Project Initialization and Planning Phase

Date	09 July 2024
Team ID	SWTID1720455879
Project Title	Human Resource Management: Predicting Employee Promotions 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	To develop a machine learning model that predicts employee promotions based on performance metrics, tenure, skills, and feedback, enhancing workforce management strategies by identifying high-potential employees.
Scope	The project will focus on analyzing employee data from various types of organizations, including large corporations, rapidly expanding startups, and companies in competitive industries, to predict promotion likelihood.
Problem Statement	
Description	The Employee Promotion Prediction project involves creating a machine learning model to forecast which employees are most likely to be promoted. By evaluating various factors such as performance metrics, tenure, skills, and feedback, the model will help organizations streamline their promotion processes, establish fair criteria, and proactively manage talent development.
Impact	This solution will enhance employee engagement, retention, and organizational growth by: • Streamlining the promotion process in large corporations. • Establishing fair and transparent promotion criteria in startups. • Proactively identifying and nurturing high-performing

	employees in competitive industries to prevent attrition.
Proposed Solution	
Approach	Utilizing machine learning techniques to analyze employee data and predict promotion likelihood, enhancing decision-making in promotion processes.
Key Features	Implementation of a machine learning model for assessing employee promotion potential. Continuous adaptation to refine predictions based on evolving organizational dynamics and employee performance.

Resource Requirements

Resource Type	Description	Specification/Allocation
Hardware		
Computing Resources	CPU/GPU specifications, number of cores	Intel i7 or higher
Memory	RAM specifications	Minimum 16 GB
Storage	Disk space for data, models, and logs	at least 500 GB
Software		
Frameworks	Python frameworks	Flask
Libraries	Additional libraries	scikit-learn, pandas, numpy
Development Environment	IDE, version control	Jupyter Notebook, Git,spyder
Data		
Data	Source, size, format	Kaggle dataset, 3.58GB,emp_promotions.csv