In [7]: `import pandas as pd`

In [14]: `df = pd.read_csv("Marks.csv")`

In [16]: `df.head()`

Out[16]:

	Student	Final Marks	Grade
0	1	129	A
1	2	101	B
2	3	119	B
3	4	78	C
4	5	120	A

In [18]: `df.tail()`

Out[18]:

	Student	Final Marks	Grade
55	56	103	B
56	57	91	C
57	58	85	C
58	59	95	C
59	60	92	C

In [21]: `df`

Out[21]:

	Student	Final Marks	Grade
0	1	129	A
1	2	101	B
2	3	119	B
3	4	78	C
4	5	120	A
5	6	82	C
6	7	103	C
7	8	64	D
8	9	110	C
9	10	106	C
10	11	113	B
11	12	103	B
12	13	120	A
13	14	81	C
14	15	102	B
15	16	88	C
16	17	105	B
17	18	101	B
18	19	139	O
19	20	117	B
20	21	142	O
21	22	109	B
22	23	98	C
23	24	110	B
24	25	105	B
25	26	107	B
26	27	93	C
27	28	108	C
28	29	135	O
29	30	104	B
30	31	98	C
31	32	92	C
32	33	129	A

	Student	Final Marks	Grade
33	34	146	O
34	35	80	D
35	36	116	B
36	37	115	B
37	38	105	B
38	39	80	D
39	40	117	B
40	41	109	B
41	42	17	E
42	43	110	B
43	44	90	C
44	45	103	B
45	46	96	C
46	47	91	C
47	48	113	A
48	49	91	C
49	50	92	C
50	51	122	A
51	52	62	E
52	53	170	O
53	54	103	B
54	55	108	B
55	56	103	B
56	57	91	C
57	58	85	C
58	59	95	C
59	60	92	C

In [23]: `df.head(2)`

Out[23]:

	Student	Final Marks	Grade
0	1	129	A
1	2	101	B

In [25]: `df.columns`

Out[25]: `Index(['Student', 'Final Marks', 'Grade'], dtype='object')`

In [27]: `df[['Student','Final Marks']]`

Out[27]:

	Student	Final Marks
0	1	129
1	2	101
2	3	119
3	4	78
4	5	120
5	6	82
6	7	103
7	8	64
8	9	110
9	10	106
10	11	113
11	12	103
12	13	120
13	14	81
14	15	102
15	16	88
16	17	105
17	18	101
18	19	139
19	20	117
20	21	142
21	22	109
22	23	98
23	24	110
24	25	105
25	26	107
26	27	93
27	28	108
28	29	135
29	30	104
30	31	98
31	32	92
32	33	129

	Student	Final Marks
33	34	146
34	35	80
35	36	116
36	37	115
37	38	105
38	39	80
39	40	117
40	41	109
41	42	17
42	43	110
43	44	90
44	45	103
45	46	96
46	47	91
47	48	113
48	49	91
49	50	92
50	51	122
51	52	62
52	53	170
53	54	103
54	55	108
55	56	103
56	57	91
57	58	85
58	59	95
59	60	92

```
In [29]: df[2:5]
```

2/18/25, 9:57 PM

Untitled

Out[29]:

	Student	Final Marks	Grade
2	3	119	B
3	4	78	C
4	5	120	A

In [31]:
```
df[::2]
```

https://nb.anaconda.cloud/jupyterhub/user/688f30d4-c600-498c-a7cd-b2007da7cc42/lab/tree/Untitled.ipynb?

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Out[31]:

	Student	Final Marks	Grade
0	1	129	A
2	3	119	B
4	5	120	A
6	7	103	C
8	9	110	C
10	11	113	B
12	13	120	A
14	15	102	B
16	17	105	B
18	19	139	O
20	21	142	O
22	23	98	C
24	25	105	B
26	27	93	C
28	29	135	O
30	31	98	C
32	33	129	A
34	35	80	D
36	37	115	B
38	39	80	D
40	41	109	B
42	43	110	B
44	45	103	B
46	47	91	C
48	49	91	C
50	51	122	A
52	53	170	O
54	55	108	B
56	57	91	C
58	59	95	C

In [33]:
```
df[5:0:-1]
```

Out[33]:

	Student	Final Marks	Grade
5	6	82	C
4	5	120	A
3	4	78	C
2	3	119	B
1	2	101	B

In [37]: `df.columns`

Out[37]: `Index(['Student', 'Final Marks', 'Grade'], dtype='object')`

In [43]: `df.Student`

Out[43]:   0   1
             1   2
             2   3
             3   4
             4   5
             5   6
             6   7
             7   8
             8   9
             9   10
            10   11
            11   12
            12   13
            13   14
            14   15
            15   16
            16   17
            17   18
            18   19
            19   20
            20   21
            21   22
            22   23
            23   24
            24   25
            25   26
            26   27
            27   28
            28   29
            29   30
            30   31
            31   32
            32   33
            33   34
            34   35
            35   36
            36   37
            37   38
            38   39
            39   40
            40   41
            41   42
            42   43
            43   44
            44   45
            45   46
            46   47
            47   48
            48   49
            49   50
            50   51
            51   52
            52   53
            53   54
            54   55
            55   56
            56   57
            57   58
            58   59

```
59     60
Name: Student, dtype: int64
```

In [45]: `df['Final Marks'].max()`

Out[45]: 170

In [47]: `df['Final Marks'].min()`

Out[47]: 17

In [49]: `df['Grade'].max()`

Out[49]: 'O'

In [51]: `df['Grade'].min()`

Out[51]: 'A'

In [57]: `df['Final Marks'].std()`

Out[57]: 22.136269034768734

In [59]: `df.describe()`

Out[59]:

	Student	Final Marks
count	60.000000	60.000000
mean	30.500000	103.550000
std	17.464249	22.136269
min	1.000000	17.000000
25%	15.750000	92.000000
50%	30.500000	103.500000
75%	45.250000	113.500000
max	60.000000	170.000000

In [71]: `df1 = df.fillna(0)`

In [81]: `df1 = df.fillna({"Student":"is missing","Final Marks":"00"})`

In [73]: `df1`

Out[73]:

	Student	Final Marks	Grade
0	1	129	A
1	2	101	B
2	3	119	B
3	4	78	C
4	5	120	A
5	6	82	C
6	7	103	C
7	8	64	D
8	9	110	C
9	10	106	C
10	11	113	B
11	12	103	B
12	13	120	A
13	14	81	C
14	15	102	B
15	16	88	C
16	17	105	B
17	18	101	B
18	19	139	O
19	20	117	B
20	21	142	O
21	22	109	B
22	23	98	C
23	24	110	B
24	25	105	B
25	26	107	B
26	27	93	C
27	28	108	C
28	29	135	O
29	30	104	B
30	31	98	C
31	32	92	C
32	33	129	A

	Student	Final Marks	Grade
33	34	146	O
34	35	80	D
35	36	116	B
36	37	115	B
37	38	105	B
38	39	80	D
39	40	117	B
40	41	109	B
41	42	17	E
42	43	110	B
43	44	90	C
44	45	103	B
45	46	96	C
46	47	91	C
47	48	113	A
48	49	91	C
49	50	92	C
50	51	122	A
51	52	62	E
52	53	170	O
53	54	103	B
54	55	108	B
55	56	103	B
56	57	91	C
57	58	85	C
58	59	95	C
59	60	92	C

```python
In [84]: df2 = df1.dropna()
```

```python
In [86]: df2
```

Out[86]:

	Student	Final Marks	Grade
0	1	129	A
1	2	101	B
2	3	119	B
3	4	78	C
4	5	120	A
5	6	82	C
6	7	103	C
7	8	64	D
8	9	110	C
9	10	106	C
10	11	113	B
11	12	103	B
12	13	120	A
13	14	81	C
14	15	102	B
15	16	88	C
16	17	105	B
17	18	101	B
18	19	139	O
19	20	117	B
20	21	142	O
21	22	109	B
22	23	98	C
23	24	110	B
24	25	105	B
25	26	107	B
26	27	93	C
27	28	108	C
28	29	135	O
29	30	104	B
30	31	98	C
31	32	92	C
32	33	129	A

	Student	Final Marks	Grade
33	34	146	O
34	35	80	D
35	36	116	B
36	37	115	B
37	38	105	B
38	39	80	D
39	40	117	B
40	41	109	B
41	42	17	E
42	43	110	B
43	44	90	C
44	45	103	B
45	46	96	C
46	47	91	C
47	48	113	A
48	49	91	C
49	50	92	C
50	51	122	A
51	52	62	E
52	53	170	O
53	54	103	B
54	55	108	B
55	56	103	B
56	57	91	C
57	58	85	C
58	59	95	C
59	60	92	C

```python
In [90]: k = pd.read_csv("empdata.csv")
```

```python
In [92]: k.head()
```

Out[92]:

	Empid	Ename	Salary	DOJ
0	1001	Ganesh	1000.00	10-10-2000
1	1002	Anil	23000.50	3/20/2002
2	1003	NaN	18000.33	NaN
3	1004	Hema Chandra	16500.50	09-10-2000
4	1005	Laxmi Prasanna	NaN	10-08-2000

In [94]:
```
k.tail()
```

Out[94]:

	Empid	Ename	Salary	DOJ
2	1003	NaN	18000.33	NaN
3	1004	Hema Chandra	16500.50	09-10-2000
4	1005	Laxmi Prasanna	NaN	10-08-2000
5	1006	Anant	9999.99	09-09-1999
6	1007	XYZ	14000.00	3/20/2002

In [96]:
```
k
```

Out[96]:

	Empid	Ename	Salary	DOJ
0	1001	Ganesh	1000.00	10-10-2000
1	1002	Anil	23000.50	3/20/2002
2	1003	NaN	18000.33	NaN
3	1004	Hema Chandra	16500.50	09-10-2000
4	1005	Laxmi Prasanna	NaN	10-08-2000
5	1006	Anant	9999.99	09-09-1999
6	1007	XYZ	14000.00	3/20/2002

In [98]:
```
k.head(2)
```

Out[98]:

	Empid	Ename	Salary	DOJ
0	1001	Ganesh	1000.0	10-10-2000
1	1002	Anil	23000.5	3/20/2002

In [100...
```
k.columns
```

Out[100...
```
Index(['Empid', 'Ename', 'Salary', 'DOJ'], dtype='object')
```

In [106...
```
k[['Empid','Ename']]
```

Out[106…

	Empid	Ename
0	1001	Ganesh
1	1002	Anil
2	1003	NaN
3	1004	Hema Chandra
4	1005	Laxmi Prasanna
5	1006	Anant
6	1007	XYZ

In [108…

```
k[2:5]
```

Out[108…

	Empid	Ename	Salary	DOJ
2	1003	NaN	18000.33	NaN
3	1004	Hema Chandra	16500.50	09-10-2000
4	1005	Laxmi Prasanna	NaN	10-08-2000

In [110…

```
k[::2]
```

Out[110…

	Empid	Ename	Salary	DOJ
0	1001	Ganesh	1000.00	10-10-2000
2	1003	NaN	18000.33	NaN
4	1005	Laxmi Prasanna	NaN	10-08-2000
6	1007	XYZ	14000.00	3/20/2002

In [112…

```
k[5:0:-1]
```

Out[112…

	Empid	Ename	Salary	DOJ
5	1006	Anant	9999.99	09-09-1999
4	1005	Laxmi Prasanna	NaN	10-08-2000
3	1004	Hema Chandra	16500.50	09-10-2000
2	1003	NaN	18000.33	NaN
1	1002	Anil	23000.50	3/20/2002

In [114…

```
k.columns
```

Out[114…

```
Index(['Empid', 'Ename', 'Salary', 'DOJ'], dtype='object')
```

In [116…

```
k["Empid"]
```

```
Out[116...   0    1001
             1    1002
             2    1003
             3    1004
             4    1005
             5    1006
             6    1007
             Name: Empid, dtype: int64
```

In [120...
```python
k["Salary"].max()
```

Out[120...   23000.5

In [122...
```python
k["Salary"].min()
```

Out[122...   1000.0

In [124...
```python
k["Empid"].max()
```

Out[124...   1007

In [126...
```python
k['Salary'].std()
```

Out[126...   7588.015291479057

In [128...
```python
k.describe()
```

Out[128...

	Empid	Salary
count	7.000000	6.000000
mean	1004.000000	13750.220000
std	2.160247	7588.015291
min	1001.000000	1000.000000
25%	1002.500000	10999.992500
50%	1004.000000	15250.250000
75%	1005.500000	17625.372500
max	1007.000000	23000.500000

In [130...
```python
k[k.Salary>10000]
```

Out[130...

	Empid	Ename	Salary	DOJ
1	1002	Anil	23000.50	3/20/2002
2	1003	NaN	18000.33	NaN
3	1004	Hema Chandra	16500.50	09-10-2000
6	1007	XYZ	14000.00	3/20/2002

In [134...
```python
k1 = k.fillna(0)
```

In [136…   k1

Out[136…
	Empid	Ename	Salary	DOJ
0	1001	Ganesh	1000.00	10-10-2000
1	1002	Anil	23000.50	3/20/2002
2	1003	0	18000.33	0
3	1004	Hema Chandra	16500.50	09-10-2000
4	1005	Laxmi Prasanna	0.00	10-08-2000
5	1006	Anant	9999.99	09-09-1999
6	1007	XYZ	14000.00	3/20/2002

In [142…   `k1 = k.fillna({"Ename":"Name is missing","Salary":"00"})`

In [144…   k1

Out[144…
	Empid	Ename	Salary	DOJ
0	1001	Ganesh	1000.0	10-10-2000
1	1002	Anil	23000.5	3/20/2002
2	1003	Name is missing	18000.33	NaN
3	1004	Hema Chandra	16500.5	09-10-2000
4	1005	Laxmi Prasanna	00	10-08-2000
5	1006	Anant	9999.99	09-09-1999
6	1007	XYZ	14000.0	3/20/2002

In [148…   `k2 = k1.dropna()`

In [150…   k2

Out[150…
	Empid	Ename	Salary	DOJ
0	1001	Ganesh	1000.0	10-10-2000
1	1002	Anil	23000.5	3/20/2002
3	1004	Hema Chandra	16500.5	09-10-2000
4	1005	Laxmi Prasanna	00	10-08-2000
5	1006	Anant	9999.99	09-09-1999
6	1007	XYZ	14000.0	3/20/2002

In [ ]: