Regression Analysis

Task: Applying Regression Techniques

Explanation: In this module, you will focus on regression analysis, a type of supervised learning used for predicting continuous numeric values. You will practice various regression techniques and evaluate their performance. You will work with the dataset of your choice, and produce the report of your analysis.

Associated Course (if you haven't taken it or mastered the skills):

- Regression Analysis

Instructions:

1. Simple Linear Regression: Implement simple linear regression to model relationships between two variables.
2. Polynomial Linear Regression: Extend the simple linear regression to polynomial regression to capture more complex relationships.
3. Linear Regression with Regularization: Apply regularization techniques (e.g., Lasso and Ridge regression) to prevent overfitting.
4. Multivariate Regression: Work with multiple independent variables to create a regression model.
5. Cross Validation: Use cross-validation to assess the accuracy and stability of your regression models.
6. Ensemble Methods: Explore ensemble techniques like bagging and boosting in the context of regression.
7. Evaluation Metrics: Evaluate the performance of your regression models using metrics like Mean Squared Error (MSE) and R-squared.