

Lab 5

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1 Step:

Download the file `Electric_Vehicle_Population_Data.csv` from <https://catalog.data.gov/dataset/electric-vehicle-population-data>

2 Step:

Upload the file

3 Step:

Open the file in read mode (`mode='r'`) and read the header (the first line), then print it.

Tip: Use `.readline()` to read only one line from the file.

```
[ ]: with open("./Electric_Vehicle_Population_Data.csv", mode="r") as evFile:
      print(evFile.readline())
```

VIN (1-10),County,City,State,Postal Code,Model Year,Make,Model,Electric Vehicle Type,Clean Alternative Fuel Vehicle (CAFV) Eligibility,Electric Range,Base MSRP,Legislative District,DOL Vehicle ID,Vehicle Location,Electric Utility,2020 Census Tract

4 Step:

Convert the header to a list and print each field along with its index. Tip: Use a for loop combined with `enumerate()`.

```
[ ]: with open("./Electric_Vehicle_Population_Data.csv", mode="r") as evFile:
      header = list(evFile.readline().strip().split(','))
      for index, field in enumerate(header):
          print(f'Index: {index}, Field: {field}')
```

Index: 0, Field: VIN (1-10)

Index: 1, Field: County

Index: 2, Field: City
Index: 3, Field: State
Index: 4, Field: Postal Code
Index: 5, Field: Model Year
Index: 6, Field: Make
Index: 7, Field: Model
Index: 8, Field: Electric Vehicle Type
Index: 9, Field: Clean Alternative Fuel Vehicle (CAFV) Eligibility
Index: 10, Field: Electric Range
Index: 11, Field: Base MSRP
Index: 12, Field: Legislative District
Index: 13, Field: DOL Vehicle ID
Index: 14, Field: Vehicle Location
Index: 15, Field: Electric Utility
Index: 16, Field: 2020 Census Tract

5 Step:

Create a dictionary with 'TESLA' as the key and 0 as the value. This dictionary will be used to count Tesla vehicles in the dataset. Read each line from the file, updating the count whenever a Tesla vehicle is found.

Question: How many Teslas did you find in the dataset?

Tip: Determine the index of the 'Make' field to identify Tesla vehicles.

```
[ ]: makeDict = {'TESLA':0}
with open("./Electric_Vehicle_Population_Data.csv", mode="r") as evFile:
    header = list(evFile.readline().strip().split(','))
    makeIndex = header.index('Make')
    for lines in evFile:
        fields = lines.strip().split(',')
        make = fields[makeIndex].upper()
        if make in makeDict:
            makeDict[make] += 1
teslaCount = makeDict['TESLA']
print(f'Total Teslas in file: {teslaCount}')
```

Total Teslas in file: 83349

6 Step

Modify the program to also count BMW vehicles. Question: How many BMWs are in the dataset?

```
[ ]: makeDict = {'TESLA':0, 'BMW':0}
with open("./Electric_Vehicle_Population_Data.csv", mode="r") as evFile:
    header = list(evFile.readline().strip().split(','))
    makeIndex = header.index('Make')
```

```
for lines in evFile:
    fields = lines.strip().split(',')
    make = fields[makeIndex].upper()
    if make in makeDict:
        makeDict[make] += 1
teslaCount = makeDict['TESLA']
BMWCount = makeDict['BMW']
print(f'Total Teslas in file: {teslaCount}\nTotal BMWs in file: {BMWCount}')
```

Total Teslas in file: 83349

Total BMWs in file: 7856