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# Department of Computing

**CS471: Machine Learning**

**Class: BESE-7AB**

**Lab 11: Open Ended Lab**

**CL03: Use modern tools to solve practical problems.**

**Date: 25-04-2019**

**Time: 10:00 am– 1:00 pm & 2:00 pm-5:00 pm**

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**Class: BESE-7B**

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**Lab 11: Open Ended Lab**

**Introduction**

In this lab you will choose a dataset and apply 3 machine-learning algorithms and report on the accuracy of the algorithms.

**Tools/Software Requirement**

Python, scikit-learn

**Description**

Go through the following website <http://archive.ics.uci.edu/ml/> and select a dataset (either classification or regression). Apply **three** algorithms on the dataset using Python Scikit-learn library (http://scikit-learn.org/stable/).

**Tasks & Deliverables**

You report should contain the following headings.

1. **Introduction**

I have selected Data\_for\_UCI\_named.csv because it has results either stable or unstable. The data was easy to understand.

1. **Algorithms**

**Decision Trees:** Decision trees use those features and classify them in 2 branches either true or false. It is good for Classification problem. So that’s why I chose Decision trees.

**Logistic Regression:** Logistic regression is a predictive analysis. Logistic regression is used to describe data and to explain the relationship between one dependent binary variable and one more independent variables.

**SVM:** A **Support Vector Machine** (**SVM**) is a discriminative classifier formally defined by a separating hyperplane. In other words, given labeled training data (supervised learning), the algorithm outputs an optimal hyperplane which categorizes new examples.

1. **Code**

Attach your code file(ipynb, py).

1. **Results**

The highest accuracy was of SVM. The accuracy depends on the type of dataset as well.

1. **Summary**

I learnt that the data can be classified by using many algorithms and here the best result was given by SVM. SVM was the fastest one.