



THE UNIVERSITY OF
WINNIPEG

Professional, Applied and
Continuing Education

Exercise 1 – Linear Regression

Assignment Overview:

In this lab exercise, you will build a linear regression model using the dataset provided. Details about the dataset can be found at the following link.

Data URL:

Be sure to follow all the steps outlined in the workflow discussed in the class. You can use either the Jupyter notebook or an IDE of your choice.

You are tasked to do the following in this exercise:

1. Train and evaluate a multiple linear regression model to predict the target feature in the dataset
2. Examine the impact and significance of features in the model
3. Apply and compare model regularization with ridge and lasso
4. Compare the model performance before and after regularization
5. Is there any evidence of non-linear relationships between the input variable and the out variable? If yes, how would you deal with the non-linearity?

Please submit your reports in PDF format.

Tips:

Ensure you are referring back to your course or other academic/reliable literature and resources to back-up your points and ideas.

The use of generative artificial intelligence is NOT allowed in this assignment.

Remember your Effective Communications courses; use the 7 C's of communication.