Task 8

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PROBLEM 1

```python
# Problem 1

import numpy as np

a = [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)
```

```
C:\Users\kaifa\PycharmProjects\Task8\venv\Scripts\python.exe C:/Users/kaifa/PycharmProjects/Task8/prob1.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.]

Process finished with exit code 0
```

PROBLEM 2

```python
# Problem 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)
```

Run: prob2

```
C:\Users\kaifa\PycharmProjects\Task8\venv\Scripts\python.exe C:/Users/kaifa/PycharmProjects/Task8/prob2.py
Enter the length of the arrays5
Enter first array elements
1
0
2
0
3
Enter second array elements
1
0
2
0
3
Array A == [1 0 2 0 3]
Array B == [1 0 2 0 3]
True

Process finished with exit code 0
```

```python
# Problem 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)
```

Run: prob2

```
C:\Users\kaifa\PycharmProjects\Task8\venv\Scripts\python.exe C:/Users/kaifa/PycharmProjects/Task8/prob2.py
Enter the length of the arrays5
Enter first array elements
1
1
2
3
4
Enter second array elements
1
2
3
4
5
Array A == [1 1 2 3 4]
Array B == [1 2 3 4 5]
False

Process finished with exit code 0
```

PROBLEM 2 (alternative)


```python
# 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))
```

```
C:\Users\kaifa\AppData\Local\Programs\Python\Python310\python.exe D:/Cognizance/Task8/prob2.py
Enter the length of the arrays5
Enter first array elements
1
2
3
4
5
Enter second array elements
1
2
3
4
5
Array A == [1 2 3 4 5]
Array B == [1 2 3 4 5]
True
Array A == [[3 6 9 6 6]]
Array B == [[3 8 4 4 2]]
False

Process finished with exit code 0
```

PROBLEM 3

Task8 > prob3.py

prob1.py   prob2.py   prob3.py   prob4.py   prob5.py

Project Files

C:\Users\kaifa\PycharmProjects\Task8
- .idea
- venv
- main.py
- prob1.py
- prob2.py
- prob3.py
- prob4.py
- prob5.py

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

Run: prob3

```
C:\Users\kaifa\PycharmProjects\Task8\venv\Scripts\python.exe C:/Users/kaifa/PycharmProjects/Task8/prob3.py
nan
True
False
nan
False

Process finished with exit code 0
```

Version Control   Run   TODO   Problems   Python Packages   Python Console   Terminal

Shared indexes are downloaded for Python packages in 3 sec, 352 ms (4.12 MB) (today 20:19)   9:16   CRLF   UTF-8   4 spaces   Python 3.10 (Task8)

PROBLEM 4

Task8 > prob4.py

prob1.py   prob2.py   prob3.py   prob4.py   prob5.py

```python
# Problem 4

import pandas as pd
import numpy as np

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

print(series)
print(newSeries)

a = np.array(newSeries)
print(*a, sep=' ')
```

Run: prob4

```
C:\Users\kaifa\PycharmProjects\Task8\venv\Scripts\python.exe C:/Users/kaifa/PycharmProjects/Task8/prob4.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

Process finished with exit code 0
```

Version Control   Run   TODO   Problems   Python Packages   Python Console   Terminal

Shared indexes are downloaded for Python packages in 3 sec, 352 ms (4.12 MB) (today 20:19)   CRLF UTF-8 4 spaces Python 3.10 (Task8)

PROBLEM 5

```python
# 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)
```

```
C:\Users\kaifa\PycharmProjects\Task8\venv\Scripts\python.exe C:/Users/kaifa/PycharmProjects/Task8/prob5.py
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]]

Process finished with exit code 0
```