Project Initialization and Planning Phase

Date	June 22 2024
Team ID	team-739669
Project Title	Hospital Readmission Prediction Using Machine Learning
Maximum Marks	3 Marks

Project Proposal (Proposed Solution) report

The proposal report aims to transform loan approval using machine learning, boosting efficiency and accuracy. It tackles system inefficiencies, promising better operations, reduced risks, and happier customers. Key features include a machine learning-based credit model and real-time decision-making.

Project Overview	
Objective	The primary objective of hospital readmission prediction using machine learning is to enhance the quality of patient care and optimize healthcare delivery by accurately identifying patients at high risk of readmission.
Scope	The rapid advancement of machine learning (ML) technologies has revolutionized various sectors, and healthcare is no exception. One of the critical applications of ML in healthcare is the prediction of hospital readmissions. The scope of using machine learning for hospital readmission prediction is vast, encompassing numerous benefits, challenges, and future possibilities.
Problem Statement	
Description	Hospital readmission prediction using machine learning involves leveraging data-driven models to identify patients at high risk of being readmitted after discharge.
Impact	Hospital readmission prediction using machine learning (ML) is a transformative approach that holds the potential to significantly impact various facets of healthcare delivery. By leveraging advanced data analytics and predictive modeling, hospitals can better identify, manage, and prevent patient readmissions.It explores the multifaceted impact of using machine learning for hospital readmission prediction, highlighting improvements in patient outcomes, cost savings, resource management, personalized care, clinical decision support, operational efficiency, regulatory compliance, and data-driven insights.
Proposed Solution	
Approach	Hospital readmissions pose significant challenges for healthcare systems globally, both in terms of patient outcomes and financial burdens. Reducing readmission rates is a priority for improving

	healthcare quality and efficiency. Machine learning (ML) offers powerful tools to predict which patients are at risk of being readmitted, allowing healthcare providers to take proactive measures.
Key Features	- Implementation of a machine learning-based hospital readmission prediction model.

	Key Features commonly used in these models: Demographic Information Medical History Hospitalization Details Post-discharge Factors Healthcare Utilization

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