



COMSATS University Islamabad, Lahore Campus

Course Title:	Machine Learning			Course Code:	CSC354	Credit Hours:	3(3,0)
Resource Person:	Dr. Muhammad Sharjeel			Programme Name:	BSSE		
Semester:	6 th	Batch:	FA21	Section:	A, B	Max Marks:	10

Assignment 2:

Due Date/Time: Wednesday, 27th March, 23:59

Submission: Upload the assignment solution to your GitHub account (private repository).

Important instructions: If the assignment requires to submit a python source code (ipython notebook), please write the following information at the start of your file.

Date

CSC354 – Assignment2 – ML – Decision Trees

Your Full Name

Your Complete Registration Number

A brief description of the task

Question1: [CLO-2] - [Bloom Taxonomy Level: <Applying>]

Download the Datasaurus Dozen dataset from the following link

Link: <https://www.openintro.org/data/csv/datasaurus.csv>

Note: Please open the dataset file first for manual inspection before performing any experiments.

Use this dataset for a classification task using decision trees. Specifically, use J48 and Random Forest classifiers for predicting the type of 'dataset' within the Datasaurus Dozen. Start with a baseline model with default parameters. Then find optimal parameters for the model using both Random and Grid search methods. You are free to use any train/test split, however, only experiment with models' parameters, keeping rest of the settings constant throughout the experiments.

Question2: [CLO-2] - [Bloom Taxonomy Level: <Applying>]

Download the Used Cars Prices dataset (cars-dataset) from your shared Google Drive folder

Link: <http://tinyurl.com/sp24ml>

Note: Please open the dataset file first for manual inspection before performing any experiments.

Use this dataset for a regression task using decision trees. Specifically, use a Decision Tree Regressor for predicting the price of a car. Similar to Q1, start with a baseline model with default parameters and then try to find the optimal parameter settings using both Random and Grid search methods.

Question3: [CLO-2] - [Bloom Taxonomy Level: <Applying>]

Write a short report explaining your experience after attempting both Q1 and Q2.