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import pandas as pd

import torch

import matplotlib.pyplot as plt


df = pd.read_csv("Linear Regression - Sheet1.csv")
x = torch.tensor(df["X"].values)
y = torch.tensor(df["Y"].values)


m = torch.tensor([0.], requires_grad = True)
c = torch.tensor([0.], requires_grad = True)

def loss(y_hat,y):
    return torch.sum((y_hat-y)**2)


for i in range(5000):
    l = loss(m*x+c, y)
    l.backward()
    with torch.no_grad():
        m-= 5e-8*m.grad
        c-= 1e-4*c.grad
    m.grad.zero_()
    c.grad.zero_()


m.requires_grad = False
c.requires_grad = False
plt.scatter(x,y,color = "black")
y_list = []
for i in range(df.shape[0]):
    y_list.append(m*x[i]+c)
plt.plot(x,y_list,color = "blue")
plt.show()

```