**Capstone Project Submission**

**Instructions:**

if) Please fill in all the required information.

ii) Avoid grammatical errors.

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| **Team Member’s Name, Email and Contribution:** |
| **Name: Prabin Deb Nath.**  **Email: prabindebnath25@gmail.com.**  **Contribution: Individual project.** |
| **Please paste the GitHub Repo link.** |
| GitHub Link: - <https://github.com/prabindebnath25/Credit-Card-Default-Prediction> |
| **Please write a short summary of your Capstone project and its components. Describe the problem statement, your approaches, and your conclusions. (200-400 words)** |
| As more and more consumers rely on credit cards to pay their everyday purchases in an online and physical retail store, the amount of issued credit cards and the overwhelming amount of credit card debt by the cardholders have rapidly increased.  Therefore, most financial institutions must deal with the issues of credit card default in addition to credit card fraud.    Our objective is to conduct quantitative analysis on credit card default risk by using machine learning models with accessible customer data to assist in predicting the case of customers' default payments in Taiwan.  After cleaning the data and renaming a few variables, in the next step, we began EDA (Exploratory Data Analysis) to understand the relationship between the dependent and the independent variables better and identify the necessary trends in them.  We then split the data into two sets, the train (70%) and the test (30%), and standardized it using Standard-Scaler.  Then we implemented five machine-learning approaches (***Logistic Regression, Decision Tree, Random Forest Classifier, XGB Classifier, Cat Boost Classifier*** to predict the default cases on the provided data.  XG Boost Classifier gave the best recall of 82% after some tuning. Also, the AUC score of XG Boost it was 0.923, which is best among the models we created.  .  From the above observations, we can say that XG Boost outperforms other models in terms of Recall and Accuracy; hence we can proceed with XG B­oost for future classifications. |