Project Design Phase-I
Solution Architecture

Date	23 October 2023
Team ID	Team-592608
Project Name	ENVISIONING SUCCESS: Predicting University Scores Using Machine Learning
Maximum Marks	4 Marks

Solution Architecture:

This architecture optimizes the university scoring process by leveraging regression models for real-time score prediction. It not only enables informed decisions for prospective students but also provides valuable insights to universities for quality improvement. The architecture consists of the following components:

1. Data Collection:

Data is collected from various universities, including characteristics such as quality of education, alumni employment, quality of faculty, publications, influence, citations, and patents. These data points serve as features for the regression model.

2. Data Preprocessing:

Data preprocessing is conducted to clean and prepare the dataset. This includes handling missing data, normalizing features, and ensuring data quality for accurate regression.

3. Data Visualization:

A data visualization phase occurs before model development, creating graphical representations of key insights derived from the dataset. This visual representation can include charts, graphs, and dashboards that provide an intuitive understanding of the data.

4. Regression Model Development:

After the data visualization phase, a regression model is developed, utilizing university characteristics as input and predicting the university's score as the output.

5. Model Training and Evaluation:

The regression model is trained on a portion of the dataset and evaluated for accuracy and performance. Cross-validation techniques are used to ensure the model's generalizability.

6. Web Application Development:

A user-friendly web application is created to allow users to input university characteristics. The application uses the trained regression model to predict the university's score based on the user's inputs.

7. Real-Time Predictions:

The web application enables real-time predictions of university scores. Users can input the characteristics they are interested in, and the application provides an estimated score.

Benefits:

Informed decision-making for prospective students.

Feedback for universities to enhance quality.

Accountability and transparency in university performance.

Real-time score predictions for users.

Enhanced understanding of data through data visualization.

Solution Architecture Diagram