

```
import pandas as pd
import seaborn as sns
```

```
penguins = load_dataset("penguins")
```

```
In [7]: penguins
```

```
Out[7]:
```

	species	island	bill_length_mm	bill_depth_mm	flipper_length_mm	body_mass_g	sex
0	Adelie	Torgersen	39.1	18.7	181.0	3750.0	Male
1	Adelie	Torgersen	39.5	17.4	186.0	3800.0	Female
2	Adelie	Torgersen	40.3	18.0	195.0	3250.0	Female
3	Adelie	Torgersen	NaN	NaN	NaN	NaN	NaN
4	Adelie	Torgersen	36.7	19.3	193.0	3450.0	Female
...
339	Gentoo	Biscoe	NaN	NaN	NaN	NaN	NaN
340	Gentoo	Biscoe	46.8	14.3	215.0	4650.0	Female
341	Gentoo	Biscoe	50.4	15.7	222.0	5750.0	Male
342	Gentoo	Biscoe	46.2	14.8	212.0	5200.0	Female
343	Gentoo	Biscoe	49.9	16.1	213.0	5400.0	Male

```
344 rows x 7 columns
```

```
In [18]: penguins.head
```

```
Out[18]:
   species island bill_length_mm bill_depth_mm flipper_length_mm body_mass_g sex
0  Adelie  Torgersen          39.1           18.7           181.0      3750.0  Male
1  Adelie  Torgersen          39.5           17.4           186.0      3800.0  Female
2  Adelie  Torgersen          40.3           18.0           195.0      3250.0  Female
3  Adelie  Torgersen          NaN             NaN             NaN         NaN    NaN
4  Adelie  Torgersen          36.7           19.3           193.0      3450.0  Female
..      ...      ...           ...           ...           ...      ...    ...
339 Gentoo  Biscoe          NaN             NaN             NaN         NaN    NaN
340 Gentoo  Biscoe          46.8           14.3           215.0      4650.0  Female
341 Gentoo  Biscoe          50.4           15.7           222.0      5750.0  Male
342 Gentoo  Biscoe          46.2           14.8           212.0      5200.0  Female
343 Gentoo  Biscoe          49.9           16.1           213.0      5400.0  Male
[344 rows x 7 columns]
```

```
In [11]: type(penguins)
```

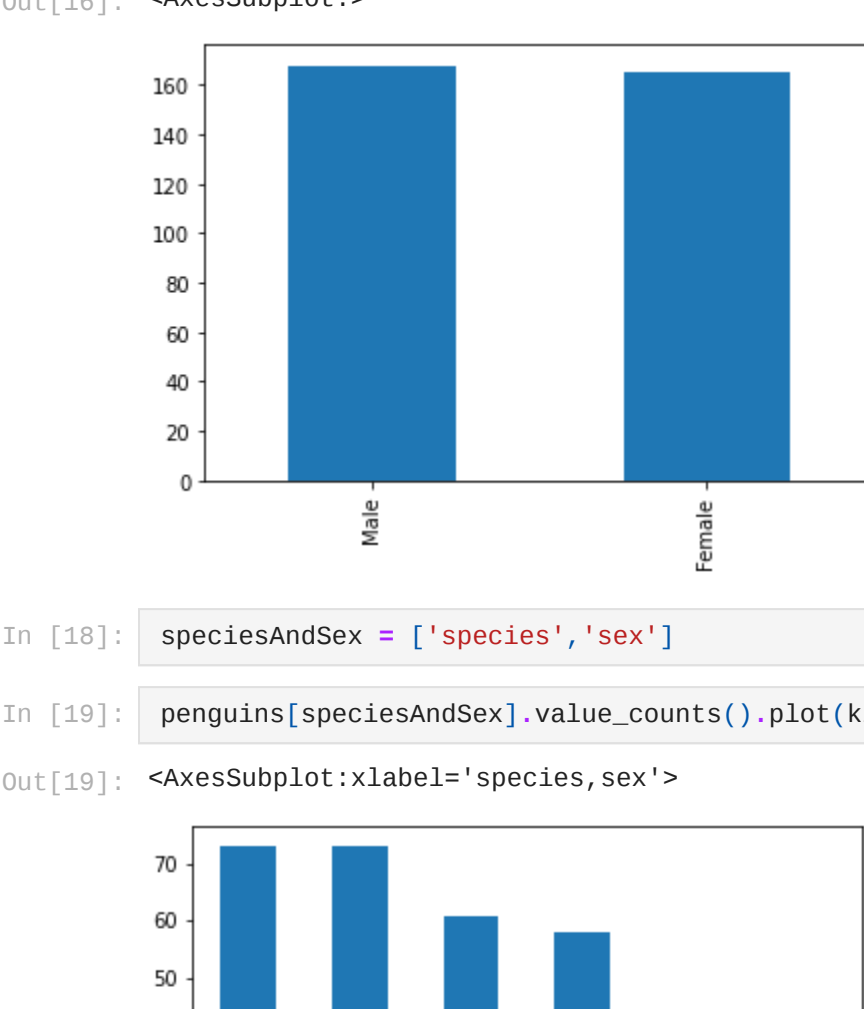
```
pandas.core.frame.DataFrame
```

```
In [13]: penguins.columns
```

```
Out[13]: Index(['species', 'island', 'bill_length_mm', 'bill_depth_mm',
              'flipper_length_mm', 'body_mass_g', 'sex'],
              dtype='object')
```

```
In [16]: penguins['sex'].value_counts().plot(kind='bar')
```

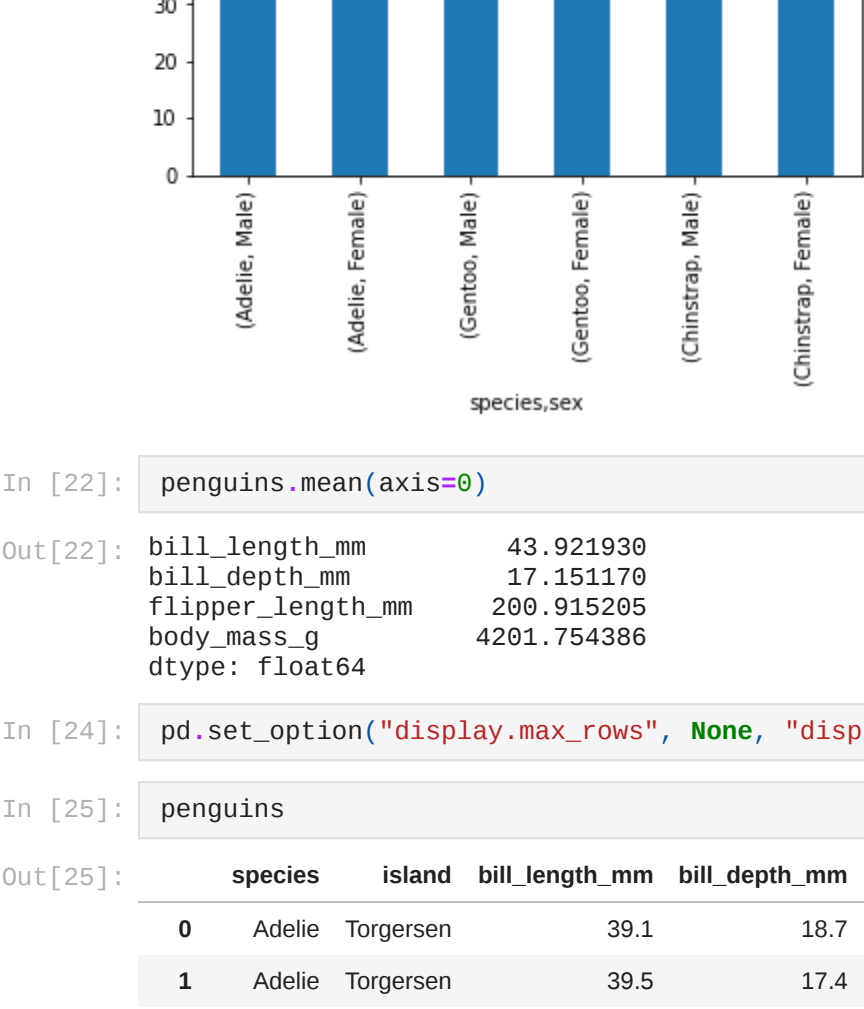
```
Out[16]: <AxesSubplot>
```



```
In [18]: speciesIndex = ['species', 'sex']
```

```
In [19]: penguins[speciesIndex].value_counts().plot(kind='bar')
```

```
Out[19]: <AxesSubplot: xlabel='species, sex'>
```



```
In [22]: penguins.nlargest(10)
```

```
Out[22]:
   bill_length_mm  bill_depth_mm  flipper_length_mm  body_mass_g  sex
0         41.525158          18.715117          181.0         3750.0  Male
1         40.317486          17.415117          186.0         3800.0  Female
2         40.317486          18.017486          195.0         3250.0  Female
```

```
In [24]: pd.set_option('display_max_colwidth', None, 'display_max_columns', None)
```

```
In [25]: penguins
```

```
Out[25]:
```

9	Adelie	Torgersen	42.0	20.2	190.0	4250	
10	Adelie	Torgersen	37.8	17.1	186.0	3300	
11	Adelie	Torgersen	37.8	17.3	180.0	3700	
12	Adelie	Torgersen	41.1	17.6	182.0	3200	
13	Adelie	Torgersen	38.6	21.2	191.0	3800	
14	Adelie	Torgersen	34.6	21.1	198.0	4400	
15	Adelie	Torgersen	38.8	17.8	185.0	3700	
16	Adelie	Torgersen	38.7	19.0	195.0	3900	
17	Adelie	Torgersen	42.5	20.7	197.0	4500	
18	Adelie	Torgersen	34.4	18.4	184.0	3235	
19	Adelie	Torgersen	46.0	21.5	194.0	4200	
20	Adelie	Biscoe	37.8	18.3	174.0	3400	
21	Adelie	Biscoe	37.7	18.7	182.0	3600	
22	Adelie	Biscoe	35.9	19.2	189.0	3600	
23	Adelie	Biscoe	38.2	18.1	185.0	3800	
24	Adelie	Biscoe	38.8	17.2	180.0	3800	
25	Adelie	Biscoe	35.3	18.9	187.0	3800	
26	Adelie	Biscoe	40.6	18.6	183.0	3900	
27	Adelie	Biscoe	40.5	17.9	187.0	3200	
28	Adelie	Biscoe	37.9	18.6	172.0	3150	
29	Adelie	Biscoe	40.5	18.9	190.0	3950	
30	Adelie	Dream	39.5	16.7	178.0	3250	
31	Adelie	Dream	37.2	18.1	178.0	3900	
32	Adelie	Dream	39.5	17.8	186.0	3900	
33	Adelie	Dream	40.9	16.9	194.0	3900	
34	Adelie	Dream	36.4	17.0	195.0	3235	
35	Adelie	Dream	39.2	21.1	196.0	4150	
36	Adelie	Dream	38.9	20.0	190.0	3950	
37	Adelie	Dream	42.2	18.5	186.0	3900	
38	Adelie	Dream	37.6	19.3	181.0	3200	
39	Adelie	Dream	39.8	19.1	184.0	4650	
40	Adelie	Dream	36.5	18.0	182.0	3150	
41	Adelie	Dream	40.8	18.4	195.0	3900	
42	Adelie	Dream	36.0	18.5	185.0	3100	
43	Adelie	Dream	44.1	19.7	195.0	4600	
44	Adelie	Dream	37.0	16.9	195.0	3900	
45	Adelie	Dream	38.6	18.8	190.0	4000	
46	Adelie	Dream	41.1	19.0	182.0	3425	
47	Adelie	Dream	37.5	18.9	179.0	2975	
48	Adelie	Dream	36.0	17.9	186.0	3600	
49	Adelie	Dream	42.3	21.2	180.0	4150	
50	Adelie	Biscoe	39.6	17.7	186.0	3500	
51	Adelie	Biscoe	40.1	18.9	188.0	4300	
52	Adelie	Biscoe	35.0	17.9	190.0	3450	
53	Adelie	Biscoe	42.0	19.5	200.0	4900	
54	Adelie	Biscoe	34.5	18.1	187.0	2900	
55	Adelie	Biscoe	41.4	18.6	191.0	3700	
56	Adelie	Biscoe	39.0	17.5	188.0	3500	
57	Adelie	Biscoe	40.6	18.8	193.0	3800	
58	Adelie	Biscoe	36.5	16.6	181.0	2900	
59	Adelie	Biscoe	37.6	18.1	184.0	3600	
60	Adelie	Biscoe	37.7	16.9	185.0	3150	
61	Adelie	Biscoe	41.3	21.1	195.0	4400	
62	Adelie	Biscoe	37.6	17.0	185.0	3600	
63	Adelie	Biscoe	41.1	18.2	182.0	4050	
64	Adelie	Biscoe	36.4	17.1	184.0	3900	
65	Adelie	Biscoe	41.6	18.0	182.0	3900	
66	Adelie	Biscoe	35.5	16.2	195.0	3950	
67	Adelie	Biscoe	41.1	19.1	188.0	4100	
68	Adelie	Torgersen	35.9	16.6	190.0	3950	
69	Adelie	Torgersen	41.8	19.4	198.0	4400	
70	Adelie	Torgersen	33.5	19.0	186.0	3600	
71	Adelie	Torgersen	39.7	18.4	190.0	3900	
72	Adelie	Torgersen	39.6	17.2	196.0	3550	
73	Adelie	Torgersen	45.8	18.9	197.0	4150	
74	Adelie	Torgersen	35.5	17.5	190.0	3700	
75	Adelie	Torgersen	42.8	18.5	195.0	4200	
76	Adelie	Torgersen	40.9	18.9	181.0	3700	
77	Adelie	Torgersen	37.2	19.4	184.0	3900	
78	Adelie	Torgersen	36.2	16.1	187.0	3900	
79	Adelie	Torgersen	42.1	19.1	190.0	4000	
80	Adelie	Torgersen	34.6	17.2	189.0	3900	
81	Adelie	Torgersen	42.9	17.6	195.0	4700	
82	Adelie	Torgersen	36.7	18.9	187.0	3800	
83	Adelie	Torgersen	35.1	18.4	193.0	4200	
84	Adelie	Dream	37.3	17.8	191.0	3350	
85	Adelie	Dream	41.3	20.3	194.0	3950	
86	Adelie	Dream	36.3	18.5	190.0	3600	
87	Adelie	Dream	39.5	18.5	190.0	3900	
88	Adelie	Dream	38.3	19.2	190.0	3950	
89	Adelie	Dream	38.9	18.8	190.0	3600	
90	Adelie	Dream	35.7	18.0	202.0	3550	
91	Adelie	Dream	41.1	18.1	205.0	4300	
92	Adelie	Dream	34.0	17.1	186.0	3400	
93	Adelie	Dream	39.6	18.1	186.0	4650	
94	Adelie	Dream	36.2	17.3	187.0	3300	
95	Adelie	Dream	40.8	18.9	208.0	4300	
96	Adelie	Dream	38.1	18.6	190.0	3700	
97	Adelie	Dream	40.3	18.5	196.0	4050	
98	Adelie	Dream	33.1	16.1	178.0	2900	
99	Adelie	Dream	42.2	18.5	192.0	4100	
100	Adelie	Biscoe	35.0	17.8	182.0	3725	
101	Adelie	Biscoe	41.0	20.0	203.0	4725	
102	Adelie	Biscoe	37.7	16.0	183.0	3075	
103	Adelie	Biscoe	37.8	20.0	190.0	4250	
104	Adelie	Biscoe	37.9	18.6	193.0	2815	
105	Adelie	Biscoe	39.7	18.9	184.0	3950	
106	Adelie	Biscoe	38.6	17.2	199.0	3750	
107	Adelie	Biscoe	38.2	20.0	190.0	3900	
108	Adelie	Biscoe	39.1	17.0	181.0	3175	
109	Adelie	Biscoe	43.2	19.0	197.0	4775	
110	Adelie	Biscoe	38.1	16.5	198.0	3625	
111	Adelie	Biscoe	45.6	20.3	191.0	4600	
112	Adelie	Biscoe	39.7	17.7	181.0	3200	
113	Adelie	Biscoe	42.2	18.5	197.0	4275	
114	Adelie	Biscoe	39.5	20.7	181.0	3900	
115	Adelie	Biscoe	42.7	18.3	196.0	4975	
116	Adelie	Torgersen	38.6	17.0	188.0	2900	
117	Adelie	Torgersen	37.3	20.5	199.0	3775	
118	Adelie	Torgersen	36.7	17.0	189.0	3200	
119	Adelie	Torgersen	41.1	18.6	196.0	3275	
120	Adelie	Torgersen	36.2	17.2	187.0	3150	
121	Adelie	Torgersen	37.7	19.8	198.0	3600	
122	Adelie	Torgersen	40.2	17.0	176.0	3450	
123	Adelie	Torgersen	41.4	18.5	202.0	3975	
124	Adelie	Torgersen	35.2	15.9	186.0	3600	
125	Adelie	Torgersen	40.6	19.0	190.0	4900	
126	Adelie	Torgersen	38.8	17.6	191.0	3275	
127	Adelie	Torgersen	41.5	18.3	195.0	4300	
128	Adelie	Torgersen	39.0	17.1	191.0	3950	
129	Adelie	Torgersen	44.1	18.0	210.0	4900	
130	Adelie	Torgersen	38.9	17.9	190.0	3900	
131	Adelie	Torgersen	43.1	19.2	197.0	3500	
132	Adelie	Dream	36.8	18.5	192.0	3900	
133	Adelie	Dream	37.5	18.5	199.0	4475	
134	Adelie	Dream	38.1	17.6	187.0	3425	
135	Adelie	Dream	41.1	17.5	196.0	3600	
136	Adelie	Dream	35.5	17.5	181.0	3175	
137	Adelie	Dream	40.2	20.1	200.0	3875	
138	Adelie	Dream	37.0	16.5	185.0	3400	
139	Adelie	Dream	38.7	17.9	193.0	4200	
140	Adelie	Dream	40.2	17.1	193.0	3400	
141	Adelie	Dream	33.1	16.5	178.0	3475	
142	Adelie	Dream	40.6	17.5	188.0	3900	
143	Adelie	Dream	40.7	17.0	187.0	3725	
144	Adelie	Dream	37.3	16.8	190.0	3000	
145	Adelie	Dream	39.0	18.7	185.0	3600	
146	Adelie	Dream	39.2	18.6	190.0	3700	
147	Adelie	Dream	38.6	18.4	184.0	3475	
148	Adelie	Dream	39.0	17.6	191.0	3450	
149	Adelie	Dream	37.8	18.1	193.0	3700	
150	Adelie	Dream	36.0	17.1	187.0	3300	
151	Adelie	Dream	41.5	18.5	202.0	4000	
152	Chinstrap	Dream	46.5	17.9	192.0	4900	
153	Chinstrap	Dream	51.5	19.5	195.0	5300	
154	Chinstrap	Dream	51.3	19.2	193.0	5100	
155	Chinstrap	Dream	45.4	18.7	188.0	3825	
156	Chinstrap	Dream	52.7	18.7	197.0	3725	
157	Chinstrap	Dream	45.2	17.8	186.0	3650	
158	Chinstrap	Dream	46.1	18.2	190.0	3925	
159	Chinstrap	Dream	51.3	18.2	187.0	5250	
160	Chinstrap	Dream	46.0	18.9	195.0	4150	
161	Chinstrap	Dream	51.3	19.9	198.0	5700	
162	Chinstrap	Dream	46.6	17.8	193.0	3800	
163	Chinstrap	Dream	51.7	20.3	194.0	5775	
164	Chinstrap	Dream	41.0	17.3	181.0	3200	
165	Chinstrap	Dream	52.0	18.3	201.0	4900	
166	Chinstrap	Dream	45.9	17.1	190.0	3675	
167	Chinstrap	Dream	50.5	19.6	201.0	4850	
168	Chinstrap	Dream	50.3	20.0	197.0	5300	
169	Chinstrap	Dream	49.2	18.3	191.0	4650	
170	Chinstrap	Dream	46.4	18.6	190.0	3400	
171	Chinstrap	Dream	49.2	18.2	195.0	4800	
172	Chinstrap	Dream	42.4	17.3	181.0	3600	
173	Chinstrap	Dream	48.5	17.5	191.0	3400	
174	Chinstrap	Dream	43.2	16.6	187.0	2900	
175	Chinstrap	Dream	45.8	18.4	194.0	4650	
176	Chinstrap	Dream	46.7	17.9	195.0	3900	
177	Chinstrap	Dream	52.0	18.9	197.0	4150	
178	Chinstrap	Dream	50.6	18.4	200.0	3800	
179	Chinstrap	Dream	49.5	19.0	200.0	3800	
180	Chinstrap	Dream	49.4	17.9	191.0	3225	
181	Chinstrap	Dream	52.8	20.0	205.0	4950	
182	Chinstrap	Dream	40.9	16.6	187.0	3200	
183	Chinstrap	Dream	54.2	20.8	201.0	4900	
184	Chinstrap	Dream	42.5	16.7	187.0	3350	
185	Chinstrap	Dream	51.0	19.8	201.0	4900	
186	Chinstrap	Dream	49.7	16.8	195.0	3900	
187	Chinstrap	Dream	47.5	16.8	190.0	3900	
188	Chinstrap	Dream	47.6	18.3	191.0	3850	
189	Chinstrap	Dream	52.0	20.7	210.0	4800	
190	Chinstrap	Dream	46.9	16.6	192.0	2700	
191	Chinstrap	Dream	49.8	18.4	205.0	4650	
192	Chinstrap	Dream	49.0	18.5	210.0	3900	
193	Chinstrap	Dream	46.2	17.5	187.0	3650</	