Slicing and Dicing Dataframes

You have seen how to do indexing of dataframes using `df.iloc` and `df.loc` . Now, let's see how to subset dataframes based on certain conditions.

```
In [10]:   # loading libraries and reading the data
           import numpy as np
           import pandas as pd

           df = pd.read_csv("../global_sales_data/market_fact.csv")
           df.head()
```

Out[10]:

	Ord_id	Prod_id	Ship_id	Cust_id	Sales	Discount	Order_Quantity	Profit	Shipping_
0	Ord_5446	Prod_16	SHP_7609	Cust_1818	136.81	0.01	23	-30.51	
1	Ord_5406	Prod_13	SHP_7549	Cust_1818	42.27	0.01	13	4.56	
2	Ord_5446	Prod_4	SHP_7610	Cust_1818	4701.69	0.00	26	1148.90	
3	Ord_5456	Prod_6	SHP_7625	Cust_1818	2337.89	0.09	43	729.34	
4	Ord_5485	Prod_17	SHP_7664	Cust_1818	4233.15	0.08	35	1219.87	

Subsetting Rows Based on Conditions

Often, you want to select rows which satisfy some given conditions. For e.g., select all the orders where the `Sales > 3000` , or all the orders where `2000 < Sales < 3000` and `Profit < 100` .

Arguably, the best way to do these operations is using `df.loc[]` , since `df.iloc[]` would require you to remember the integer column indices, which is tedious.

Let's see some examples.

In [11]:
```python
# Select all rows where Sales > 3000
# First, we get a boolean array where True corresponds to rows having Sales > 3000
df.Sales > 3000
```

Out[11]:
```
0        False
1        False
2         True
3        False
4         True
5        False
6        False
7         True
8        False
9        False
10        True
11       False
12       False
13        True
14       False
15       False
16       False
17        True
18       False
19       False
20       False
21       False
22        True
23       False
24       False
25       False
26       False
27       False
28        True
29       False
         ...
8369     False
8370     False
8371      True
8372     False
8373     False
8374     False
8375     False
8376     False
8377     False
8378     False
8379     False
8380     False
8381     False
8382     False
8383      True
8384     False
8385     False
8386     False
8387     False
8388     False
8389     False
```

```
8390     False
8391     False
8392     False
8393     False
8394     False
8395     False
8396     False
8397      True
8398     False
Name: Sales, Length: 8399, dtype: bool
```

In [12]:
```python
# Then, we pass this boolean array inside df.loc
df.loc[df.Sales > 3000]
```

Out[12]:

	Ord_id	Prod_id	Ship_id	Cust_id	Sales	Discount	Order_Quantity	Profit
2	Ord_5446	Prod_4	SHP_7610	Cust_1818	4701.6900	0.00	26	1148.90
4	Ord_5485	Prod_17	SHP_7664	Cust_1818	4233.1500	0.08	35	1219.87
7	Ord_4725	Prod_4	SHP_6593	Cust_1641	3410.1575	0.10	48	1137.91
10	Ord_4743	Prod_2	SHP_6615	Cust_1641	4072.0100	0.01	43	1675.98
13	Ord_2207	Prod_11	SHP_3093	Cust_839	3364.2480	0.10	15	-693.23
17	Ord_4471	Prod_15	SHP_6228	Cust_1521	13255.9300	0.02	25	4089.27
22	Ord_996	Prod_5	SHP_1377	Cust_371	3202.2500	0.09	44	991.26
28	Ord_2573	Prod_4	SHP_3527	Cust_931	3594.7435	0.05	38	1016.97
40	Ord_5035	Prod_15	SHP_7024	Cust_1710	4917.6900	0.02	42	126.31
57	Ord_4546	Prod_1	SHP_6327	Cust_1474	5208.7800	0.05	34	1547.78
64	Ord_4475	Prod_4	SHP_6234	Cust_1474	7640.2250	0.07	46	2027.68
79	Ord_5188	Prod_14	SHP_7252	Cust_1749	5177.4000	0.06	12	287.50
82	Ord_5156	Prod_4	SHP_7207	Cust_1749	8374.1320	0.06	48	2568.10
84	Ord_5232	Prod_17	SHP_7306	Cust_1758	21366.5100	0.00	3	-11984.40
107	Ord_250	Prod_15	SHP_346	Cust_45	8901.7800	0.04	31	2795.36
121	Ord_5423	Prod_17	SHP_7577	Cust_1800	13070.2000	0.07	4	-6923.60
124	Ord_2432	Prod_4	SHP_3339	Cust_933	3883.4715	0.10	42	707.17
133	Ord_2432	Prod_3	SHP_3338	Cust_933	15337.5800	0.10	30	6670.41
148	Ord_1649	Prod_2	SHP_2277	Cust_498	3005.7400	0.02	48	1053.21
163	Ord_4646	Prod_15	SHP_6475	Cust_1603	4083.1900	0.07	43	-1049.85
164	Ord_4646	Prod_1	SHP_6476	Cust_1603	4902.3800	0.05	32	1438.49
165	Ord_4702	Prod_3	SHP_6560	Cust_1603	11823.5200	0.10	34	4592.74
168	Ord_2973	Prod_4	SHP_4102	Cust_1081	4671.1495	0.07	28	947.31
169	Ord_3009	Prod_15	SHP_4168	Cust_1081	5718.8500	0.09	49	-2426.55
170	Ord_2973	Prod_4	SHP_4102	Cust_1480	6264.1855	0.01	34	1312.04
171	Ord_2973	Prod_9	SHP_6073	Cust_1480	5410.9500	0.09	36	2077.91
183	Ord_5157	Prod_15	SHP_7208	Cust_1753	5149.0600	0.03	27	605.44
185	Ord_5153	Prod_11	SHP_7202	Cust_1753	3457.5600	0.02	35	-365.44
189	Ord_2831	Prod_3	SHP_3893	Cust_1036	18092.6600	0.09	36	7917.76
191	Ord_2791	Prod_11	SHP_3838	Cust_1036	10351.0100	0.08	19	-1331.55
...	...	...	...	...	...	...	...	...
8125	Ord_4515	Prod_1	SHP_6285	Cust_1546	4976.6000	0.06	32	601.88
8137	Ord_2267	Prod_2	SHP_3089	Cust_890	6608.2400	0.09	35	2164.64
8141	Ord_3368	Prod_15	SHP_4668	Cust_1190	3227.3800	0.05	26	192.31

	Ord_id	Prod_id	Ship_id	Cust_id	Sales	Discount	Order_Quantity	Profit
8143	Ord_3265	Prod_1	SHP_4530	Cust_1190	10330.9400	0.07	25	2914.56
8151	Ord_3214	Prod_2	SHP_4456	Cust_1187	8316.7600	0.05	30	2108.80
8158	Ord_2868	Prod_15	SHP_3950	Cust_1059	5405.4400	0.07	18	604.46
8207	Ord_3433	Prod_8	SHP_4759	Cust_1180	3601.0700	0.04	50	174.80
8210	Ord_2110	Prod_17	SHP_2885	Cust_802	4502.2600	0.09	38	1272.17
8211	Ord_2144	Prod_1	SHP_2925	Cust_802	5318.8900	0.06	48	525.15
8217	Ord_3359	Prod_10	SHP_7245	Cust_1762	28389.1400	0.07	33	7132.18
8219	Ord_5200	Prod_4	SHP_7266	Cust_1762	4815.8620	0.08	47	1316.79
8235	Ord_759	Prod_5	SHP_1036	Cust_245	8549.0400	0.03	42	2861.01
8240	Ord_793	Prod_11	SHP_1090	Cust_245	4452.6500	0.09	30	-265.12
8249	Ord_3470	Prod_17	SHP_4805	Cust_1203	5615.4000	0.07	46	1807.16
8263	Ord_4954	Prod_15	SHP_6913	Cust_1694	7987.4300	0.03	49	1304.90
8283	Ord_1741	Prod_11	SHP_2411	Cust_595	15168.8200	0.02	26	-1096.78
8286	Ord_1749	Prod_1	SHP_2424	Cust_595	5176.2700	0.01	38	-743.45
8292	Ord_1765	Prod_14	SHP_2446	Cust_595	14647.2600	0.07	25	5485.15
8298	Ord_2172	Prod_1	SHP_2960	Cust_787	6648.5800	0.08	19	-555.98
8308	Ord_2659	Prod_8	SHP_3638	Cust_1016	4744.6400	0.04	46	1033.38
8317	Ord_2770	Prod_3	SHP_3802	Cust_1016	7535.9600	0.08	46	2745.87
8329	Ord_2160	Prod_15	SHP_2944	Cust_810	3636.3700	0.06	33	-176.91
8332	Ord_2101	Prod_11	SHP_2875	Cust_790	10714.7800	0.00	41	-627.64
8335	Ord_2070	Prod_11	SHP_2833	Cust_784	3905.7500	0.01	21	55.30
8343	Ord_2178	Prod_4	SHP_2968	Cust_785	6030.5800	0.09	39	1197.86
8366	Ord_3593	Prod_3	SHP_4974	Cust_1274	12073.0600	0.03	39	5081.87
8367	Ord_3593	Prod_15	SHP_4975	Cust_1274	6685.0500	0.09	25	1653.60
8371	Ord_2624	Prod_4	SHP_3591	Cust_1006	4924.1350	0.07	28	1049.54
8383	Ord_2722	Prod_1	SHP_3731	Cust_1006	3508.3300	0.04	21	-546.98
8397	Ord_5348	Prod_15	SHP_7469	Cust_1798	3872.8700	0.03	23	565.34

1359 rows × 10 columns

```
In [13]:   # An alternative to df.Sales is df['Sales]
           # You may want to put the : to indicate that you want all columns
           # It is more explicit
           df.loc[df['Sales'] > 3000, :]
```

Out[13]:

	Ord_id	Prod_id	Ship_id	Cust_id	Sales	Discount	Order_Quantity	Profit
2	Ord_5446	Prod_4	SHP_7610	Cust_1818	4701.6900	0.00	26	1148.90
4	Ord_5485	Prod_17	SHP_7664	Cust_1818	4233.1500	0.08	35	1219.87
7	Ord_4725	Prod_4	SHP_6593	Cust_1641	3410.1575	0.10	48	1137.91
10	Ord_4743	Prod_2	SHP_6615	Cust_1641	4072.0100	0.01	43	1675.98
13	Ord_2207	Prod_11	SHP_3093	Cust_839	3364.2480	0.10	15	-693.23
17	Ord_4471	Prod_15	SHP_6228	Cust_1521	13255.9300	0.02	25	4089.27
22	Ord_996	Prod_5	SHP_1377	Cust_371	3202.2500	0.09	44	991.26
28	Ord_2573	Prod_4	SHP_3527	Cust_931	3594.7435	0.05	38	1016.97
40	Ord_5035	Prod_15	SHP_7024	Cust_1710	4917.6900	0.02	42	126.31
57	Ord_4546	Prod_1	SHP_6327	Cust_1474	5208.7800	0.05	34	1547.78
64	Ord_4475	Prod_4	SHP_6234	Cust_1474	7640.2250	0.07	46	2027.68
79	Ord_5188	Prod_14	SHP_7252	Cust_1749	5177.4000	0.06	12	287.50
82	Ord_5156	Prod_4	SHP_7207	Cust_1749	8374.1320	0.06	48	2568.10
84	Ord_5232	Prod_17	SHP_7306	Cust_1758	21366.5100	0.00	3	-11984.40
107	Ord_250	Prod_15	SHP_346	Cust_45	8901.7800	0.04	31	2795.36
121	Ord_5423	Prod_17	SHP_7577	Cust_1800	13070.2000	0.07	4	-6923.60
124	Ord_2432	Prod_4	SHP_3339	Cust_933	3883.4715	0.10	42	707.17
133	Ord_2432	Prod_3	SHP_3338	Cust_933	15337.5800	0.10	30	6670.41
148	Ord_1649	Prod_2	SHP_2277	Cust_498	3005.7400	0.02	48	1053.21
163	Ord_4646	Prod_15	SHP_6475	Cust_1603	4083.1900	0.07	43	-1049.85
164	Ord_4646	Prod_1	SHP_6476	Cust_1603	4902.3800	0.05	32	1438.49
165	Ord_4702	Prod_3	SHP_6560	Cust_1603	11823.5200	0.10	34	4592.74
168	Ord_2973	Prod_4	SHP_4102	Cust_1081	4671.1495	0.07	28	947.31
169	Ord_3009	Prod_15	SHP_4168	Cust_1081	5718.8500	0.09	49	-2426.55
170	Ord_2973	Prod_4	SHP_4102	Cust_1480	6264.1855	0.01	34	1312.04
171	Ord_2973	Prod_9	SHP_6073	Cust_1480	5410.9500	0.09	36	2077.91
183	Ord_5157	Prod_15	SHP_7208	Cust_1753	5149.0600	0.03	27	605.44
185	Ord_5153	Prod_11	SHP_7202	Cust_1753	3457.5600	0.02	35	-365.44
189	Ord_2831	Prod_3	SHP_3893	Cust_1036	18092.6600	0.09	36	7917.76
191	Ord_2791	Prod_11	SHP_3838	Cust_1036	10351.0100	0.08	19	-1331.55
...	...	...	...	...	...	...	...	...
8125	Ord_4515	Prod_1	SHP_6285	Cust_1546	4976.6000	0.06	32	601.88

	Ord_id	Prod_id	Ship_id	Cust_id	Sales	Discount	Order_Quantity	Profit	
8137	Ord_2267	Prod_2	SHP_3089	Cust_890	6608.2400	0.09	35	2164.64	
8141	Ord_3368	Prod_15	SHP_4668	Cust_1190	3227.3800	0.05	26	192.31	
8143	Ord_3265	Prod_1	SHP_4530	Cust_1190	10330.9400	0.07	25	2914.56	
8151	Ord_3214	Prod_2	SHP_4456	Cust_1187	8316.7600	0.05	30	2108.80	
8158	Ord_2868	Prod_15	SHP_3950	Cust_1059	5405.4400	0.07	18	604.46	
8207	Ord_3433	Prod_8	SHP_4759	Cust_1180	3601.0700	0.04	50	174.80	
8210	Ord_2110	Prod_17	SHP_2885	Cust_802	4502.2600	0.09	38	1272.17	
8211	Ord_2144	Prod_1	SHP_2925	Cust_802	5318.8900	0.06	48	525.15	
8217	Ord_3359	Prod_10	SHP_7245	Cust_1762	28389.1400	0.07	33	7132.18	
8219	Ord_5200	Prod_4	SHP_7266	Cust_1762	4815.8620	0.08	47	1316.79	
8235	Ord_759	Prod_5	SHP_1036	Cust_245	8549.0400	0.03	42	2861.01	
8240	Ord_793	Prod_11	SHP_1090	Cust_245	4452.6500	0.09	30	-265.12	
8249	Ord_3470	Prod_17	SHP_4805	Cust_1203	5615.4000	0.07	46	1807.16	
8263	Ord_4954	Prod_15	SHP_6913	Cust_1694	7987.4300	0.03	49	1304.90	
8283	Ord_1741	Prod_11	SHP_2411	Cust_595	15168.8200	0.02	26	-1096.78	
8286	Ord_1749	Prod_1	SHP_2424	Cust_595	5176.2700	0.01	38	-743.45	
8292	Ord_1765	Prod_14	SHP_2446	Cust_595	14647.2600	0.07	25	5485.15	
8298	Ord_2172	Prod_1	SHP_2960	Cust_787	6648.5800	0.08	19	-555.98	
8308	Ord_2659	Prod_8	SHP_3638	Cust_1016	4744.6400	0.04	46	1033.38	
8317	Ord_2770	Prod_3	SHP_3802	Cust_1016	7535.9600	0.08	46	2745.87	
8329	Ord_2160	Prod_15	SHP_2944	Cust_810	3636.3700	0.06	33	-176.91	
8332	Ord_2101	Prod_11	SHP_2875	Cust_790	10714.7800	0.00	41	-627.64	
8335	Ord_2070	Prod_11	SHP_2833	Cust_784	3905.7500	0.01	21	55.30	
8343	Ord_2178	Prod_4	SHP_2968	Cust_785	6030.5800	0.09	39	1197.86	
8366	Ord_3593	Prod_3	SHP_4974	Cust_1274	12073.0600	0.03	39	5081.87	
8367	Ord_3593	Prod_15	SHP_4975	Cust_1274	6685.0500	0.09	25	1653.60	
8371	Ord_2624	Prod_4	SHP_3591	Cust_1006	4924.1350	0.07	28	1049.54	
8383	Ord_2722	Prod_1	SHP_3731	Cust_1006	3508.3300	0.04	21	-546.98	
8397	Ord_5348	Prod_15	SHP_7469	Cust_1798	3872.8700	0.03	23	565.34	

1359 rows × 10 columns

In [14]:
```
# We combine multiple conditions using the & operator
# E.g. all orders having 2000 < Sales < 3000 and Profit > 100
df.loc[(df.Sales > 2000) & (df.Sales < 3000) & (df.Profit > 100), :]
```

Out[14]:

	Ord_id	Prod_id	Ship_id	Cust_id	Sales	Discount	Order_Quantity	Profit	Shi
3	Ord_5456	Prod_6	SHP_7625	Cust_1818	2337.8900	0.09	43	729.34	
81	Ord_5205	Prod_4	SHP_7274	Cust_1749	2546.5235	0.09	26	210.00	
109	Ord_139	Prod_17	SHP_186	Cust_45	2671.2100	0.06	14	636.18	
110	Ord_239	Prod_4	SHP_332	Cust_45	2157.3085	0.00	38	519.25	
141	Ord_1673	Prod_17	SHP_2314	Cust_498	2027.5500	0.04	14	537.40	
146	Ord_1649	Prod_4	SHP_2278	Cust_498	2209.5155	0.06	41	458.62	
176	Ord_2273	Prod_8	SHP_3101	Cust_878	2899.9800	0.10	19	666.01	
184	Ord_5230	Prod_4	SHP_7304	Cust_1753	2197.4115	0.00	20	305.96	
186	Ord_5159	Prod_5	SHP_7210	Cust_1753	2213.9200	0.03	20	768.34	
230	Ord_657	Prod_4	SHP_899	Cust_209	2343.0760	0.06	24	311.64	
285	Ord_1607	Prod_4	SHP_2220	Cust_506	2980.3720	0.02	19	494.63	
314	Ord_1521	Prod_15	SHP_2100	Cust_560	2230.9700	0.06	12	273.27	
349	Ord_4896	Prod_4	SHP_6829	Cust_1674	2827.1425	0.01	35	713.88	
395	Ord_4144	Prod_2	SHP_5772	Cust_1418	2182.9100	0.10	40	549.45	
404	Ord_1621	Prod_3	SHP_2238	Cust_566	2010.8900	0.09	34	564.07	
510	Ord_3848	Prod_4	SHP_5335	Cust_1346	2660.6105	0.03	46	618.07	
522	Ord_142	Prod_8	SHP_191	Cust_51	2689.4800	0.04	27	399.93	
536	Ord_4909	Prod_2	SHP_6846	Cust_227	2180.2300	0.05	37	660.25	
541	Ord_4935	Prod_4	SHP_6886	Cust_1680	2292.1015	0.02	21	398.36	
647	Ord_4292	Prod_5	SHP_5988	Cust_1439	2758.2200	0.00	15	966.81	
680	Ord_674	Prod_4	SHP_922	Cust_212	2404.5990	0.08	45	496.89	
688	Ord_4904	Prod_1	SHP_6841	Cust_1682	2257.8800	0.01	38	474.98	
718	Ord_2069	Prod_4	SHP_2832	Cust_783	2135.9735	0.07	40	239.40	
720	Ord_2150	Prod_4	SHP_2932	Cust_805	2773.0315	0.04	38	897.87	
729	Ord_4826	Prod_3	SHP_6724	Cust_1588	2168.0500	0.00	5	416.02	
767	Ord_2054	Prod_2	SHP_2808	Cust_828	2192.6300	0.05	37	660.06	
775	Ord_5154	Prod_4	SHP_7204	Cust_1746	2610.8940	0.00	23	516.19	
783	Ord_2666	Prod_4	SHP_3652	Cust_1017	2368.1680	0.00	30	1181.30	
809	Ord_4279	Prod_1	SHP_5971	Cust_1440	2752.6800	0.04	45	430.32	
810	Ord_4269	Prod_2	SHP_5958	Cust_1440	2405.0000	0.10	39	696.17	
...	...	...	...	...	...	...	...	...	
7777	Ord_3414	Prod_2	SHP_4733	Cust_1196	2167.0500	0.02	36	684.90	
7778	Ord_3363	Prod_6	SHP_4663	Cust_1196	2040.3900	0.07	50	221.09	

	Ord_id	Prod_id	Ship_id	Cust_id	Sales	Discount	Order_Quantity	Profit	Shi
7788	Ord_2482	Prod_4	SHP_3399	Cust_977	2252.2620	0.10	42	478.11	
7811	Ord_3215	Prod_4	SHP_4458	Cust_1188	2080.0350	0.10	31	844.90	
7823	Ord_4370	Prod_9	SHP_6092	Cust_1492	2325.4200	0.02	25	739.91	
7858	Ord_3232	Prod_3	SHP_4483	Cust_1200	2206.1700	0.02	4	251.43	
7875	Ord_1762	Prod_17	SHP_2443	Cust_577	2287.1000	0.07	23	231.49	
7877	Ord_1748	Prod_4	SHP_2421	Cust_577	2503.3265	0.04	45	447.12	
7884	Ord_710	Prod_4	SHP_973	Cust_244	2529.3960	0.06	25	371.21	
7911	Ord_5012	Prod_4	SHP_6993	Cust_1693	2882.7070	0.02	16	303.23	
7927	Ord_2502	Prod_4	SHP_3430	Cust_976	2104.9910	0.09	20	165.45	
7940	Ord_3277	Prod_4	SHP_4550	Cust_1224	2185.9535	0.10	21	268.01	
7973	Ord_1694	Prod_6	SHP_2346	Cust_582	2145.0500	0.07	45	1012.67	
7986	Ord_4788	Prod_4	SHP_6674	Cust_1583	2478.4810	0.09	27	249.10	
8045	Ord_5443	Prod_8	SHP_7605	Cust_1803	2587.5300	0.02	44	401.85	
8048	Ord_796	Prod_5	SHP_1095	Cust_247	2780.8800	0.07	27	595.38	
8061	Ord_2020	Prod_2	SHP_3104	Cust_892	2550.1200	0.01	40	882.45	
8071	Ord_5350	Prod_4	SHP_7473	Cust_1795	2750.1070	0.00	24	600.42	
8147	Ord_3214	Prod_4	SHP_4457	Cust_1187	2143.2155	0.02	37	464.36	
8152	Ord_3337	Prod_2	SHP_4630	Cust_1187	2477.9900	0.00	30	747.68	
8239	Ord_793	Prod_9	SHP_1089	Cust_245	2833.1900	0.06	34	1409.87	
8262	Ord_4954	Prod_4	SHP_6914	Cust_1694	2455.2760	0.04	42	693.06	
8271	Ord_4679	Prod_4	SHP_6528	Cust_1587	2823.0370	0.10	29	372.40	
8289	Ord_1749	Prod_4	SHP_2422	Cust_595	2731.7300	0.07	21	310.59	
8304	Ord_2709	Prod_11	SHP_3709	Cust_1025	2272.5600	0.06	15	111.05	
8338	Ord_2107	Prod_2	SHP_2882	Cust_785	2409.9600	0.07	32	575.10	
8350	Ord_3570	Prod_4	SHP_4942	Cust_1266	2094.9780	0.06	44	697.29	
8354	Ord_3592	Prod_4	SHP_4973	Cust_1266	2614.3705	0.07	25	384.01	
8381	Ord_2696	Prod_4	SHP_3691	Cust_1006	2836.0505	0.01	25	561.13	
8394	Ord_5353	Prod_4	SHP_7479	Cust_1798	2841.4395	0.08	28	374.63	

328 rows × 10 columns

In [15]:
```python
# The 'OR' operator is represented by a | (Note that 'or' doesn't work with panda
# E.g. all orders having 2000 < Sales  OR Profit > 100
df.loc[(df.Sales > 2000) | (df.Profit > 100), :]
```

Out[15]:

	Ord_id	Prod_id	Ship_id	Cust_id	Sales	Discount	Order_Quantity	Profit
2	Ord_5446	Prod_4	SHP_7610	Cust_1818	4701.6900	0.00	26	1148.90
3	Ord_5456	Prod_6	SHP_7625	Cust_1818	2337.8900	0.09	43	729.34
4	Ord_5485	Prod_17	SHP_7664	Cust_1818	4233.1500	0.08	35	1219.87
7	Ord_4725	Prod_4	SHP_6593	Cust_1641	3410.1575	0.10	48	1137.91
10	Ord_4743	Prod_2	SHP_6615	Cust_1641	4072.0100	0.01	43	1675.98
13	Ord_2207	Prod_11	SHP_3093	Cust_839	3364.2480	0.10	15	-693.23
16	Ord_2282	Prod_9	SHP_3122	Cust_839	443.4600	0.06	30	193.12
17	Ord_4471	Prod_15	SHP_6228	Cust_1521	13255.9300	0.02	25	4089.27
22	Ord_996	Prod_5	SHP_1377	Cust_371	3202.2500	0.09	44	991.26
27	Ord_2405	Prod_9	SHP_3300	Cust_931	1062.6900	0.01	28	401.80
28	Ord_2573	Prod_4	SHP_3527	Cust_931	3594.7435	0.05	38	1016.97
37	Ord_5040	Prod_2	SHP_7032	Cust_1710	1637.7800	0.08	38	461.65
38	Ord_5035	Prod_12	SHP_7025	Cust_1710	416.8000	0.01	32	223.38
39	Ord_5045	Prod_5	SHP_7040	Cust_1710	1286.8700	0.05	48	384.38
40	Ord_5035	Prod_15	SHP_7024	Cust_1710	4917.6900	0.02	42	126.31
47	Ord_4659	Prod_6	SHP_6493	Cust_1579	1451.5900	0.06	26	435.11
54	Ord_4682	Prod_4	SHP_6531	Cust_1579	1909.0065	0.01	32	344.13
56	Ord_4410	Prod_5	SHP_6146	Cust_1474	605.7700	0.05	42	129.33
57	Ord_4546	Prod_1	SHP_6327	Cust_1474	5208.7800	0.05	34	1547.78
62	Ord_4410	Prod_6	SHP_6146	Cust_1474	1480.9100	0.00	44	489.14
64	Ord_4475	Prod_4	SHP_6234	Cust_1474	7640.2250	0.07	46	2027.68
70	Ord_4607	Prod_2	SHP_6408	Cust_1474	1463.4200	0.08	26	350.82
77	Ord_5213	Prod_13	SHP_7284	Cust_1749	1633.3700	0.08	50	144.69
79	Ord_5188	Prod_14	SHP_7252	Cust_1749	5177.4000	0.06	12	287.50
81	Ord_5205	Prod_4	SHP_7274	Cust_1749	2546.5235	0.09	26	210.00
82	Ord_5156	Prod_4	SHP_7207	Cust_1749	8374.1320	0.06	48	2568.10
84	Ord_5232	Prod_17	SHP_7306	Cust_1758	21366.5100	0.00	3	-11984.40
88	Ord_5172	Prod_4	SHP_7229	Cust_1758	1239.4445	0.07	22	165.50
98	Ord_5481	Prod_15	SHP_7659	Cust_1820	2700.7800	0.06	29	-793.36
102	Ord_1557	Prod_2	SHP_2152	Cust_565	1736.5300	0.10	46	457.03
...	...	...	...	...	...	...	...	...
8328	Ord_2169	Prod_6	SHP_2956	Cust_810	1321.5500	0.10	25	448.24
8329	Ord_2160	Prod_15	SHP_2944	Cust_810	3636.3700	0.06	33	-176.91

	Ord_id	Prod_id	Ship_id	Cust_id	Sales	Discount	Order_Quantity	Profit	
8331	Ord_2148	Prod_10	SHP_2929	Cust_810	2966.1300	0.08	31	-1456.31	
8332	Ord_2101	Prod_11	SHP_2875	Cust_790	10714.7800	0.00	41	-627.64	
8334	Ord_2124	Prod_3	SHP_2900	Cust_790	926.8500	0.09	34	382.94	
8335	Ord_2070	Prod_11	SHP_2833	Cust_784	3905.7500	0.01	21	55.30	
8338	Ord_2107	Prod_2	SHP_2882	Cust_785	2409.9600	0.07	32	575.10	
8342	Ord_2119	Prod_2	SHP_2895	Cust_785	1623.0900	0.02	28	245.88	
8343	Ord_2178	Prod_4	SHP_2968	Cust_785	6030.5800	0.09	39	1197.86	
8344	Ord_2194	Prod_5	SHP_2991	Cust_785	525.7800	0.03	20	180.64	
8347	Ord_3534	Prod_4	SHP_4894	Cust_1266	1735.3515	0.08	31	258.62	
8350	Ord_3570	Prod_4	SHP_4942	Cust_1266	2094.9780	0.06	44	697.29	
8351	Ord_3584	Prod_15	SHP_4961	Cust_1266	2502.6700	0.10	9	-198.80	
8354	Ord_3592	Prod_4	SHP_4973	Cust_1266	2614.3705	0.07	25	384.01	
8358	Ord_3582	Prod_6	SHP_4959	Cust_1266	539.6600	0.00	26	147.08	
8359	Ord_3543	Prod_3	SHP_4906	Cust_1266	514.2200	0.02	17	187.37	
8360	Ord_3639	Prod_10	SHP_5038	Cust_1266	2173.2600	0.00	35	-465.66	
8362	Ord_3593	Prod_5	SHP_4975	Cust_1274	1175.5300	0.03	18	257.59	
8366	Ord_3593	Prod_3	SHP_4974	Cust_1274	12073.0600	0.03	39	5081.87	
8367	Ord_3593	Prod_15	SHP_4975	Cust_1274	6685.0500	0.09	25	1653.60	
8369	Ord_3633	Prod_3	SHP_5031	Cust_1274	1169.2600	0.02	41	515.62	
8371	Ord_2624	Prod_4	SHP_3591	Cust_1006	4924.1350	0.07	28	1049.54	
8375	Ord_2772	Prod_3	SHP_3806	Cust_1006	1413.8200	0.10	47	226.53	
8378	Ord_2706	Prod_2	SHP_3705	Cust_1006	1361.9100	0.05	20	312.52	
8381	Ord_2696	Prod_4	SHP_3691	Cust_1006	2836.0505	0.01	25	561.13	
8383	Ord_2722	Prod_1	SHP_3731	Cust_1006	3508.3300	0.04	21	-546.98	
8385	Ord_1833	Prod_3	SHP_2527	Cust_637	611.1600	0.04	46	100.22	
8394	Ord_5353	Prod_4	SHP_7479	Cust_1798	2841.4395	0.08	28	374.63	
8397	Ord_5348	Prod_15	SHP_7469	Cust_1798	3872.8700	0.03	23	565.34	
8398	Ord_5459	Prod_6	SHP_7628	Cust_1798	603.6900	0.00	47	131.39	

3009 rows × 10 columns

In [16]:
```python
# E.g. all orders having 2000 < Sales < 3000 and Profit > 100
# Also, this time, you only need the Cust_id, Sales and Profit columns
df.loc[(df.Sales > 2000) & (df.Sales < 3000) & (df.Profit > 100), ['Cust_id', 'Sa
```

Out[16]:

	Cust_id	Sales	Profit
3	Cust_1818	2337.8900	729.34
81	Cust_1749	2546.5235	210.00
109	Cust_45	2671.2100	636.18
110	Cust_45	2157.3085	519.25
141	Cust_498	2027.5500	537.40
146	Cust_498	2209.5155	458.62
176	Cust_878	2899.9800	666.01
184	Cust_1753	2197.4115	305.96
186	Cust_1753	2213.9200	768.34
230	Cust_209	2343.0760	311.64
285	Cust_506	2980.3720	494.63
314	Cust_560	2230.9700	273.27
349	Cust_1674	2827.1425	713.88
395	Cust_1418	2182.9100	549.45
404	Cust_566	2010.8900	564.07
510	Cust_1346	2660.6105	618.07
522	Cust_51	2689.4800	399.93
536	Cust_227	2180.2300	660.25
541	Cust_1680	2292.1015	398.36
647	Cust_1439	2758.2200	966.81
680	Cust_212	2404.5990	496.89
688	Cust_1682	2257.8800	474.98
718	Cust_783	2135.9735	239.40
720	Cust_805	2773.0315	897.87
729	Cust_1588	2168.0500	416.02
767	Cust_828	2192.6300	660.06
775	Cust_1746	2610.8940	516.19
783	Cust_1017	2368.1680	1181.30
809	Cust_1440	2752.6800	430.32
810	Cust_1440	2405.0000	696.17
...	...	...	...
7777	Cust_1196	2167.0500	684.90
7778	Cust_1196	2040.3900	221.09

	Cust_id	Sales	Profit
7788	Cust_977	2252.2620	478.11
7811	Cust_1188	2080.0350	844.90
7823	Cust_1492	2325.4200	739.91
7858	Cust_1200	2206.1700	251.43
7875	Cust_577	2287.1000	231.49
7877	Cust_577	2503.3265	447.12
7884	Cust_244	2529.3960	371.21
7911	Cust_1693	2882.7070	303.23
7927	Cust_976	2104.9910	165.45
7940	Cust_1224	2185.9535	268.01
7973	Cust_582	2145.0500	1012.67
7986	Cust_1583	2478.4810	249.10
8045	Cust_1803	2587.5300	401.85
8048	Cust_247	2780.8800	595.38
8061	Cust_892	2550.1200	882.45
8071	Cust_1795	2750.1070	600.42
8147	Cust_1187	2143.2155	464.36
8152	Cust_1187	2477.9900	747.68
8239	Cust_245	2833.1900	1409.87
8262	Cust_1694	2455.2760	693.06
8271	Cust_1587	2823.0370	372.40
8289	Cust_595	2731.7300	310.59
8304	Cust_1025	2272.5600	111.05
8338	Cust_785	2409.9600	575.10
8350	Cust_1266	2094.9780	697.29
8354	Cust_1266	2614.3705	384.01
8381	Cust_1006	2836.0505	561.13
8394	Cust_1798	2841.4395	374.63

328 rows × 3 columns

In [17]:
```python
# You can use the == and != operators
df.loc[(df.Sales == 4233.15), :]
df.loc[(df.Sales != 1000), :]
```

Out[17]:

	Ord_id	Prod_id	Ship_id	Cust_id	Sales	Discount	Order_Quantity	Profit	Sh
0	Ord_5446	Prod_16	SHP_7609	Cust_1818	136.8100	0.01	23	-30.51	
1	Ord_5406	Prod_13	SHP_7549	Cust_1818	42.2700	0.01	13	4.56	
2	Ord_5446	Prod_4	SHP_7610	Cust_1818	4701.6900	0.00	26	1148.90	
3	Ord_5456	Prod_6	SHP_7625	Cust_1818	2337.8900	0.09	43	729.34	
4	Ord_5485	Prod_17	SHP_7664	Cust_1818	4233.1500	0.08	35	1219.87	
5	Ord_5446	Prod_6	SHP_7608	Cust_1818	164.0200	0.03	23	-47.64	
6	Ord_31	Prod_12	SHP_41	Cust_26	14.7600	0.01	5	1.32	
7	Ord_4725	Prod_4	SHP_6593	Cust_1641	3410.1575	0.10	48	1137.91	
8	Ord_4725	Prod_13	SHP_6593	Cust_1641	162.0000	0.01	33	45.84	
9	Ord_4725	Prod_6	SHP_6593	Cust_1641	57.2200	0.07	8	-27.72	
10	Ord_4743	Prod_2	SHP_6615	Cust_1641	4072.0100	0.01	43	1675.98	
11	Ord_1925	Prod_6	SHP_2637	Cust_708	465.9000	0.05	38	79.34	
12	Ord_2978	Prod_16	SHP_4112	Cust_1088	305.0500	0.04	27	23.12	
13	Ord_2207	Prod_11	SHP_3093	Cust_839	3364.2480	0.10	15	-693.23	
14	Ord_2207	Prod_10	SHP_3006	Cust_839	1410.9300	0.08	10	-317.48	
15	Ord_2280	Prod_5	SHP_3114	Cust_839	460.6900	0.06	48	-103.48	
16	Ord_2282	Prod_9	SHP_3122	Cust_839	443.4600	0.06	30	193.12	
17	Ord_4471	Prod_15	SHP_6228	Cust_1521	13255.9300	0.02	25	4089.27	
18	Ord_4427	Prod_6	SHP_6171	Cust_1521	283.1300	0.08	45	-141.26	
19	Ord_996	Prod_13	SHP_1378	Cust_371	41.9700	0.05	12	-37.03	
20	Ord_996	Prod_13	SHP_1378	Cust_371	57.1700	0.08	18	-24.03	
21	Ord_996	Prod_6	SHP_1378	Cust_371	81.2500	0.01	11	-44.54	
22	Ord_996	Prod_5	SHP_1377	Cust_371	3202.2500	0.09	44	991.26	
23	Ord_996	Prod_7	SHP_1378	Cust_371	35.6400	0.05	10	-0.71	
24	Ord_2573	Prod_3	SHP_3525	Cust_931	197.6100	0.08	13	3.46	
25	Ord_2335	Prod_13	SHP_3204	Cust_931	38.2600	0.03	22	-2.34	
26	Ord_2456	Prod_5	SHP_3367	Cust_931	109.5800	0.00	13	31.32	
27	Ord_2405	Prod_9	SHP_3300	Cust_931	1062.6900	0.01	28	401.80	
28	Ord_2573	Prod_4	SHP_3527	Cust_931	3594.7435	0.05	38	1016.97	
29	Ord_2478	Prod_12	SHP_3395	Cust_931	139.9800	0.07	33	-140.54	
...	...	...	...	...	...	...	...	...	
8369	Ord_3633	Prod_3	SHP_5031	Cust_1274	1169.2600	0.02	41	515.62	
8370	Ord_2696	Prod_13	SHP_3690	Cust_1006	62.7800	0.04	20	-17.75	

	Ord_id	Prod_id	Ship_id	Cust_id	Sales	Discount	Order_Quantity	Profit	Sr
8371	Ord_2624	Prod_4	SHP_3591	Cust_1006	4924.1350	0.07	28	1049.54	
8372	Ord_2772	Prod_9	SHP_3806	Cust_1006	56.9000	0.03	7	12.64	
8373	Ord_2600	Prod_16	SHP_3560	Cust_1006	106.6400	0.10	30	-31.95	
8374	Ord_2658	Prod_5	SHP_3637	Cust_1006	1082.6600	0.08	14	-256.93	
8375	Ord_2772	Prod_3	SHP_3806	Cust_1006	1413.8200	0.10	47	226.53	
8376	Ord_2624	Prod_8	SHP_3590	Cust_1006	1211.0000	0.00	36	-27.99	
8377	Ord_2722	Prod_12	SHP_3729	Cust_1006	34.0100	0.00	12	10.58	
8378	Ord_2706	Prod_2	SHP_3705	Cust_1006	1361.9100	0.05	20	312.52	
8379	Ord_2722	Prod_5	SHP_3730	Cust_1006	1008.9500	0.04	41	69.31	
8380	Ord_2772	Prod_6	SHP_3807	Cust_1006	308.9200	0.04	45	-143.58	
8381	Ord_2696	Prod_4	SHP_3691	Cust_1006	2836.0505	0.01	25	561.13	
8382	Ord_2658	Prod_3	SHP_3636	Cust_1006	120.9800	0.00	28	-92.85	
8383	Ord_2722	Prod_1	SHP_3731	Cust_1006	3508.3300	0.04	21	-546.98	
8384	Ord_4620	Prod_3	SHP_6435	Cust_1577	59.6200	0.04	10	-56.30	
8385	Ord_1833	Prod_3	SHP_2527	Cust_637	611.1600	0.04	46	100.22	
8386	Ord_2324	Prod_7	SHP_3189	Cust_851	121.8700	0.07	39	11.32	
8387	Ord_2220	Prod_3	SHP_3019	Cust_851	41.0600	0.04	4	-16.39	
8388	Ord_4424	Prod_1	SHP_6165	Cust_1519	994.0400	0.03	10	-335.06	
8389	Ord_4444	Prod_13	SHP_6192	Cust_1519	159.4100	0.00	44	34.68	
8390	Ord_5435	Prod_16	SHP_7594	Cust_1798	316.9900	0.04	47	-276.54	
8391	Ord_5435	Prod_4	SHP_7594	Cust_1798	1991.8985	0.07	20	88.36	
8392	Ord_5384	Prod_9	SHP_7519	Cust_1798	181.5000	0.08	43	-6.24	
8393	Ord_5348	Prod_8	SHP_7470	Cust_1798	356.7200	0.07	9	12.61	
8394	Ord_5353	Prod_4	SHP_7479	Cust_1798	2841.4395	0.08	28	374.63	
8395	Ord_5411	Prod_6	SHP_7555	Cust_1798	127.1600	0.10	20	-74.03	
8396	Ord_5388	Prod_6	SHP_7524	Cust_1798	243.0500	0.02	39	-70.85	
8397	Ord_5348	Prod_15	SHP_7469	Cust_1798	3872.8700	0.03	23	565.34	
8398	Ord_5459	Prod_6	SHP_7628	Cust_1798	603.6900	0.00	47	131.39	

8399 rows × 10 columns

In [18]:
```python
# You may want to select rows whose column value is in an iterable
# For instance, say a colleague gives you a list of customer_ids from a certain r

customers_in_bangalore = ['Cust_1798', 'Cust_1519', 'Cust_637', 'Cust_851']

# To get all the orders from these customers, use the isin() function
# It returns a boolean, which you can use to select rows
df.loc[df['Cust_id'].isin(customers_in_bangalore), :]
```

Out[18]:

	Ord_id	Prod_id	Ship_id	Cust_id	Sales	Discount	Order_Quantity	Profit	Ship
8385	Ord_1833	Prod_3	SHP_2527	Cust_637	611.1600	0.04	46	100.22	
8386	Ord_2324	Prod_7	SHP_3189	Cust_851	121.8700	0.07	39	11.32	
8387	Ord_2220	Prod_3	SHP_3019	Cust_851	41.0600	0.04	4	-16.39	
8388	Ord_4424	Prod_1	SHP_6165	Cust_1519	994.0400	0.03	10	-335.06	
8389	Ord_4444	Prod_13	SHP_6192	Cust_1519	159.4100	0.00	44	34.68	
8390	Ord_5435	Prod_16	SHP_7594	Cust_1798	316.9900	0.04	47	-276.54	
8391	Ord_5435	Prod_4	SHP_7594	Cust_1798	1991.8985	0.07	20	88.36	
8392	Ord_5384	Prod_9	SHP_7519	Cust_1798	181.5000	0.08	43	-6.24	
8393	Ord_5348	Prod_8	SHP_7470	Cust_1798	356.7200	0.07	9	12.61	
8394	Ord_5353	Prod_4	SHP_7479	Cust_1798	2841.4395	0.08	28	374.63	
8395	Ord_5411	Prod_6	SHP_7555	Cust_1798	127.1600	0.10	20	-74.03	
8396	Ord_5388	Prod_6	SHP_7524	Cust_1798	243.0500	0.02	39	-70.85	
8397	Ord_5348	Prod_15	SHP_7469	Cust_1798	3872.8700	0.03	23	565.34	
8398	Ord_5459	Prod_6	SHP_7628	Cust_1798	603.6900	0.00	47	131.39	