

## Project Initialization and Planning Phase

Date	25 June 2024
Team ID	739772

<b>Project Overview</b>	
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.
<b>Problem Statement</b>	
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.
<b>Proposed Solution</b>	
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.
Project Title	Gem Vaaluation Revolution: Predicting Diamond Prices With Artificial Neural Networks

Maximum Marks	3 Marks
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### **Project Proposal (Proposed Solution) report**

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

	<ul style="list-style-type: none"> <li>- Real-time decision-making for quicker loan approvals.</li> <li>- Continuous learning to adapt to evolving financial landscapes.</li> </ul>
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### Resource Requirements

Resource Type	Description	Specification/Allocation
<b>Hardware</b>		
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
<b>Software</b>		
Frameworks	Python frameworks	Flask
Libraries	Additional libraries	scikit-learn, pandas, numpy, matplotlib, seaborn
Development Environment	IDE	Jupyter Notebook, pycharm
<b>Data</b>		
Data	Source, size, format	Kaggle dataset, 614, csv UCI dataset, 690, csv