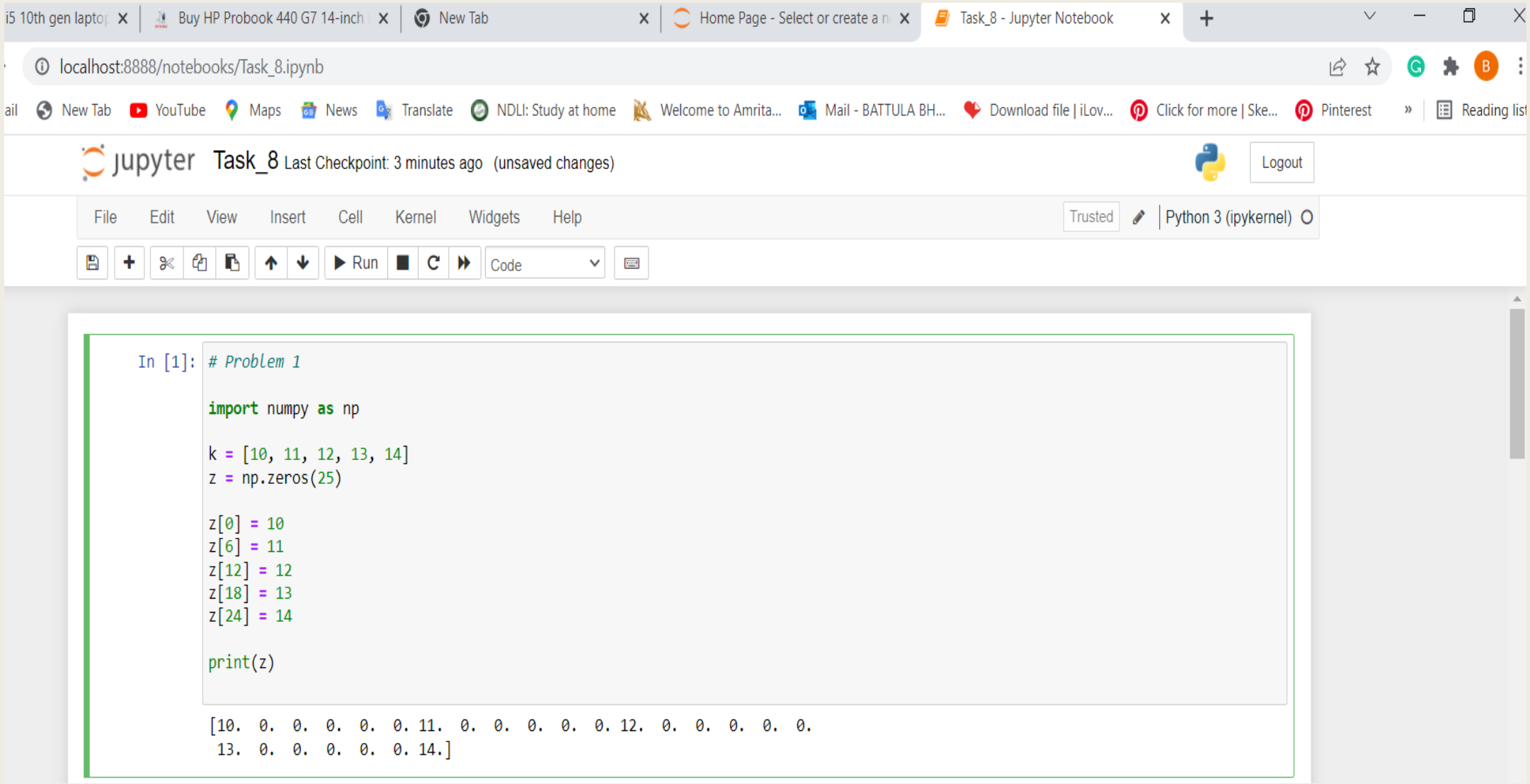
B.BHAVANA

AIE

Problem - 1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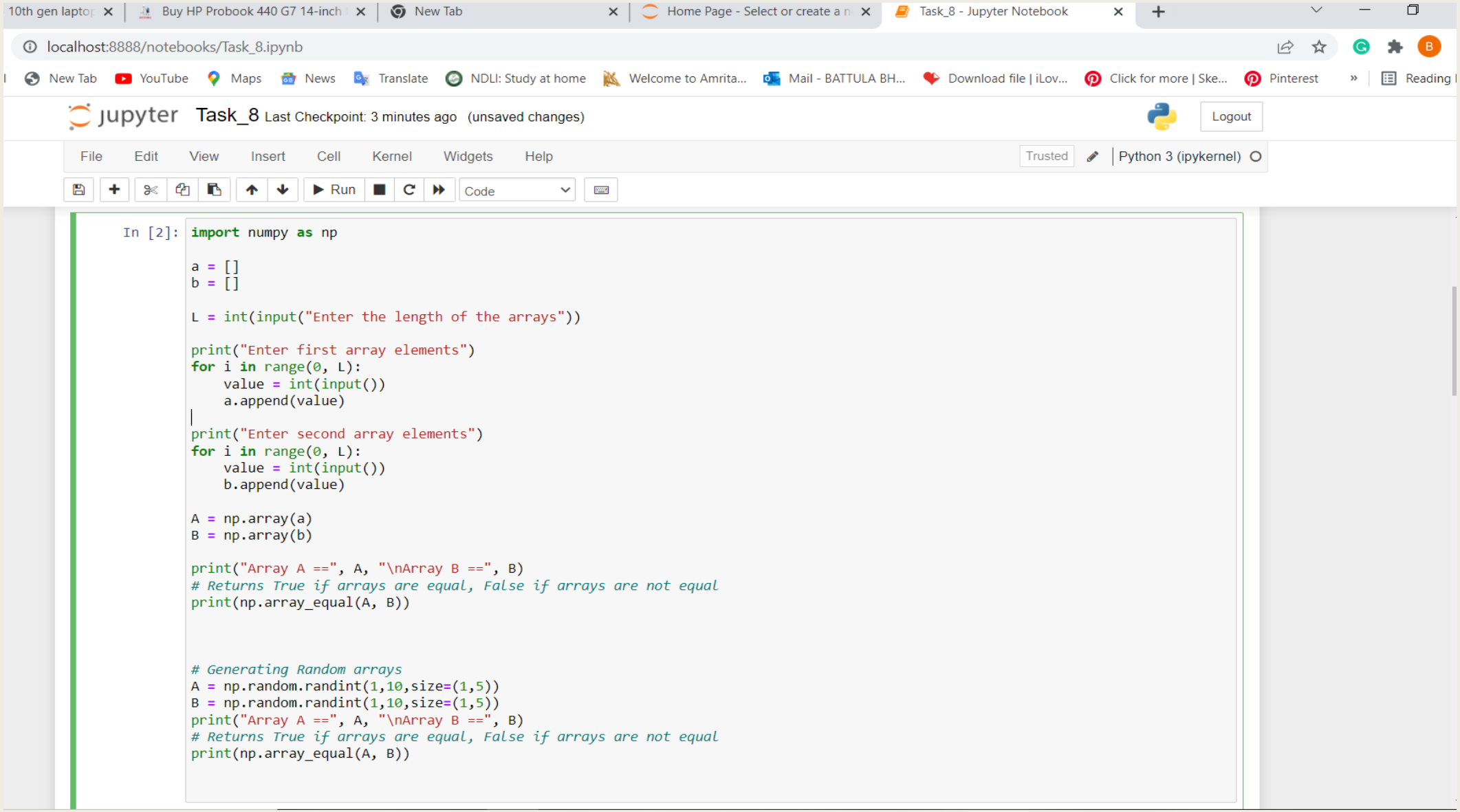
Python 3 (ipykernel)
Run
Code
In [1]:
# Problem 1
import numpy as np
k = [10, 11, 12, 13, 14]
z = np.zeros(25)
z[0] = 10
z[6] = 11
z[12] = 12
z[18] = 13
z[24] = 14
print(z)
[10. 0. 0. 0. 0. 0. 11. 0. 0. 0. 0. 0. 12. 0. 0. 0. 0. 0.
13. 0. 0. 0. 0. 0. 14.]

Problem - 2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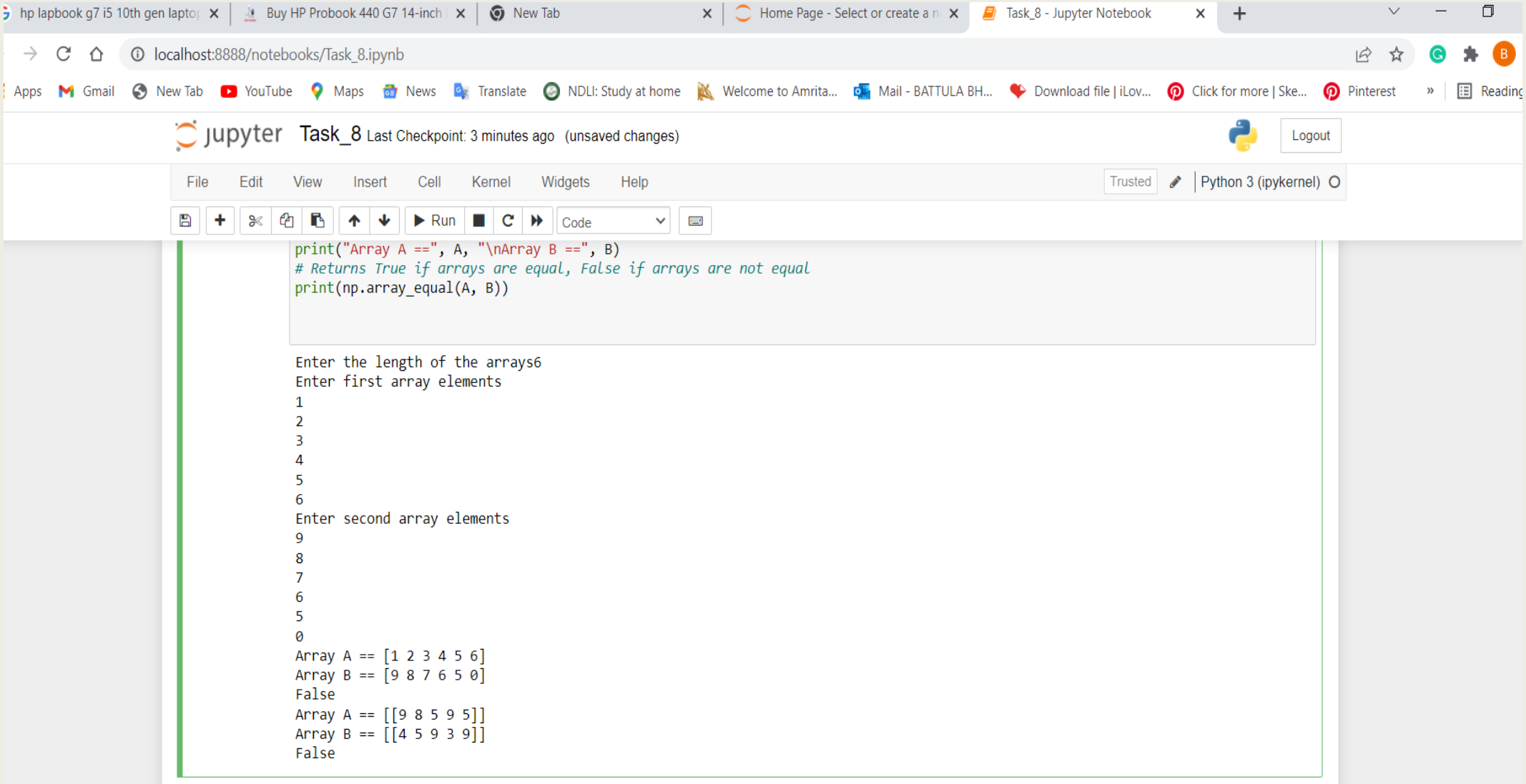
Run
Code
In [2]:
import numpy as np
a = []
b = []
L = int(input("Enter the length of the arrays"))
print("Enter first array elements")
for i in range(0, L):
value = int(input())
a.append(value)
print("Enter second array elements")
for i in range(0, L):
value = int(input())
b.append(value)
A = np.array(a)
B = np.array(b)
print("Array A ==", A, "\nArray B ==", B)
# Returns True if arrays are equal, False if arrays are not equal
print(np.array_equal(A, B))
# Generating Random arrays
A = np.random.randint(1,10,size=(1,5))
B = np.random.randint(1,10,size=(1,5))
print("Array A ==", A, "\nArray B ==", B)
# Returns True if arrays are equal, False if arrays are not equal
print(np.array_equal(A, B))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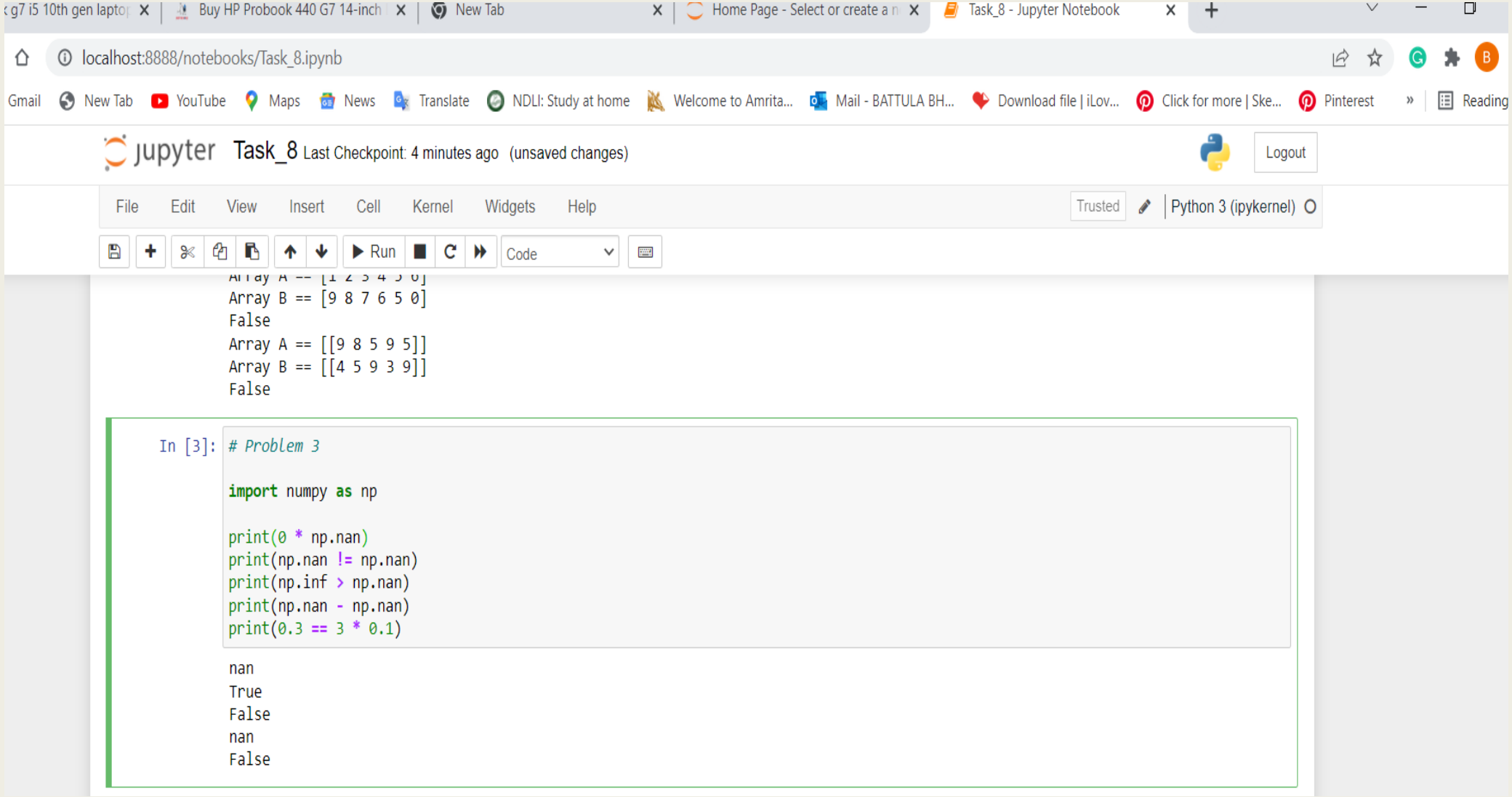
Run
Code
print("Array A ==", A, "\nArray B ==", B)
# Returns True if arrays are equal, False if arrays are not equal
print(np.array_equal(A, B))
Enter the length of the arrays6
Enter first array elements
1
2
3
4
5
6
Enter second array elements
9
8
7
6
5
0
Array A == [1 2 3 4 5 6]
Array B == [9 8 7 6 5 0]
False
Array A == [[9 8 5 9 5]]
Array B == [[4 5 9 3 9]]
False

Problem - 3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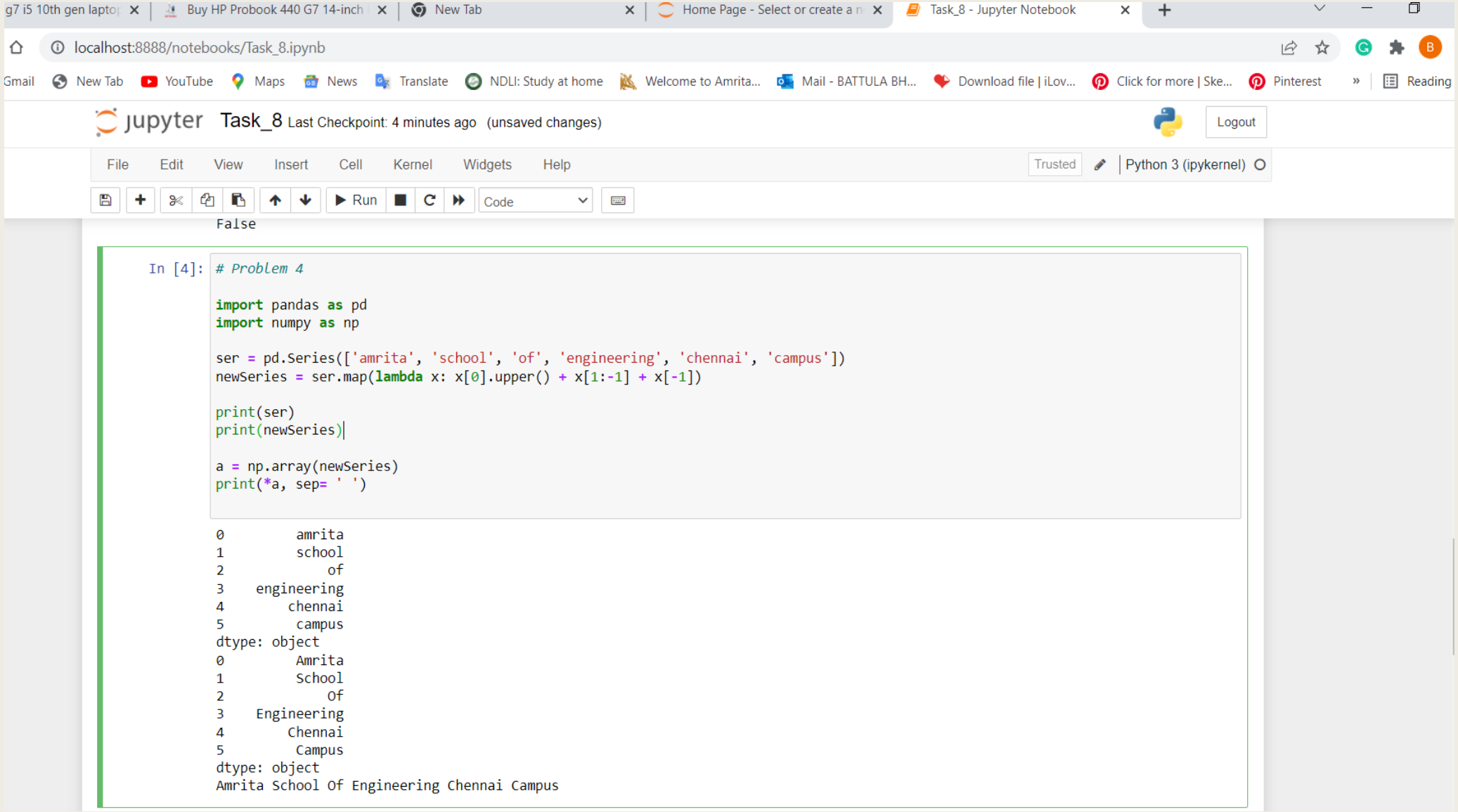
Run
Code
Array B == [9 8 7 6 5 0]
False
Array A == [[9 8 5 9 5]]
Array B == [[4 5 9 3 9]]
False
In [3]:
# Problem 3
import numpy as np
print(0 * np.nan)
print(np.nan != np.nan)
print(np.inf > np.nan)
print(np.nan - np.nan)
print(0.3 == 3 * 0.1)
nan
True
False
nan
False

Problem - 4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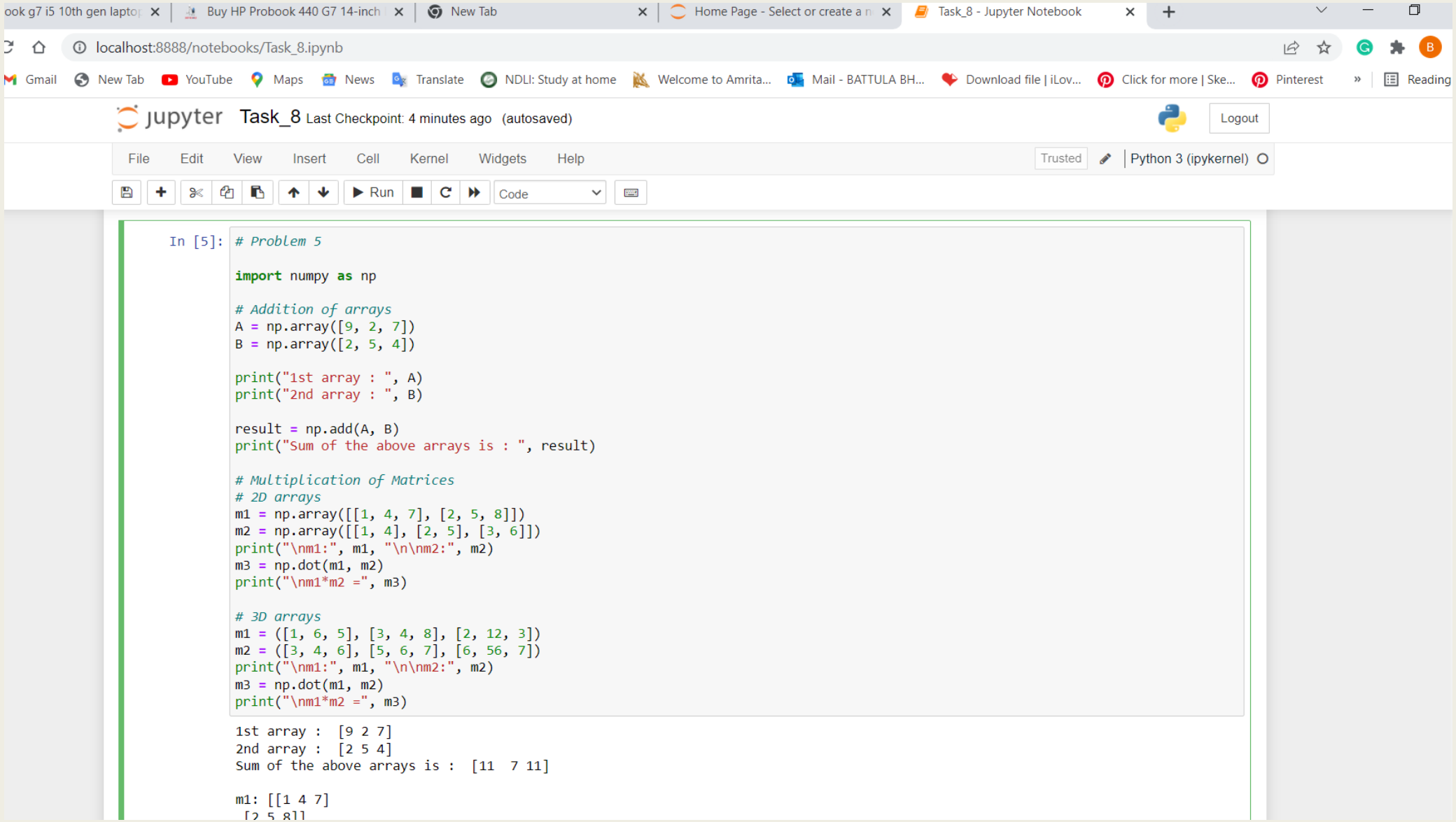
Python 3 (ipykernel)
Run
Code
False
In [4]:
# Problem 4
import pandas as pd
import numpy as np
ser = pd.Series(['amrita', 'school', 'of', 'engineering', 'chennai', 'campus'])
newSeries = ser.map(lambda x: x[0].upper() + x[1:-1] + x[-1])
print(ser)
print(newSeries)
a = np.array(newSeries)
print(*a, sep= ' ')
0 amrita
1 school
2 of
3 engineering
4 chennai
5 campus
dtype: object
0 Amrita
1 School
2 Of
3 Engineering
4 Chennai
5 Campus
dtype: object
Amrita School Of Engineering Chennai Campus

Problem - 5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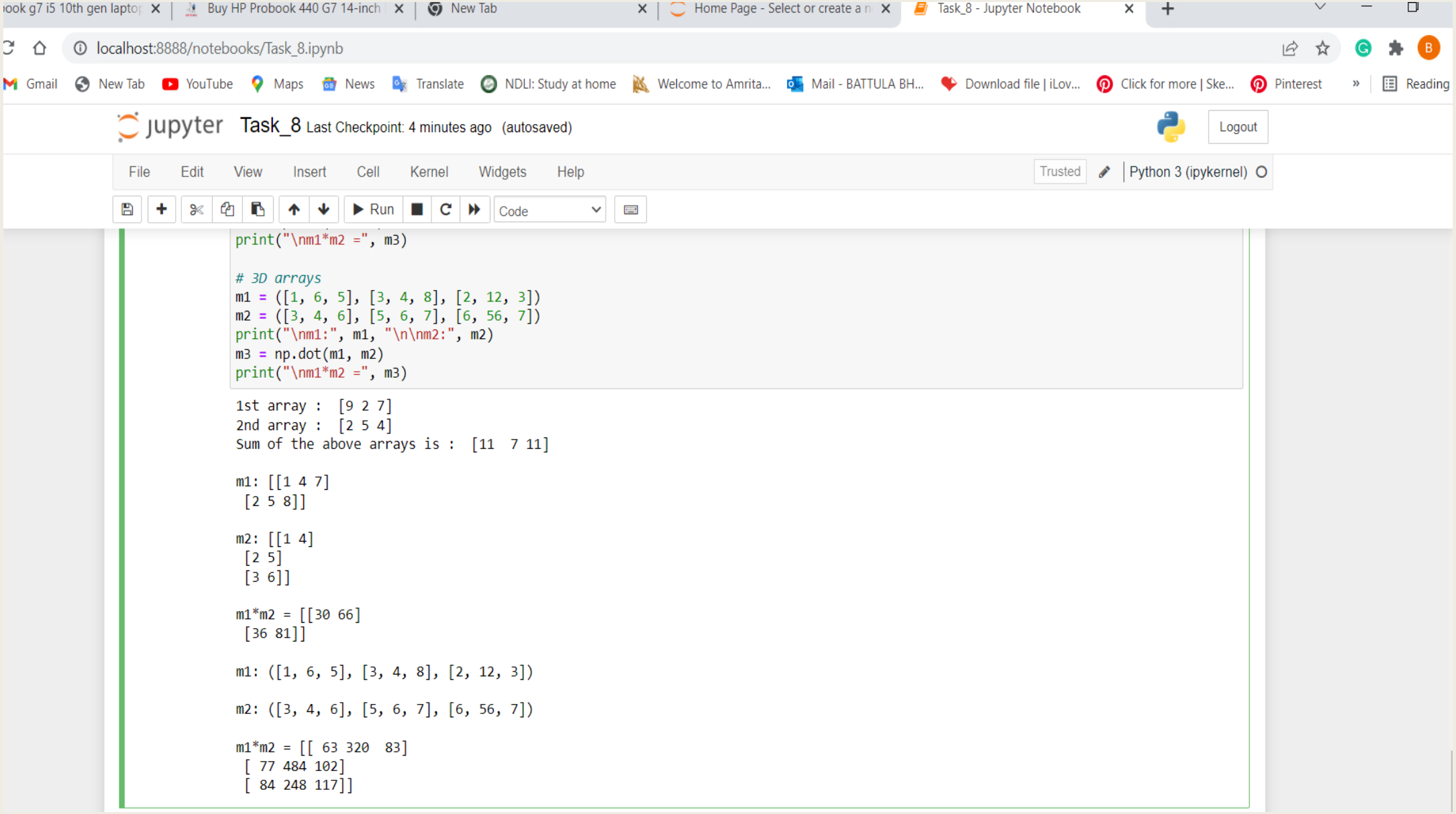
Code
In [5]:
# Problem 5
import numpy as np
# Addition of arrays
A = np.array([9, 2, 7])
B = np.array([2, 5, 4])
print("1st array : ", A)
print("2nd array : ", B)
result = np.add(A, B)
print("Sum of the above arrays is : ", result)
# Multiplication of Matrices
# 2D arrays
m1 = np.array([[1, 4, 7], [2, 5, 8]])
m2 = np.array([[1, 4], [2, 5], [3, 6]])
print("\nm1:", m1, "\n\nm2:", m2)
m3 = np.dot(m1, m2)
print("\nm1*m2 =", m3)
# 3D arrays
m1 = ([1, 6, 5], [3, 4, 8], [2, 12, 3])
m2 = ([3, 4, 6], [5, 6, 7], [6, 56, 7])
print("\nm1:", m1, "\n\nm2:", m2)
m3 = np.dot(m1, m2)
print("\nm1*m2 =", m3)
1st array : [9 2 7]
2nd array : [2 5 4]
Sum of the above arrays is : [11 7 11]
m1: [[1 4 7]
[2 5 8]]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Run
Code
print("\nm1*m2 =", m3)
# 3D arrays
m1 = ([1, 6, 5], [3, 4, 8], [2, 12, 3])
m2 = ([3, 4, 6], [5, 6, 7], [6, 56, 7])
print("\nm1:", m1, "\n\nm2:", m2)
m3 = np.dot(m1, m2)
print("\nm1*m2 =", m3)
1st array : [9 2 7]
2nd array : [2 5 4]
Sum of the above arrays is : [11 7 11]
m1: [[1 4 7]
[2 5 8]]
m2: [[1 4]
[2 5]
[3 6]]
m1*m2 = [[30 66]
[36 81]]
m1: ([1, 6, 5], [3, 4, 8], [2, 12, 3])
m2: ([3, 4, 6], [5, 6, 7], [6, 56, 7])
m1*m2 = [[63 320 83]
[77 484 102]
[84 248 117]]