**Project Charter**

**Project Name:**

Predictive Placement Status and Graduation Year Calculation

**Project Objective:**

The primary objective of this project is to develop and deploy machine learning models for predicting the placement status of students and calculating their expected year of graduation. Additionally, this project aims to streamline data preprocessing, enhance data quality, and generate informative reports for decision-making.

**Business Case:**

In an increasingly competitive education landscape, institutions are under pressure to provide students with career-oriented support and guidance. By accurately predicting placement status and calculating expected graduation years, this project will empower educational institutions to make data-driven decisions, improve student outcomes, and align academic planning with industry demands.

**Goals/Metrics:**

**Develop machine learning models for:**

Predicting student placement status with a minimum accuracy of 80%.

Calculating expected graduation years with a high degree of precision.

Automate data preprocessing and imputation to improve data quality.

**Generate two sets of informative reports:**

"Prediction of Placement Status" Excel report.

"Calculation for Year of Graduation" Excel report.

Complete the project within a timeline of six weeks.

**Expected Deliverables:**

Two Excel reports:

"Prediction of Placement Status.xlsx" containing placement status predictions.

"Calculation for Year of Graduation.xlsx" containing calculated graduation years.

Deployed machine learning models for placement status prediction and graduation year calculation.

Automated data preprocessing pipeline.

Documentation for model deployment and data preprocessing.

Timely project completion within the defined timeline.

**Within Scope:**

Data preprocessing and cleaning for both training and testing datasets.

Development, training, and deployment of machine learning models.

Generation of informative Excel reports.

Automation of data preprocessing to enhance data quality.

**Outside of Scope:**

Continuous monitoring and maintenance of deployed models (post-deployment support).

Extensive data exploration beyond basic preprocessing.

Infrastructure setup for production deployment.

**Project Team:**

Mohammed Abdur Rashed

**Support Resources:**

Access to historical student data.

Computing resources for model development and deployment.

Software and tools required for data preprocessing and modeling.

**Cost Allocation:**

Project budget will cover personnel costs, computing resources, and software licenses.

Allocation based on budgetary guidelines and project requirements.

**Risks:**

Data quality issues in the historical student data may impact model performance.

Achieving the target accuracy for placement status prediction could be challenging.

Delays in data preprocessing or model development may affect the project timeline.

Availability of computing resources and software licenses may be limited.

**Assumptions:**

The historical student data provided is representative and comprehensive.

Adequate support and resources will be available throughout the project.

Model deployment will occur in a controlled environment adhering to data privacy and security regulations.

Timely access to required data and computing resources.

**Constraints:**

The project must comply with data privacy and security regulations.

Models should be developed using scikit-learn and openpyxl for Excel report generation.

The project timeline is limited for completion.