Project Initialization and Planning Phase

Date	5 July 2024
Team ID	739728
Project Title	3D Printer material prediction using machine learning
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) template

This project proposal outlines a solution to address a specific problem. With a clear objective, defined scope, and a concise problem statement, the proposed solution details the approach, key features, and resource requirements, including hardware, software, and personnel.

Project Overview	
Objective	Develop a machine learning model to predict the optimal material for 3d printing based on specific use case and requirements, enhancing efficiency and product quality.
Scope	Build an ML model that suggest the best material for 3d printing considering various factors such as strength, flexibility, temperature, resistance and cost
Problem Statement	
Description	Develop an AI platform to predict the most suitable 3d printing material for different applications.
Impact	Enhance the quality and efficiency of 3d printed products by providing precise material recommendations.
Proposed Solution	
Approach	Utilize advanced machine learning algorithms to analyze material properties, past usage data, and desired product characteristics to recommend the best material for 3d printing.
Key Features	• Material suitability analysis • Customized recommendations • Real-time prediction

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…
Development Environment	IDE	Jupyter Notebook
Data		
Data	Source, size, format	Kaggle Dataset, 4 kB, csv