As electronic vehicles (EVs) become more popular, there is an increasing need for access to charging stations, also known as ports. To that end, many modern apartment buildings have begun retrofitting their parking garages to include shared charging stations. A charging station is shared if it is accessible by anyone in the building.
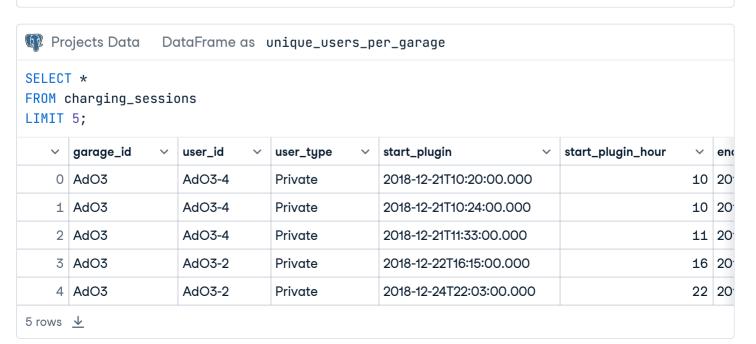
To help apartment building managers better understand their tenants' EV charging habits, let's find out the number of unique individuals that use each garage's shared charging stations.

charging_sessions

Column	Definition	Data type
garage_id	Identifier for the garage/building	VARCHAR
user_id	Identifier for the individual user	VARCHAR
user_type	Indicating whether the station is `Shared` or `Private`	VARCHAR
start_plugin	The date and time the session started	DATETIME
start_plugin_hour	The hour (in military time) that the session started	NUMERIC
end_plugout	The date and time the session ended	DATETIME
end_plugout_hour	The hour (in military time) that the session ended	NUMERIC
duration_hours	The length of the session, in hours	NUMERIC
el_kwh	Amount of electricity used (in Kilowatt hours)	NUMERIC
month_plugin	The month that the session started	VARCHAR
weekdays_plugin	The day of the week that the session started	VARCHAR

Sources

🐘 Projects Data   DataFrame as unique_users_per_garage

```
SELECT *
FROM charging_sessions
LIMIT 5;
```

	garage_id	user_id	user_type	start_plugin	start_plugin_hour	en
0	AdO3	AdO3-4	Private	2018-12-21T10:20:00.000	10	20
1	AdO3	AdO3-4	Private	2018-12-21T10:24:00.000	10	20
2	AdO3	AdO3-4	Private	2018-12-21T11:33:00.000	11	20
3	AdO3	AdO3-2	Private	2018-12-22T16:15:00.000	16	20
4	AdO3	AdO3-2	Private	2018-12-24T22:03:00.000	22	20

5 rows ⤓

Projects Data DataFrame as `df`

```sql
-- Calculating the number of unique individuals that use each garage's shared charging
stations
SELECT garage_id, COUNT(DISTINCT user_id) AS num_unique_users
FROM charging_sessions
WHERE user_type = 'Shared'
GROUP BY garage_id
ORDER BY num_unique_users DESC;
```

	garage_id	num_unique_users
0	Bl2	
1	AsO2	
2	UT9	
3	AdO3	
4	MS1	
5	SR2	
6	AdA1	
7	Ris	

8 rows

Projects Data DataFrame as `most_popular_shared_start_times`

```sql
-- the top 10 most popular charging start times for sessions that use shared charging
stations
SELECT weekdays_plugin, start_plugin_hour, COUNT(*) AS num_charging_sessions
FROM charging_sessions
WHERE user_type = 'Shared'
GROUP BY weekdays_plugin, start_plugin_hour
ORDER BY num_charging_sessions DESC
LIMIT 10;
```

	weekdays_plugin	start_plugin_hour
0	Sunday	
1	Friday	
2	Thursday	
3	Thursday	
4	Wednesday	
5	Sunday	
6	Sunday	
7	Monday	

```
-- long_duration_shared_users
SELECT user_id, AVG(duration_hours) AS avg_charging_duration
FROM charging_sessions
WHERE user_type = 'Shared'
GROUP BY user_id
HAVING AVG(duration_hours) > 10
ORDER BY avg_charging_duration DESC;
```

	user_id	avg_charging_duration
0	Share-9	
1	Share-17	
2	Share-25	
3	Share-18	
4	Share-8	
5	AdO3-1	

6 rows