

Untitled53

September 17, 2019

```
[12]: import numpy as np
```

```
[35]: #Matrix types
```

```
[33]: #SQUARE MATRIX
```

```
A = np.random.randn(5,5)
```

```
print(A)
```

```
[[ 0.56950897 -0.48876855  0.9332924  -1.16566792  0.2144531 ]
 [-1.41550559 -0.5636      -0.53395691  1.27761478 -2.6873272 ]
 [-0.04315038 -0.22865222 -1.71248567  0.61299039 -1.48793318]
 [ 1.25460366  0.48444881 -0.69880209  1.11605965  0.35947075]
 [-0.71950494 -0.77173861 -0.23864073 -0.40566546 -0.06914409]]
```

```
[6]: # Identity Matrix
```

```
I = np.eye(3)
```

```
print(I)
```

```
[[1.  0.  0.]
 [0.  1.  0.]
 [0.  0.  1.]]
```

```
[15]: #Zeroes Matrix
```

```
Z = np.zeros((4,4))
```

```
print(Z)
```

```
[[0.  0.  0.  0.]
 [0.  0.  0.  0.]
 [0.  0.  0.  0.]
 [0.  0.  0.  0.]]
```

[20]: *#Diagonal Matrix*

```
D = np.diag([4,4,3,3,4,4])  
print(D)
```

```
[[4 0 0 0 0 0]  
 [0 4 0 0 0 0]  
 [0 0 3 0 0 0]  
 [0 0 0 3 0 0]  
 [0 0 0 0 4 0]  
 [0 0 0 0 0 4]]
```

[25]: *# Triangular Matrix*

```
B = np.random.randn(5,5)  
U = np.triu(B)  
L = np.tril(B)  
print(U)
```

```
[[ 0.24296899  0.24030161 -0.06822885 -1.01902921  0.15587428]  
 [ 0.          -0.30569448  0.51008842 -0.29410246 -1.6904844 ]  
 [ 0.           0.          -0.16692523 -1.93536177 -1.23836216]  
 [ 0.           0.           0.          -0.91421328  0.88350443]  
 [ 0.           0.           0.           0.          -0.02540638]]
```

[27]: print(L)

```
[[ 0.24296899  0.           0.           0.           0.           ]  
 [-0.61003308 -0.30569448  0.           0.           0.           ]  
 [ 0.5459173  -0.65755142 -0.16692523  0.           0.           ]  
 [ 1.19710491 -1.37858599 -0.80357475 -0.91421328  0.           ]  
 [ 0.69525354  0.40823088  1.04600026  0.49998221 -0.02540638]]
```

[]: