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Useful equations:

$$Y_{pred} = b_0 + b_1 \times X_1 \text{ --> hypothesis}$$

$$\text{Cost function} = \text{MSE} = \left(\frac{1}{2 \times m}\right) \times \sum \left(\text{Y}_{\text{pred}} - \text{Y}\right)^2$$

Problem statement:
You are conducting an experiment to study the relationship between the force applied to a spring and the resulting displacement of the spring. You want to determine if Hooke's Law, which states that the force applied to a spring is directly proportional to the displacement it causes, holds true for a specific spring.

Collected data provided as .csv file in studip.

Task 1:

Implement Linear regression using Gradient descent method to find best possible model.

Task 2:

Implement Linear regression using sklearn library to find best possible model.