# ****Final Year Project Document****

## ****1. Project Title****

**Predictive Analytics for Student Performance Based on Legacy Data, Career Guidance, Subject Preferences, and Personality Traits**

## ****2. Project Objectives****

**Primary Objective:**

* Predict student performance (e.g., final grades, GPA) using a combination of legacy academic data, career guidance inputs, subject preferences, and personality traits.

**Secondary Objectives:**

* Analyze correlations between personality traits and academic performance.
* Provide personalized career recommendations based on predictive models.
* Suggest subject choices aligned with predicted performance and career aspirations.

## ****3. Project Scope****

**Data Scope:**

* **Legacy Data:** Historical academic records including grades and attendance.
* **Career Guidance Data:** Information from career counseling sessions, surveys, or interviews.
* **Subject Preferences:** Data on students’ preferred or excelled subjects.
* **Personality Tests:** Results from psychology tests (e.g., MBTI, Big Five).

**Model Scope:**

* **Predictive Models:**
  + Academic performance prediction.
  + Career fit recommendation.
  + Subject recommendation.

**Application Scope:**

* Development of a user interface/dashboard for interacting with predictions and recommendations.
* Visualizations of data correlations and performance trends.

## ****4. Data Collection Plan****

**Data Sources:**

* **Legacy Data:** Obtain from school databases or past academic records.
* **Career Guidance Data:** Gather from career counseling records or student surveys.
* **Subject Preferences:** Collect through surveys or existing student data.
* **Personality Tests:** Access results from standardized tests or implement a new test if necessary.

**Permissions:**

* Ensure you have permissions to access and use sensitive data.

**Data Collection Steps:**

1. Identify and request access to data sources.
2. Obtain necessary permissions.
3. Collect data and prepare it for analysis.

## ****5. Project Timeline****

**Week 1:**

* Define project objectives and scope.
* Plan for data collection: identify sources, permissions, and methods.

**Week 2-3:**

* Data preprocessing: Clean and organize the collected data.
* Exploratory Data Analysis (EDA): Understand data characteristics and relationships.

**Week 4-6:**

* Develop predictive models: Build and test models for performance prediction, career fit, and subject recommendations.
* Evaluate model performance and refine as needed.

**Week 7-8:**

* Integrate models into a user-friendly application or dashboard.
* Develop visualizations and reports for insights and recommendations.

**Week 9-12:**

* Finalize application: Test and debug.
* Prepare final documentation and project report.

## ****6. Deliverables****

* **Week 1:** Document outlining project objectives and scope. List of data sources and collection plan. Initial timeline.
* **Week 2-3:** Preprocessed data and EDA report.
* **Week 4-6:** Predictive models and evaluation results.
* **Week 7-8:** Functional application/dashboard with visualizations.
* **Week 9-12:** Finalized application, project report, and presentation.

## ****7. Expected Outcomes****

* A set of predictive models for academic performance, career guidance, and subject recommendations.
* A user-friendly interface providing actionable insights and recommendations.
* Visual and analytical reports on data correlations and performance trends.

## ****8. Resources Needed****

* **Data:** Access to legacy data, career guidance inputs, subject preferences, and personality test results.
* **Tools:** Data analysis software (e.g., Python libraries, Jupyter Notebook), application development tools.
* **Permissions:** Access rights for sensitive or proprietary data.

## ****9. Risk Management****

* **Data Access Issues:** Mitigate by securing permissions early and considering alternative data sources if necessary.
* **Model Accuracy:** Regularly evaluate and refine models to ensure accurate predictions.
* **Technical Challenges:** Plan for troubleshooting and seek help from peers or mentors as needed.

## ****10. Team Members****

* **Name:** Ijlal Ansari
* **Role:** Project Lead and Developer