

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.

But with increasing demand comes competition for these ports — nothing is more frustrating than coming home to find no charging stations available! In this project, you will use a dataset to help apartment building managers better understand their tenants' EV charging habits.

The data has been loaded into a PostgreSQL database with a table named charging\_sessions with the following columns:

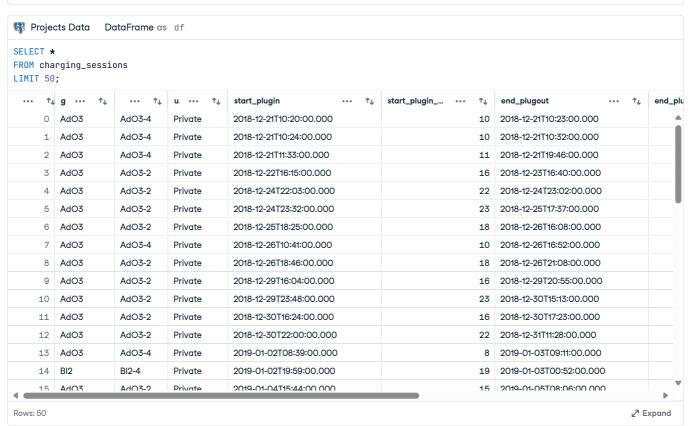
## charging\_sessions

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 $\boxed{\text{Shared}}$ or $\boxed{\text{Private}}$	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

Let's get started!

## Sources

- Data: CC BY 4.0 ℃, via Kaggle ♂,
- Image: Julian Herzog, CC BY 4.0 🗹, via Wikimedia Commons



```
Projects Data DataFrame as unique_users_per_garage
-- unique_users_per_garage
-- Modify the code below
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
index
                                                                                       ··· ↑ num_unique_users
                                      0 BI2
                                      1 AsO2
                                      2 UT9
                                      3 AdO3
                                      4 MS1
                                      5 SR2
                                      6 AdA1
                                      7 Ris

∠ Expand

Rows: 8
```

```
Projects Data DataFrame as most_popular_shared_start_times

-- most_popular_shared_start_times

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
```

index ··· ↑↓	weekdays_plugin	••• ↑↓	start_plugin_hour	•••	↑↓	nι
0	Sunday				17	
1	Friday				15	
2	Thursday				19	
3	Thursday				16	
4	Wednesday				19	
5	Sunday				18	
6	Sunday				15	
7	Monday				15	
8	Friday				16	
9	Tuesday				16	
Rows: 10				∠ Ex	pand	

