

Question-1


```
import numpy as np  Untitled-1  Q1.py  X  [Play] [Dropdown] [Grid] [More]

Q1.py > ...
1  import numpy as np
2  Z = np.array([10,11,12,13,14])
3  nz = 5
4  Z0 = np.zeros(len(Z) + (len(Z)-1)*(nz))
5  Z0[::nz+1] = Z
6  print(Z0)

PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  Python [Plus] [Dropdown] [Grid] [Trash] [Up] [Close]

PS C:\Users\gotti\OneDrive\Documents\Task-8> & C:/ProgramData/Anaconda3/Scripts/conda.exe run -n base --no-capture-output --live-stream python c:/Users/gotti/OneDrive/Documents/Task-8/Q1.py
[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.]
PS C:\Users\gotti\OneDrive\Documents\Task-8>
```

Question-2

 Q2.py > ...

```
1 import numpy as np
2 p = np.random.randint(0,2,6)
3 print("First array:")
4 print(p)
5 q = np.random.randint(0,2,6)
6 print("Second array:")
7 print(q)
8 print("let's see if the both arrays are equal or not!")
9 array_equal = np.allclose(p, q)
10 print(array_equal)
11
12
```

PROBLEMS OUTPUT DEBUG CONSOLE **TERMINAL**

Python +

```
PS C:\Users\gotti\OneDrive\Documents\Task-8> & C:/ProgramData/Anaconda3/Scripts/conda.exe run -n base --no-capture-output --live-stream python c:/Users/gotti/OneDrive/Documents/Task-8/Q2.py
First array:
[1 1 0 0 1 0]
Second array:
[1 0 1 1 1 1]
let's see if the both arrays are equal or not!
False
PS C:\Users\gotti\OneDrive\Documents\Task-8>
```

Question-3

import numpy as np

Untitled-1

Q1.py

Q2.py

Q3.py

Q3.py

```
1 import numpy as np
2 print(0 * np.nan)
3 print(np.nan != np.nan)
4 print(np.inf > np.nan)
5 print(np.nan - np.nan)
6 print(0.3 == 3 * 0.1)
```

PROBLEMS

OUTPUT

DEBUG CONSOLE

TERMINAL

Python

```
PS C:\Users\gotti\OneDrive\Documents\Task-8> & C:/ProgramData/Anaconda3/Scripts/conda.exe run -n base --no-capture-output --live-stream python c:/Users/gotti/OneDrive/Documents/Task-8/Q2.py
First array:
[1 1 0 0 1 0]
Second array:
[1 0 1 1 1 1]
let's see if the both arrays are equal or not!
False
PS C:\Users\gotti\OneDrive\Documents\Task-8> & C:/ProgramData/Anaconda3/Scripts/conda.exe run -n base --no-capture-output --live-stream python c:/Users/gotti/OneDrive/Documents/Task-8/Q3.py
nan
True
False
nan
False
PS C:\Users\gotti\OneDrive\Documents\Task-8>
```

Question-4

Python as np

Untitled-1

Q1.py

Q2.py

Q3.py

Q4.py

Q5.py

Q5_2.py

Q5_3.py

Q5_4.py

▶ ▼ □ ...

Q4.py > ...

```
1
2 import pandas as pd
3 import numpy as np
4
5 ser = pd.Series(['amrita', 'school', 'of', 'engineering', 'chennai', 'campus'])
6 newSeries = ser.map(lambda x: x[0].upper() + x[1:-1] + x[-1])
7
8 print(ser)
9 print(newSeries)
10
11 a = np.array(newSeries)
12 print(*a, sep= ' ')
```

PROBLEMS

OUTPUT

DEBUG CONSOLE

TERMINAL

Python + ▼ □ ✕ ^

neDrive/Documents/Task-8/Q4.py

```
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
PS C:\Users\gotti\OneDrive\Documents\Task-8>
```

Question-5 (1)

The image shows a Jupyter Notebook interface with a dark theme. At the top, there is a tab bar with several tabs: 'import numpy as np Untitled-1', 'Q1.py', 'Q2.py', 'Q3.py', 'Q4.py', and 'Q5.py'. The 'Q5.py' tab is selected and highlighted. Below the tab bar, the main area displays a Python script with line numbers 1 through 10. The script imports numpy as np, creates two arrays A and B, prints them, adds them, and prints the result. The script is as follows:

```
1 import numpy as np
2
3 A = np.array([5, 3, 7])
4 B = np.array([6, 3, 5])
5
6 print ("1st array : ", A)
7 print ("2nd array : ", B)
8
9 out_arr = np.add(A, B)
10 print ("added array : ", out_arr)
```

Below the code editor, there is a terminal window with tabs for 'PROBLEMS', 'OUTPUT', 'DEBUG CONSOLE', and 'TERMINAL'. The 'TERMINAL' tab is selected. The terminal shows the command to run the script and its output:

```
PS C:\Users\gotti\OneDrive\Documents\Task-8> & C:/ProgramData/Anaconda3/Scripts/conda.exe run -n base --no-capture-output --live-stream python c:/Users/gotti/OneDrive/Documents/Task-8/Q3.py
nan
True
False
nan
False
PS C:\Users\gotti\OneDrive\Documents\Task-8> & C:/ProgramData/Anaconda3/Scripts/conda.exe run -n base --no-capture-output --live-stream python c:/Users/gotti/OneDrive/Documents/Task-8/Q5.py
1st array : [5 3 7]
2nd array : [6 3 5]
added array : [11 6 12]
PS C:\Users\gotti\OneDrive\Documents\Task-8>
```

Question-5 (2)

Q5_2.py > ...

```
1 import numpy as np
2 # here, we take two arrays
3 a1 = np.array([[1,5,3],[7,1,8]])
4 a2 = np.array([[3,4],[4,5],[7,3]])
5 a3 = np.dot(a1,a2)
6 print(a3)
7 # here, we get a 2*2 matrix , as we took 3*2 matrix in a1 and 2*3 matrix in a2 as a result we get the 2*2 matrix
```

PROBLEMS OUTPUT DEBUG CONSOLE **TERMINAL**

Python + - [] [] ^ x

True

False

nan

False

PS C:\Users\gotti\OneDrive\Documents\Task-8> & C:/ProgramData/Anaconda3/Scripts/conda.exe run -n base --no-capture-output --live-stream python c:/Users/gotti/OneDrive/Documents/Task-8/Q5.py

1st array : [5 3 7]

2nd array : [6 3 5]

added array : [11 6 12]

PS C:\Users\gotti\OneDrive\Documents\Task-8> & C:/ProgramData/Anaconda3/Scripts/conda.exe run -n base --no-capture-output --live-stream python c:/Users/gotti/OneDrive/Documents/Task-8/Q5_2.py

[[44 38]

[81 57]]

PS C:\Users\gotti\OneDrive\Documents\Task-8> []

Question-5 (3)

import numpy as np

Untitled-1

Q1.py

Q2.py

Q3.py

Q4.py

Q5.py

Q5_2.py

Q5_3.py

▶ ▼ □ ...

Q5_3.py > ...

```
1 import numpy as np
2 a = np.identity(4)
3 print("\n Matrix a : \n ", a)
```

PROBLEMS

OUTPUT

DEBUG CONSOLE

TERMINAL

Python + ▼ □ 🗑 ^ ×

neDrive/Documents/Task-8/Q5_3.py

Matrix a :
[[1. 0. 0. 0.]
[0. 1. 0. 0.]
[0. 0. 1. 0.]
[0. 0. 0. 1.]]

PS C:\Users\gotti\OneDrive\Documents\Task-8>

Question-5 (4)



The image shows a Python IDE interface with a file explorer at the top and a code editor below. The file explorer shows several files: 'as np Untitled-1', 'Q1.py', 'Q2.py', 'Q3.py', 'Q4.py', 'Q5.py', 'Q5_2.py', 'Q5_3.py', and 'Q5_4.py'. The 'Q5_4.py' file is selected and its contents are displayed in the code editor. The code in 'Q5_4.py' is as follows:

```
1
2 import numpy as np
3
4 # we create an array
5 A = np.array([100, 200, 300, 400, 500])
6
7 # here we print the array
8 print(A)
9 # here we print the type of the data
10 print(A.dtype)
11
12 # here, if we use 20.1 which mean in decimal we get the datatype in float
```

Below the code editor, there is a terminal window with the following output:

```
neDrive/Documents/Task-8/Q5_4.py
[100 200 300 400 500]
int32
PS C:\Users\gotti\OneDrive\Documents\Task-8>
```

The terminal window also shows the Python interpreter icon and some window management icons.