import csv

cars = []

with open("C:/Users/ahsan/OneDrive/Desktop/couch\_to\_coder/session\_4/vw.csv", "r") as csvfile:

 print(csvfile)

 reader = csv.reader(csvfile, skipinitialspace=True)

 for row in reader:

     new\_car = {}

     new\_car["model"] = row[0]

     new\_car["year"] = row[1]

     new\_car["price"] = row[2]

     new\_car["transmission"] = row[3]

     new\_car["mileage"] = row[4]

     new\_car["fuelType"] = row[5]

     new\_car["tax"] = row[6]

     new\_car["mpg"] = row[7]

     new\_car["engineSize"] = row[8]

     cars.append(new\_car)

# What is the most expensive car?

count =0

expensive\_car=cars[1]

for car in cars:

   if(count==0):

    count+=1 # For ignoring the first row with the title

   else:

     if(int(car['price'])>int(expensive\_car['price'])):

       expensive\_car = car

print(f"The most expensive car is{expensive\_car['model']} of price {expensive\_car['price']}")

# Finding all the VW Golf models and calculating the average price

count=0

vw\_golf=[]

total\_price\_vw\_golf=0

for car in cars:

  if(count==0):

    count+=1 # For ignoring the first row with the title

  else:

    if("golf" in car['model'].lower()):

      #print(car)

      total\_price\_vw\_golf+=int(car['price'])

      vw\_golf.append(car)

print(f"Average price for VW Golf car is: {total\_price\_vw\_golf/len(vw\_golf):.2f}")

# What is the average mileage for VW Polo models registered in 2020?

count=0

vw\_polo\_total\_mileage=0

no\_of\_polo\_cars=0

for car in cars:

  if(count==0):

     count+=1 # For ignoring the first row with the title

  else:

    if(("polo" in car['model'].lower().strip()) and (car['year'].strip()=='2020')):

      vw\_polo\_total\_mileage+= int(car['mileage'])

      no\_of\_polo\_cars+=1

print(f"Average mileage for VW Polo car is: {vw\_polo\_total\_mileage/no\_of\_polo\_cars:.2f}")

# Extensions

# A pie chart showing the distribution between fuel types.

import pandas as pd

import matplotlib.pyplot as plt

data = pd.read\_csv("C:/Users/ahsan/OneDrive/Desktop/couch\_to\_coder/session\_4/vw.csv")

data.head()

number\_of\_fule\_types = data.groupby('fuelType')[['model']].count().sort\_values("model",ascending=False).head(10).reset\_index()

print(number\_of\_fule\_types)

plt.pie(number\_of\_fule\_types.model,labels=number\_of\_fule\_types.fuelType)

plt.show()

#A bar chart showing the average mileage for each model.

group\_by\_avg\_mileage= data.groupby('model').mileage.mean().reset\_index()

print(group\_by\_avg\_mileage)

plt.bar(group\_by\_avg\_mileage.model,group\_by\_avg\_mileage.mileage,color='green',width=0.2)

plt.xlabel("Model")

plt.ylabel("Mileage")

plt.title("Average mileage by model")

plt.show()

A computer screen shot of a number

Description automatically generated

A graph of a petrol price

Description automatically generated with medium confidenceA graph with green lines

Description automatically generated