

```
In [11]: import pandas as pd
import numpy as np

In [12]: df=pd.read_csv("student_data.csv")
df

Out[12]:
```

	Roll	Name	Class	Marks	Age
0	101	Aarav Sharma	SE	78	19
1	102	Isha Verma	TE	85	20
2	103	Rohan Iyer	BE	67	21
3	104	Nidhi Patel	TE	90	19
4	105	Karan Mehta	TE	74	20
5	106	Pooja Deshmukh	BE	81	22
6	107	Aditya Joshi	SE	76	18
7	108	Shreha Kulkarni	TE	89	21
8	109	Vikram Nair	BE	72	22
9	110	Ananya Choudhary	SE	85	19
10	111	Rajat Bansal	TE	68	20
11	112	Priya Sinha	BE	79	22
12	113	Akash Kapoor	SE	83	19
13	114	Simran Mahotra	TE	91	21
14	115	Manish Reddy	BE	70	23
15	116	Tanya Ghosh	SE	87	18
16	117	Suresh Menon	TE	75	20
17	118	Kavita Pillai	BE	80	22
18	119	Devedra Chauhan	SE	65	19
19	120	Meenal Saxena	TE	92	21
20	121	Harsh Gupta	BE	78	22
21	122	Swati Srivastava	SE	85	18
22	123	Arun Thakur	TE	88	21
23	124	Shravan Shetty	BE	90	22
24	125	Rohit Yadav	SE	77	19
25	126	Deepika Banerjee	TE	82	20
26	127	Mohit Rao	BE	66	22
27	128	Sakshi Mehra	SE	84	19
28	129	Tarun Singh	TE	79	21
29	130	Nikhil Das	BE	88	23
30	131	Riya Paul	SE	92	18
31	132	Gautam Bhat	TE	73	20
32	133	Neha Khanna	BE	69	22
33	134	Varun Agrawal	SE	80	19
34	135	Aditi Nanda	TE	94	21
35	136	Yashwant Pillai	BE	75	23
36	137	Supriya Borkar	SE	89	18
37	138	Ramesh Prabhu	TE	76	20
38	139	Pallavi Mukherjee	BE	91	22
39	140	Vishal Khatri	SE	72	19
40	141	Shruti Rao	TE	83	21
41	142	Kunal Bhardwaj	BE	77	23
42	143	Meera Nair	SE	86	18
43	144	Sumit Saxena	TE	79	20
44	145	Aniket Joshi	BE	93	22
45	146	Priyanshi Tiwari	SE	70	19
46	147	Dhruv Mahotra	TE	82	21
47	148	Kaishma Shah	BE	74	22
48	149	Rahul Sethi	SE	90	19
49	150	Anushka Sharma	TE	88	20

```
In [17]: df["Marks"].mean()

Out[17]: 80.94

In [18]: df["Marks"].median()

Out[18]: 80.5

In [19]: df["Marks"].mode()

Out[11]:
```

0	79
1	85
2	90

Name: Marks, dtype: int64

```
In [13]: df["Age"].median()

Out[13]: 20.0

In [15]: df["Marks"].std()

Out[15]: 8.234843839516596

In [17]: df.min()

Out[17]:
```

Roll	Name	Class	Marks	Age
101	Aarav Sharma	TE	86	18
105	Karan Mehta	TE	65	18

dtype: object

```
In [19]: df.max()

Out[19]:
```

Roll	Name	Class	Marks	Age
150	Yashwant Pillai	BE	93	22
114	Simran Mahotra	TE	91	21

dtype: object

```
In [21]: np.std(df["Marks"])

Out[21]: 8.152079489388232

In [23]: gr1 = df.groupby("Class")

In [29]: tw = gr1.get_group("TE")
tw

Out[29]:
```

Roll	Name	Class	Marks	Age	
1	102	Isha Verma	TE	85	20
4	105	Karan Mehta	TE	74	20
7	108	Shreha Kulkarni	TE	89	21
10	111	Rajat Bansal	TE	68	20
13	114	Simran Mahotra	TE	91	21
16	117	Suresh Menon	TE	75	20
19	120	Meenal Saxena	TE	92	21
22	123	Arun Thakur	TE	88	21
25	126	Deepika Banerjee	TE	82	20
28	129	Tarun Singh	TE	79	21
31	132	Gautam Bhat	TE	73	20
34	135	Aditi Nanda	TE	94	21
37	138	Ramesh Prabhu	TE	76	20
40	141	Shruti Rao	TE	83	21
43	144	Sumit Saxena	TE	79	20
46	147	Dhruv Mahotra	TE	82	21
49	150	Anushka Sharma	TE	88	20

```
In [31]: tw.min()

Out[31]:
```

Roll	Name	Class	Marks	Age
102	Aditi Nanda	TE	94	21
105	Karan Mehta	TE	65	18
108	Shreha Kulkarni	TE	89	21

dtype: object

```
In [33]: tw.max()

Out[33]:
```

Roll	Name	Class	Marks	Age
150	Tarun Singh	TE	94	21
114	Simran Mahotra	TE	91	21

dtype: object

```
In [35]: gr2 = df.groupby("Age")

In [37]: gr2.groups

Out[37]:
```

	Roll	Name	Class	Marks	Age
14	10	Isha Verma	TE	85	20
15	21	Karan Mehta	TE	74	20
16	36	Shreha Kulkarni	TE	89	21
17	42	Rajat Bansal	TE	68	20
18	57	Simran Mahotra	TE	91	21
19	72	Suresh Menon	TE	75	20
20	87	Meenal Saxena	TE	92	21
21	102	Arun Thakur	TE	88	21
22	117	Deepika Banerjee	TE	82	20
23	129	Tarun Singh	TE	79	21
24	142	Gautam Bhat	TE	73	20
25	155	Aditi Nanda	TE	94	21
26	168	Ramesh Prabhu	TE	76	20
27	183	Shruti Rao	TE	83	21
28	198	Sumit Saxena	TE	79	20
29	213	Dhruv Mahotra	TE	82	21

```
In [39]: ymgr2 = gr2.get_group(21)
ymgr2

Out[39]:
```

Roll	Name	Class	Marks	Age	
2	103	Rohan Iyer	BE	67	21
7	108	Shreha Kulkarni	TE	89	21
13	114	Simran Mahotra	TE	91	21
19	120	Meenal Saxena	TE	92	21
22	123	Arun Thakur	TE	88	21
28	129	Tarun Singh	TE	79	21
34	135	Aditi Nanda	TE	94	21
40	141	Shruti Rao	TE	83	21
46	147	Dhruv Mahotra	TE	82	21

```
In [41]: import seaborn as sns

Matplotlib is building the font cache; this may take a moment.

In [43]: df=sns.load_dataset("iris")
df

Out[43]:
```

	sepal_length	sepal_width	petal_length	petal_width	species
0	5.1	3.5	1.4	0.2	setosa
1	4.9	3.0	1.4	0.2	setosa
2	4.7	3.2	1.3	0.2	setosa
3	4.6	3.1	1.5	0.2	setosa
4	5.0	3.6	1.4	0.2	setosa
...
145	6.7	3.0	5.2	2.3	virginica
146	6.3	2.5	5.0	1.9	virginica
147	6.5	3.0	5.2	2.0	virginica
148	6.2	3.4	5.4	2.3	virginica
149	5.9	3.0	5.1	1.8	virginica

150 rows x 5 columns

```
In [45]: gr1=df.groupby("species")

In [49]: se = gr1.get_group("setosa")
tw = gr1.get_group("versicolor")
vi = gr1.get_group("virginica")

In [51]: se

Out[51]:
```

	sepal_length	sepal_width	petal_length	petal_width	species
0	5.1	3.5	1.4	0.2	setosa
1	4.9	3.0	1.4	0.2	setosa
2	4.7	3.2	1.3	0.2	setosa
3	4.6	3.1	1.5	0.2	setosa
4	5.0	3.6	1.4	0.2	setosa
...
145	6.7	3.0	5.2	2.3	virginica
146	6.3	2.5	5.0	1.9	virginica
147	6.5	3.0	5.2	2.0	virginica
148	6.2	3.4	5.4	2.3	virginica
149	5.9	3.0	5.1	1.8	virginica

```
In [53]: gr2=groups

In [55]: se["sepal_length"].min()

Out[55]: 4.3

In [60]: ve

Out[60]:
```

	sepal_length	sepal_width	petal_length	petal_width	species
50	7.0	3.2	4.7	1.4	versicolor
51	6.4	3.2	4.5	1.5	versicolor
52	6.9	3.1	4.9	1.5	versicolor
53	5.5	2.3	4.0	1.3	versicolor
54	6.5	2.8	4.6	1.5	versicolor
55	5.7	2.8	4.5	1.3	versicolor
56	6.3	3.3	4.7	1.6	versicolor
57	4.9	2.4	3.3	1.0	versicolor
58	6.6	2.9	4.6	1.3	versicolor
59	5.2	2.7	3.9	1.4	versicolor
60	5.0	2.0	3.5	1.0	versicolor
61	5.9	3.0	4.2	1.5	versicolor
62	6.0	2.2	4.0	1.0	versicolor
63	6.1	2.9	4.7	1.4	versicolor
64	5.6	2.9	3.6	1.3	versicolor
65	6.7	3.1	4.4	1.4	versicolor
66	5.6	3.0	4.5	1.5	versicolor
67	5.8	2.7	4.1	1.0	versicolor
68	6.2	2.2	4.5	1.5	versicolor
69	5.6	2.5	3.9	1.1	versicolor
70	5.9	3.2	4.8	1.8	versicolor
71	6.1	2.8	4.0	1.3	versicolor
72	6.3	2.5	4.9	1.5	versicolor
73	6.1	2.8	4.7	1.2	versicolor
74	6.4	2.9	4.3	1.3	versicolor
75	6.6	3.0	4.4	1.4	versicolor
76	6.8	2.8	4.8	1.4	versicolor
77	6.7	3.0	5.0	1.7	versicolor
78	6.0	2.9	4.5	1.5	versicolor
79	5.7	2.6	3.5	1.0	versicolor
80	5.5	2.4	3.8	1.1	versicolor
81	5.5	2.4	3.7	1.0	versicolor
82	5.8	2.7	3.9	1.2	versicolor
83	6.0	2.7	5.1	1.6	versicolor
84	5.4	3.0	4.5	1.5	versicolor
85	6.0	3.4	4.5	1.6	versicolor
86	6.7	3.1	4.7	1.5	versicolor
87	6.3	2.3	4.4	1.3	versicolor
88	5.6	3.0	4.1	1.3	versicolor
89	5.5	2.5	4.0	1.3	versicolor
90	5.5	2.6	4.4	1.2	versicolor
91	6.1	3.0	4.6	1.4	versicolor
92	5.8	2.6	4.0	1.2	versicolor
93	5.0	2.3	3.3	1.0	versicolor
94	5.6	2.7	4.2	1.3	versicolor
95	5.7	3.0	4.2	1.2	versicolor
96	5.7	2.9	4.2	1.3	versicolor
97	6.2	2.9	4.3	1.3	versicolor
98	5.1	2.5	3.0	1.1	versicolor
99	5.7	2.8	4.1	1.3	versicolor

```
In [62]: ve.shape

Out[62]: (50, 5)

In [64]: ve.describe()

Out[64]:
```

	sepal_length	sepal_width	petal_length	petal_width
count	50.000000	50.000000	50.000000	50.000000
mean	5.936000	2.770000	4.260000	1.326000
std	0.616171	0.313798	0.469911	0.197753
min	4.900000	2.000000	3.000000	1.000000
25%	5.900000	2.500000	4.000000	1.200000
50%	5.900000	2.800000	4.350000	1.300000
75%	6.300000	3.000000	4.600000	1.500000
max	7.000000	3.400000	5.100000	1.800000

```
In [66]: ve["sepal_length"].min()

Out[66]: 4.9

In [68]: vi

Out[68]:
```

	sepal_length	sepal_width	petal_length	petal_width	species
100	6.3	3.3	6.0	2.5	virginica
101	5.8	2.7	5.1	1.9	virginica
102	7.1	3.0	5.9	2.1	virginica
103	6.3	2.9	5.8	1.8	virginica
104	6.5	3.0	5.8	2.2	virginica
105	7.6	3.0	6.6	2.1	virginica
106	4.9	2.5	4.5	1.7	virginica
107	7.3	2.9	6.3	1.8	virginica
108	6.7	2.5	5.8	1.6	virginica
109	7.2	3.6	6.1	2.5	virginica
110	6.5	3.2	5.1	2.0	virginica
111	6.4	2.7	5.3	1.9	virginica
112	6.8	3.0	5.5	2.1	virginica
113	5.7	2.5	5.0	2.0	virginica
114	5.8	2.8	5.1	2.4	virginica
115	6.4	3.2	5.3	2.3	virginica
116	6.5	3.0	5.5	1.8	virginica
117	7.7	3.8	6.7	2.2	virginica
118	7.7	2.6	6.9	2.3	virginica
119	6.0	2.2	5.0	1.5	virginica
120	6.9	3.2	5.7	2.3	virginica
121	5.6	2.8	4.9	2.0	virginica
122	7.7	2.8	6.7	2.0	virginica
123	6.3	2.7	4.9	1.8	virginica
124	6.7	3.3	5.7	2.1	virginica
125	7.2	3.2	6.0	1.8	virginica
126	6.2	2.8	4.8	1.8	virginica
127	6.1	3.0	4.9	1.8	virginica
128	6.4	2.8	5.6	2.1	virginica
129	7.2	3.0	5.8	1.6	virginica
130	7.4	2.8	6.1	1.9	virginica
131	7.9	3.8	6.4	2.0	virginica
132	6.4	2.8	5.6	2.2	virginica
133	6.3	2.8	5.1	1.5	virginica
134	6.1	2.6	5.8	1.4	virginica
135	7.7	3.0	6.1	2.3	virginica
136	6.3	3.4	5.6	2.4	virginica
137	6.4	3.1	5.5	1.8	virginica
138	6.0	3.0	4.8	1.8	virginica
139	6.9	3.1	5.4	2.1	virginica
140	6.7	3.1	5.6		

