```
In [1]: import pandas as pd
In [6]: import numpy as np
import matplotlib.pyplot as plt
In [3]: ds=pd.read_csv("D:\president_heights.csv")
In [4]: ds
```

Out[4]:	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
ling [MathJax]	38	41	George H. W. Bush	188

Loading [MathJax]

	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
```

 George Washington John Adams Thomas Jefferson James Madison James Monroe John Quincy Adams Andrew Jackson Martin Van Buren 	189 170 189 163 183 171 185 168 173 183 173
 2 3 Thomas Jefferson 3 4 James Madison 4 5 James Monroe 5 6 John Quincy Adams 6 7 Andrew Jackson 7 8 Martin Van Buren 	189 163 183 171 185 168 173
 3 4 James Madison 4 5 James Monroe 5 6 John Quincy Adams 6 7 Andrew Jackson 7 8 Martin Van Buren 	163 183 171 185 168 173 183
 4 5 James Monroe 5 6 John Quincy Adams 6 7 Andrew Jackson 7 8 Martin Van Buren 	183 171 185 168 173 183
 5 6 John Quincy Adams 6 7 Andrew Jackson 7 8 Martin Van Buren 	171 185 168 173 183
6 7 Andrew Jackson7 8 Martin Van Buren	185 168 173 183
7 8 Martin Van Buren	168 173 183
	173 183
	183
8 9 William Henry Harrison	
9 10 John Tyler	173
10 11 James K. Polk	
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 ading [MathJax]/extensions/Safe.js	188

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

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

In [12]: ds

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 6 7 Andrew Jackson 185 good 6 7 Andrew Jackson 185 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 14 15 James Buchanan 183 good 15 16 Abraham Lincoln 193 good 16 17 Andrew Johnson 178 good 17 18 <th>Out[12]:</th> <th></th> <th>order</th> <th>name</th> <th>height</th> <th>quality</th>	Out[12]:		order	name	height	quality
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 12 13 Millard Fillmore 175 good 13 14 Franklin Pierce 178 good 15 I6 Abraham Lincoln 193 good 16 17 Andrew Johnson 178 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 Z3 Benjamin Harrison 168 good 22 Z5 William McKinley 170 good 23 Z6 Theodore Roosevelt 178 good 25 Z8 Woodrow Wilson 180 good 26 Z9 Warren G. Harding 183 good 27 30 Calvin Coolidge 178 good 28 31 Herbert Hoover 182 good 30 33 Harry S. Truman 175 good 31 Arry S. Truman 175 good 32 Gerald Ford 183 good 33 Gerald Ford 183 good 34 Gerald Ford 183 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		0	1	George Washington	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 33 Gerald Ford 183 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		1	2	John Adams	170	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 12 13 Millard Fillmore 175 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 20 <th></th> <th>2</th> <th>3</th> <th>Thomas Jefferson</th> <th>189</th> <th>good</th>		2	3	Thomas Jefferson	189	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 12 13 Millard Fillmore 175 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 20 21 Chester A. Arthur 183 good <td< th=""><th></th><th>3</th><th>4</th><th>James Madison</th><th>163</th><th>good</th></td<>		3	4	James Madison	163	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 12 13 Millard Fillmore 175 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 20 21 Chester A. Arthur 183 good 21 23 Benjamin Harrison 168 good <		4	5	James Monroe	183	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 12 13 Millard Fillmore 175 good 14 15 James Buchanan 183 good 15 16 Abraham Lincoln 193 good 16 17 Andrew Johnson 178 good 18 19 Rutherford B. Hayes 174 good 18 19 Rutherford B. Hayes 174 good 20 21 Chester A. Arthur 183 good 21 23 Benjamin Harrison 168 good 22 25 William McKinley 170 good		5	6	John Quincy Adams	171	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 Howard Taft 182 good		6	7	Andrew Jackson	185	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 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		7	8	Martin Van Buren	168	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 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		8	9	William Henry Harrison	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 <		9	10	John Tyler	183	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 20 21 Chester 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		10	11	James K. Polk	173	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		11	12	Zachary Taylor	173	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		12	13	Millard Fillmore	175	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 30 33 Harry S. Truman 175 good 31 34 Dwight D. Eisenhower 179 good		13	14	Franklin Pierce	178	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 Hokkinley 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 32 35 John F. Kennedy 183 good		14	15	James Buchanan	183	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		15	16	Abraham Lincoln	193	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		16	17	Andrew Johnson	178	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		17	18	Ulysses S. Grant	173	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		18	19	Rutherford B. Hayes	174	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 3		19	20	James A. Garfield	183	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		20	21	Chester A. Arthur	183	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		21	23	Benjamin Harrison	168	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		22	25	William McKinley	170	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		23	26	Theodore Roosevelt	178	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		24	27	William Howard Taft	182	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		25	28	Woodrow Wilson	180	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		26	29	Warren G. Harding	183	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		27	30	Calvin Coolidge	178	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		28	31	Herbert Hoover	182	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		29	32	Franklin D. Roosevelt	188	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		30	33	Harry S. Truman	175	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		31	34	Dwight D. Eisenhower	179	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		32	35	John F. Kennedy	183	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		33	36	Lyndon B. Johnson	193	good
36 39 Jimmy Carter 177 good 37 40 Ronald Reagan 185 good 38 41 George H. W. Bush 188 good		34	37	Richard Nixon	182	good
37 40 Ronald Reagan 185 good 38 41 George H. W. Bush 188 good		35	38	Gerald Ford	183	good
38 41 George H. W. Bush 188 good		36	39	Jimmy Carter	177	good
		37	40	Ronald Reagan	185	good
Loading [MathJax]/extensions/Safe.js	Looding Marth 3				188	good

	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
ading [MathJax	J/exte	ensions/S	sate.js	

	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
Loading [MathJax	38	41	George H. W. Bush	188	good

```
40
                43
                        George W. Bush
                                         182
                                               good
          41
                44
                                         185
                                               good
                          Barack Obama
          ds.drop(columns=['quality'],inplace=True) #permanently delete the column
In [15]:
          ds['height']<175
In [16]:
                False
Out[16]:
                 True
          2
                False
          3
                 True
          4
                False
          5
                 True
          6
                False
          7
                 True
          8
                 True
          9
                False
          10
                 True
          11
                 True
                False
          12
          13
                False
          14
                False
          15
                False
                False
          16
          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
          ds[ds['height']>=175]
In [17]:
```

name height quality

188

good

Bill Clinton

order

42

39

	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

Out[17]:

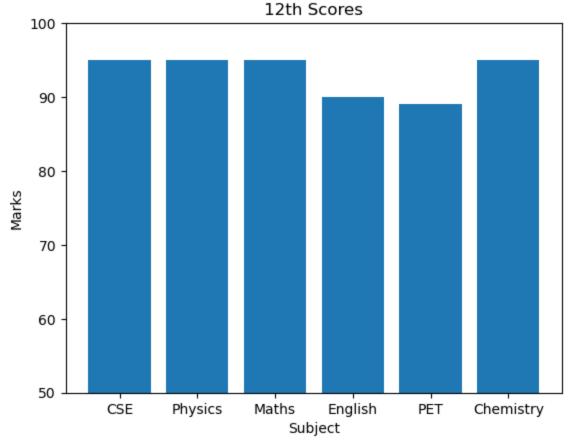
In [23]: ds[((ds['height']>=175)&(ds['height']<180))]</pre>

Out[23]:		order	name	height
	12	13	Millard Fillmore	175
	13	14	Franklin Pierce	178
	16 1723 26		Andrew Johnson	178
			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]: 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
Loading Moth Isra	38	False	False	False
Loading [MathJax]	rexie	11510115/5	aie.js	

```
False
                    False
                          False
          41 False
                   False
                          False
          sum(ds['height'])
In [25]:
          7549
Out[25]:
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'>
```

order

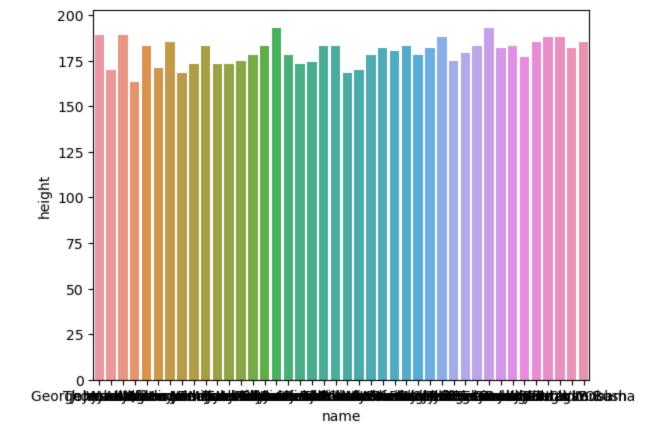
False

name

False

height

False



In []: