# Data Analysis using SQL vs Data Analysis using Python

## SQL Query

**select * from** dataset_1 ;

dataset_1 1

select * from dataset_1 | Enter a SQL expression to filter results (use Ctrl+Space)

| | destination | passanger | weather | temperature | time | coupon |
|---|---|---|---|---|---|---|
| 1 | No Urgent Place | Alone | Sunny | 55 | 2PM | Restaurant(<20) |
| 2 | No Urgent Place | Friend(s) | Sunny | 80 | 10AM | Coffee House |
| 3 | No Urgent Place | Friend(s) | Sunny | 80 | 10AM | Carry out & Take awa |
| 4 | No Urgent Place | Friend(s) | Sunny | 80 | 2PM | Coffee House |
| 5 | No Urgent Place | Friend(s) | Sunny | 80 | 2PM | Coffee House |
| 6 | No Urgent Place | Friend(s) | Sunny | 80 | 6PM | Restaurant(<20) |
| 7 | No Urgent Place | Friend(s) | Sunny | 55 | 2PM | Carry out & Take awa |
| 8 | No Urgent Place | Kid(s) | Sunny | 80 | 10AM | Restaurant(<20) |
| 9 | No Urgent Place | Kid(s) | Sunny | 80 | 10AM | Carry out & Take awa |
| 10 | No Urgent Place | Kid(s) | Sunny | 80 | 10AM | Bar |
| 11 | No Urgent Place | Kid(s) | Sunny | 80 | 2PM | Restaurant(<20) |
| 12 | No Urgent Place | Kid(s) | Sunny | 55 | 2PM | Restaurant(<20) |
| 13 | No Urgent Place | Kid(s) | Sunny | 55 | 6PM | Coffee House |
| 14 | Home | Alone | Sunny | 55 | 6PM | Bar |

Refresh Save Cancel Export data 200 200+

200 row(s) fetched - 0.004s (0.004s fetch), on 2024-09-08 at 18:22:21

## Python Code

df

```
[1]: #To read the file
[2]: import pandas as pd
[5]: df=pd.read_csv(r'C:\Users\arati\OneDrive\Desktop\SQL\data.csv')
[6]: df
```

[6]:

| | destination | passanger | weather | temperature | time | coupon | expiration | gender | age | maritalStatus | ... | CarryAway | RestaurantLessThan20 | Restauran |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | No Urgent Place | Alone | Sunny | 55 | 2PM | Restaurant(<20) | 1d | Female | 21 | Unmarried partner | ... | NaN | 4~8 | |
| 1 | No Urgent Place | Friend(s) | Sunny | 80 | 10AM | Coffee House | 2h | Female | 21 | Unmarried partner | ... | NaN | 4~8 | |
| 2 | No Urgent Place | Friend(s) | Sunny | 80 | 10AM | Carry out & Take away | 2h | Female | 21 | Unmarried partner | ... | NaN | 4~8 | |
| 3 | No Urgent Place | Friend(s) | Sunny | 80 | 2PM | Coffee House | 2h | Female | 21 | Unmarried partner | ... | NaN | 4~8 | |
| 4 | No Urgent Place | Friend(s) | Sunny | 80 | 2PM | Coffee House | 1d | Female | 21 | Unmarried partner | ... | NaN | 4~8 | |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | |
| 12679 | Home | Partner | Rainy | 55 | 6PM | Carry out & Take away | 1d | Male | 26 | Single | ... | 1~3 | 4~8 | |
| 12680 | Work | Alone | Rainy | 55 | 7AM | Carry out & Take away | 1d | Male | 26 | Single | ... | 1~3 | 4~8 | |
| 12681 | Work | Alone | Snowy | 30 | 7AM | Coffee House | 1d | Male | 26 | Single | ... | 1~3 | 4~8 | |
| 12682 | Work | Alone | Snowy | 30 | 7AM | Bar | 1d | Male | 26 | Single | ... | 1~3 | 4~8 | |
| 12683 | Work | Alone | Sunny | 80 | 7AM | Restaurant(20-50) | 2h | Male | 26 | Single | ... | 1~3 | 4~8 | |

12684 rows × 27 columns

# SQL Query

SELECT weather,temperature FROM dataset_1

dataset_1 1

SELECT weather,temperature FROM dataset_1 | Enter a SQL expression to filter results (use Ctrl+Space)

| | weather | temperature |
|---|---|---|
| 1 | Sunny | 55 |
| 2 | Sunny | 80 |
| 3 | Sunny | 80 |
| 4 | Sunny | 80 |
| 5 | Sunny | 80 |
| 6 | Sunny | 80 |
| 7 | Sunny | 55 |
| 8 | Sunny | 80 |
| 9 | Sunny | 80 |
| 10 | Sunny | 80 |
| 11 | Sunny | 80 |
| 12 | Sunny | 55 |
| 13 | Sunny | 55 |
| 14 | Sunny | 55 |

Refresh Save Cancel Export data 200

200 row(s) fetched - 0.001s (0.001s fetch), on 2024-09-08 at 18:36:58

# Python Code

df[['weather','temperature']]

[7]:
```
df[['weather','temperature']] #Select wether, temperature from dataset_1
```

[7]:

| | weather | temperature |
|---|---|---|
| **0** | Sunny | 55 |
| **1** | Sunny | 80 |
| **2** | Sunny | 80 |
| **3** | Sunny | 80 |
| **4** | Sunny | 80 |
| **...** | ... | ... |
| **12679** | Rainy | 55 |
| **12680** | Rainy | 55 |
| **12681** | Snowy | 30 |
| **12682** | Snowy | 30 |
| **12683** | Sunny | 80 |

12684 rows × 2 columns

# SQL Query

SELECT*FROM dataset_1 LIMIT 10

dataset_1 1

SELECT*FROM dataset_1 LIMIT 10 | Enter a SQL expression to filter results (use Ctrl+Space)

| | destination | passanger | weather | temperature | time | coupon |
|---|---|---|---|---|---|---|
| 1 | No Urgent Place | Alone | Sunny | 55 | 2PM | Restaurant(<20) |
| 2 | No Urgent Place | Friend(s) | Sunny | 80 | 10AM | Coffee House |
| 3 | No Urgent Place | Friend(s) | Sunny | 80 | 10AM | Carry out & Take away |
| 4 | No Urgent Place | Friend(s) | Sunny | 80 | 2PM | Coffee House |
| 5 | No Urgent Place | Friend(s) | Sunny | 80 | 2PM | Coffee House |
| 6 | No Urgent Place | Friend(s) | Sunny | 80 | 6PM | Restaurant(<20) |
| 7 | No Urgent Place | Friend(s) | Sunny | 55 | 2PM | Carry out & Take away |
| 8 | No Urgent Place | Kid(s) | Sunny | 80 | 10AM | Restaurant(<20) |
| 9 | No Urgent Place | Kid(s) | Sunny | 80 | 10AM | Carry out & Take away |
| 10 | No Urgent Place | Kid(s) | Sunny | 80 | 10AM | Bar |

# Python Code

Df[['weather','temperature']]

```
[8]: df.head(10) #To see first 10 rows
```

[8]:

| | destination | passanger | weather | temperature | time | coupon | expiration | gender | age | maritalStatus | ... | CarryAway | RestaurantLessThan20 | Restaurant20To5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | No Urgent Place | Alone | Sunny | 55 | 2PM | Restaurant(<20) | 1d | Female | 21 | Unmarried partner | ... | NaN | 4~8 | 1~ |
| 1 | No Urgent Place | Friend(s) | Sunny | 80 | 10AM | Coffee House | 2h | Female | 21 | Unmarried partner | ... | NaN | 4~8 | 1~ |
| 2 | No Urgent Place | Friend(s) | Sunny | 80 | 10AM | Carry out & Take away | 2h | Female | 21 | Unmarried partner | ... | NaN | 4~8 | 1~ |
| 3 | No Urgent Place | Friend(s) | Sunny | 80 | 2PM | Coffee House | 2h | Female | 21 | Unmarried partner | ... | NaN | 4~8 | 1~ |
| 4 | No Urgent Place | Friend(s) | Sunny | 80 | 2PM | Coffee House | 1d | Female | 21 | Unmarried partner | ... | NaN | 4~8 | 1~ |
| 5 | No Urgent Place | Friend(s) | Sunny | 80 | 6PM | Restaurant(<20) | 2h | Female | 21 | Unmarried partner | ... | NaN | 4~8 | 1~ |
| 6 | No Urgent Place | Friend(s) | Sunny | 55 | 2PM | Carry out & Take away | 1d | Female | 21 | Unmarried partner | ... | NaN | 4~8 | 1~ |
| 7 | No Urgent Place | Kid(s) | Sunny | 80 | 10AM | Restaurant(<20) | 2h | Female | 21 | Unmarried partner | ... | NaN | 4~8 | 1~ |
| 8 | No Urgent Place | Kid(s) | Sunny | 80 | 10AM | Carry out & Take away | 2h | Female | 21 | Unmarried partner | ... | NaN | 4~8 | 1~ |
| 9 | No Urgent Place | Kid(s) | Sunny | 80 | 10AM | Bar | 1d | Female | 21 | Unmarried partner | ... | NaN | 4~8 | 1~ |

10 rows × 27 columns

# SQL Query

SELECT DISTINCT passenger FROM dataset_1

dataset_1 1

SELECT DISTINCT passanger FROM dataset_1

| | A-Z passanger |
|---|---|
| 1 | Alone |
| 2 | Friend(s) |
| 3 | Kid(s) |
| 4 | Partner |

# Python Code

df['passanger'].unique()

```
[9]: df['passanger'].unique() #To DISTINCT passangers

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

# SQL Query

**SELECT * FROM** dataset_1 **WHERE** destination = **'Home'**

dataset_1 1

SELECT * FROM dataset_1 WHERE destination | Enter a SQL expression to filter results (use Ctrl+Space)

| | destination | passanger | weather | temperature | time | coupon | A |
|---|---|---|---|---|---|---|---|
| 1 | Home | Alone | Sunny | 55 | 6PM | Bar | 1 |
| 2 | Home | Alone | Sunny | 55 | 6PM | Restaurant(20-50) | 1 |
| 3 | Home | Alone | Sunny | 80 | 6PM | Coffee House | 2 |
| 4 | Home | Alone | Sunny | 55 | 6PM | Bar | 1 |
| 5 | Home | Alone | Sunny | 55 | 6PM | Restaurant(20-50) | 1 |
| 6 | Home | Alone | Sunny | 80 | 6PM | Coffee House | 2 |
| 7 | Home | Alone | Sunny | 55 | 6PM | Bar | 1 |
| 8 | Home | Alone | Sunny | 55 | 6PM | Restaurant(20-50) | 1 |
| 9 | Home | Alone | Sunny | 80 | 6PM | Coffee House | 2 |
| 10 | Home | Alone | Sunny | 55 | 6PM | Bar | 1 |
| 11 | Home | Alone | Sunny | 55 | 6PM | Restaurant(20-50) | 1 |
| 12 | Home | Alone | Sunny | 80 | 6PM | Coffee House | 2 |
| 13 | Home | Alone | Sunny | 55 | 6PM | Bar | 1 |
| 14 | Home | Alone | Sunny | 55 | 6PM | Restaurant(20-50) | 1 |
| 15 | Home | Alone | Sunny | 80 | 6PM | Coffee House | 2 |

# Python Code

df[df['destination']=='Home']

```
[10]: df[df['destination']=='Home'] #To see where destination == Home
```

[10]:

| | destination | passanger | weather | temperature | time | coupon | expiration | gender | age | maritalStatus | ... | CarryAway | RestaurantLessThan20 | Restauran |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **13** | Home | Alone | Sunny | 55 | 6PM | Bar | 1d | Female | 21 | Unmarried partner | ... | NaN | 4~8 | |
| **14** | Home | Alone | Sunny | 55 | 6PM | Restaurant(20-50) | 1d | Female | 21 | Unmarried partner | ... | NaN | 4~8 | |
| **15** | Home | Alone | Sunny | 80 | 6PM | Coffee House | 2h | Female | 21 | Unmarried partner | ... | NaN | 4~8 | |
| **35** | Home | Alone | Sunny | 55 | 6PM | Bar | 1d | Male | 21 | Single | ... | 4~8 | 4~8 | |
| **36** | Home | Alone | Sunny | 55 | 6PM | Restaurant(20-50) | 1d | Male | 21 | Single | ... | 4~8 | 4~8 | |
| **...** | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | |
| **12675** | Home | Alone | Snowy | 30 | 10PM | Coffee House | 2h | Male | 26 | Single | ... | 1~3 | 4~8 | |
| **12676** | Home | Alone | Sunny | 80 | 6PM | Restaurant(20-50) | 1d | Male | 26 | Single | ... | 1~3 | 4~8 | |
| **12677** | Home | Partner | Sunny | 30 | 6PM | Restaurant(<20) | 1d | Male | 26 | Single | ... | 1~3 | 4~8 | |
| **12678** | Home | Partner | Sunny | 30 | 10PM | Restaurant(<20) | 2h | Male | 26 | Single | ... | 1~3 | 4~8 | |
| **12679** | Home | Partner | Rainy | 55 | 6PM | Carry out & Take away | 1d | Male | 26 | Single | ... | 1~3 | 4~8 | |

3237 rows × 27 columns

# SQL Query

**SELECT *FROM** dataset_1 **ORDER BY** coupon

dataset_1 1

SELECT *FROM dataset_1 ORDER BY coupon

Enter a SQL expression to filter results (use Ctrl+Space)

| | destination | passanger | weather | temperature | time | coupon | |
|---|---|---|---|---|---|---|---|
| 1 | No Urgent Place | Kid(s) | Sunny | 80 | 10AM | Bar | 1 |
| 2 | Home | Alone | Sunny | 55 | 6PM | Bar | 1 |
| 3 | Work | Alone | Sunny | 55 | 7AM | Bar | 1 |
| 4 | No Urgent Place | Friend(s) | Sunny | 80 | 10AM | Bar | 1 |
| 5 | Home | Alone | Sunny | 55 | 6PM | Bar | 1 |
| 6 | Work | Alone | Sunny | 55 | 7AM | Bar | 1 |
| 7 | No Urgent Place | Friend(s) | Sunny | 80 | 10AM | Bar | 1 |
| 8 | Home | Alone | Sunny | 55 | 6PM | Bar | 1 |
| 9 | Work | Alone | Sunny | 55 | 7AM | Bar | 1 |
| 10 | No Urgent Place | Kid(s) | Sunny | 80 | 10AM | Bar | 1 |
| 11 | Home | Alone | Sunny | 55 | 6PM | Bar | 1 |
| 12 | Work | Alone | Sunny | 55 | 7AM | Bar | 1 |
| 13 | No Urgent Place | Friend(s) | Sunny | 80 | 10AM | Bar | 1 |
| 14 | Home | Alone | Sunny | 55 | 6PM | Bar | 1 |
| 15 | Work | Alone | Sunny | 55 | 7AM | Bar | 1 |

Refresh Save Cancel Export data 200 200+

# Python Code

df.sort_values('coupon')

```
[11]: df.sort_values('coupon')  #Shorting the COUPON value in ascending order
```

[11]:

| | destination | passanger | weather | temperature | time | coupon | expiration | gender | age | maritalStatus | ... | CarryAway | RestaurantLessThan20 | Restaura |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **11702** | Home | Partner | Sunny | 30 | 10PM | Bar | 2h | Female | 50plus | Married partner | ... | 4~8 | 1~3 | |
| **9930** | No Urgent Place | Alone | Snowy | 30 | 2PM | Bar | 1d | Female | 21 | Single | ... | gt8 | gt8 | |
| **10632** | Home | Alone | Rainy | 55 | 6PM | Bar | 1d | Male | 21 | Single | ... | gt8 | less1 | |
| **7997** | No Urgent Place | Friend(s) | Rainy | 55 | 10PM | Bar | 2h | Male | 26 | Unmarried partner | ... | 4~8 | never | |
| **11166** | Work | Alone | Snowy | 30 | 7AM | Bar | 1d | Female | 41 | Married partner | ... | gt8 | 1~3 | |
| **...** | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | |
| **10476** | Home | Alone | Sunny | 80 | 6PM | Restaurant(<20) | 1d | Female | 31 | Unmarried partner | ... | 1~3 | 1~3 | |
| **5447** | Home | Alone | Sunny | 80 | 10PM | Restaurant(<20) | 2h | Female | 50plus | Single | ... | less1 | less1 | |
| **10478** | Home | Alone | Snowy | 30 | 10PM | Restaurant(<20) | 2h | Female | 31 | Unmarried partner | ... | 1~3 | 1~3 | |
| **5440** | No Urgent Place | Alone | Sunny | 80 | 2PM | Restaurant(<20) | 2h | Female | 50plus | Single | ... | less1 | less1 | |
| **0** | No Urgent Place | Alone | Sunny | 55 | 2PM | Restaurant(<20) | 1d | Female | 21 | Unmarried partner | ... | NaN | 4~8 | |

12684 rows × 27 columns

# SQL Query

**SELECT** destination **as** *Destination* **FROM** dataset_1

dataset_1 1

SELECT destination as Destination FROM datas

| | Destination |
|---|---|
| 1 | No Urgent Place |
| 2 | No Urgent Place |
| 3 | No Urgent Place |
| 4 | No Urgent Place |
| 5 | No Urgent Place |
| 6 | No Urgent Place |
| 7 | No Urgent Place |
| 8 | No Urgent Place |
| 9 | No Urgent Place |
| 10 | No Urgent Place |
| 11 | No Urgent Place |
| 12 | No Urgent Place |
| 13 | No Urgent Place |
| 14 | Home |
| 15 | Home |
| 16 | Home |

# Python Code

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

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

[13]: df
```

[13]:

| | Destination | passanger | weather | temperature | time | coupon | expiration | gender | age | maritalStatus | ... | CarryAway | RestaurantLessThan20 | Restauran |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0** | No Urgent Place | Alone | Sunny | 55 | 2PM | Restaurant(<20) | 1d | Female | 21 | Unmarried partner | ... | NaN | 4~8 | |
| **1** | No Urgent Place | Friend(s) | Sunny | 80 | 10AM | Coffee House | 2h | Female | 21 | Unmarried partner | ... | NaN | 4~8 | |
| **2** | No Urgent Place | Friend(s) | Sunny | 80 | 10AM | Carry out & Take away | 2h | Female | 21 | Unmarried partner | ... | NaN | 4~8 | |
| **3** | No Urgent Place | Friend(s) | Sunny | 80 | 2PM | Coffee House | 2h | Female | 21 | Unmarried partner | ... | NaN | 4~8 | |
| **4** | No Urgent Place | Friend(s) | Sunny | 80 | 2PM | Coffee House | 1d | Female | 21 | Unmarried partner | ... | NaN | 4~8 | |
| **...** | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | |
| **12679** | Home | Partner | Rainy | 55 | 6PM | Carry out & Take away | 1d | Male | 26 | Single | ... | 1~3 | 4~8 | |
| **12680** | Work | Alone | Rainy | 55 | 7AM | Carry out & Take away | 1d | Male | 26 | Single | ... | 1~3 | 4~8 | |
| **12681** | Work | Alone | Snowy | 30 | 7AM | Coffee House | 1d | Male | 26 | Single | ... | 1~3 | 4~8 | |
| **12682** | Work | Alone | Snowy | 30 | 7AM | Bar | 1d | Male | 26 | Single | ... | 1~3 | 4~8 | |
| **12683** | Work | Alone | Sunny | 80 | 7AM | Restaurant(20-50) | 2h | Male | 26 | Single | ... | 1~3 | 4~8 | |

12684 rows × 27 columns

# SQL Query

**SELECT** occupation **FROM** dataset_1 **GROUP BY** occupation

dataset_1 1

SELECT occupation FROM dataset_1 GROUP BY | Enter a SQL expression to filter results (

Grid | Text | Record

| | occupation |
|---|---|
| 1 | Architecture & Engineering |
| 2 | Arts Design Entertainment Sports & Media |
| 3 | Building & Grounds Cleaning & Maintenance |
| 4 | Business & Financial |
| 5 | Community & Social Services |
| 6 | Computer & Mathematical |
| 7 | Construction & Extraction |
| 8 | Education&Training&Library |
| 9 | Farming Fishing & Forestry |
| 10 | Food Preparation & Serving Related |
| 11 | Healthcare Practitioners & Technical |
| 12 | Healthcare Support |
| 13 | Installation Maintenance & Repair |
| 14 | Legal |
| 15 | Life Physical Social Science |
| 16 | Management |

# Python Code

df.groupby('occupation').size().to_frame('Count').reset_index()

```
[16]: df.groupby('occupation').size().to_frame('Count').reset_index() # Select occupation from dataset_1 GROUPBY occupation
```

[16]:

| | occupation | Count |
|---|---|---|
| 0 | Architecture & Engineering | 175 |
| 1 | Arts Design Entertainment Sports & Media | 629 |
| 2 | Building & Grounds Cleaning & Maintenance | 44 |
| 3 | Business & Financial | 544 |
| 4 | Community & Social Services | 241 |
| 5 | Computer & Mathematical | 1408 |
| 6 | Construction & Extraction | 154 |
| 7 | Education&Training&Library | 943 |
| 8 | Farming Fishing & Forestry | 43 |
| 9 | Food Preparation & Serving Related | 298 |
| 10 | Healthcare Practitioners & Technical | 244 |
| 11 | Healthcare Support | 242 |
| 12 | Installation Maintenance & Repair | 133 |
| 13 | Legal | 219 |
| 14 | Life Physical Social Science | 170 |
| 15 | Management | 838 |
| 16 | Office & Administrative Support | 639 |
| 17 | Personal Care & Service | 175 |
| 18 | Production Occupations | 110 |
| 19 | Protective Service | 175 |
| 20 | Retired | 495 |
| 21 | Sales & Related | 1093 |
| 22 | Student | 1584 |
| 23 | Transportation & Material Moving | 218 |
| 24 | Unemployed | 1870 |

# SQL Query

SELECT weather ,AVG(temperature) as avg_temp FROM dataset_1 GROUP BY

dataset_1 1

SELECT weather ,AVG(temperature) as avg_tem

| | weather | avg_temp |
|---|---|---|
| 1 | Rainy | 55 |
| 2 | Snowy | 30 |
| 3 | Sunny | 68.9462707319 |

# Python Code

df.groupby('weather')['temperature'].mean().to_frame('avg_temp').reset_index()

```
[17]: df.groupby('weather')['temperature'].mean().to_frame('avg_temp').reset_index() #To see avg(temperature) as avg_temp from dataset_1 groupby weather
```

[17]:

| | weather | avg_temp |
|---|---|---|
| 0 | Rainy | 55.000000 |
| 1 | Snowy | 30.000000 |
| 2 | Sunny | 68.946271 |

# SQL Query

**SELECT** weather ,**COUNT**( temperature) **AS** *count_temp* **FROM** dataset_1
**GROUP BY** weather

dataset_1 1

SELECT weather ,COUNT( temperature) AS cou

| | weather | count_temp |
|---|---|---|
| 1 | Rainy | 1,210 |
| 2 | Snowy | 1,405 |
| 3 | Sunny | 10,069 |

# Python Code

df.groupby('weather')['temperature'].size().to_frame('Count_temp').reset_index()

[18]:
```
#Select weather count(temperature) as Count_temp from dataset_1 groupby weather
df.groupby('weather')['temperature'].size().to_frame('Count_temp').reset_index()
```

[18]:

| | weather | Count_temp |
|---|---|---|
| 0 | Rainy | 1210 |
| 1 | Snowy | 1405 |
| 2 | Sunny | 10069 |

# SQL Query

**SELECT** weather ,**COUNT**(**DISTINCT** temperature) **AS** *count_distinct_temp*
**FROM** dataset_1 **GROUP BY** weather

dataset_1 1

SELECT weather ,COUNT(DISTINCT temperatur | Enter a SQL

Grid | Text

| | weather | count_distinct_temp |
|---|---|---|
| 1 | Rainy | 1 |
| 2 | Snowy | 1 |
| 3 | Sunny | 3 |

# Python Code

df.groupby('weather')['temperature'].nunique().to_frame('count_distinct_temp').reset_index()

[19]:
```
#Select weather count( distinct temperature) as count_distinct_temp from dataset_1 groupby weather
df.groupby('weather')['temperature'].nunique().to_frame('count_distinct_temp').reset_index()
```

[19]:

| | weather | count_distinct_temp |
|---|---|---|
| 0 | Rainy | 1 |
| 1 | Snowy | 1 |
| 2 | Sunny | 3 |

# SQL Query

**SELECT** weather ,**SUM**(temperature) **AS** sum_temp **FROM** dataset_1 **GROUP BY** weather

dataset_1 1

SELECT weather ,SUM(temperature) AS sum_te

| | weather | sum_temp |
|---|---|---|
| 1 | Rainy | 66,550 |
| 2 | Snowy | 42,150 |
| 3 | Sunny | 694,220 |

# Python Code

df.groupby('weather')['temperature'].sum().to_frame('sum_temp').reset_index()

[20]:
```
#SELECT weather from SUM(temperature) as sum_temp from database_1 groupby weather
df.groupby('weather')['temperature'].sum().to_frame('sum_temp').reset_index()
```

[20]:

| | weather | sum_temp |
|---|---|---|
| 0 | Rainy | 66550 |
| 1 | Snowy | 42150 |
| 2 | Sunny | 694220 |

# SQL Query

**SELECT** weather ,**MIN**(temperature) **AS** min_temp **FROM** dataset_1 **GROUP BY** weather

dataset_1 1

SELECT weather ,MIN(temperature) AS min_tem

Enter a SQL expres

Grid

Text

| | weather | min_temp |
|---|---|---|
| 1 | Rainy | 55 |
| 2 | Snowy | 30 |
| 3 | Sunny | 30 |

# Python Code

df.groupby('weather')['temperature'].min().to_frame('min_temp').reset_index()

```
#SELECT weather from MIN(temperature) as min_temp from database_1 groupby weather
df.groupby('weather')['temperature'].min().to_frame('min_temp').reset_index()
```

| | weather | min_temp |
|---|---|---|
| 0 | Rainy | 55 |
| 1 | Snowy | 30 |
| 2 | Sunny | 30 |

# SQL Query

**SELECT** weather ,**MAX**(temperature) **AS** max_temp **FROM** dataset_1 **GROUP BY** weather

dataset_1 1

SELECT weather ,MAX(temperature) AS max_te

| | weather | max_temp |
|---|---|---|
| 1 | Rainy | 55 |
| 2 | Snowy | 30 |
| 3 | Sunny | 80 |

# Python Code

df.groupby('weather')['temperature'].max().to_frame('max_temp').reset_index()

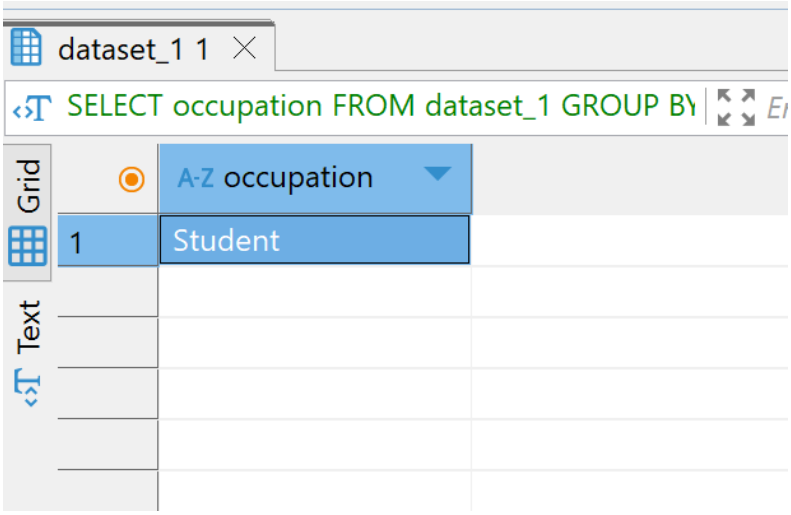
[22]:
```
#SELECT weather from MAX(temperature) as max_temp from database_1 groupby weather
df.groupby('weather')['temperature'].max().to_frame('max_temp').reset_index()
```

[22]:

| | weather | max_temp |
|---|---|---|
| 0 | Rainy | 55 |
| 1 | Snowy | 30 |
| 2 | Sunny | 80 |

# SQL Query

**SELECT** occupation **FROM** dataset_1 **GROUP BY** occupation **HAVING** occupation='**Student**'




# Python Code

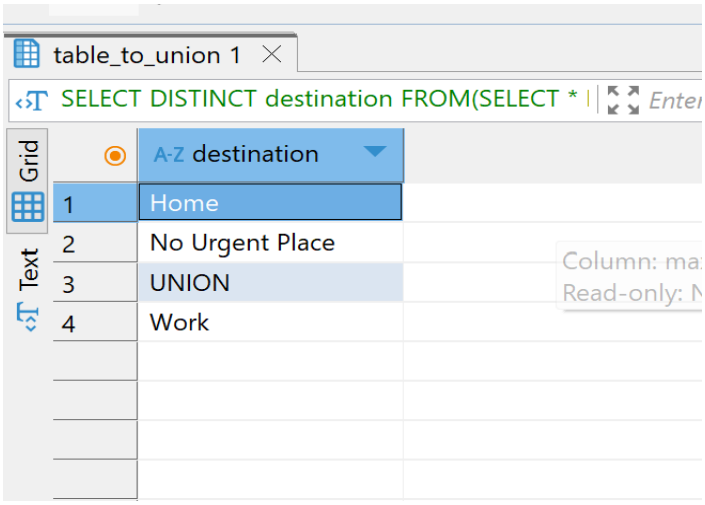
df.groupby('occupation').filter(lambda x: x['occupation'].iloc[0] == 'Student').groupby('occupation').size()

```
•[25]: #SELECT occupation from dataset_1 groupby OCCUPATION HAVING occupation = student
       df.groupby('occupation').filter(lambda x: x['occupation'].iloc[0] == 'Student').groupby('occupation').size()

[25]: occupation
      Student    1584
      dtype: int64
```

# SQL Query

**SELECT DISTINCT** destination **FROM**(**SELECT** * **FROM** dataset_1 **UNION SELECT** * **FROM** table_to_union)




# Python Code

pd.concat([df, df1])['Destination'].drop_duplicates()

```
[30]: pd.concat([df, df1])['Destination'].drop_duplicates()

[30]: 0     No Urgent Place
      13               Home
      16               Work
      Name: Destination, dtype: object
```

# SQL Query

**SELECT** destination ,passanger **FROM**(**SELECT***FROM dataset_1 **WHERE** passanger = **'Alone'**)

dataset_1 1

SELECT destination ,passanger FROM(SELECT*f

| | destination | passanger |
|---|---|---|
| 1 | No Urgent Place | Alone |
| 2 | Home | Alone |
| 3 | Home | Alone |
| 4 | Home | Alone |
| 5 | Work | Alone |
| 6 | Work | Alone |
| 7 | Work | Alone |
| 8 | Work | Alone |
| 9 | Work | Alone |
| 10 | Work | Alone |
| 11 | No Urgent Place | Alone |
| 12 | No Urgent Place | Alone |
| 13 | Home | Alone |
| 14 | Home | Alone |
| 15 | Home | Alone |
| 16 | Work | Alone |

# Python Code

df[df['passanger'] == 'Alone'][['Destination', 'passanger']]

[42]:
```
#SELECT destination,passangers FROM dataset_1 where passanger=Alone
df[df['passanger'] == 'Alone'][['Destination', 'passanger']]
```

[42]:

| | Destination | passanger |
|---|---|---|
| 0 | No Urgent Place | Alone |
| 13 | Home | Alone |
| 14 | Home | Alone |
| 15 | Home | Alone |
| 16 | Work | Alone |
| ... | ... | ... |
| 12676 | Home | Alone |
| 12680 | Work | Alone |
| 12681 | Work | Alone |
| 12682 | Work | Alone |
| 12683 | Work | Alone |

7305 rows × 2 columns

# SQL Query

SELECT * FROM dataset_1 WHERE weather LIKE 'Sun%'

dataset_1 1

SELECT * FROM dataset_1 WHERE weather LIKE | Enter a SQL expression to filter results (use C

| | destination | passanger | weather | temperature |
|---|---|---|---|---|
| 1 | No Urgent Place | Alone | Sunny | 55 |
| 2 | No Urgent Place | Friend(s) | Sunny | 80 |
| 3 | No Urgent Place | Friend(s) | Sunny | 80 |
| 4 | No Urgent Place | Friend(s) | Sunny | 80 |
| 5 | No Urgent Place | Friend(s) | Sunny | 80 |
| 6 | No Urgent Place | Friend(s) | Sunny | 80 |
| 7 | No Urgent Place | Friend(s) | Sunny | 55 |
| 8 | No Urgent Place | Kid(s) | Sunny | 80 |
| 9 | No Urgent Place | Kid(s) | Sunny | 80 |
| 10 | No Urgent Place | Kid(s) | Sunny | 80 |
| 11 | No Urgent Place | Kid(s) | Sunny | 80 |
| 12 | No Urgent Place | Kid(s) | Sunny | 55 |
| 13 | No Urgent Place | Kid(s) | Sunny | 55 |
| 14 | Home | Alone | Sunny | 55 |
| 15 | Home | Alone | Sunny | 55 |

# Python Code

df[df['weather'].str.startswith('Sun')]

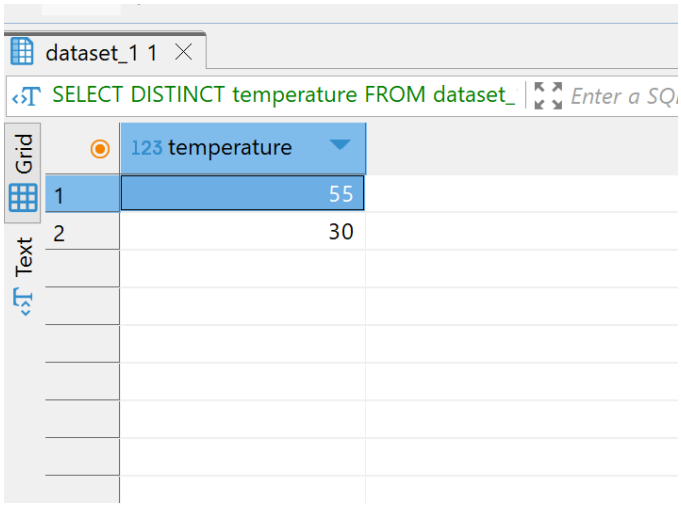
3]:
```
#SELECT weather from dataset_1 where weather is sunny
df[df['weather'].str.startswith('Sun')]
```

3]:

| | Destination | passanger | weather | temperature | time |
|---|---|---|---|---|---|
| 0 | No Urgent Place | Alone | Sunny | 55 | 2PM |
| 1 | No Urgent Place | Friend(s) | Sunny | 80 | 10AM |
| 2 | No Urgent Place | Friend(s) | Sunny | 80 | 10AM |
| 3 | No Urgent Place | Friend(s) | Sunny | 80 | 2PM |
| 4 | No Urgent Place | Friend(s) | Sunny | 80 | 2PM |
| ... | ... | ... | ... | ... | ... |
| 12673 | Home | Alone | Sunny | 30 | 6PM |
| 12676 | Home | Alone | Sunny | 80 | 6PM |
| 12677 | Home | Partner | Sunny | 30 | 6PM |
| 12678 | Home | Partner | Sunny | 30 | 10PM |
| 12683 | Work | Alone | Sunny | 80 | 7AM |

# SQL Query

**SELECT DISTINCT** temperature **FROM** dataset_1 **WHERE** temperature **BETWEEN** 29 **AND** 75




# Python Code

df[(df['temperature'] >= 29) & (df['temperature'] <= 75)]['temperature'].unique()

```
[44]: #SELECT distinct temperature from dataset_1 where temperature is between 29 to 75
      df[(df['temperature'] >= 29) & (df['temperature'] <= 75)]['temperature'].unique()

[44]: array([55, 30], dtype=int64)
```

# SQL Query

SELECT occupation FROM dataset_1 WHERE occupation IN('Sales & Related','Management')

dataset_1 1

SELECT occupation FROM dataset_1 WHERE oc

| | occupation |
|---|---|
| 1 | Sales & Related |
| 2 | Sales & Related |
| 3 | Sales & Related |
| 4 | Sales & Related |
| 5 | Sales & Related |
| 6 | Sales & Related |
| 7 | Sales & Related |
| 8 | Sales & Related |
| 9 | Sales & Related |
| 10 | Sales & Related |
| 11 | Sales & Related |
| 12 | Sales & Related |
| 13 | Sales & Related |
| 14 | Sales & Related |
| 15 | Sales & Related |
| 16 | Sales & Related |

# Python Code

df[df['occupation'].isin(['Sales & Related', 'Management'])][['occupation']]

[45]:
```
#SELECT occupation from dataset_1 where occupation IN ('Sales & Related', 'Management')
df[df['occupation'].isin(['Sales & Related', 'Management'])][['occupation']]
```

[45]:

| | occupation |
|---|---|
| 193 | Sales & Related |
| 194 | Sales & Related |
| 195 | Sales & Related |
| 196 | Sales & Related |
| 197 | Sales & Related |
| ... | ... |
| 12679 | Sales & Related |
| 12680 | Sales & Related |
| 12681 | Sales & Related |
| 12682 | Sales & Related |
| 12683 | Sales & Related |

1931 rows × 1 columns