```python
In [1]: import pandas as pd
```

```python
In [6]: import numpy as np
        import matplotlib.pyplot as plt
```

```python
In [3]: ds=pd.read_csv("D:\president_heights.csv")
```

```python
In [4]: ds
```

	order	name	height(cm)
0	1	George Washington	189
1	2	John Adams	170
2	3	Thomas Jefferson	189
3	4	James Madison	163
4	5	James Monroe	183
5	6	John Quincy Adams	171
6	7	Andrew Jackson	185
7	8	Martin Van Buren	168
8	9	William Henry Harrison	173
9	10	John Tyler	183
10	11	James K. Polk	173
11	12	Zachary Taylor	173
12	13	Millard Fillmore	175
13	14	Franklin Pierce	178
14	15	James Buchanan	183
15	16	Abraham Lincoln	193
16	17	Andrew Johnson	178
17	18	Ulysses S. Grant	173
18	19	Rutherford B. Hayes	174
19	20	James A. Garfield	183
20	21	Chester A. Arthur	183
21	23	Benjamin Harrison	168
22	25	William McKinley	170
23	26	Theodore Roosevelt	178
24	27	William Howard Taft	182
25	28	Woodrow Wilson	180
26	29	Warren G. Harding	183
27	30	Calvin Coolidge	178
28	31	Herbert Hoover	182
29	32	Franklin D. Roosevelt	188
30	33	Harry S. Truman	175
31	34	Dwight D. Eisenhower	179
32	35	John F. Kennedy	183
33	36	Lyndon B. Johnson	193
34	37	Richard Nixon	182
35	38	Gerald Ford	183
36	39	Jimmy Carter	177
37	40	Ronald Reagan	185
38	41	George H. W. Bush	188

Out[4]:

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	order	name	height(cm)
39	42	Bill Clinton	188
40	43	George W. Bush	182
41	44	Barack Obama	185

In [9]: `ds.rename(columns={'height(cm)':'height'},inplace=True)` *#inplce is used to permanently*

In [10]: `ds`

```
Out[10]:
```

	order	name	height
0	1	George Washington	189
1	2	John Adams	170
2	3	Thomas Jefferson	189
3	4	James Madison	163
4	5	James Monroe	183
5	6	John Quincy Adams	171
6	7	Andrew Jackson	185
7	8	Martin Van Buren	168
8	9	William Henry Harrison	173
9	10	John Tyler	183
10	11	James K. Polk	173
11	12	Zachary Taylor	173
12	13	Millard Fillmore	175
13	14	Franklin Pierce	178
14	15	James Buchanan	183
15	16	Abraham Lincoln	193
16	17	Andrew Johnson	178
17	18	Ulysses S. Grant	173
18	19	Rutherford B. Hayes	174
19	20	James A. Garfield	183
20	21	Chester A. Arthur	183
21	23	Benjamin Harrison	168
22	25	William McKinley	170
23	26	Theodore Roosevelt	178
24	27	William Howard Taft	182
25	28	Woodrow Wilson	180
26	29	Warren G. Harding	183
27	30	Calvin Coolidge	178
28	31	Herbert Hoover	182
29	32	Franklin D. Roosevelt	188
30	33	Harry S. Truman	175
31	34	Dwight D. Eisenhower	179
32	35	John F. Kennedy	183
33	36	Lyndon B. Johnson	193
34	37	Richard Nixon	182
35	38	Gerald Ford	183
36	39	Jimmy Carter	177
37	40	Ronald Reagan	185
38	41	George H. W. Bush	188

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	order	name	height
39	42	Bill Clinton	188
40	43	George W. Bush	182
41	44	Barack Obama	185

In [11]:
```python
ds.insert(3,"quality","good")
```

In [12]:
```python
ds
```

```
Out[12]:
```

	order	name	height	quality
0	1	George Washington	189	good
1	2	John Adams	170	good
2	3	Thomas Jefferson	189	good
3	4	James Madison	163	good
4	5	James Monroe	183	good
5	6	John Quincy Adams	171	good
6	7	Andrew Jackson	185	good
7	8	Martin Van Buren	168	good
8	9	William Henry Harrison	173	good
9	10	John Tyler	183	good
10	11	James K. Polk	173	good
11	12	Zachary Taylor	173	good
12	13	Millard Fillmore	175	good
13	14	Franklin Pierce	178	good
14	15	James Buchanan	183	good
15	16	Abraham Lincoln	193	good
16	17	Andrew Johnson	178	good
17	18	Ulysses S. Grant	173	good
18	19	Rutherford B. Hayes	174	good
19	20	James A. Garfield	183	good
20	21	Chester A. Arthur	183	good
21	23	Benjamin Harrison	168	good
22	25	William McKinley	170	good
23	26	Theodore Roosevelt	178	good
24	27	William Howard Taft	182	good
25	28	Woodrow Wilson	180	good
26	29	Warren G. Harding	183	good
27	30	Calvin Coolidge	178	good
28	31	Herbert Hoover	182	good
29	32	Franklin D. Roosevelt	188	good
30	33	Harry S. Truman	175	good
31	34	Dwight D. Eisenhower	179	good
32	35	John F. Kennedy	183	good
33	36	Lyndon B. Johnson	193	good
34	37	Richard Nixon	182	good
35	38	Gerald Ford	183	good
36	39	Jimmy Carter	177	good
37	40	Ronald Reagan	185	good
38	41	George H. W. Bush	188	good

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	order	name	height	quality
39	42	Bill Clinton	188	good
40	43	George W. Bush	182	good
41	44	Barack Obama	185	good

```
In [13]: ds.drop(columns=['quality'])
```

```
Out[13]:
```

	order	name	height
0	1	George Washington	189
1	2	John Adams	170
2	3	Thomas Jefferson	189
3	4	James Madison	163
4	5	James Monroe	183
5	6	John Quincy Adams	171
6	7	Andrew Jackson	185
7	8	Martin Van Buren	168
8	9	William Henry Harrison	173
9	10	John Tyler	183
10	11	James K. Polk	173
11	12	Zachary Taylor	173
12	13	Millard Fillmore	175
13	14	Franklin Pierce	178
14	15	James Buchanan	183
15	16	Abraham Lincoln	193
16	17	Andrew Johnson	178
17	18	Ulysses S. Grant	173
18	19	Rutherford B. Hayes	174
19	20	James A. Garfield	183
20	21	Chester A. Arthur	183
21	23	Benjamin Harrison	168
22	25	William McKinley	170
23	26	Theodore Roosevelt	178
24	27	William Howard Taft	182
25	28	Woodrow Wilson	180
26	29	Warren G. Harding	183
27	30	Calvin Coolidge	178
28	31	Herbert Hoover	182
29	32	Franklin D. Roosevelt	188
30	33	Harry S. Truman	175
31	34	Dwight D. Eisenhower	179
32	35	John F. Kennedy	183
33	36	Lyndon B. Johnson	193
34	37	Richard Nixon	182
35	38	Gerald Ford	183
36	39	Jimmy Carter	177
37	40	Ronald Reagan	185
38	41	George H. W. Bush	188

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	order	name	height
39	42	Bill Clinton	188
40	43	George W. Bush	182
41	44	Barack Obama	185

In [14]: `ds #column is only temporarily dropped`

```
Out[14]:
```

	order	name	height	quality
0	1	George Washington	189	good
1	2	John Adams	170	good
2	3	Thomas Jefferson	189	good
3	4	James Madison	163	good
4	5	James Monroe	183	good
5	6	John Quincy Adams	171	good
6	7	Andrew Jackson	185	good
7	8	Martin Van Buren	168	good
8	9	William Henry Harrison	173	good
9	10	John Tyler	183	good
10	11	James K. Polk	173	good
11	12	Zachary Taylor	173	good
12	13	Millard Fillmore	175	good
13	14	Franklin Pierce	178	good
14	15	James Buchanan	183	good
15	16	Abraham Lincoln	193	good
16	17	Andrew Johnson	178	good
17	18	Ulysses S. Grant	173	good
18	19	Rutherford B. Hayes	174	good
19	20	James A. Garfield	183	good
20	21	Chester A. Arthur	183	good
21	23	Benjamin Harrison	168	good
22	25	William McKinley	170	good
23	26	Theodore Roosevelt	178	good
24	27	William Howard Taft	182	good
25	28	Woodrow Wilson	180	good
26	29	Warren G. Harding	183	good
27	30	Calvin Coolidge	178	good
28	31	Herbert Hoover	182	good
29	32	Franklin D. Roosevelt	188	good
30	33	Harry S. Truman	175	good
31	34	Dwight D. Eisenhower	179	good
32	35	John F. Kennedy	183	good
33	36	Lyndon B. Johnson	193	good
34	37	Richard Nixon	182	good
35	38	Gerald Ford	183	good
36	39	Jimmy Carter	177	good
37	40	Ronald Reagan	185	good
38	41	George H. W. Bush	188	good

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	order	name	height	quality
39	42	Bill Clinton	188	good
40	43	George W. Bush	182	good
41	44	Barack Obama	185	good

In [15]: `ds.drop(columns=['quality'],inplace=True) #permanently delete the column`

In [16]: `ds['height']<175`

Out[16]:
```
0      False
1       True
2      False
3       True
4      False
5       True
6      False
7       True
8       True
9      False
10      True
11      True
12     False
13     False
14     False
15     False
16     False
17      True
18      True
19     False
20     False
21      True
22      True
23     False
24     False
25     False
26     False
27     False
28     False
29     False
30     False
31     False
32     False
33     False
34     False
35     False
36     False
37     False
38     False
39     False
40     False
41     False
Name: height, dtype: bool
```

In [17]: `ds[ds['height']>=175]`

	order	name	height
0	1	George Washington	189
2	3	Thomas Jefferson	189
4	5	James Monroe	183
6	7	Andrew Jackson	185
9	10	John Tyler	183
12	13	Millard Fillmore	175
13	14	Franklin Pierce	178
14	15	James Buchanan	183
15	16	Abraham Lincoln	193
16	17	Andrew Johnson	178
19	20	James A. Garfield	183
20	21	Chester A. Arthur	183
23	26	Theodore Roosevelt	178
24	27	William Howard Taft	182
25	28	Woodrow Wilson	180
26	29	Warren G. Harding	183
27	30	Calvin Coolidge	178
28	31	Herbert Hoover	182
29	32	Franklin D. Roosevelt	188
30	33	Harry S. Truman	175
31	34	Dwight D. Eisenhower	179
32	35	John F. Kennedy	183
33	36	Lyndon B. Johnson	193
34	37	Richard Nixon	182
35	38	Gerald Ford	183
36	39	Jimmy Carter	177
37	40	Ronald Reagan	185
38	41	George H. W. Bush	188
39	42	Bill Clinton	188
40	43	George W. Bush	182
41	44	Barack Obama	185

```
In [23]: ds[((ds['height']>=175)&(ds['height']<180))]
```

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Out[23]:

	order	name	height
12	13	Millard Fillmore	175
13	14	Franklin Pierce	178
16	17	Andrew Johnson	178
23	26	Theodore Roosevelt	178
27	30	Calvin Coolidge	178
30	33	Harry S. Truman	175
31	34	Dwight D. Eisenhower	179
36	39	Jimmy Carter	177

In [24]:
```python
ds.isnull() #to check if any null is present
```

```
Out[24]:
```

	order	name	height
0	False	False	False
1	False	False	False
2	False	False	False
3	False	False	False
4	False	False	False
5	False	False	False
6	False	False	False
7	False	False	False
8	False	False	False
9	False	False	False
10	False	False	False
11	False	False	False
12	False	False	False
13	False	False	False
14	False	False	False
15	False	False	False
16	False	False	False
17	False	False	False
18	False	False	False
19	False	False	False
20	False	False	False
21	False	False	False
22	False	False	False
23	False	False	False
24	False	False	False
25	False	False	False
26	False	False	False
27	False	False	False
28	False	False	False
29	False	False	False
30	False	False	False
31	False	False	False
32	False	False	False
33	False	False	False
34	False	False	False
35	False	False	False
36	False	False	False
37	False	False	False
38	False	False	False

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	order	name	height
39	False	False	False
40	False	False	False
41	False	False	False

```
In [25]: sum(ds['height'])
```

```
Out[25]: 7549
```

```
In [26]: import seaborn as sns
```

```
In [29]: mark=[95,95,95,90,89,95]
         sub=['CSE','Physics','Maths','English','PET','Chemistry']
         plt.bar(sub,mark)
         plt.title("12th Scores")
         plt.xlabel("Subject")
         plt.ylabel("Marks")
         plt.ylim(50,100)  #changing y limits
         plt.show()
```



```
In [30]: sns.barplot(x='name',y='height',data=ds)
```
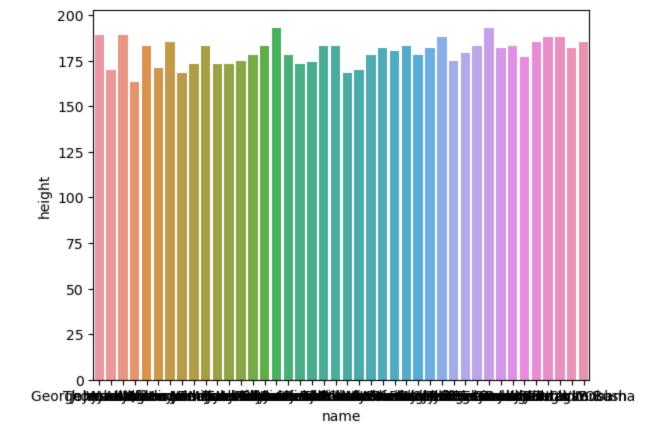
```
Out[30]: <AxesSubplot:xlabel='name', ylabel='height'>
```

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In [ ]: