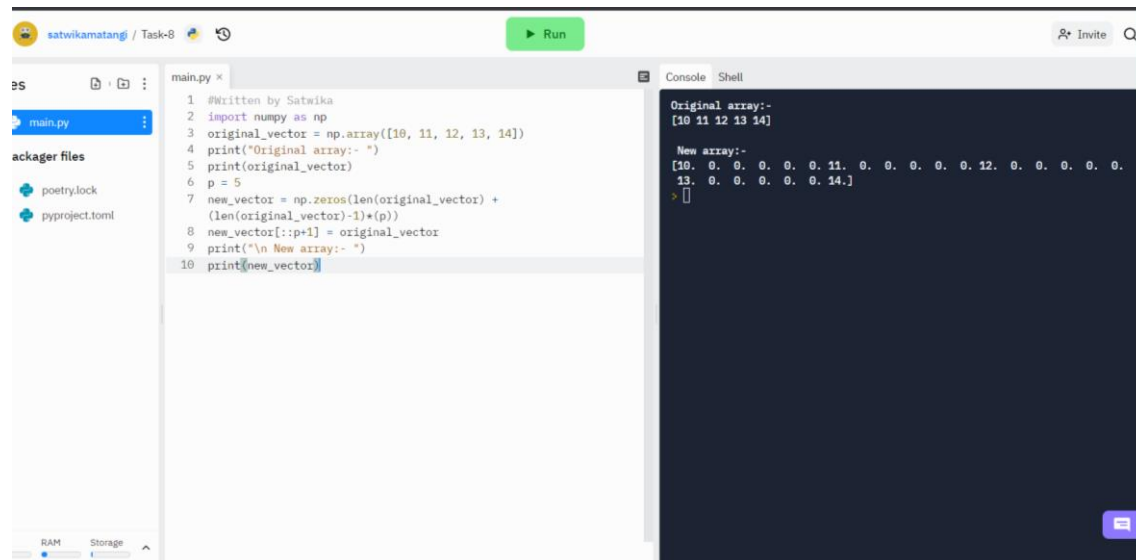


TASK-8

CODES AND OUTPUTS

Q.1:

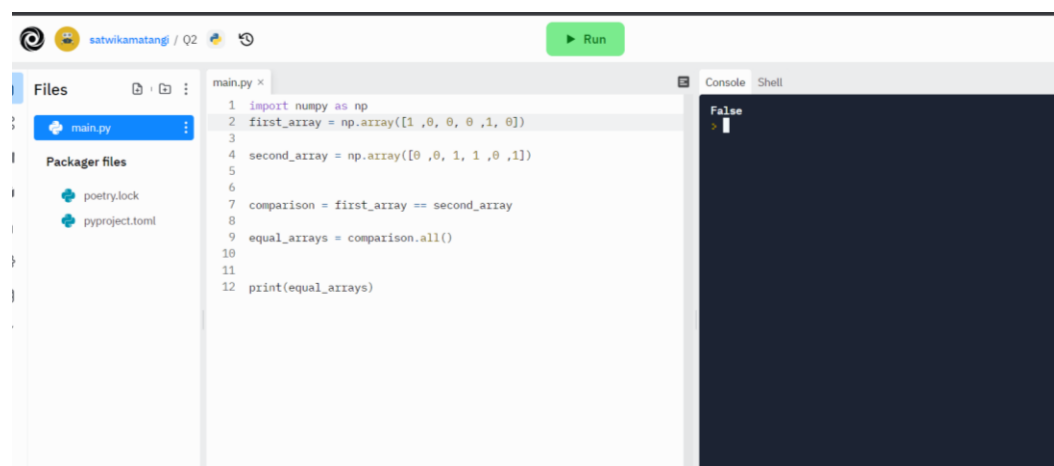


```
1 #Written by Satwika
2 import numpy as np
3 original_vector = np.array([10, 11, 12, 13, 14])
4 print("Original array:- ")
5 print(original_vector)
6 p = 5
7 new_vector = np.zeros(len(original_vector) +
8 (len(original_vector)-1)*(p))
9 new_vector[:p] = original_vector
10 print("\n New array:- ")
11 print(new_vector)
```

Original array:-
[10 11 12 13 14]

New array:-
[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.]

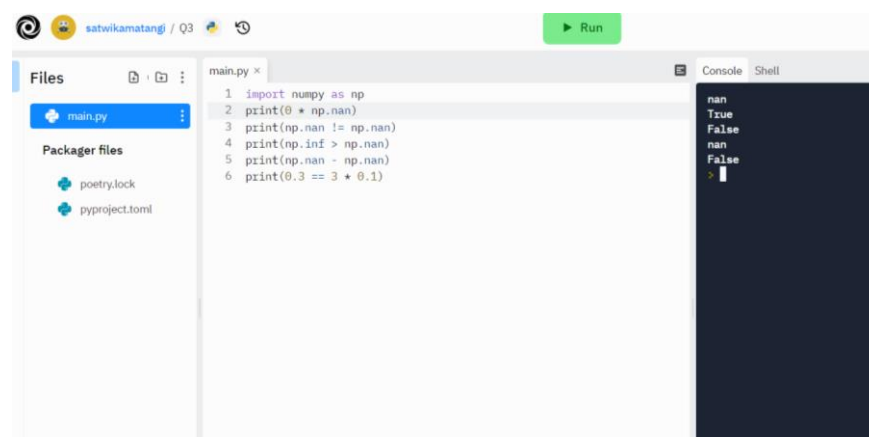
Q.2:



```
1 import numpy as np
2 first_array = np.array([1 ,0, 0, 0 ,1, 0])
3
4 second_array = np.array([0 ,0, 1, 1 ,0 ,1])
5
6
7 comparison = first_array == second_array
8
9 equal_arrays = comparison.all()
10
11
12 print(equal_arrays)
```

False

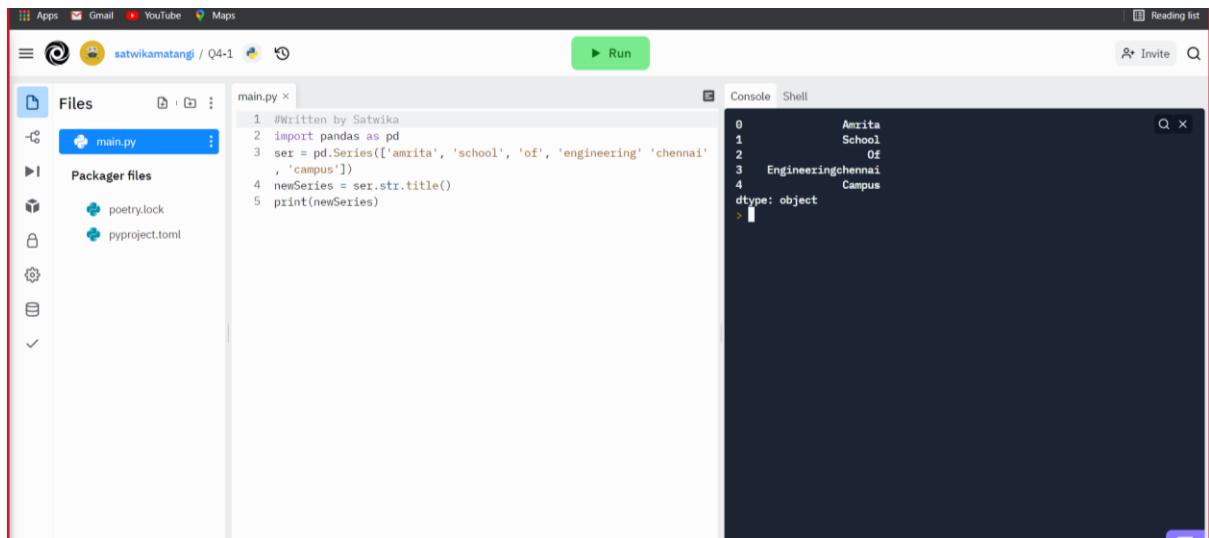
Q.3:



```
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)
```

nan
True
False
nan
False

Q.4:



The screenshot shows a Jupyter Notebook interface with a file explorer on the left, a code editor in the center, and a console on the right. The code in the editor is as follows:

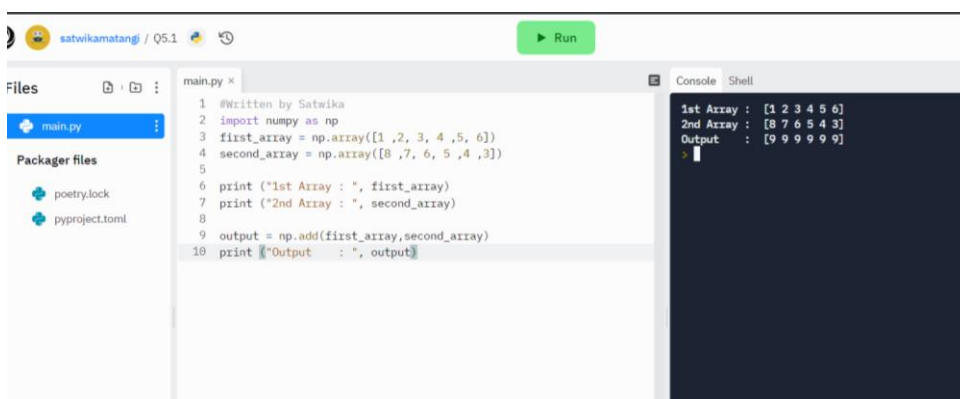
```
1 #Written by Satwika
2 import pandas as pd
3 ser = pd.Series(['amrita', 'school', 'of', 'engineering', 'chennai',
4                 , 'campus'])
5 newSeries = ser.str.title()
6 print(newSeries)
```

The console output shows the result of the code execution:

```
0      Amrita
1    School
2      Of
3 Engineeringchennai
4      Campus
dtype: object
```

Q.5:

5.1: ADDITION OF ARRAYS:



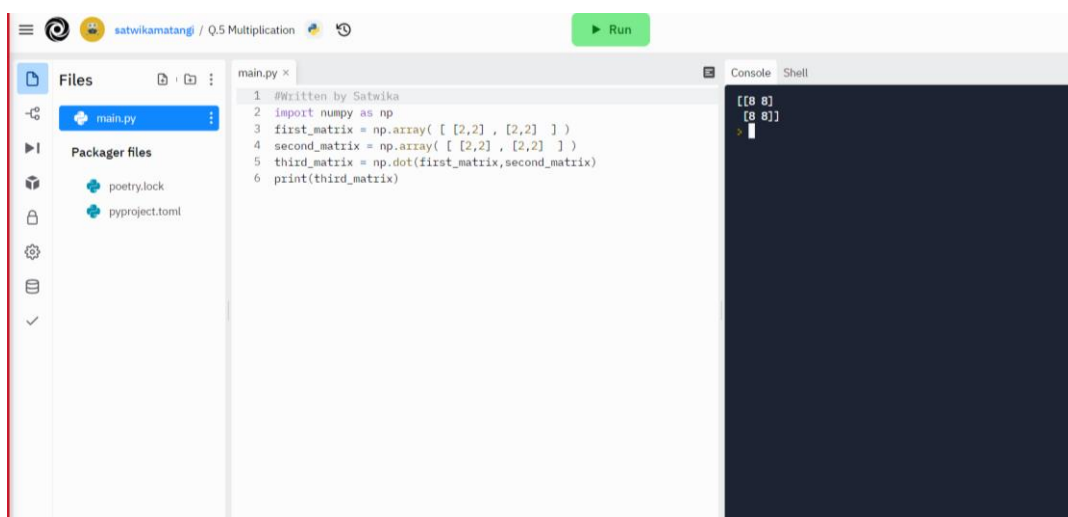
The screenshot shows a Jupyter Notebook interface with a file explorer on the left, a code editor in the center, and a console on the right. The code in the editor is as follows:

```
1 #Written by Satwika
2 import numpy as np
3 first_array = np.array([1,2,3,4,5,6])
4 second_array = np.array([8,7,6,5,4,3])
5
6 print ("1st Array : ", first_array)
7 print ("2nd Array : ", second_array)
8
9 output = np.add(first_array,second_array)
10 print ("Output : ", output)
```

The console output shows the result of the code execution:

```
1st Array : [1 2 3 4 5 6]
2nd Array : [8 7 6 5 4 3]
Output : [9 9 9 9 9 9]
```

5.2: Multiplication of matrices :



The screenshot shows a Jupyter Notebook interface with a file explorer on the left, a code editor in the center, and a console on the right. The code in the editor is as follows:

```
1 #Written by Satwika
2 import numpy as np
3 first_matrix = np.array( [ [2,2] , [2,2] ] )
4 second_matrix = np.array( [ [2,2] , [2,2] ] )
5 third_matrix = np.dot(first_matrix,second_matrix)
6 print(third_matrix)
```

The console output shows the result of the code execution:

```
[[8 8]
 [8 8]]
```