Project Initialization and Planning Phase

Date	13 June 2025
Team ID	SWTID1749705685
Project Title	Movie Box Office Gross Prediction using Machine Learning
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) report :

The proposal report aims to transform **box office gross prediction** using **machine learning**, enabling data-driven decisions for budget allocation, marketing strategies, and release scheduling. It addresses the unpredictability in the movie planning process, offering enhanced operational planning, reduced investment risks, and optimized revenue outcomes. Key features include a machine learning-based prediction model, scenario-driven forecasting, and real-time strategic insights.

Project Overview	
Objective	The primary objective is to **predict movie box office gross** accurately by implementing advanced machine learning techniques, thereby enhancing production decisions and maximizing returns on investment.
Scope	The project involves building a comprehensive predictive framework that utilizes historical and current movie data—such as genre, cast, budget, release timing, and marketing variables—to improve film planning, budgeting, and promotional execution.
Problem Statement	
Description	Movie studios currently rely on experience and intuition to forecast box office revenue, which leads to **budget misallocation, inefficient marketing campaigns**, and poorly timed releases—ultimately resulting in lost revenue and strategic missteps.
Impact	Addressing these issues through data-driven forecasting will result in

	improved planning accuracy, better marketing alignment, **optimized release timing**, and stronger return on investment, empowering studios with reliable insights for competitive advantage.
Proposed Solution	
Approach	Employing machine learning algorithms to analyze a rich dataset of historical movie performance and related features, the model will predict box office revenue potential across various what-if scenarios.
Key Features	**-Machine learning-based revenue prediction** model trained on genre, cast, budget, release date, and marketing attributes. **-Scenario-based forecasting** for strategic decisions in budgeting, marketing, and scheduling. **-Real-time insights** for studios to make dynamic and adaptive decisions based on changing market and audience behavior. **-Release date optimization engine** using seasonal trends and competitor timelines to identify optimal launch windows.

Resource Requirements

Resource Type	Description	Specification/Allocation
Hardware		
Computing Resources	CPU/GPU specifications, number of cores	I3-1260p,12 Cores,Iris Xe graphic
Memory	RAM specifications	4 GB
Storage	Disk space for data, models, and logs	256 GB SSD
Software		
Frameworks	Python frameworks	Flask
Libraries	Additional libraries	scikit-learn, pandas, numpy
Development Environment	IDE, version control	Jupyter Notebook, Git
Data		
Data	Source, size, format	Kaggle dataset, TMDB 5000 Movie Dataset(.csv)