

Project 5

Electric car charging stations

Boubacar Traoré



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01

ABOUT THE DATA



A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
sessionId	kwhTotal	dollars	created	ended	startTime	endTime	chargeTimeHrs	weekday	platform	distance	userId	stationId	locationId	managerVeh
1366563	7.78	0	2014-11-18 15:40:26	2014-11-18 17:11:04	15	17	1.510555556	Tue	android	NA	35897499	582873	461655	
3075723	9.74	0	2014-11-19 17:40:26	2014-11-19 19:51:04	17	19	2.177222222	Wed	android	NA	35897499	549414	461655	
4228788	6.76	0.58	2014-11-21 12:05:46	2014-11-21 16:46:04	12	16	4.671666667	Fri	android	NA	35897499	129465	461655	
3173284	6.17	0	2014-12-03 19:16:12	2014-12-03 21:02:16	19	21	1.768333333	Wed	android	NA	35897499	569889	461655	
3266500	0.93	0	2014-12-11 20:56:11	2014-12-11 21:14:06	20	21	0.298611111	Thu	android	NA	35897499	414088	566549	
4099366	2.14	0	2014-12-12 14:38:44	2014-12-12 15:04:04	14	15	0.422222222	Fri	android	NA	35897499	911231	202527	
5084244	0.3	0	2014-12-12 15:08:40	2014-12-12 15:47:04	15	15	0.64	Fri	android	NA	35897499	920264	461655	
2948436	1.82	0	2014-12-17 20:30:26	2014-12-17 21:31:04	20	21	1.010833333	Wed	android	NA	35897499	431796	461655	
3515913	0.81	0	2014-12-18 17:53:16	2014-12-18 18:04:04	17	18	0.179166667	Thu	android	NA	35897499	134427	620906	
8490014	1.98	0	2014-12-18 18:06:46	2014-12-18 18:30:06	18	18	0.387777778	Thu	android	NA	35897499	207262	928191	
7075912	4.56	0	2014-12-18 18:31:54	2014-12-18 20:57:04	18	20	2.419444444	Thu	android	NA	35897499	280221	976902	
5226095	2.05	0	2014-12-19 14:30:37	2014-12-19 15:12:04	14	15	0.690833333	Fri	android	NA	35897499	371335	461655	
9342496	5.3	0	2015-01-07 17:52:52	2015-01-07 20:54:03	17	20	3.019444444	Wed	android	NA	35897499	405157	976902	
1853945	0	0	2015-01-09 13:59:06	2015-01-09 14:21:03	13	14	0.365	Fri	android	NA	35897499	355208	976902	
2113485	7.85	0.5	2015-01-12 17:39:36	2015-01-12 21:48:04	17	21	4.141111111	Mon	android	NA	35897499	944575	928191	

Challenges

01

Understanding some
columns

02

Find some relevant
charts

03

Adapt charts in
streamlit



02

CLEANING





3395 columns

24 rows



```
df_missing = df.isna().sum().sort_values(ascending=False)  
💡_missing
```

✓ 0.3s

distance	1065
sessionId	0
locationId	0
Sun	0
Sat	0
Fri	0
Thurs	0
Wed	0

I
weekday
Tue
Wed
Fri
Wed
Thu
Fri
Fri
Wed
Thu
Thu
Thu
Fri
Wed
Fri
Mon

Q	R	S	T	U	V	W
Mon	Tues	Wed	Thurs	Fri	Sat	Sun
0	1	0	0	0	0	0
0	0	1	0	0	0	0
0	0	0	0	1	0	0
0	0	1	0	0	0	0
0	0	0	1	0	0	0

```
df = df.drop(['Mon', 'Tues', 'Wed', 'Thurs', 'Fri', 'Sat', 'Sun'], axis=1)
df = df.drop(['reportedZip'], axis=1)
df.head()
```

drop a raw with an outliers to create scatter plot

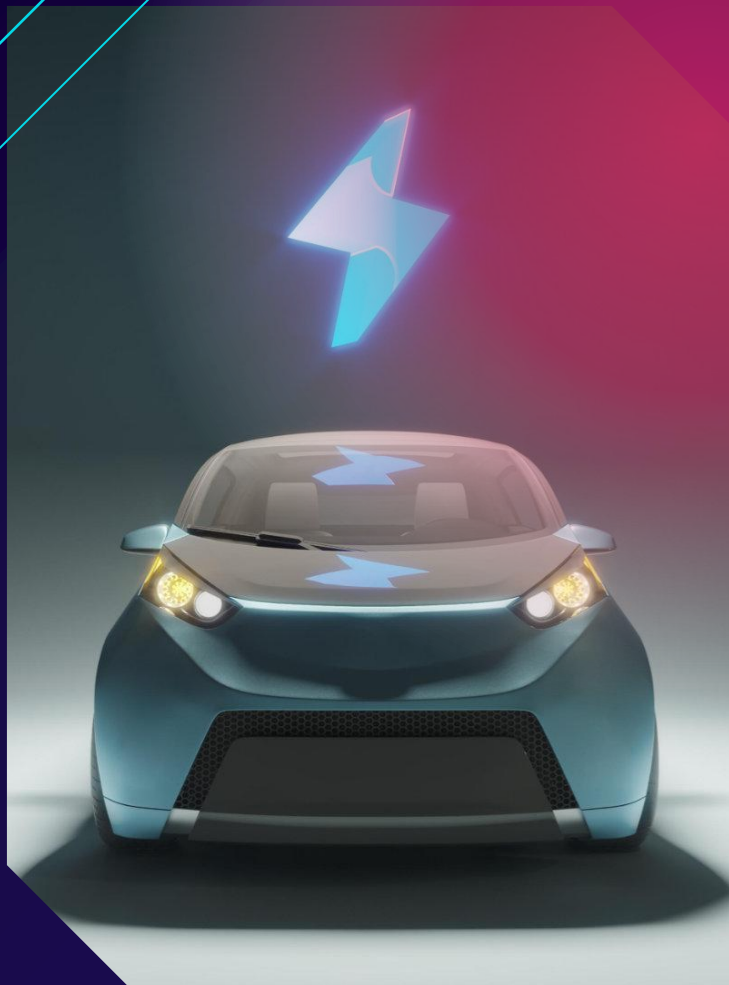
```
df["chargeTimeHrs"].max()
55.23805556

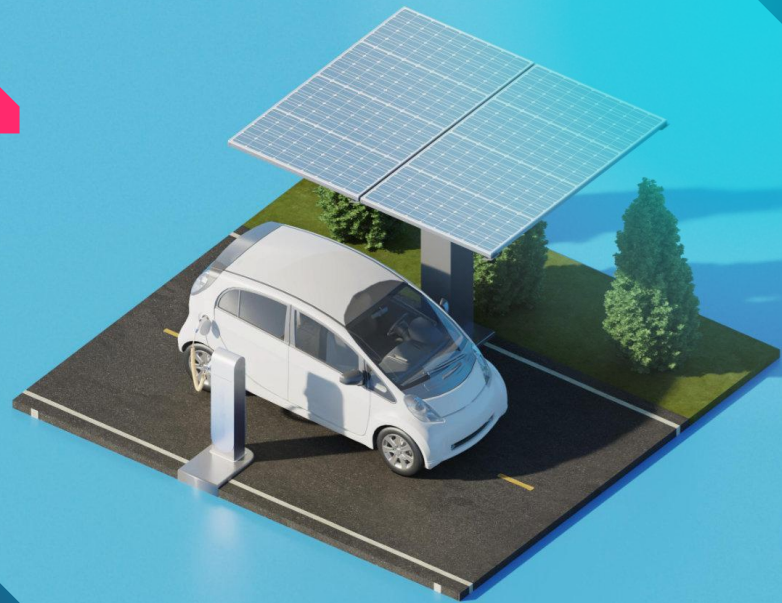
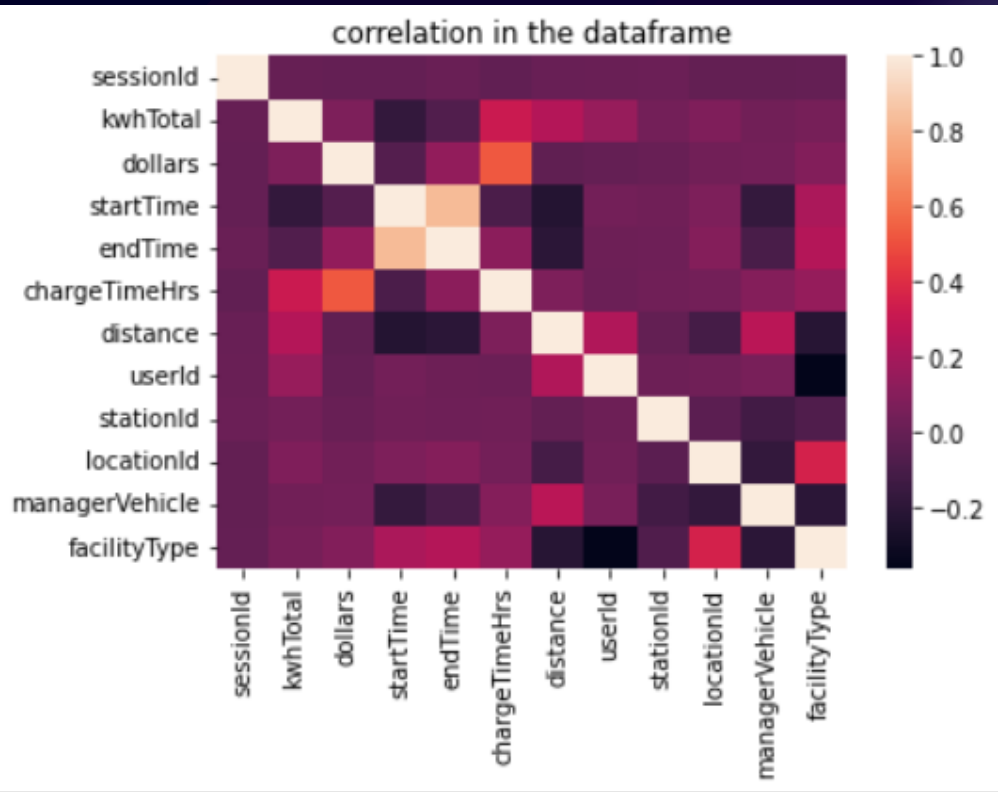
df.drop(df.loc[df['chargeTimeHrs']== 55.23805556].index, inplace=True)
```



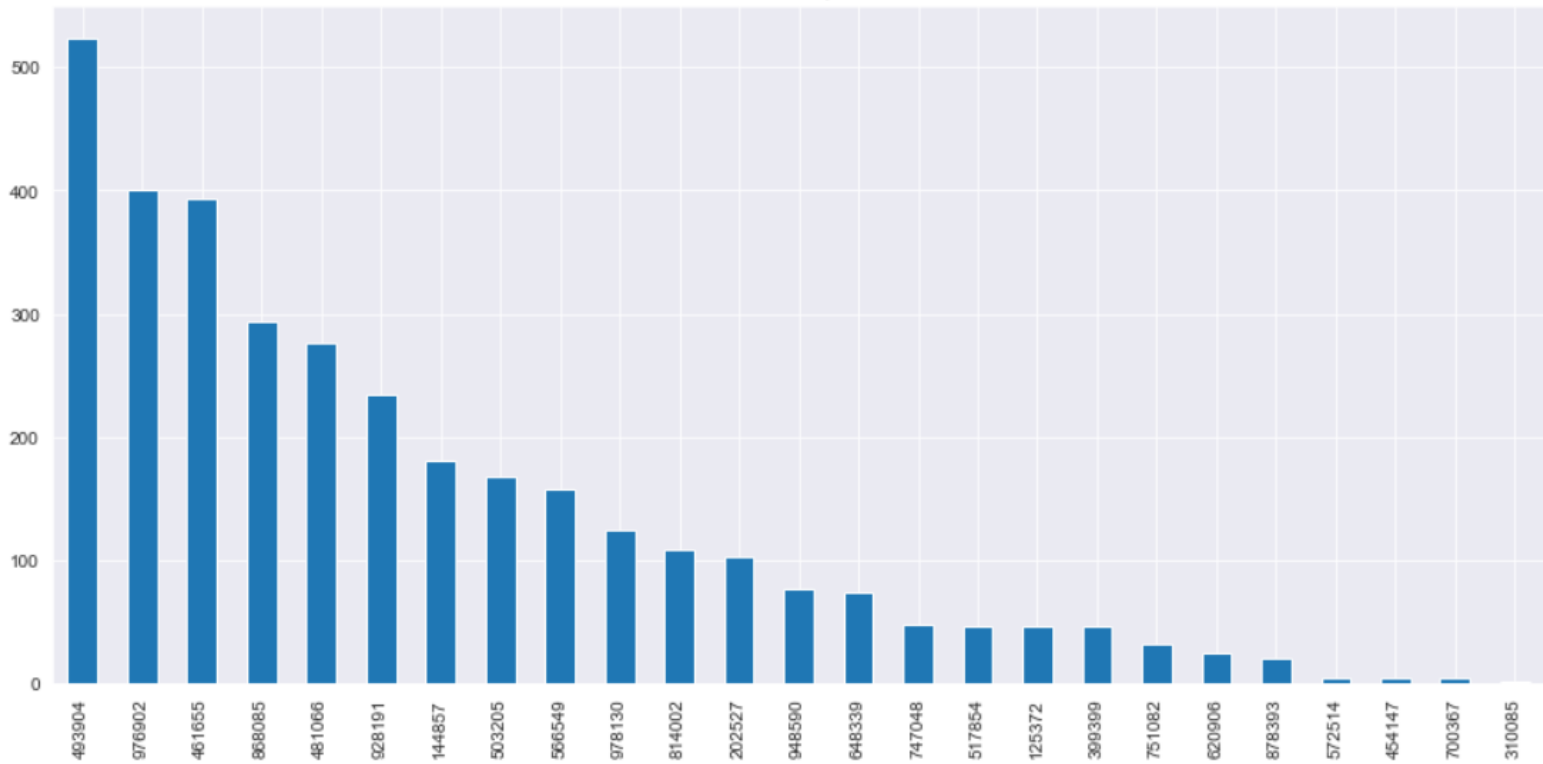

03

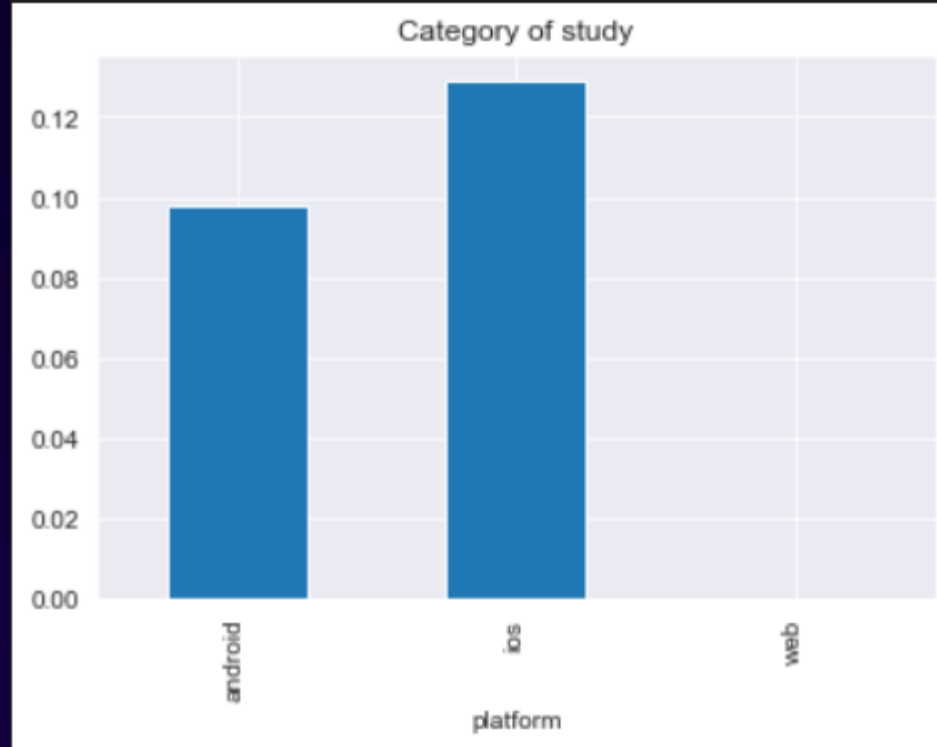
VISUALIZATION





locationID frequencies

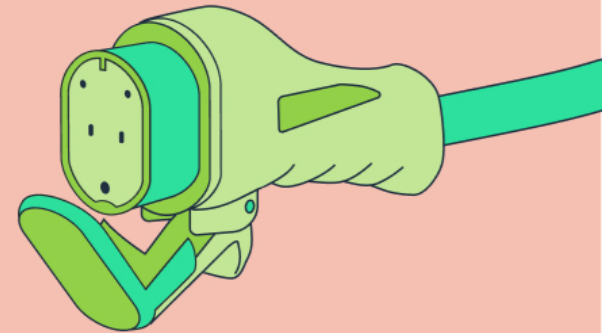
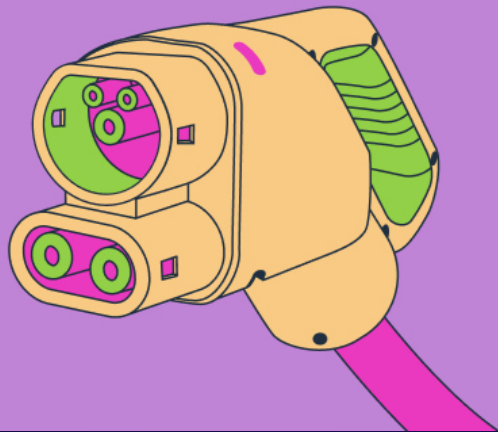
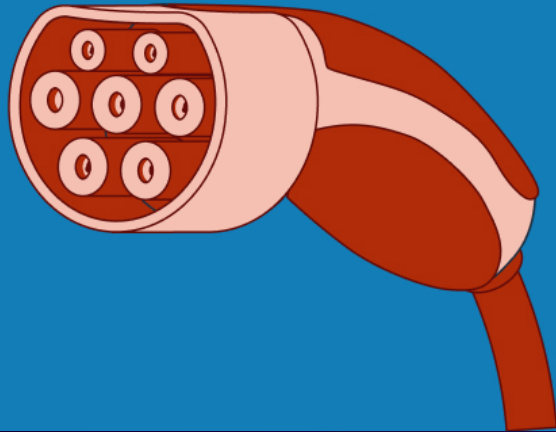
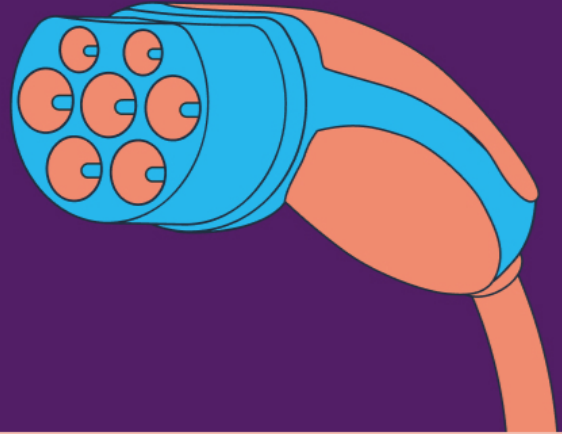
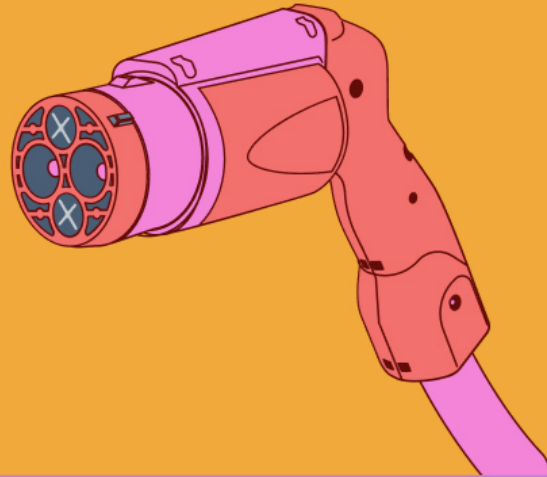
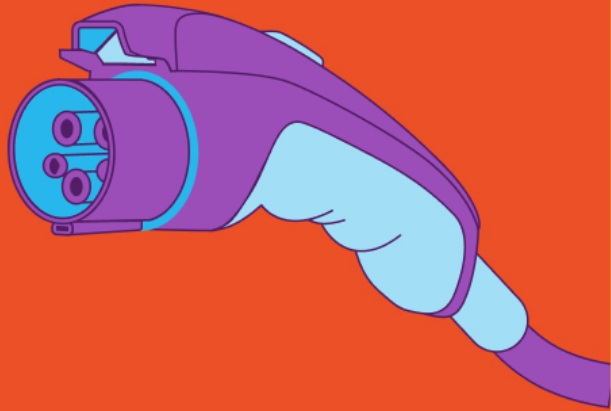




The different facility Type

In Europe the most common is called 'Type 2'





40 \$



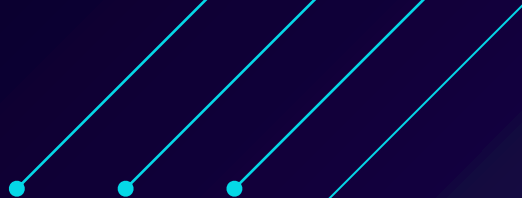
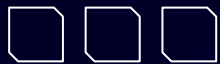
40 \$

Money save on a trip from Paris to Toulouse
(700km)with an electric car compared to a
petrol car

Consommation moyenne	Heures pleines
12 kWh/100 km	1.75 €/100 km
15 kWh/100 km	2.20 €/100 km
20 kWh/100 km	2.90 €/100 km

$2,90 \times 7$ (pour 700km) = 20,3e pour les voitures électriques qui consomment le plus (20kw/h /100km)

alors qu'il faut 70e si on roule en essence



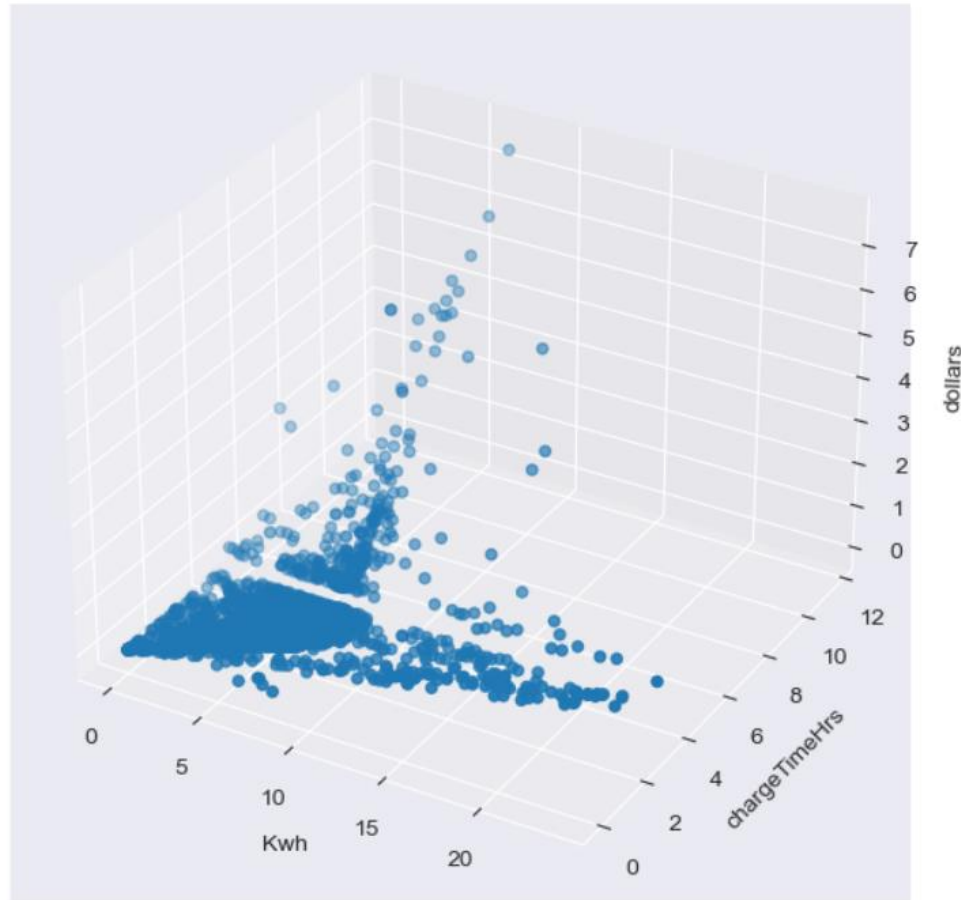
STREAMLIT



Streamlit



correlation between kwh chargeTime and the price



Thank
You

