

1].NUMPY.WHERE FUNCTIONS

```
In [1]: import numpy as np
```

executed in 169ms, finished 11:32:13 2021-10-28

EXAMPLE 1

```
In [2]: random_num=np.array([23,45,67,65,22,44,556,876])
```

executed in 13ms, finished 11:32:13 2021-10-28

```
In [3]: np.where(random_num < 70,random_num,random_num*2)
```

executed in 29ms, finished 11:32:13 2021-10-28

```
Out[3]: array([ 23,  45,  67,  65,  22,  44, 1112, 1752])
```

EXAMPLE 2

```
In [4]: random_num_2 = np.array([24,46,67,34,56,234,56,789,123])
```

executed in 13ms, finished 11:32:13 2021-10-28

```
In [5]: np.where(random_num_2 % 2 ==1 ,False,True)
```

executed in 13ms, finished 11:32:13 2021-10-28

```
Out[5]: array([ True,  True, False,  True,  True,  True,  True, False, False])
```

2] to_numeric

```
In [12]: import pandas as pd
```

executed in 1.01s, finished 11:36:14 2021-10-28

```
In [21]: prime_numbers=['2','3','5','7','11','13']
```

executed in 13ms, finished 11:38:00 2021-10-28

```
In [22]: prime_numbers=pd.to_numeric(prime_numbers)
```

executed in 19ms, finished 11:38:25 2021-10-28

```
In [23]: prime_numbers
```

executed in 18ms, finished 11:38:29 2021-10-28

```
Out[23]: array([ 2,  3,  5,  7, 11, 13], dtype=int64)
```

3] Aggregate function



```
In [25]: euro_data=pd.read_csv('Euro_2012_stats_TEAM-Copy1.csv')
euro_data
```

executed in 40ms, finished 11:43:30 2021-10-28

Out[25]:

	Total shots (inc. Blocked)	Hit Woodwork	Penalty goals	Penalties not scored	...	Saves made	Saves- to- shots ratio	Fouls Won	Fouls Conceded
0%	32	0	0	0	...	13	81.3%	41	62
9%	39	0	0	0	...	9	60.1%	53	73
0%	27	1	0	0	...	10	66.7%	25	38
2%	40	0	0	0	...	22	88.1%	43	45
5%	65	1	0	0	...	6	54.6%	36	51
6%	80	2	1	0	...	10	62.6%	63	49
2%	32	1	1	1	...	13	65.1%	67	48
5%	110	2	0	0	...	20	74.1%	101	89
1%	60	2	0	0	...	12	70.6%	35	30
2%	48	0	0	0	...	6	66.7%	48	56
3%	82	6	0	0	...	10	71.5%	73	90
2%	28	0	0	0	...	17	65.4%	43	51
5%	59	2	0	0	...	10	77.0%	34	43
0%	100	0	1	0	...	15	93.8%	102	83
8%	39	3	0	0	...	8	61.6%	35	51
0%	38	0	0	0	...	13	76.5%	48	31

```
In [27]: euro_data_1= euro_data.aggregate({'Shots off target': ['sum'],
                                             'Red Cards' :['sum','max','min'],
                                             'Fouls Conceded': ['sum','max','min','mean']})
```

executed in 15ms, finished 11:48:55 2021-10-28

In [28]: euro_data_1

executed in 10ms, finished 11:49:03 2021-10-28

Out[28]:

	Shots off target	Red Cards	Fouls Conceded
sum	399.0	3.0	890.000
max	NaN	1.0	90.000
min	NaN	0.0	30.000
mean	NaN	NaN	55.625

4] QUERY Function

```
In [34]: query_1= pd.DataFrame({'A': range(1, 6),
                                'B': range(10, 0, -2),
                                'C C': range(10, 5, -1)})

query_1
```

executed in 23ms, finished 11:59:53 2021-10-28

Out[34]:

	A	B	C C
0	1	10	10
1	2	8	9
2	3	6	8
3	4	4	7
4	5	2	6

In [35]: query_1.query('A > B')

executed in 17ms, finished 12:00:02 2021-10-28

Out[35]:

	A	B	C C
4	5	2	6

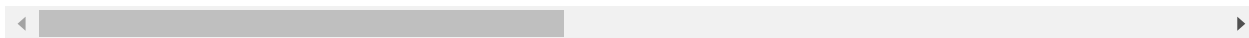
In [29]: `query_data=pd.read_csv("Euro_2012_stats_TEAM-Copy1.csv")`
`query_data`

executed in 31ms, finished 11:53:22 2021-10-28

Out[29]:

	Team	Goals	Shots on target	Shots off target	Shooting Accuracy	% Goals- to- shots	Total shots (inc. Blocked)	Hit Woodwork	Penal goa
0	Croatia	4	13	12	51.9%	16.0%	32	0	
1	Czech Republic	4	13	18	41.9%	12.9%	39	0	
2	Denmark	4	10	10	50.0%	20.0%	27	1	
3	England	5	11	18	50.0%	17.2%	40	0	
4	France	3	22	24	37.9%	6.5%	65	1	
5	Germany	10	32	32	47.8%	15.6%	80	2	
6	Greece	5	8	18	30.7%	19.2%	32	1	
7	Italy	6	34	45	43.0%	7.5%	110	2	
8	Netherlands	2	12	36	25.0%	4.1%	60	2	
9	Poland	2	15	23	39.4%	5.2%	48	0	
10	Portugal	6	22	42	34.3%	9.3%	82	6	
11	Republic of Ireland	1	7	12	36.8%	5.2%	28	0	
12	Russia	5	9	31	22.5%	12.5%	59	2	
13	Spain	12	42	33	55.9%	16.0%	100	0	
14	Sweden	5	17	19	47.2%	13.8%	39	3	
15	Ukraine	2	7	26	21.2%	6.0%	38	0	

16 rows × 35 columns



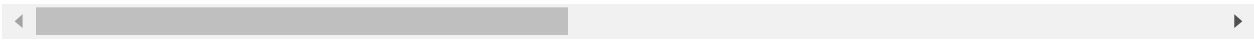
```
In [36]: query_data.query('Goals==True')
```

executed in 38ms, finished 12:06:59 2021-10-28

Out[36]:

	Team	Goals	Shots on target	Shots off target	Shooting Accuracy	% Goals- to- shots	Total shots (inc. Blocked)	Hit Woodwork	Penalty goals
11	Republic of Ireland	1	7	12	36.8%	5.2%	28	0	

1 rows × 35 columns



```
In [ ]:
```