DUE DATE : 16/12/2022

You will implement decision tree classification to predict the acceptability of a car using 6 variables. These variables are;

The price of the car with 4 categories: 1 to 4

Maintenance prices with 4 categories: 1 to 4

Number of doors with 4 categories: 2 to 5

Capacity of the car (number of persons that fit) with 3 categories: 2,4,6

Luggage size with 3 categories: 1 to 3

Safety with 3 categories: 1 to 3

Download the provided data (trainDATA.xlsx), write your own codes for decision tree algorithm for classification. Provide your tree structure in your report. Use your tree to get the classification results for data provided in testDATA.xlsx. Submit your classification results in an excel file along with your report.

WRITE A FINAL REPORT, which includes your codes in an organized manner and the tree structure (you may plot it by hand and add the picture of it to the report). Do not forget to submit the results for the test data.

Use following Matlab Codes to load the data:

```
data=xlsread('trainDATA.xlsx','Sayfa1'); % read data from an excel file
variables = data(:,1:6); % Feature Matrix
labels=data(:,end); % Corresponding class values
```