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CS 422

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Homework 3

In HW3, I designed a linear regression model from scratch to predict miles per gallon (mpg) for vehicles. The dataset included eight attributes, and I removed the "car\_name" attribute before preprocessing the data. I replaced missing values with NaN and dropped rows containing them. I then split the dataset into features and target variables, and employed 10-fold cross-validation. For each fold, I normalized the training data, calculated the mean and standard deviation to normalize the test data, and implemented a custom linear regression model. I computed the coefficients of the independent variables and the RMSE values for each fold. The results were presented in a formatted table using the PrettyTable library. See table below:

Graphical user interface, text

Description automatically generated