

Milestone 2

Code:

```
# Julia Cuellar
# DSC 540
# Final project

import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns

# Read csv file
def read_csv_file():
    evcp = pd.read_csv('2019 EVCP use Q1 and Q2.csv')
    print("Csv data:\n", evcp)

# Drop 1st column from csv file
def csv_drop():
    evcp = pd.read_csv('2019 EVCP use Q1 and Q2.csv')
    evcp.drop('Charging event', axis=1, inplace=True)
    print("Remove 1st column from csv data:\n", evcp)

# Check, replace, and recheck the nulls from csv file
def csv_cpr_null():
    evcp = pd.read_csv('2019 EVCP use Q1 and Q2.csv')
    evcp.drop('Charging event', axis=1, inplace=True)
    print("Display csv data with null:\n", evcp.isnull())
    print("Display counts of null from csv data:\n", evcp.isnull().sum())
    evcp = evcp.fillna(" ")
    print("Display csv data with replaced nulls:\n", evcp)
    print("Display recounts of null from csv data:\n", evcp.isnull().sum())

# Rename Model column from csv file
def csv_rename_col():
    evcp = pd.read_csv('2019 EVCP use Q1 and Q2.csv')
    evcp.drop('Charging event', axis=1, inplace=True)
    evcp = evcp.fillna(" ")
    evcp.rename(columns={'Model': 'Charge'}, inplace=True)
    print("Rename Model column from csv data:\n", evcp)

# Display count plot of Total kWh column from csv file
def csv_showCountplot_kWh():
    evcp = pd.read_csv('2019 EVCP use Q1 and Q2.csv')
    evcp.drop('Charging event', axis=1, inplace=True)
    evcp = evcp.fillna(" ")
    evcp.rename(columns={'Model': 'Charge'}, inplace=True)
    sns.countplot(x='Total kWh', data=evcp)
    plt.title('kWh')
    plt.show()
```

```

# Display count plot of Site column from csv file
def csv_showCountplot_Site():
    evcp = pd.read_csv('2019 EVCP use Q1 and Q2.csv')
    evcp.drop('Charging event', axis=1, inplace=True)
    evcp = evcp.fillna(" ")
    evcp.rename(columns={'Model': 'Charge'}, inplace=True)
    sns.countplot(x='Site', data=evcp)
    plt.title('Site')
    plt.show()

# Display count plot of Charge column from csv file
def csv_showCountplot_Charge():
    evcp = pd.read_csv('2019 EVCP use Q1 and Q2.csv')
    evcp.drop('Charging event', axis=1, inplace=True)
    evcp = evcp.fillna(" ")
    evcp.rename(columns={'Model': 'Charge'}, inplace=True)
    sns.countplot(x='Charge', data=evcp)
    plt.title('Charge')
    plt.show()

if __name__ == "__main__":
    read_csv_file()
    csv_drop()
    csv_cpr_null()
    csv_rename_col()
    csv_showCountplot_kWh()
    csv_showCountplot_Site()
    csv_showCountplot_Charge()

```

Output:

Csv data:

	Charging event ...	Model
0	8124494 ...	APT 7kW Dual Outlet
1	8124522 ...	APT 7kW Dual Outlet
2	8124828 ...	APT 7kW Dual Outlet
3	8124987 ...	APT 7kW Dual Outlet
4	8125100 ...	APT 7kW Dual Outlet
...
3401	8702065 ...	APT Triple Rapid Charger
3402	8702103 ...	APT Triple Rapid Charger
3403	8702255 ...	APT Triple Rapid Charger
3404	8702426 ...	APT 7kW Dual Outlet
3405	8702978 ...	APT 7kW Dual Outlet

[3406 rows x 11 columns]

Remove 1st column from csv data:

	User ID	CP ID	...	Site	Model
0	User 406	70204	...	Woodhouse Lane Car Park	APT 7kW Dual Outlet
1	User 546	70204	...	Woodhouse Lane Car Park	APT 7kW Dual Outlet
2	User 279	80085	...	Temple Green Park and Ride	APT 7kW Dual Outlet
3	User 399	70202	...	Woodhouse Lane Car Park	APT 7kW Dual Outlet
4	User 771	70202	...	Woodhouse Lane Car Park	APT 7kW Dual Outlet
...
3401	User 131	80164	...	Elland Road Park and Ride	APT Triple Rapid Charger
3402	User 573	80164	...	Elland Road Park and Ride	APT Triple Rapid Charger
3403	User 418	80164	...	Elland Road Park and Ride	APT Triple Rapid Charger
3404	User 306	70204	...	Woodhouse Lane Car Park	APT 7kW Dual Outlet

3405 User 308 70204 ... Woodhouse Lane Car Park APT 7kW Dual Outlet

[3406 rows x 10 columns]

Display csv data with null:

	User ID	CP ID	Connector	Start Date	...	End Time	Total kWh	Site	Model
0	False	False	False	False	...	False	False	False	False
1	False	False	False	False	...	False	False	False	False
2	False	False	False	False	...	False	False	False	False
3	False	False	False	False	...	False	False	False	False
4	False	False	False	False	...	False	False	False	False
...
3401	False	False	False	False	...	True	True	False	False
3402	False	False	False	False	...	False	False	False	False
3403	False	False	False	False	...	False	False	False	False
3404	False	False	False	False	...	False	False	False	False
3405	False	False	False	False	...	False	False	False	False

[3406 rows x 10 columns]

Display counts of null from csv data:

User ID	0
CP ID	0
Connector	0
Start Date	0
Start Time	0
End Date	52
End Time	52
Total kWh	52
Site	0

Model 0

dtype: int64

Display csv data with replaced nulls:

	User ID	CP ID	...	Site	Model
0	User 406	70204	...	Woodhouse Lane Car Park	APT 7kW Dual Outlet
1	User 546	70204	...	Woodhouse Lane Car Park	APT 7kW Dual Outlet
2	User 279	80085	...	Temple Green Park and Ride	APT 7kW Dual Outlet
3	User 399	70202	...	Woodhouse Lane Car Park	APT 7kW Dual Outlet
4	User 771	70202	...	Woodhouse Lane Car Park	APT 7kW Dual Outlet
...
3401	User 131	80164	...	Elland Road Park and Ride	APT Triple Rapid Charger
3402	User 573	80164	...	Elland Road Park and Ride	APT Triple Rapid Charger
3403	User 418	80164	...	Elland Road Park and Ride	APT Triple Rapid Charger
3404	User 306	70204	...	Woodhouse Lane Car Park	APT 7kW Dual Outlet
3405	User 308	70204	...	Woodhouse Lane Car Park	APT 7kW Dual Outlet

[3406 rows x 10 columns]

Display recounts of null from csv data:

User ID 0

CP ID 0

Connector 0

Start Date 0

Start Time 0

End Date 0

End Time 0

Total kWh 0

Site 0

Model 0

dtype: int64

Rename Model column from csv data:

	User ID	CP ID	...	Site	Charge
0	User 406	70204	...	Woodhouse Lane Car Park	APT 7kW Dual Outlet
1	User 546	70204	...	Woodhouse Lane Car Park	APT 7kW Dual Outlet
2	User 279	80085	...	Temple Green Park and Ride	APT 7kW Dual Outlet
3	User 399	70202	...	Woodhouse Lane Car Park	APT 7kW Dual Outlet
4	User 771	70202	...	Woodhouse Lane Car Park	APT 7kW Dual Outlet
...
3401	User 131	80164	...	Elland Road Park and Ride	APT Triple Rapid Charger
3402	User 573	80164	...	Elland Road Park and Ride	APT Triple Rapid Charger
3403	User 418	80164	...	Elland Road Park and Ride	APT Triple Rapid Charger
3404	User 306	70204	...	Woodhouse Lane Car Park	APT 7kW Dual Outlet
3405	User 308	70204	...	Woodhouse Lane Car Park	APT 7kW Dual Outlet

[3406 rows x 10 columns]



