BIRZEIT UNIVERSITY
Electrical and Computer Engineering Department
ENCS3340 Artificial Intelligence, Second Semester, 2021-2022
Project 2 Instructors: Dr Yazan Abu Farha, Dr. Adnan H. Yahya**,**
Due: June 12, 2022

Machine Learning for Classification

Teams: This assignment is for groups of 2 students each (at most). If you want to do it alone you must get the permission of the instructor. The teams can be cross sections (from different sections)

Goal: In this project students will learn how to use machine learning tools to test different algorithms for classification tasks.

Specifications: You need to compare different machine learning algorithms for a classification task using WEKA or any other machine learning tool of your choice. Each group has to choose one dataset to experiment with based on the last digit of the least student id in the team mod3 as follows:

No.	Dataset
0	Speaker Accent Recognition Dataset (Link)
1	Early stage diabetes risk prediction Dataset (Link)
2	Raisin Dataset (Link)

You have to test at least 3 models: Decision Tree, Naïve Bayes, and one more model of your choice. For each model make sure to do the following:

- Preprocess at least one attribute (e.g., discretization of continuous attributes).
- Test the model using 5-fold cross validation and report the confusion matrix, accuracy, precision, recall, and F1-score.
- Change at least one hyper-parameter of the model and study its effect.

Submissions: Please submit a report (up to 4 pages) to describe the used dataset, attributes, experiments you did, settings for each experiment, and the results. You have to include snapshots from the tool to illustrate your work, and make sure to comment on and discuss all your results. Write a final conclusion to compare the performance of all the tested methods.

Honor Policy: All are required to adhere to the University honor policy and violations will be dealt with according to university regulations.

Good Luck