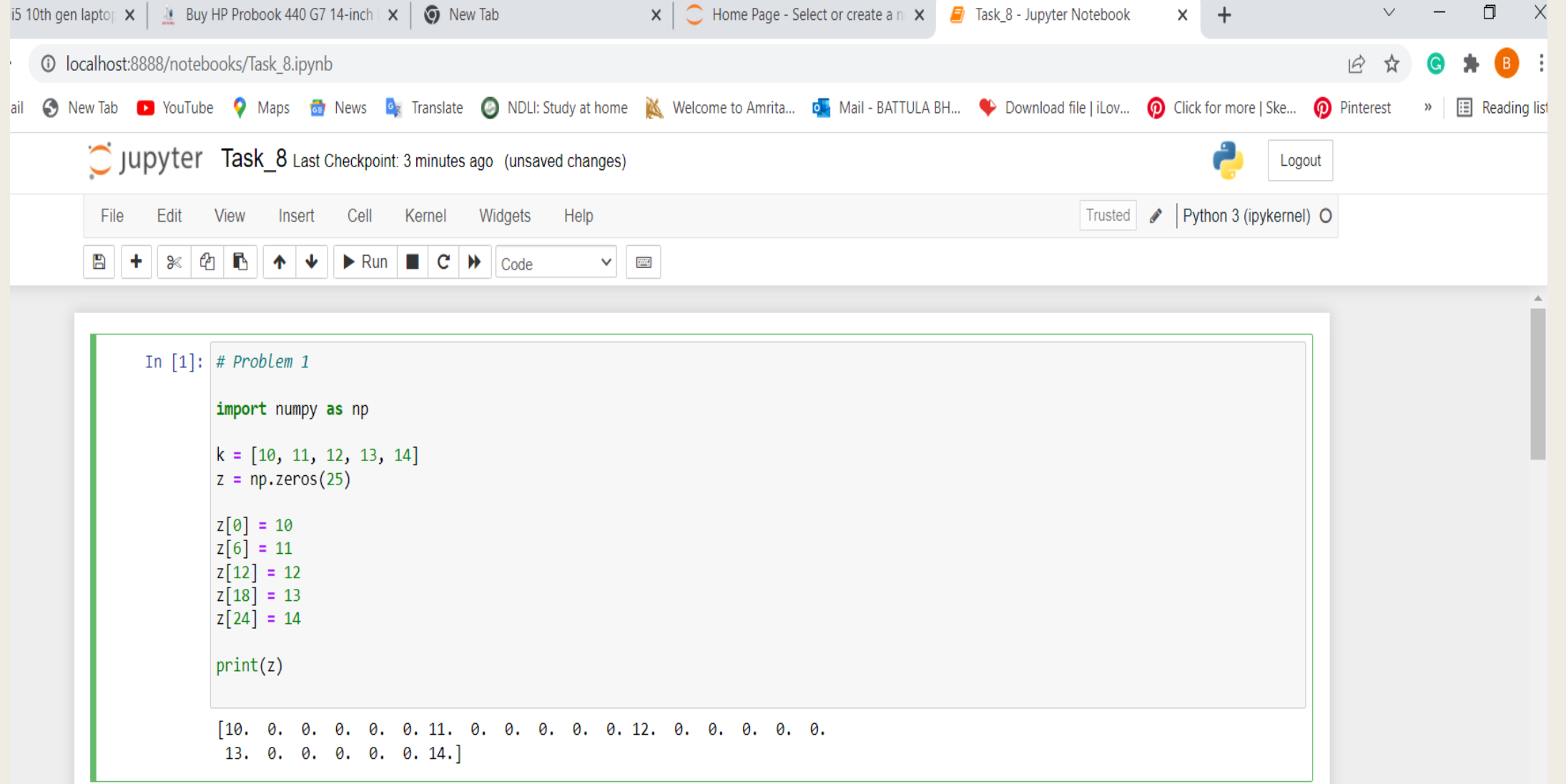




B.BHAVANA

AIE

Problem - 1



```
In [1]: # Problem 1

import numpy as np

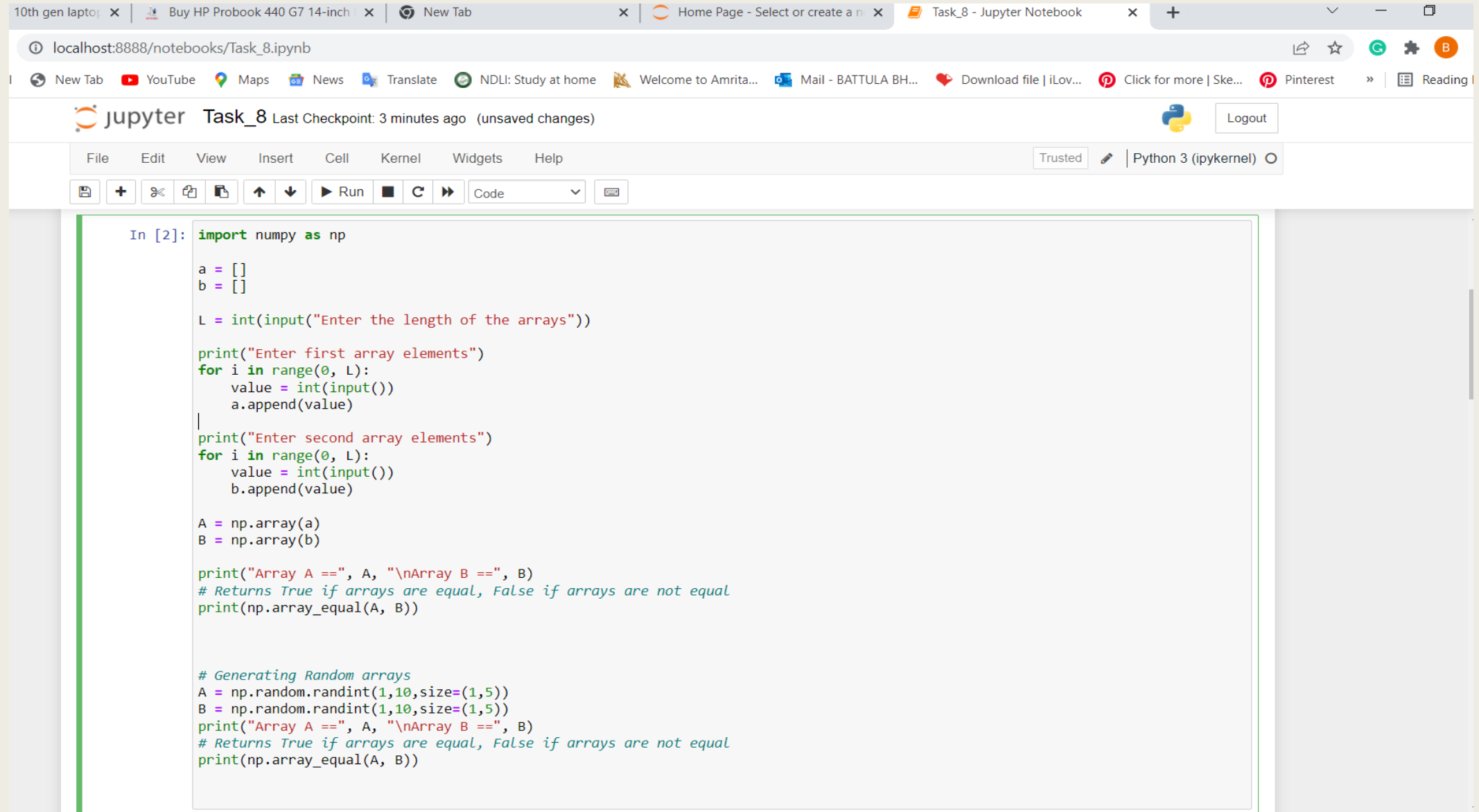
k = [10, 11, 12, 13, 14]
z = np.zeros(25)

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



```
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))
```

hp lapbook g7 i5 10th gen laptop x Buy HP Probook 440 G7 14-inch x New Tab x Home Page - Select or create a n x Task_8 - Jupyter Notebook x

localhost:8888/notebooks/Task_8.ipynb

jupyter Task_8 Last Checkpoint: 3 minutes ago (unsaved changes) Logout

File Edit View Insert Cell Kernel Widgets Help Trusted Python 3 (ipykernel)

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

The screenshot shows a Jupyter Notebook interface in a web browser. The browser tabs include "g7 i5 10th gen laptop", "Buy HP Probook 440 G7 14-inch", "New Tab", "Home Page - Select or create a n...", and "Task_8 - Jupyter Notebook". The address bar shows "localhost:8888/notebooks/Task_8.ipynb". The notebook title is "Task_8" with a subtitle "Last Checkpoint: 4 minutes ago (unsaved changes)". The interface includes a menu bar (File, Edit, View, Insert, Cell, Kernel, Widgets, Help) and a toolbar with icons for saving, adding cells, and running code. The notebook content shows a comparison of two arrays, A and B, with the following output:

```
Array A == [1 2 3 4 5 0]
Array B == [9 8 7 6 5 0]
False
Array A == [[9 8 5 9 5]]
Array B == [[4 5 9 3 9]]
False
```

The code cell, labeled "In [3]: # Problem 3", contains the following Python code:

```
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)
```

The output of the code cell is:

```
nan
True
False
nan
False
```

Problem - 4

g7 i5 10th gen laptop x Buy HP Probook 440 G7 14-inch x New Tab x Home Page - Select or create a n x Task_8 - Jupyter Notebook x +

localhost:8888/notebooks/Task_8.ipynb

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False

```
In [4]: # Problem 4

import pandas as pd
import numpy as np

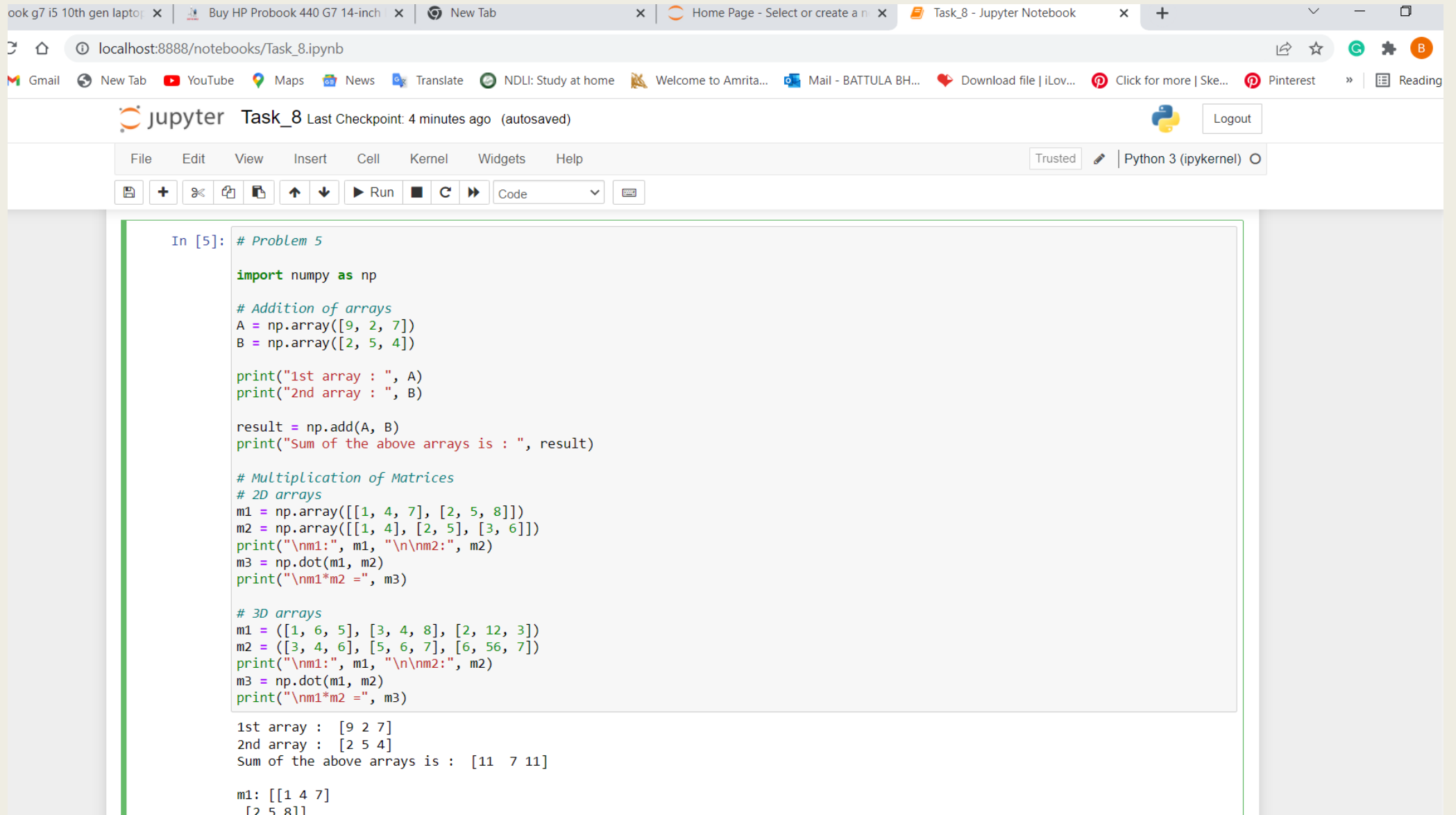
ser = pd.Series(['amrita', 'school', 'of', 'engineering', 'chennai', 'campus'])
newSeries = ser.map(lambda x: x[0].upper() + x[1:-1] + x[-1])

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



The screenshot shows a web browser window with multiple tabs. The active tab is 'Task_8 - Jupyter Notebook'. The address bar shows 'localhost:8888/notebooks/Task_8.ipynb'. The Jupyter Notebook interface includes a top bar with the 'jupyter' logo, the notebook name 'Task_8', and a 'Logout' button. Below this is a menu bar with 'File', 'Edit', 'View', 'Insert', 'Cell', 'Kernel', 'Widgets', and 'Help'. A toolbar contains icons for file operations, a 'Run' button, and a 'Code' dropdown. The main area displays a code cell with the following Python 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]]
```

Task_8 - Jupyter Notebook

localhost:8888/notebooks/Task_8.ipynb

Task_8 Last Checkpoint: 4 minutes ago (autosaved)

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Trusted Python 3 (ipykernel)

```
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]]
```