

Description: In these projects we will apply what we've learned in class to real-world datasets for analysis.

Tasks:

1. Using the **Multiclass Diabetes Dataset.csv** file provided in the datasets zip file, implement a function to test various KNN models comparing distance metrics and tie breaking methods. Compare the results with a decision tree and one of the ensemble methods (your choice). Produce a confusion matrix and appropriate graphs.
2. Using the **50_AdAgency.csv** file provided in the datasets zip file, compare a KNN regression model with different decision models (mean, median, etc.) to a principal component regression using all the variables available. Convert the categorical variable to dummy variables and include those in your model. Compare appropriate metrics.

Submission: Write up a work document describing your code and the results obtained. Include with your submission your R code file.