# Machine Learning - Regression

## Overview

This folder contains projects and scripts related to regression models, a fundamental technique in supervised machine learning.

## Content

- \*\*linear\_regression.py\*\*: Implementation of Linear Regression from scratch using Python and NumPy.

- \*\*ridge\_regression.py\*\*: A Python script for Ridge Regression with an explanation of how regularization works.

- \*\*sklearn\_regression.ipynb\*\*: A Jupyter notebook implementing Linear and Ridge Regression using scikit-learn.

## Purpose

The purpose of this folder is to demonstrate various regression techniques and their applications in machine learning. Understanding these models is essential for tasks like predictive modeling and feature analysis.

## References

- [Scikit-learn Documentation - Linear Models](https://scikit-learn.org/stable/modules/linear\_model.html)

- \*\*Book\*\*: Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow by Aurélien Géron

## Usage

To use the scripts:

1. Install necessary libraries (NumPy, scikit-learn) using `pip install numpy scikit-learn`.

2. Run `.py` files directly using Python.

3. Open `.ipynb` files in Jupyter Notebook to interact with the code.