UNIT 2.2 GRADED ASSIGNMENT

BUILD A MATRIX

Group members

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Task:

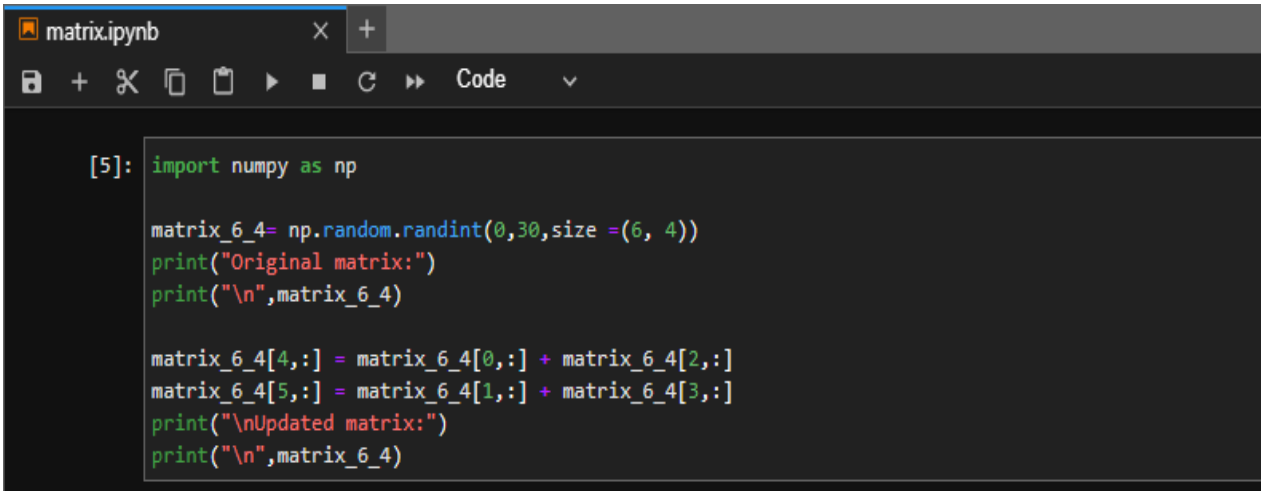
Build a 6x4 matrix of random numbers.
Using slicing, replace rows 5-6 of the matrix so that the 5th row becomes a sum of the 1st and the 3rd row, and the 6th row becomes a sum of the 2nd and the 4th one.

Solution:

I tried this assignment using two methods.

Method 1:

In this method after generating a 6x4 matrix of random number between 0 and 30 I replaced the 5th row with the sum of 1st and 3rd rows using slicing and 6th row of the matrix replaced with the sum of 2nd and 4th rows.



Method 2:

In this method after generating a 6x4 matrix of random number between 0 and 30 I initialized a variable updated_rows and then create a matrix with the sum of 1st and 3rd rows and then 2nd and 4th rows. After this **matrix[4:6, :]** selects a range of rows from index 4 up to index 6, and all columns using the **:** character and it replaced with the variable updated_rows.

```python
import numpy as np

matrix_6_4 = np.random.randint(0, 30, size=(6, 4))
print("Original matrix:")
print(matrix_6_4)

updated_rows = np.array([matrix_6_4[0,:] + matrix_6_4[2,:], matrix_6_4[1,:] + matrix_6_4[3,:]])

matrix_6_4[4:6, :] = updated_rows

print("\nUpdated matrix:")
print(matrix_6_4)
```

Output:

```
Original matrix:

[[ 1 28 14 25]
 [14 11 12 13]
 [10 16 20 15]
 [ 9 12  4  8]
 [ 3 20 18  7]
 [ 2 25 15 19]]

Updated matrix:

[[ 1 28 14 25]
 [14 11 12 13]
 [10 16 20 15]
 [ 9 12  4  8]
 [11 44 34 40]
 [23 23 16 21]]
```