Assignment #1 **Possible Points: 50**
CSCE 5215/ 003 ML **Due date: 18th Sep 2023**

Name:_____

Email id:

_____ _____

Assignments should be done on an individual basis. Please upload the report containing response to the questions posed along with the code snippet as a part of the single PDF file.

Q1 Fit a predictive linear regression model to estimate weight of the fish from its length (length1, length2, length3), height and width using the data source fish.xls provided to you. Use only 70% of the data as training set (15 points)

-Report the coefficients values by using the standard Least Square Estimates
-What is the standard error of the estimated coefficients, R-squared term, and the 95% confidence interval?
-Is there any dependence between the length and weight of the fish?

Q2 Using the data source in Q1(only 70% of the data points as training set), fit the Ridge and Lasso Regression Models (15 points)

- Report the coefficients for both the models.
- Report the attribute(s) least impacting the weight of the fish. Justify your answer.

Q3 Using remaining 30% of the data in Q1, test the trained regression models in Q1 and Q2 and report their performance (model accuracy) using MSE (mean square error) and R-squared metrics. Which model is performing the best? Explain your answer. (20 points)