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Assignment: Second Numpy

In [ ]:
```
#Exercise 1
import numpy as np
np.random.seed(21) # This guarantees the code will generate the same set of random numbers whenever executed
random_integers = np.random.randint(1,high=500000, size=(20, 5))
random_integers
```

Out[ ]:
```
array([[ 80842, 333008, 202553, 140037,  81969],
       [ 63857,  42105, 261540, 481981, 176739],
       [489984, 326386, 110795, 394863,  25024],
       [ 38317,  49982, 408830, 485118,  16119],
       [407675, 231729, 265455, 109413, 103399],
       [174677, 343356, 301717, 224120, 401101],
       [140473, 254634, 112262,  25063, 108262],
       [375059, 406983, 208947, 115641, 296685],
       [444899, 129585, 171318, 313094, 425041],
       [188411, 335140, 141681,  59641, 211420],
       [287650,   8973, 477425, 382803, 465168],
       [  3975,  32213, 160603, 275485, 388234],
       [246225,  56174, 244097,   9350, 496966],
       [225516, 273338,  73335, 283013, 212813],
       [ 38175, 282399, 318413, 337639, 379802],
       [198049, 101115, 419547, 260219, 325793],
       [148593, 425024, 348570, 117968, 107007],
       [ 52547, 180346, 178760, 305186, 262153],
       [ 11835, 449971, 494184, 472031, 353049],
       [476442,  35455, 191553, 384154,  29917]])
```

In [ ]:
```
#Exercise 2
average_value_of_second_columnn= np.mean(random_integers[:,1])
print(average_value_of_second_columnn)
```

```
214895.8
```

In [ ]:
```
#Exercise 3
average_val_3= np.mean(random_integers[:6,3:5])
print(average_val_3)
```

```
219990.25
```

In [ ]:
```
##Exercise 6

#Exercise 4
import numpy as np
first_matrix = np.array([[1, 2, 3], [4, 5, 6]])
print(first_matrix)
second_matrix = np.array([1, 2, 3])
print(second_matrix)
first_matrix + second_matrix

# Excerise 5

my_vector = np.array([1, 2, 3, 4, 5, 6])
selection = my_vector % 2 == 0
my_vector[selection]
```

Out[ ]:
```
array([2, 4, 6])
```

In [ ]:
```
#Excerise 7-10
my_array = np.array([[1, 2, 3], [4, 5, 6]])
my_slice = my_array[:,1:3]
print(my_slice)
my_array[:,:] = my_array*2
print(my_slice)
my_array = my_array*2
print(my_slice)
```

```
[[2 3]
 [5 6]]
[[ 4  6]
 [10 12]]
[[ 4  6]
 [10 12]]
```

In [ ]:
```
#Excercise 11
my_array = np.array([[1, 2, 3], [4, 5, 6]])
print(my_array)
my_slice = my_array[:, 1:3].copy()
print(my_slice)
my_array[:, :] = my_array * 2
my_slice
```

```
[[1 2 3]
 [4 5 6]]
```