



```
In [2]: import pandas as pd
```

```
In [4]: df = pd.read_csv(r"/content/dataset_1_202509101953.csv")
```

```
In [ ]: df
```

```
Out[ ]:
```

	destination	passanger	weather	temperature	time	coupon	exp
0	No Urgent Place	Alone	Sunny	55	2PM	Restaurant(<20)	
1	No Urgent Place	Friend(s)	Sunny	80	10AM	Coffee House	
2	No Urgent Place	Friend(s)	Sunny	80	10AM	Carry out & Take away	
3	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	
4	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	
...
5562	Work	Alone	Sunny	80	7AM	Coffee House	
5563	Work	Alone	Sunny	80	7AM	Carry out & Take away	
5564	Work	Alone	Sunny	55	7AM	Coffee House	
5565	No Urgent Place	Alone	Sunny	80	10AM	Bar	
5566	No Urgent Place	Friend(s)	Sunny	80	10AM	Coffee House	

5567 rows × 27 columns

```
In [5]: df[['weather', 'temperature']]
```

Out[5]:

	weather	temperature
0	Sunny	55
1	Sunny	80
2	Sunny	80
3	Sunny	80
4	Sunny	80
...
11107	Rainy	55
11108	Rainy	55
11109	Sunny	80
11110	Snowy	30
11111	Sunny	80

11112 rows × 2 columns

In [6]: `df.head(50)`

Out[6]:

	destination	passanger	weather	temperature	time	coupon	expi
0	No Urgent Place	Alone	Sunny	55	2PM	Restaurant(<20)	
1	No Urgent Place	Friend(s)	Sunny	80	10AM	Coffee House	
2	No Urgent Place	Friend(s)	Sunny	80	10AM	Carry out & Take away	
3	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	
4	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	
5	No Urgent Place	Friend(s)	Sunny	80	6PM	Restaurant(<20)	
6	No Urgent Place	Friend(s)	Sunny	55	2PM	Carry out & Take away	
7	No Urgent Place	Kid(s)	Sunny	80	10AM	Restaurant(<20)	
8	No Urgent Place	Kid(s)	Sunny	80	10AM	Carry out & Take away	
9	No Urgent Place	Kid(s)	Sunny	80	10AM	Bar	
10	No Urgent Place	Kid(s)	Sunny	80	2PM	Restaurant(<20)	
11	No Urgent Place	Kid(s)	Sunny	55	2PM	Restaurant(<20)	
12	No Urgent Place	Kid(s)	Sunny	55	6PM	Coffee House	
13	Home	Alone	Sunny	55	6PM	Bar	
14	Home	Alone	Sunny	55	6PM	Restaurant(20-50)	
15	Home	Alone	Sunny	80	6PM	Coffee House	
16	Work	Alone	Sunny	55	7AM	Coffee House	
17	Work	Alone	Sunny	55	7AM	Bar	
18	Work	Alone	Sunny	80	7AM	Restaurant(20-50)	
19	Work	Alone	Sunny	80	7AM	Carry out & Take away	

	destination	passanger	weather	temperature	time	coupon	expi
20	Work	Alone	Sunny	55	7AM	Restaurant(<20)	
21	Work	Alone	Sunny	55	7AM	Coffee House	
22	No Urgent Place	Alone	Sunny	55	2PM	Restaurant(<20)	
23	No Urgent Place	Friend(s)	Sunny	80	10AM	Coffee House	
24	No Urgent Place	Friend(s)	Sunny	80	10AM	Bar	
25	No Urgent Place	Friend(s)	Sunny	80	10AM	Carry out & Take away	
26	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	
27	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	
28	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	
29	No Urgent Place	Friend(s)	Sunny	80	2PM	Restaurant(<20)	
30	No Urgent Place	Friend(s)	Sunny	80	6PM	Coffee House	
31	No Urgent Place	Friend(s)	Sunny	80	6PM	Restaurant(<20)	
32	No Urgent Place	Friend(s)	Sunny	55	2PM	Coffee House	
33	No Urgent Place	Friend(s)	Sunny	55	2PM	Carry out & Take away	
34	No Urgent Place	Alone	Sunny	55	10AM	Coffee House	
35	Home	Alone	Sunny	55	6PM	Bar	
36	Home	Alone	Sunny	55	6PM	Restaurant(20-50)	
37	Home	Alone	Sunny	80	6PM	Coffee House	
38	Work	Alone	Sunny	55	7AM	Coffee House	
39	Work	Alone	Sunny	55	7AM	Bar	
40	Work	Alone	Sunny	80	7AM	Restaurant(20-50)	
41	Work	Alone	Sunny	80	7AM	Carry out & Take away	

	destination	passanger	weather	temperature	time	coupon	expi
42	Work	Alone	Sunny	55	7AM	Restaurant(<20)	
43	Work	Alone	Sunny	55	7AM	Coffee House	
44	No Urgent Place	Alone	Sunny	55	2PM	Restaurant(<20)	
45	No Urgent Place	Friend(s)	Sunny	80	10AM	Coffee House	
46	No Urgent Place	Friend(s)	Sunny	80	10AM	Bar	
47	No Urgent Place	Friend(s)	Sunny	80	10AM	Carry out & Take away	
48	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	
49	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	

50 rows × 27 columns

In [7]: `df[:51]`

Out[7]:

	destination	passanger	weather	temperature	time	coupon	expi
0	No Urgent Place	Alone	Sunny	55	2PM	Restaurant(<20)	
1	No Urgent Place	Friend(s)	Sunny	80	10AM	Coffee House	
2	No Urgent Place	Friend(s)	Sunny	80	10AM	Carry out & Take away	
3	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	
4	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	
5	No Urgent Place	Friend(s)	Sunny	80	6PM	Restaurant(<20)	
6	No Urgent Place	Friend(s)	Sunny	55	2PM	Carry out & Take away	
7	No Urgent Place	Kid(s)	Sunny	80	10AM	Restaurant(<20)	
8	No Urgent Place	Kid(s)	Sunny	80	10AM	Carry out & Take away	
9	No Urgent Place	Kid(s)	Sunny	80	10AM	Bar	
10	No Urgent Place	Kid(s)	Sunny	80	2PM	Restaurant(<20)	
11	No Urgent Place	Kid(s)	Sunny	55	2PM	Restaurant(<20)	
12	No Urgent Place	Kid(s)	Sunny	55	6PM	Coffee House	
13	Home	Alone	Sunny	55	6PM	Bar	
14	Home	Alone	Sunny	55	6PM	Restaurant(20-50)	
15	Home	Alone	Sunny	80	6PM	Coffee House	
16	Work	Alone	Sunny	55	7AM	Coffee House	
17	Work	Alone	Sunny	55	7AM	Bar	
18	Work	Alone	Sunny	80	7AM	Restaurant(20-50)	
19	Work	Alone	Sunny	80	7AM	Carry out & Take away	

	destination	passanger	weather	temperature	time	coupon	expi
20	Work	Alone	Sunny	55	7AM	Restaurant(<20)	
21	Work	Alone	Sunny	55	7AM	Coffee House	
22	No Urgent Place	Alone	Sunny	55	2PM	Restaurant(<20)	
23	No Urgent Place	Friend(s)	Sunny	80	10AM	Coffee House	
24	No Urgent Place	Friend(s)	Sunny	80	10AM	Bar	
25	No Urgent Place	Friend(s)	Sunny	80	10AM	Carry out & Take away	
26	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	
27	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	
28	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	
29	No Urgent Place	Friend(s)	Sunny	80	2PM	Restaurant(<20)	
30	No Urgent Place	Friend(s)	Sunny	80	6PM	Coffee House	
31	No Urgent Place	Friend(s)	Sunny	80	6PM	Restaurant(<20)	
32	No Urgent Place	Friend(s)	Sunny	55	2PM	Coffee House	
33	No Urgent Place	Friend(s)	Sunny	55	2PM	Carry out & Take away	
34	No Urgent Place	Alone	Sunny	55	10AM	Coffee House	
35	Home	Alone	Sunny	55	6PM	Bar	
36	Home	Alone	Sunny	55	6PM	Restaurant(20-50)	
37	Home	Alone	Sunny	80	6PM	Coffee House	
38	Work	Alone	Sunny	55	7AM	Coffee House	
39	Work	Alone	Sunny	55	7AM	Bar	
40	Work	Alone	Sunny	80	7AM	Restaurant(20-50)	
41	Work	Alone	Sunny	80	7AM	Carry out & Take away	

	destination	passanger	weather	temperature	time	coupon	expi
42	Work	Alone	Sunny	55	7AM	Restaurant(<20)	
43	Work	Alone	Sunny	55	7AM	Coffee House	
44	No Urgent Place	Alone	Sunny	55	2PM	Restaurant(<20)	
45	No Urgent Place	Friend(s)	Sunny	80	10AM	Coffee House	
46	No Urgent Place	Friend(s)	Sunny	80	10AM	Bar	
47	No Urgent Place	Friend(s)	Sunny	80	10AM	Carry out & Take away	
48	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	
49	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	
50	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	

51 rows × 27 columns

```
In [8]: df['passanger'].unique()
```

```
Out[8]: array(['Alone', 'Friend(s)', 'Kid(s)', 'Partner'], dtype=object)
```

```
In [9]: df['passanger'].nunique()
```

```
Out[9]: 4
```

```
In [12]: df[df['destination'] == 'home']
```

```
Out[12]: destination passanger weather temperature time coupon expiration gen
```

0 rows × 27 columns

```
In [11]: df.sort_values('coupon')
```


Out[11]:

	destination	passanger	weather	temperature	time	coupon e>
10074	Work	Alone	Rainy	55	7AM	Bar
3967	Home	Alone	Sunny	55	6PM	Bar
7650	No Urgent Place	Partner	Sunny	30	10AM	Bar
1261	No Urgent Place	Friend(s)	Sunny	80	10AM	Bar
3971	Work	Alone	Sunny	55	7AM	Bar
...
8690	Work	Alone	Snowy	30	7AM	Restaurant(<20)
8692	Work	Alone	Sunny	80	7AM	Restaurant(<20)
2258	No Urgent Place	Friend(s)	Sunny	80	6PM	Restaurant(<20)
8678	No Urgent Place	Friend(s)	Sunny	30	10PM	Restaurant(<20)
0	No Urgent Place	Alone	Sunny	55	2PM	Restaurant(<20)

11112 rows × 27 columns

In [13]:

```
df.rename(columns={'destination': 'Destination'}, inplace=True)
df
```

Out[13]:

	Destination	passanger	weather	temperature	time	coupon	e
0	No Urgent Place	Alone	Sunny	55	2PM	Restaurant(<20)	
1	No Urgent Place	Friend(s)	Sunny	80	10AM	Coffee House	
2	No Urgent Place	Friend(s)	Sunny	80	10AM	Carry out & Take away	
3	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	
4	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	
...
11107	No Urgent Place	Alone	Rainy	55	10AM	Bar	
11108	No Urgent Place	Alone	Rainy	55	2PM	Carry out & Take away	
11109	No Urgent Place	Alone	Sunny	80	10AM	Restaurant(<20)	
11110	No Urgent Place	Alone	Snowy	30	10AM	Restaurant(<20)	
11111	Home	Alone	Sunny	80	6PM	Carry out & Take away	

11112 rows × 27 columns

```
In [14]: df.rename(columns={'destination': 'Destination'}, inplace=True)
df
```

Out[14]:

	Destination	passanger	weather	temperature	time	coupon	e
0	No Urgent Place	Alone	Sunny	55	2PM	Restaurant(<20)	
1	No Urgent Place	Friend(s)	Sunny	80	10AM	Coffee House	
2	No Urgent Place	Friend(s)	Sunny	80	10AM	Carry out & Take away	
3	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	
4	No Urgent Place	Friend(s)	Sunny	80	2PM	Coffee House	
...
11107	No Urgent Place	Alone	Rainy	55	10AM	Bar	
11108	No Urgent Place	Alone	Rainy	55	2PM	Carry out & Take away	
11109	No Urgent Place	Alone	Sunny	80	10AM	Restaurant(<20)	
11110	No Urgent Place	Alone	Snowy	30	10AM	Restaurant(<20)	
11111	Home	Alone	Sunny	80	6PM	Carry out & Take away	

11112 rows × 27 columns

```
In [15]: df.groupby('occupation').size().to_frame('Count').reset_index()
```

Out[15]:

	occupation	Count
0	Architecture & Engineering	175
1	Arts Design Entertainment Sports & Media	558
2	Building & Grounds Cleaning & Maintenance	44
3	Business & Financial	456
4	Community & Social Services	219
5	Compu	1
6	Computer & Mathematical	1286
7	Construction & Extraction	132
8	Education&Training&Library	812
9	Farming Fishing & Forestry	43
10	Food Preparation & Serving Related	254
11	Healthcare Practitioners & Technical	200
12	Healthcare Support	198
13	Installation Maintenance & Repair	133
14	Legal	197
15	Life Physical Social Science	170
16	Management	782
17	Office & Administrative Support	551
18	Personal Care & Service	153
19	Production Occupations	110
20	Protective Service	153
21	Retired	445
22	Sales & Related	938
23	Student	1366
24	Transportation & Material Moving	196
25	Unemployed	1540

```
In [16]: df.groupby('weather')['temperature'].mean().to_frame('avg_temp').reset_index()
```

Out[16]:

	weather	avg_temp
0	Rainy	55.000000
1	Snowy	30.000000
2	Sunny	69.704607

0	Rainy	55.000000
1	Snowy	30.000000
2	Sunny	69.704607

```
In [17]: df.groupby('weather')['temperature'].size().to_frame('count_temp').reset_index()
```

Out[17]:

	weather	count_temp
0	Rainy	895
1	Snowy	992
2	Sunny	9225

0	Rainy	895
1	Snowy	992
2	Sunny	9225

```
In [18]: df.groupby('weather')['temperature'].nunique().to_frame('count_distict_temp').
```

Out[18]:

	weather	count_distict_temp
0	Rainy	1
1	Snowy	1
2	Sunny	3

0	Rainy	1
1	Snowy	1
2	Sunny	3

```
In [19]: df.groupby('weather')['temperature'].sum().to_frame('sum_temp').reset_index()
```

Out[19]:

	weather	sum_temp
0	Rainy	49225
1	Snowy	29760
2	Sunny	643025

0	Rainy	49225
1	Snowy	29760
2	Sunny	643025

```
In [20]: df.groupby('weather')['temperature'].min().to_frame('min_temp').reset_index()
```

Out[20]:

	weather	min_temp
0	Rainy	55
1	Snowy	30
2	Sunny	30

0	Rainy	55
1	Snowy	30
2	Sunny	30

```
In [22]: df.groupby('weather')['temperature'].max().to_frame('max_temp').reset_index()
```

Out[22]:

	weather	max_temp
0	Rainy	55
1	Snowy	30
2	Sunny	80

In []: