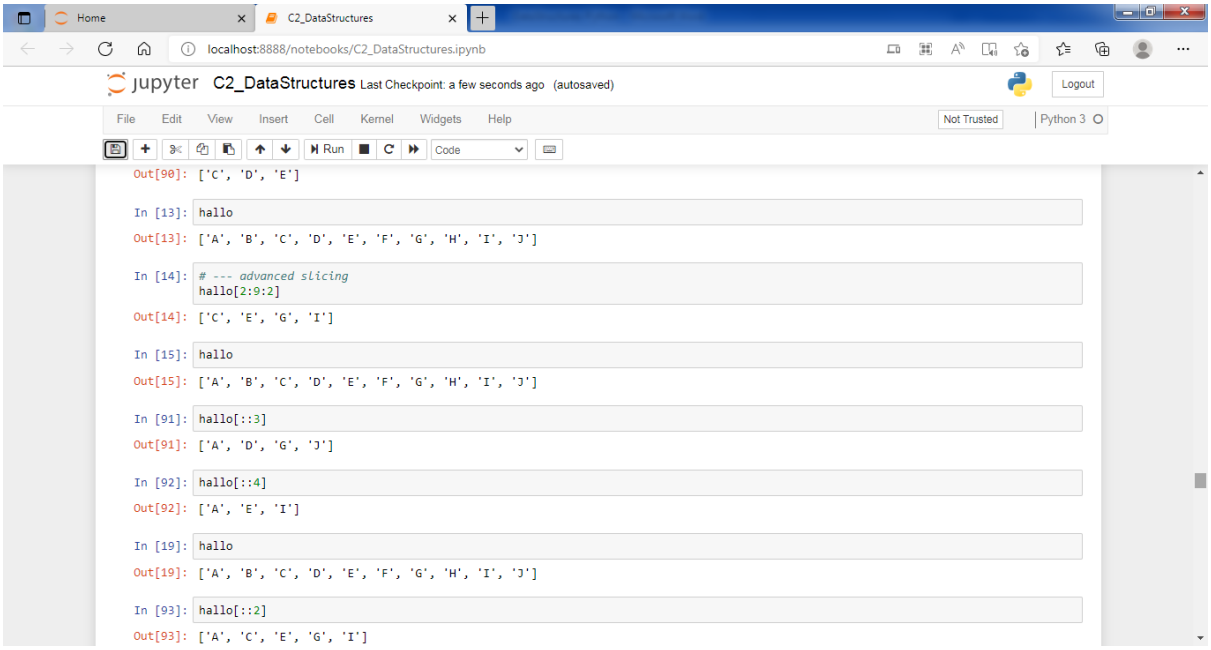
Python 3
Run
Code
Out[86]: ['C', 'F', 'I']
In [10]: hallo
Out[10]: ['A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J']
In [87]: hallo[-7:5]
Out[87]: ['D', 'E']
In [88]: hallo[-7:4]
Out[88]: ['D']
In [89]: hallo[-7:2]
Out[89]: []
In [90]: hallo[-8:-5]
Out[90]: ['C', 'D', 'E']
In [13]: hallo
Out[13]: ['A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J']
In [14]: # --- advanced slicing
hallo[2:9:2]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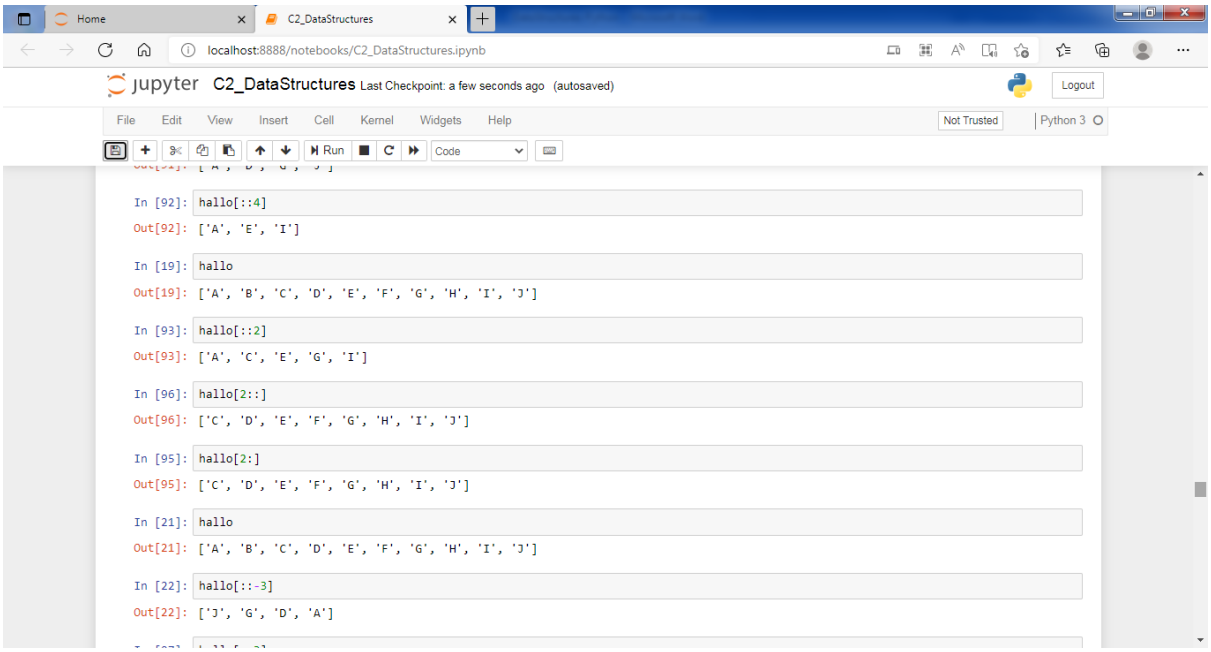
Python 3
Run
Code
Out[90]: ['C', 'D', 'E']
In [13]: hallo
Out[13]: ['A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J']
In [14]: # --- advanced slicing
hallo[2:9:2]
Out[14]: ['C', 'E', 'G', 'I']
In [15]: hallo
Out[15]: ['A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J']
In [91]: hallo[::3]
Out[91]: ['A', 'D', 'G', 'J']
In [92]: hallo[::4]
Out[92]: ['A', 'E', 'I']
In [19]: hallo
Out[19]: ['A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J']
In [93]: hallo[::2]
Out[93]: ['A', 'C', 'E', 'G', 'I']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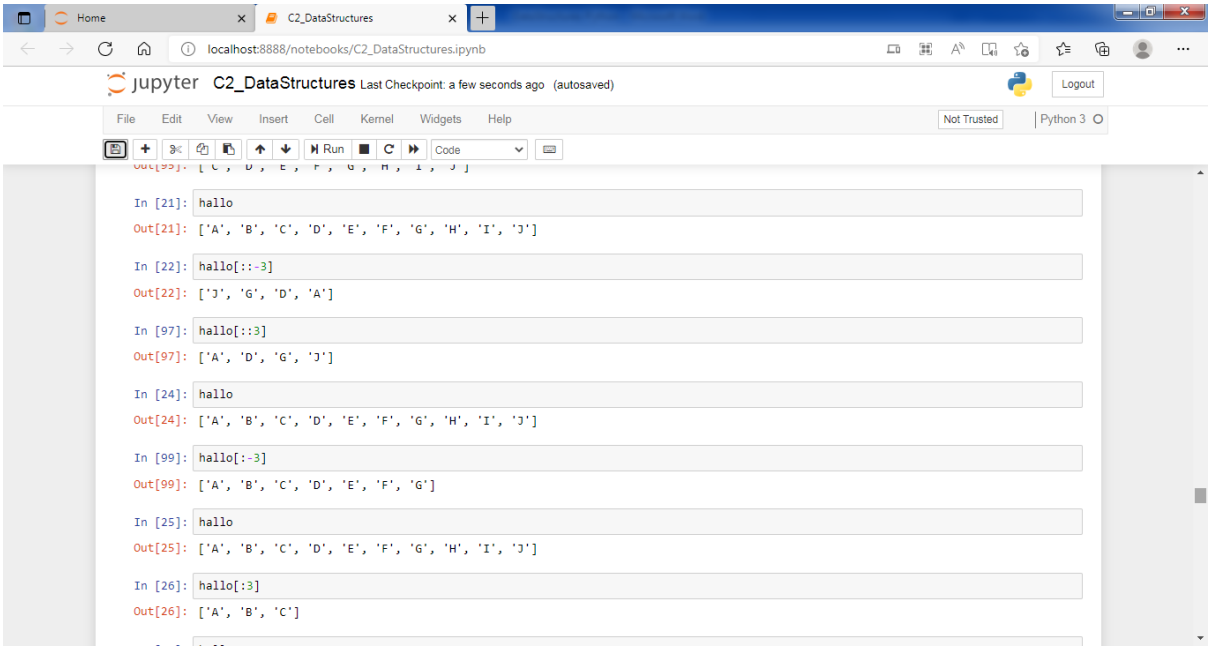
Python 3
Run
Code
In [92]: hallo[::4]
Out[92]: ['A', 'E', 'I']
In [19]: hallo
Out[19]: ['A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J']
In [93]: hallo[::2]
Out[93]: ['A', 'C', 'E', 'G', 'I']
In [96]: hallo[2::]
Out[96]: ['C', 'D', 'E', 'F', 'G', 'H', 'I', 'J']
In [95]: hallo[2:]
Out[95]: ['C', 'D', 'E', 'F', 'G', 'H', 'I', 'J']
In [21]: hallo
Out[21]: ['A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J']
In [22]: hallo[::-3]
Out[22]: ['J', 'G', 'D', 'A']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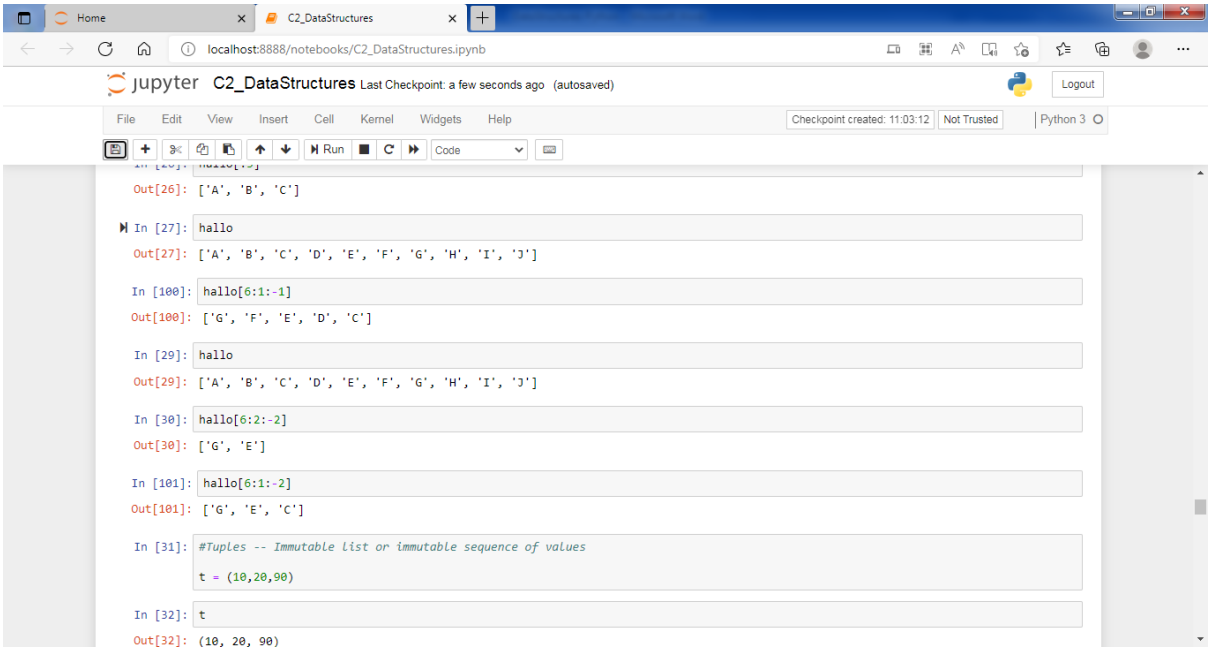
Python 3
Run
Code
In [21]: hallo
Out[21]: ['A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J']
In [22]: hallo[::-3]
Out[22]: ['J', 'G', 'D', 'A']
In [97]: hallo[::3]
Out[97]: ['A', 'D', 'G', 'J']
In [24]: hallo
Out[24]: ['A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J']
In [99]: hallo[:-3]
Out[99]: ['A', 'B', 'C', 'D', 'E', 'F', 'G']
In [25]: hallo
Out[25]: ['A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J']
In [26]: hallo[:3]
Out[26]: ['A', 'B', 'C']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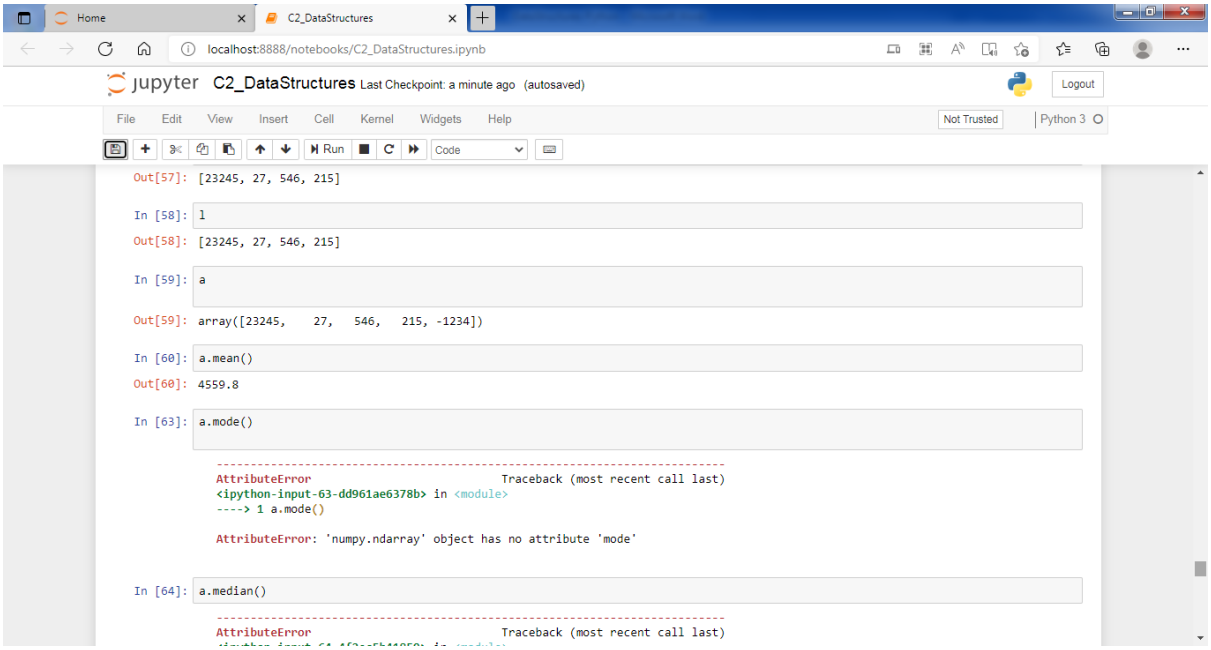
Python 3
Run
Code
Out[26]: ['A', 'B', 'C']
In [27]: hallo
Out[27]: ['A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J']
In [100]: hallo[6:1:-1]
Out[100]: ['G', 'F', 'E', 'D', 'C']
In [29]: hallo
Out[29]: ['A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J']
In [30]: hallo[6:2:-2]
Out[30]: ['G', 'E']
In [101]: hallo[6:1:-2]
Out[101]: ['G', 'E', 'C']
In [31]: #Tuples -- Immutable list or immutable sequence of values
t = (10,20,90)
In [32]: t
Out[32]: (10, 20, 90)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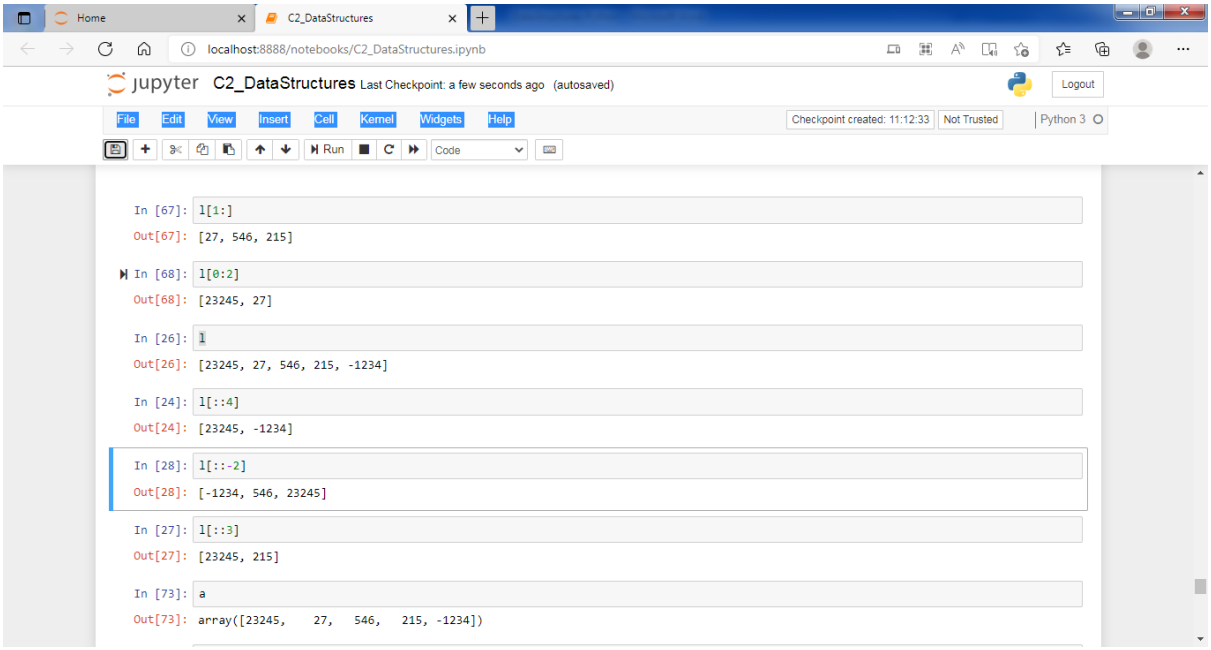
Python 3
Run
Code
Out[57]: [23245, 27, 546, 215]
In [58]: l
Out[58]: [23245, 27, 546, 215]
In [59]: a
Out[59]: array([23245, 27, 546, 215, -1234])
In [60]: a.mean()
Out[60]: 4559.8
In [63]: a.mode()
AttributeError Traceback (most recent call last)
<ipython-input-63-dd961ae6378b> in <module>
----> 1 a.mode()
AttributeError: 'numpy.ndarray' object has no attribute 'mode'
In [64]: a.median()
AttributeError Traceback (most recent call last)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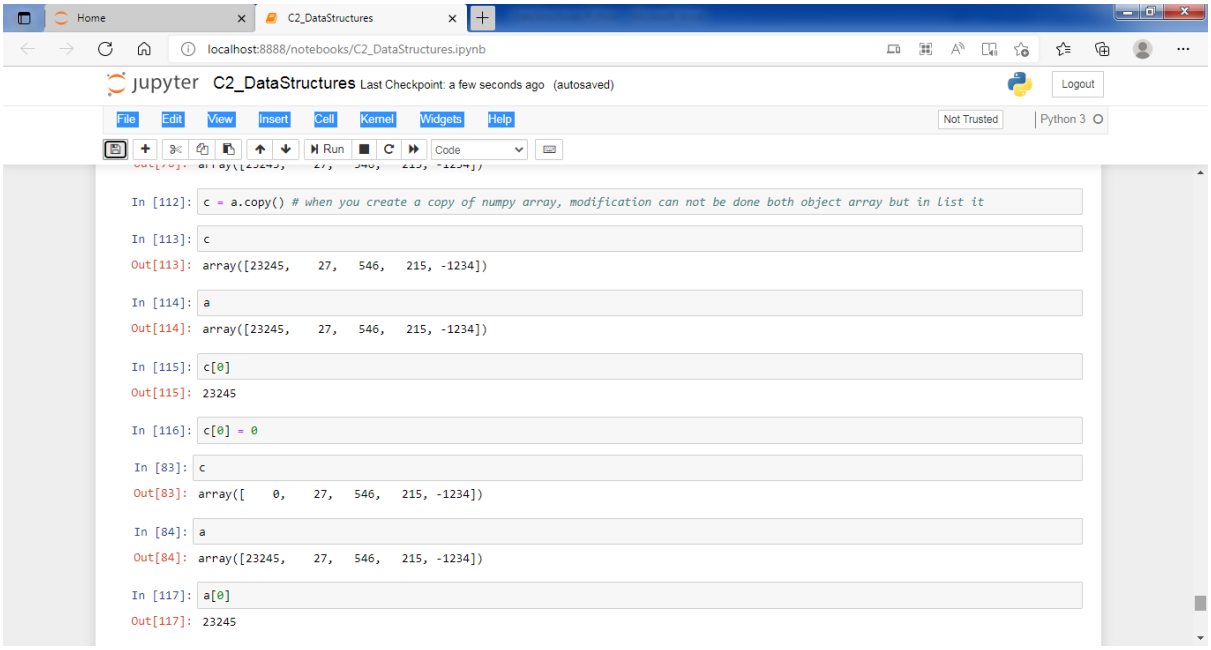
Python 3
Run
Code
In [67]: l[1:]
Out[67]: [27, 546, 215]
In [68]: l[0:2]
Out[68]: [23245, 27]
In [26]: l
Out[26]: [23245, 27, 546, 215, -1234]
In [24]: l[::4]
Out[24]: [23245, -1234]
In [28]: l[::-2]
Out[28]: [-1234, 546, 23245]
In [27]: l[::3]
Out[27]: [23245, 215]
In [73]: a
Out[73]: array([23245, 27, 546, 215, -1234])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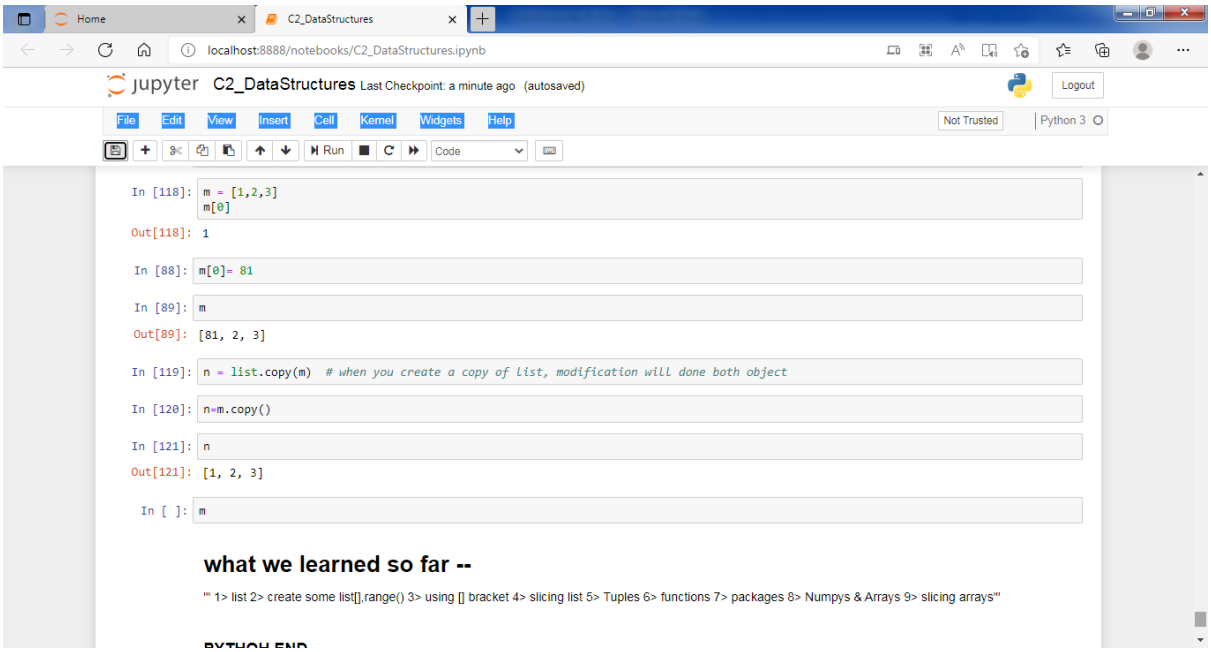
Python 3
Run
Code
In [112]: c = a.copy() # when you create a copy of numpy array, modification can not be done both object array but in list it
In [113]: c
Out[113]: array([23245, 27, 546, 215, -1234])
In [114]: a
Out[114]: array([23245, 27, 546, 215, -1234])
In [115]: c[0]
Out[115]: 23245
In [116]: c[0] = 0
In [83]: c
Out[83]: array([0, 27, 546, 215, -1234])
In [84]: a
Out[84]: array([23245, 27, 546, 215, -1234])
In [117]: a[0]
Out[117]: 23245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Python 3
Run
Code
In [118]: m = [1,2,3]
m[0]
Out[118]: 1
In [88]: m[0]= 81
In [89]: m
Out[89]: [81, 2, 3]
In [119]: n = list.copy(m) # when you create a copy of list, modification will done both object
In [120]: n=m.copy()
In [121]: n
Out[121]: [1, 2, 3]
In [ ]: m
what we learned so far --
''' 1> list 2> create some list[],range() 3> using [] bracket 4> slicing list 5> Tuples 6> functions 7> packages 8> Numpys & Arrays 9> slicing arrays'''