ARTIFICIAL INTELLIGENCE(AI)

BSCYS-3rd Semester

Fall 2025

Lab Report # 5

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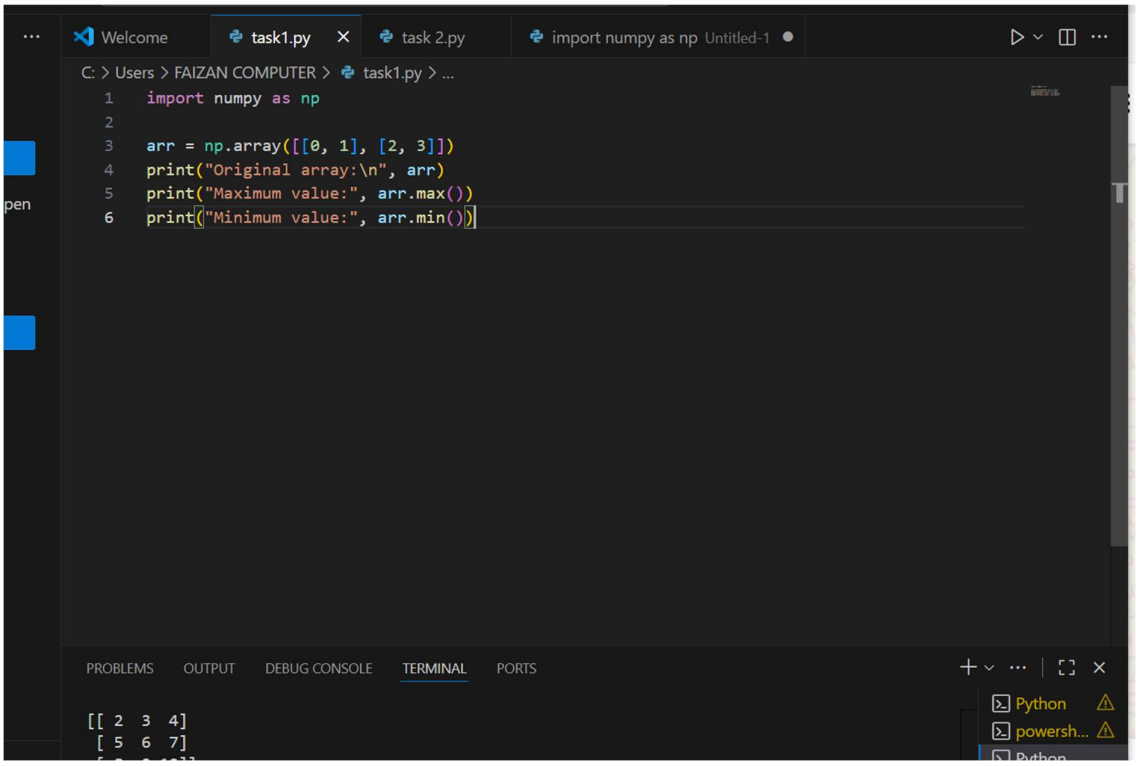
BS CYBER SECURITY PROGRAM

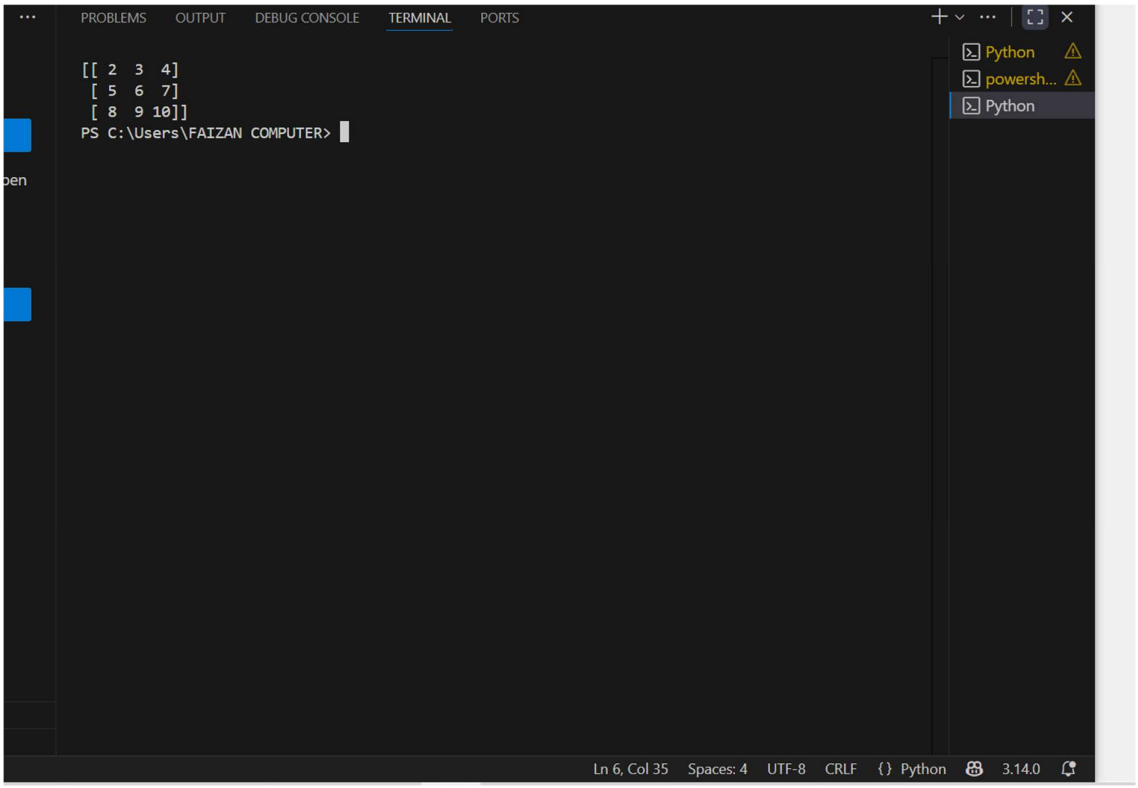
DEPARTMENT OF COMPUTER SCIENCE HITEC UNIVERSITY TAXILA

Task 1:

Code:

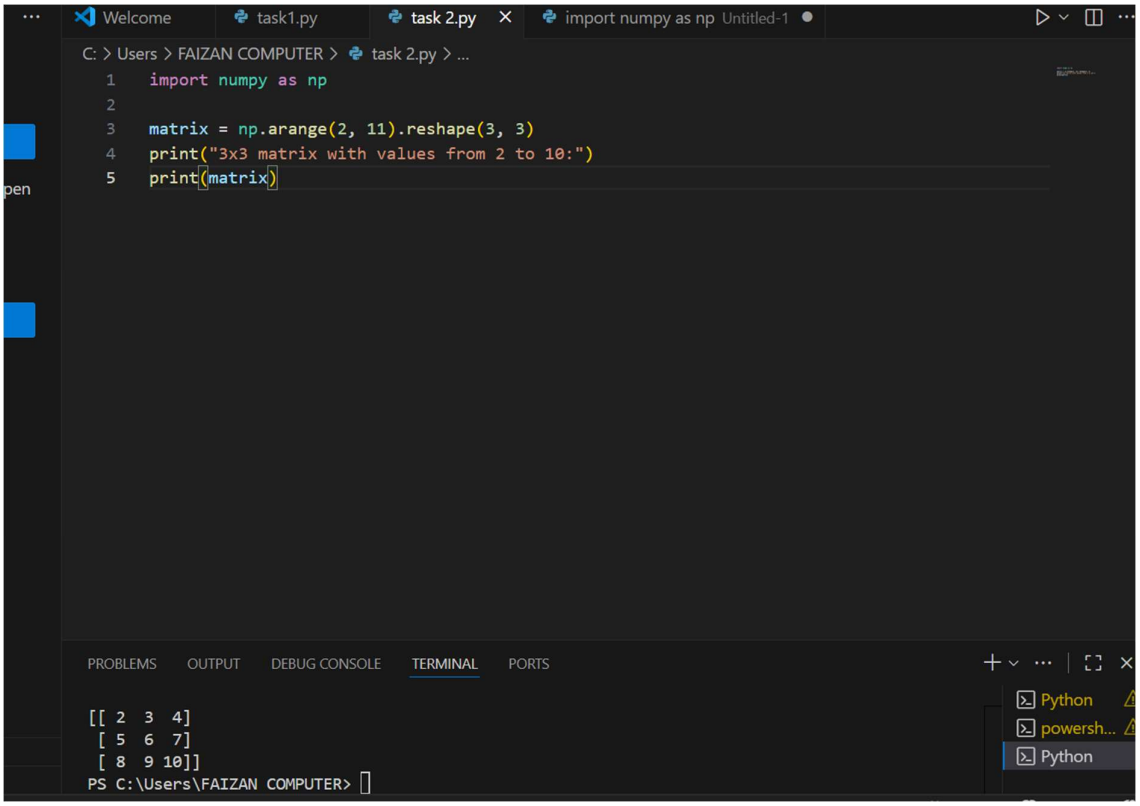

Welcome
task1.py
task 2.py
import numpy as np Untitled-1
C: > Users > FAIZAN COMPUTER > task1.py > ...
1 import numpy as np
2
3 arr = np.array([[0, 1], [2, 3]])
4 print("Original array:\n", arr)
5 print("Maximum value:", arr.max())
6 print("Minimum value:", arr.min())
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
[[2 3 4]
[5 6 7]
Python
powersh...

Output:

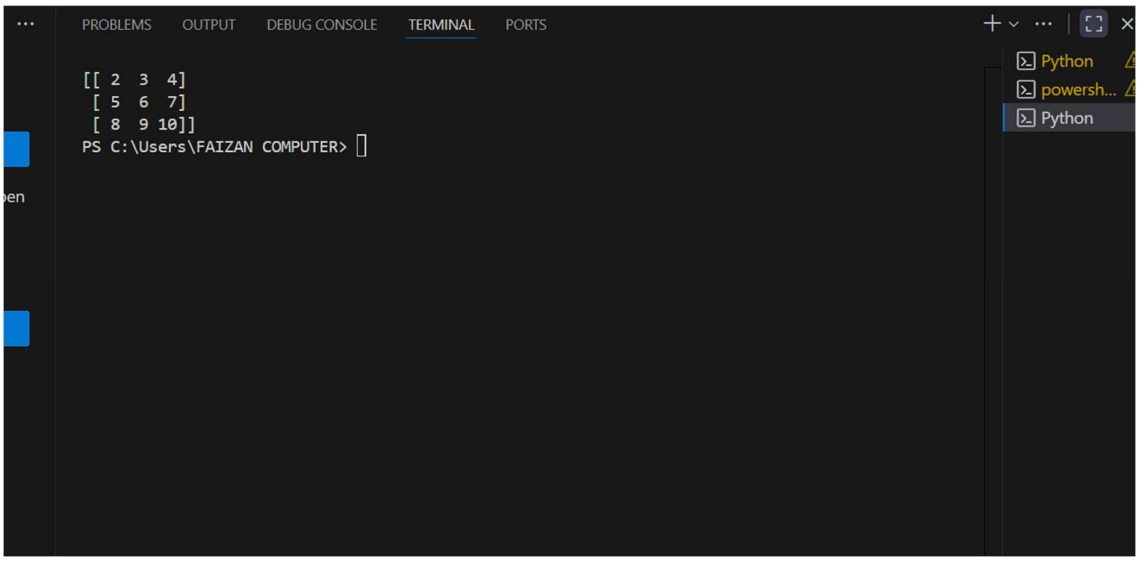


Task2:

Code:

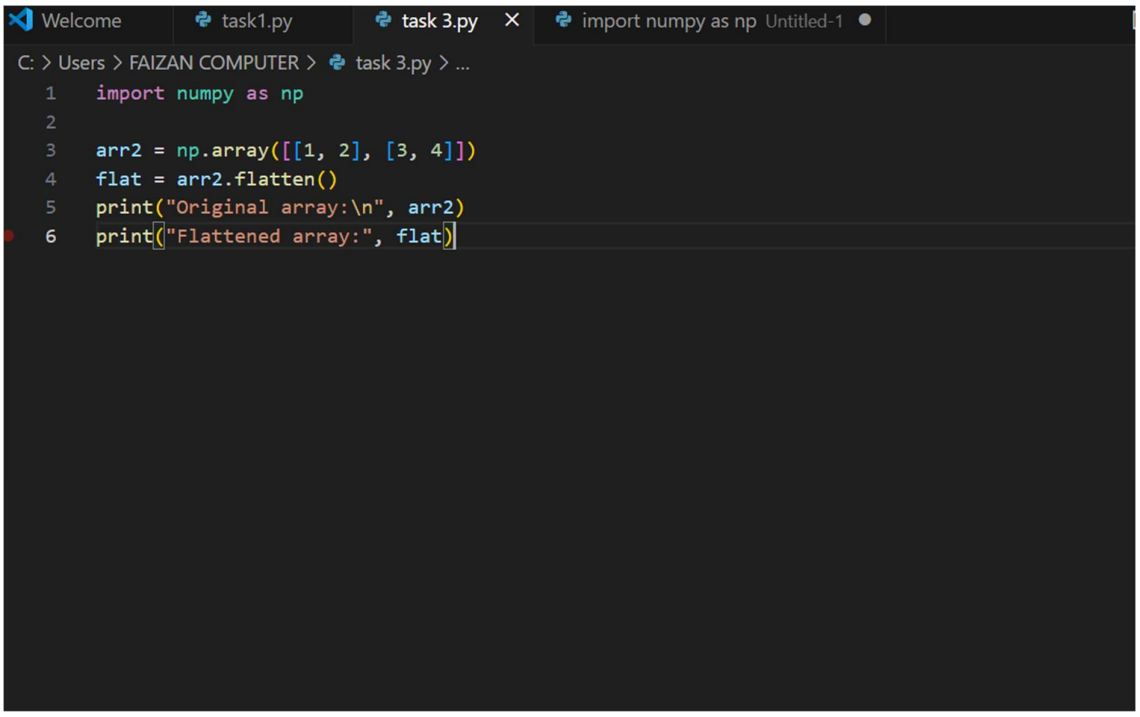

Welcome
task1.py
task 2.py
import numpy as np Untitled-1
C: > Users > FAIZAN COMPUTER > task 2.py > ...
1 import numpy as np
2
3 matrix = np.arange(2, 11).reshape(3, 3)
4 print("3x3 matrix with values from 2 to 10:")
5 print(matrix)
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
[[2 3 4]
[5 6 7]
[8 9 10]]
PS C:\Users\FAIZAN COMPUTER>
Python
powersh...
Python

Output:


PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
[[2 3 4]
[5 6 7]
[8 9 10]]
PS C:\Users\FAIZAN COMPUTER>
Python
powersh...
Python

Task 3:

Code:

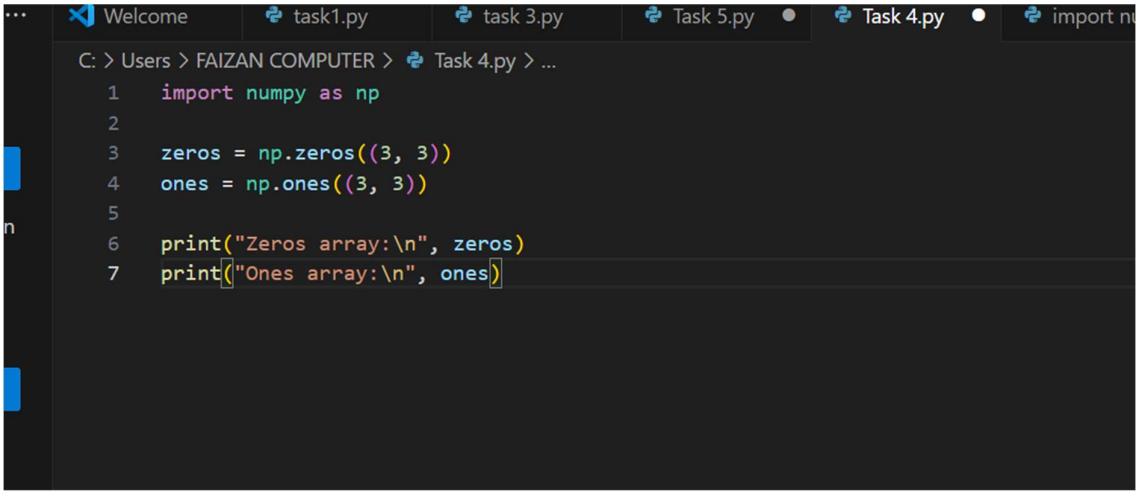


Output:

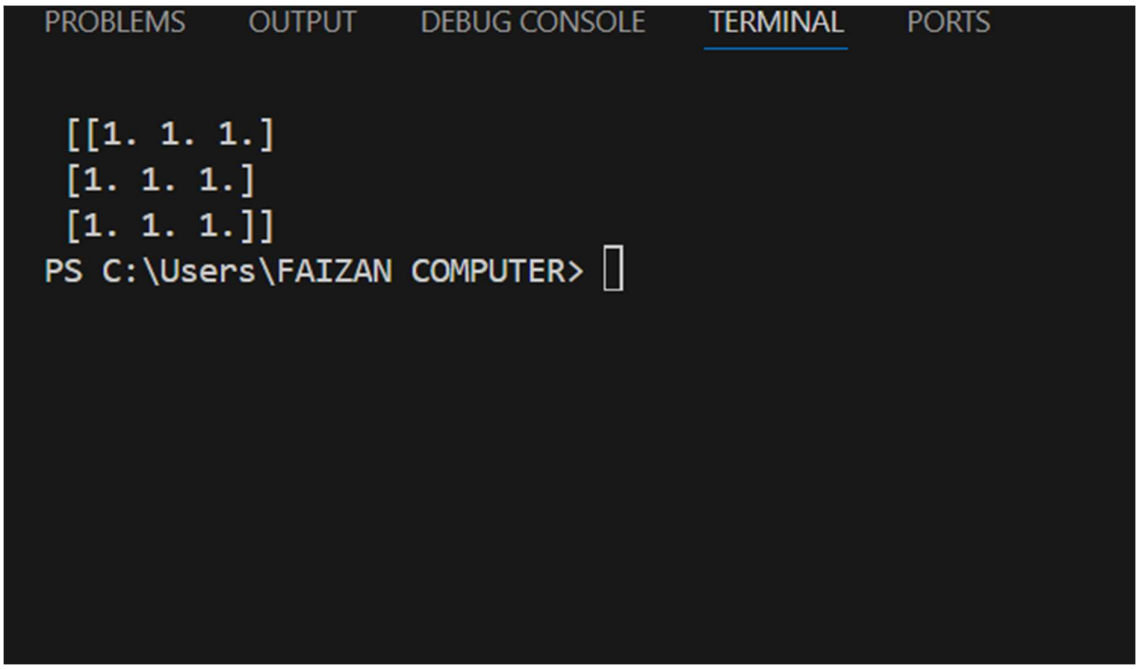

PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
[[1 2]
[3 4]]
Flattened array: [1 2 3 4]
PS C:\Users\FAIZAN COMPUTER>

Task 4:

Code:

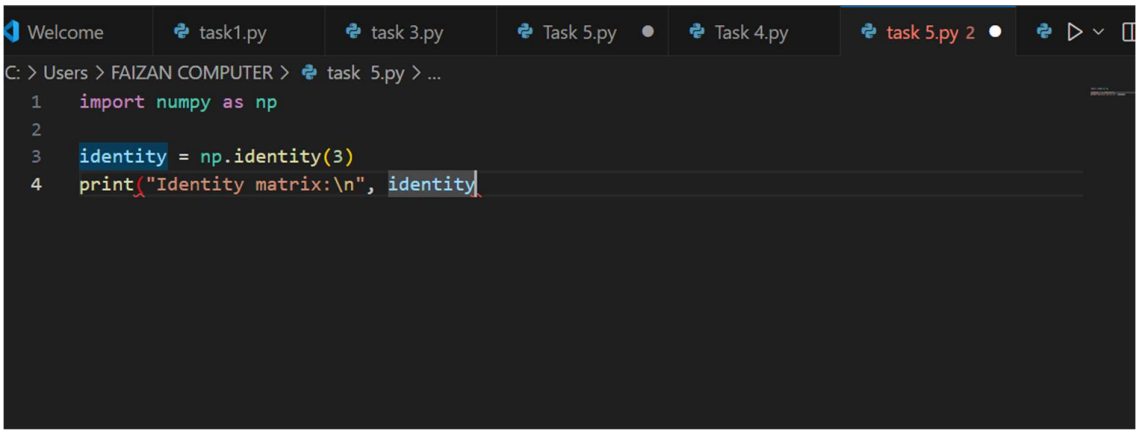

Welcome
task1.py
task 3.py
Task 5.py
Task 4.py
C: > Users > FAIZAN COMPUTER > Task 4.py > ...
1 import numpy as np
2
3 zeros = np.zeros((3, 3))
4 ones = np.ones((3, 3))
5
6 print("Zeros array:\n", zeros)
7 print("Ones array:\n", ones)

Output:



Task 5:

Code:



Output:

Conclusion:

In this lab, i learned to work with NumPy arrays and perform basic operations. In Task 1, i created a 2D array and found its maximum and minimum values. Task 2 tells that how to create a 3x3 matrix with consecutive values, while Task 3 showed how to flatten a 2D array into a 1D array. In Task 4, i created arrays of zeros and ones, which are useful for initialization in programming and in task 5 i learn how to create an identity matrix, which is important in linear algebra. Overall, these tasks helped me understand array creation, manipulation, and basic operations using Python and NumPy.