Implementation of Multivariate Linear Regression

Aim

To write a python program to implement multivariate linear regression and predict the output.

Equipment's required:

1. Hardware – PCs
2. Anaconda – Python 3.7 Installation / Moodle-Code Runner

Algorithm:

Step1 Import pandas as pd.

Step2 Read the csv file.

Step3 Extract 'Weight' and 'Volume' as 'x' and 'CO2' as 'y'.

Step4 Create linear regression model and fit it with the data, and find the coefficients and intercept.

Step5 Predict the CO2 emission of a car where the weight is 2300kg, and the volume is 1300cm3 and print.

Program:

```
# Program for Multivariate linear regression using the least squares method.
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import pandas as pd
from sklearn import linear_model
data=pd.read_csv("cars.csv")
x=data[['Weight','Volume']]
y=data['CO2']
regr=linear_model.LinearRegression()
regr.fit(x,y)
print('coefficient: ',regr.coef_)
print('Intercept: ',regr.intercept_)
predictCO2=regr.predict([[3300,1300]])
print('Predicted CO2 fot the corresponding weight and volume',predictCO2)
```

Output:

```
Coefficient: [0.00755095 0.00780526]
Intercept: 79.69471929115939
Predicted CO@ for the corresponding weight and volume [114.75968007]
```

Result

Thus the multivariate linear regression is implemented and predicted the output using python program.