Univariate LinearRegression

This report focuses on the implementation of the Univariate Linear Regression algorithm on the sklearn diabetes dataset. The aim was to train a model that could accurately predict cancer progression. The data was shuffled and split into train, dev, and test sets, with the dev set used to determine the best feature to be used for modeling. The results showed the best performance with a Root Mean Squared Error of 71.40 and a Mean Squared Error of 5097.34.

Methodology:

1. Data Preparation: The data was shuffled and split into train, dev, and test sets.
2. Feature Selection: The Mean Squared Error was calculated for various features to determine the best one for modeling.
3. Model Implementation: The Univariate Linear Regression function, compute\_cost function, and gradient descent function were defined.
4. Normalization: The data was normalized to improve the results.

Results:

The model achieved a Root Mean Squared Error of 71.40 and a Mean Squared Error of 5097.34 when using the dev data set. This indicated that the Univariate Linear Regression model was able to accurately predict cancer progression.

Conclusion:

The implementation of the Univariate Linear Regression algorithm on the sklearn diabetes dataset showed promising results. The model was able to accurately predict cancer progression, making it a valuable tool for further research and development.