Unit 2.2 Graded Assignment:

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Daily Assignment :

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 3rd row ,and the 6th row becomes a sum of the 2nd and the 4th one.

Answer:

Install and import the numpy library

```
!pip install numpy
```

```
Defaulting to user installation because normal site-packages is not writeable
Collecting numpy
  Using cached numpy-1.24.2-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (17.3 MB)
Installing collected packages: numpy
Successfully installed numpy-1.24.2
```

```
import numpy as np
```

we first create a 6x4 matrix with random values using the “np.random.randint()” function from Numpy.

```
random_array = np.random.randint(low=1, high=100, size=(6, 4))

print(random_array)
```

```
[[68 34 64 30]
 [88 79 31 38]
 [91 36 42 16]
 [35 71 89 67]
 [30 28 60 52]
 [23  8 47 17]]
```

Then, we use slicing to update rows 5-6 of the matrix with the sum of rows 1-3 and 2-4

```
random_array[0:3:2]
row5=sum(random_array[0:3:2])
random_array[1:5:2]
row6=sum(random_array[1:5:2])
random_array[4]=row5
random_array[5]=row6
print(random_array)
```

```
[[ 68  34  64  30]
 [ 88  79  31  38]
 [ 91  36  42  16]
 [ 35  71  89  67]
 [159  70 106  46]
 [123 150 120 105]]
```

random_array[0:3:2] use for slicing extract elements from the random_array, skips every 2nd element. So, it selects elements from indices 0 and 2, effectively retrieving the 1st and 3rd rows of the array.
sum(random_array[0:3:2]) use for calculates the sum of the elements in the 1st and 3rd rows of the random_array array using the sum() function.