ELEMENT COMPARISION

```
import numpy as np
```

```
a=np.array([1,2,3,4])
b=np.array([6,2,9,4])
print(a==b)
```

```
[False  True False  True]
```

```
print(a>b)
```

```
[False False False False]
```

```
print(a<b)
```

```
[ True False  True False]
```

+ Code + Text

ARRAY WISE COMPARISION

```
print(np.array_equal(a,b))
```

```
False
```

```
c=np.array([1,2,5,4])
print(np.array_equal(a,c))
```

```
False
```

LOGICAL OPERATIONS

```
a=np.array([1,0,0,1],dtype='bool')
b=np.array([0,1,0,1],dtype='bool')
print(np.logical_or(a,b))
```

```
[ True  True False  True]
```

```
print(np.logical_and(a,b))
```

```
[False False False  True]
```

```
print(np.logical_not(a))
```

```
[False  True  True False]
```

TRANSCENDENTAL FUNCTIONS

```
a=np.arange(5)+1
print(np.sin(a))
```

```
[ 0.84147098  0.90929743  0.14112001 -0.7568025  -0.95892427]
```

```
print(np.log(a))
```

```
[0.         0.69314718 1.09861229 1.38629436 1.60943791]
```

```
print(np.exp(a))
```

```
[  2.71828183   7.3890561   20.08553692  54.59815003 148.4131591 ]
```

SHAPE MISMATCH

BASIC REDUCTIONS

```
x=np.array([1,2,3,4])
print(np.sum(x))
```

```
10
```

```
y=np.array([[1,2],[3,4]])
print(y)
print("*"*100)
print(y.T)
```

```
[[1 2]
 [3 4]]
****************************************************************************************************
[[1 3]
 [2 4]]
```

COLUMN WISE SUM

```
print(y.sum(axis=0))
```

```
[4 6]
```

ROW WISE SUM

```
print(y.sum(axis=1))
```

```
[3 7]
```

```
print(y.max())
```

```
4
```

```
print(y.argmin())
```

```
0
```

```
print(y.argmax())
```

```
3
```

LOGICAL REDUCTIONS

```
print(np.all([True,False,False]))
```

```
False
```

```
print(np.any([True,False,False]))
```

```
True
```

```
a=np.zeros((50,50))
print(np.any(a!=0))
```

```
False
```

STATISTICS

```
x=np.arange(1,10)
print(np.mean(x))
```

```
5.0
```

```
print(np.median(x))
```

```
5.0
```

```
y=np.array([[1,2,3],[4,5,6]])
print(np.mean(y,axis=0))
print(np.mean(y,axis=1))
```

```
[2.5 3.5 4.5]
[2. 5.]
```

```
print(np.std(x))
```

```
2.581988897471611
```

```
a=np.array([1,2,3,4,5])
a
```

```
array([1, 2, 3, 4, 5])
```