**Project Proposal: Credit Card Fraud Analysis Using Machine Learning Tools and Techniques**

**1. Introduction:**

Credit card fraud is a significant concern for financial institutions and individuals alike. It can result in substantial financial losses and damage to the reputation of both the cardholders and the issuing banks. To address this issue, the application of machine learning techniques has gained significant attention. This project is an extension of Project 3 (Credit Card Fraud Visualization) and aims to develop a credit card fraud analysis system using machine learning tools and techniques to detect and prevent fraudulent transactions effectively.

**2. Objectives:**

The primary objectives of this project are as follows:

1. ETL
2. Web scrapping
3. The flask app from Project 3 will be used to develop the web application on credit card fraud interactive visualizations.
4. Develop a credit card fraud detection model using machine learning algorithms.

c. Evaluate the performance of the developed model and compare it with existing fraud detection methods.

**3. Methodology:**

The project will follow the following methodology:

a. Data Collection: Data sourced from www.keggal.com

b. Data Preprocessing: ETL and web scrapping.

c. Data Visualization: flask app

c. Model Development: Utilize machine learning algorithms such as logistic regression, decision trees, random forests, or neural networks to build a fraud detection model.

**4. Timeline:**

The estimated timeline for the project is as follows:

a. Data Collection: July 24, 2023 ([Layla Abdul Sater](https://utorvirtdatap-oxv9509.slack.com/team/U04PR61TFG9))

b. ETL: July 24, 2023 ([Layla Abdul Sater](https://utorvirtdatap-oxv9509.slack.com/team/U04PR61TFG9))

c. Flask app: July 26, 2023 ([Osmar eduardo luna luactero](https://utorvirtdatap-oxv9509.slack.com/team/U04P2QPCWAX), [Priscila Glienke](https://utorvirtdatap-oxv9509.slack.com/team/U04PBEU5ZV3))

d. Machine Learning: July 28-30, 2023 (All)

e. Testing: July 31, 2023 (All)

f. Preparation of presentation slide: Aug 2, 2023 ([Layla Abdul Sater](https://utorvirtdatap-oxv9509.slack.com/team/U04PR61TFG9), [Alessia Presotto](https://utorvirtdatap-oxv9509.slack.com/team/U04PEDPSV3M))

g. GitHub final touch and Readme file: Aug 2, 2023 ([Romi Oinam](https://utorvirtdatap-oxv9509.slack.com/team/U04NG0NDMFH), [Layla Abdul Sater](https://utorvirtdatap-oxv9509.slack.com/team/U04PR61TFG9))

h. Project presentation: Aug 3, 2023 ([Layla Abdul Sater](https://utorvirtdatap-oxv9509.slack.com/team/U04PR61TFG9), [Osmar eduardo luna luactero](https://utorvirtdatap-oxv9509.slack.com/team/U04P2QPCWAX))

**5. Team members:**

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