Project Initialization and Planning Phase

Date	25 June 2024
Team ID	739940
Project Title	Gem Vaaluation Revolution: Predicting Diamond Prices With Artificial Neural Networks
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) report

Project Overview	
Objective	In essence, the main objective of predicting diamond prices is to leverage data analytics and statistical modeling techniques to provide reliable and actionable insights that drive efficiency, fairness, and profitability within the diamond market.
Scope	The scope of predicting diamond prices involves leveraging data science and statistical modeling techniques to develop accurate predictive models that enhance decision-making, optimize business operations, and provide valuable insights into the dynamic diamond market.
Problem Statement	
Description	Predicting diamond prices is crucial for stakeholders in the diamond industry to make informed decisions regarding pricing, inventory management, and investment strategies.
Impact	The impact of predicting diamond prices extends beyond financial gains to encompass improved decision-making, risk management, market efficiency, consumer trust, and ethical standards within the diamond industry. It plays a crucial role in driving sustainability and competitiveness while fostering a fair and transparent marketplace for diamonds.
Proposed Solution	
Approach	Predicting diamond prices involves a systematic approach that integrates data science methodologies, statistical techniques, and domain knowledge specific to the diamond industry.
Key Features	When working on your project, consider conducting feature selection and engineering to determine which of these features are most predictive of diamond prices. It may involve analyzing correlations, feature importance scores from machine learning models, or domain expertise from stakeholders in the diamond industry.

This project proposal aims to leverage Artificial Neural Networks to transform diamond price prediction, offering stakeholders in the diamond industry a reliable and transparent method for valuation. By harnessing the power of machine learning, this initiative seeks to enhance decision-making processes and foster innovation within gem valuation practices

	- Real-time decision-making for quicker loan approvals. - Continuous learning to adapt to evolving financial landscapes.

Resource Requirements

Resource Type	**Description**	**Specification/Allocation**
Hardware		
Computing Resources	CPU/GPU specifications, number of cores	T4 GPU
Memory	RAM specifications	8 GB
Storage	Disk space for data, models, and logs	1 TB SSD
Software		
Frameworks	Python frameworks	Flask
Libraries	Additional libraries	scikit-learn, pandas, numpy, matplotlib, seaborn
Development Environment	IDE	Jupyter Notebook, pycharm
Data		
Data	Source, size, format	Kaggle dataset, 614, csv UCI dataset, 690, csv