SCHOOL OF COMPUTING
Faculty of Engineering

Project Proposal Form MCST1043
Sem: 2 Session: 2024/25

SECTION A: Project Information.

Program Name: **Masters of Science (Data Science)**

Subject Name: **Project 1 (MCST1043)**

Student Name: Siti Nur Elisya Aqmar binti Mohamad Kamal

Metric Number: MCS241056

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Project Title: A Comparative Analysis of Public Gold and Local Jewelers Using Machine Learning to Assess Price.

Supervisor 1:

Supervisor 2 / Industry Advisor(if any):

SECTION B: Project Proposal

Introduction:

For a long time, gold has been considered a popular financial item and a reliable store of value (K. Ran, 2024). Online gold sellers like Public Gold have grown in number since buying gold has gotten easier with the introduction of digital platforms. Still, a sizable section of the market is served by conventional local jewelers. The purpose of this study is to evaluate Public Gold's and local jewelers' pricing tactics using machine learning techniques, giving customers statistical insight into their pricing patterns.

Problem Background:

Global economic conditions, currency volatility, and political developments are some of the variables that affect the gold market. Local jewelers frequently offer individualized services and instant access to actual gold, while internet marketplaces such as Public Gold give convenience and competitive pricing. The presence of dynamic market forces and the absence of standardized pricing information make it difficult for consumers to compare prices across various platforms.

Problem Statement:

Traditional local jewelers and internet sites like Public Gold offer different price structures and customer experiences, creating a duality in Malaysia's gold sector. While local jewelers frequently place an emphasis on individualized attention and instant physical possession of gold, Public Gold, a well-known internet merchant, offers digital ease and affordable pricing. Comprehensive, data-driven assessments of these two channels' pricing strategies are, nevertheless, lacking. Without objective, comparative data to guide their purchasing decisions, consumers are forced to rely on personal experience or scant reviews. This information gap calls for a methodical investigation to assess and contrast Public Gold's price trends with those of nearby jeweller using machine learning techniques, giving customers clear and useful insights.

Aim of the Project:

To generate a machine learning-based model that contrasts Public Gold's pricing tactics with those of other jewelry so that customers may make reasonable decisions based on data-driven insights.

Objectives of the Project:

- To create machine learning models for pricing strategy analysis and comparison.
- To evaluate the models' performance with relevant metrics and confirm the results.
- To display the findings using clear visuals to help with understanding.

Scopes of the Project:

In this project, a machine learning-based comparison of gold prices between a few local jewelers in a certain geographic area and Public Gold, a well-known online gold retailer, will be conducted. To assess pricing trends, variations, and transparency, the scope includes collecting historical gold price data from both sources over a particular amount of time. With structured price data, the study prioritizes quantitative analysis while omitting qualitative elements like aesthetic preferences and in-store service experience. Only publicly accessible or surveyed data is used in the analysis, guaranteeing adherence to ethical data collection guidelines. This targeted strategy makes it possible to conduct a thorough, data-driven analysis of price competition across two distinct gold buying channels.

Expected Contribution of the Project:

Give customers neutral, fact-based information on gold prices.

Increase transparency of gold prices on various platforms.

Help implement machine learning in financial market analysis.

Establish the framework for additional research comparing various elements of buying gold, like customer happiness and delivery delays.

Project Requirements:

Software: Google Colab/ Jupyter Notebook (Phyton)

Hardware: i5/Ryzen 5+, 8–16 GB RAM, SSD

Technology/Technique/ Methodology/Algorithm:

Type of Project (Focusing on Data Science):

[/] Data Preparation and Modeling

[/] Data Analysis and Visualization

[ ] Business Intelligence and Analytics

[/] Machine Learning and Prediction

[ ] Data Science Application in Business Domain

Status of Project:

[/] New

[ ] Continued

If continued, what is the previous title?

SECTION C: Declaration

I declare that this project is proposed by:

[/] Myself

[ ] Supervisor/Industry Advisor ( )

Student Name: Siti Nur Elisya Aqmar binti Mohamad Kamal

Signature **Date**

SECTION D: Supervisor Acknowledgement

The Supervisor(s) shall complete this section.

I/We agree to become the supervisor(s) for this student under aforesaid proposed title.

Name of Supervisor 1: .....

Signature **Date**

Name of Supervisor 2 (if any): .....

Signature **Date**

SECTION E: Evaluation Panel Approval

The Evaluator(s) shall complete this section.

Result:

[ ] FULL APPROVAL [ ] CONDITIONAL APPROVAL (Major)*

[ ] CONDITIONAL APPROVAL (Minor) [ ] FAIL*

***** Student has to submit new proposal form considering the evaluators' comments.

Comments:

Name of Evaluator 1: .....

Signature ..... **Date** .....

Name of Evaluator 2: .....

Signature ..... **Date** .....