

Week1

July 24, 2024

```
[4]: import numpy as np
a=np.array([0,1,2,3,4,5,6,7,8])
b=a.reshape(3,3)
print(b)
```

```
[[0 1 2]
 [3 4 5]
 [6 7 8]]
```

```
[7]: import numpy as np
a=np.array([0,1,2,3,4,5,6,7,8,9])
for i in range(len(a)):
    if a[i] % 2 != 0:
        a[i] = -1
print(a)
```

```
[ 0 -1  2 -1  4 -1  6 -1  8 -1]
```

```
[7]: import numpy as np

x = np.array([21, 64, 86, 22, 74, 55, 81, 79, 90, 89])
y = np.array([21, 7, 3, 45, 10, 29, 55, 4, 37, 18])

emplst1 = []
emplst2 = []

for i in range(len(x)):
    if x[i] > y[i]:
        emplst1.append(i)
    if x[i] == y[i]:
        emplst2.append(i)

a = np.array(emplst1)
b = np.array(emplst2)

print("Indices where x > y:", a)
print("Indices where x == y:", b)
```

Indices where x > y: [1 2 4 5 6 7 8 9]
Indices where x == y: [0]

```
[9]: import numpy as np
a= np.arange(100).reshape(5,-1)
b=a[:, :4]
print(b)
```

```
[[ 0  1  2  3]
 [20 21 22 23]
 [40 41 42 43]
 [60 61 62 63]
 [80 81 82 83]]
```

```
[10]: import numpy as np

a= np.random.randint(30, 41, size=10)

print(a)
```

```
[40 33 38 36 37 36 33 33 38 39]
```

```
[16]: import numpy as np

a= np.array([[1, 2, 3], [4, 5, 6], [7, 8, 10]])
b= np.array([[7, 8, 10], [4, 5, 6], [1, 2, 3]])

c= a+b
e=a-b

print("\nMatrix c:")
print(c)
print("\nMatrix e:")
print(e)

sum_of_a = np.sum(a)
sum_columns_b= np.sum(b, axis=0)
sum_rows_c = np.sum(c, axis=1)

print("\nSum of all elements in Matrix A:", sum_of_a)
print("Sum of each column in Matrix B:", sum_columns_b)
print("Sum of each row in Matrix C:", sum_rows_c)

d= np.dot(a,b)
```

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print("\nMatrix d:")
print(d)

E= np.sort(c, axis=None).reshape(c.shape)

print("\nResultant Matrix E:")
print(E)

ET= np.transpose(E)

print("\nTranspose of Matrix E:")
print(ET)

```

Matrix c:

```

[[ 8 10 13]
 [ 8 10 12]
 [ 8 10 13]]

```

Matrix e:

```

[[-6 -6 -7]
 [ 0  0  0]
 [ 6  6  7]]

```

Sum of all elements in Matrix A: 46

Sum of each column in Matrix B: [12 15 19]

Sum of each row in Matrix C: [31 30 31]

Matrix d:

```

[[ 18  24  31]
 [ 54  69  88]
 [ 91 116 148]]

```

Resultant Matrix E:

```

[[ 8  8  8]
 [10 10 10]
 [12 13 13]]

```

Transpose of Matrix E:

```

[[ 8 10 12]
 [ 8 10 13]
 [ 8 10 13]]

```

[]: