EDU PREDICT TOOL

International Student Forecasting Dashboard

Minimum Viable Product (MVP) Manual

This manual outlines the design, structure, and functionality of the EDU PREDICT TOOL MVP dashboard. It serves as a guide for both users and developers to understand the solution's purpose, components, and usage.

1. Project Overview

1.1 Objective

The EDU PREDICT TOOL is designed to forecast and visualize trends in international student enrollment in U.S. higher education. It empowers institutions, researchers, and policy makers to understand future scenarios based on enrollment status, origin, funding, and academic types.

1.2 Purpose of the MVP

This Minimum Viable Product (MVP) provides a working version of the dashboard using real forecasted data, dynamic scenario logic, and clean visuals built using Power BI. The dashboard is published publicly and designed for decision-making and early user feedback.

1.3 Key Features

- Power BI dashboard with 5 core pages
- Country and region–based origin mapping
- Funding source analysis across academic types
- Scenario analysis (Baseline, Optimistic, Pessimistic)
- Machine learning–driven forecasts (SARIMAX model used to generate data)
- Built with Tailwind CSS, hosted on GitHub Pages

1.4 MVP Stack

Component	Tool/Platform
Visualization	Power BI Desktop
Forecast Model	SARIMAX (offline Python)
Styling	Tailwind CSS
Hosting	GitHub Pages
Format	CSV-based data ingestion

2. Data Sources

2.1 Data Inputs

The dashboard is powered by forecasted CSV datasets, each representing different slices of student data. These CSVs are generated using time series forecasting models (SARIMAX), and then imported into Power BI for visualization.

2.2 Datasets Used

Dataset Name	Description
`forecasted_data_all_columns_until_2032_status.csv`	Enrollment status breakdown (full-time/part-time), gender, visa types, marital status

`forecasted_students_country_by_year.csv`	Country-wise forecast of international student enrollment
`forecasted_values_separate_tables.csv`	Academic level forecast: undergraduate, graduate, non-degree, OPT
`final_forecasted_source_of_fund.csv`	Funding source projections by academic type
`ScenarioList`	Table used to enable scenario selection

2.3 Data Refresh (MVP-level)

This MVP uses **static forecasted data** exported from ML models. There is no live connection or dynamic refresh — updates must be made by replacing the CSV files and republishing the dashboard.

3. Dashboard Pages & Features

3.1 Student Status Overview

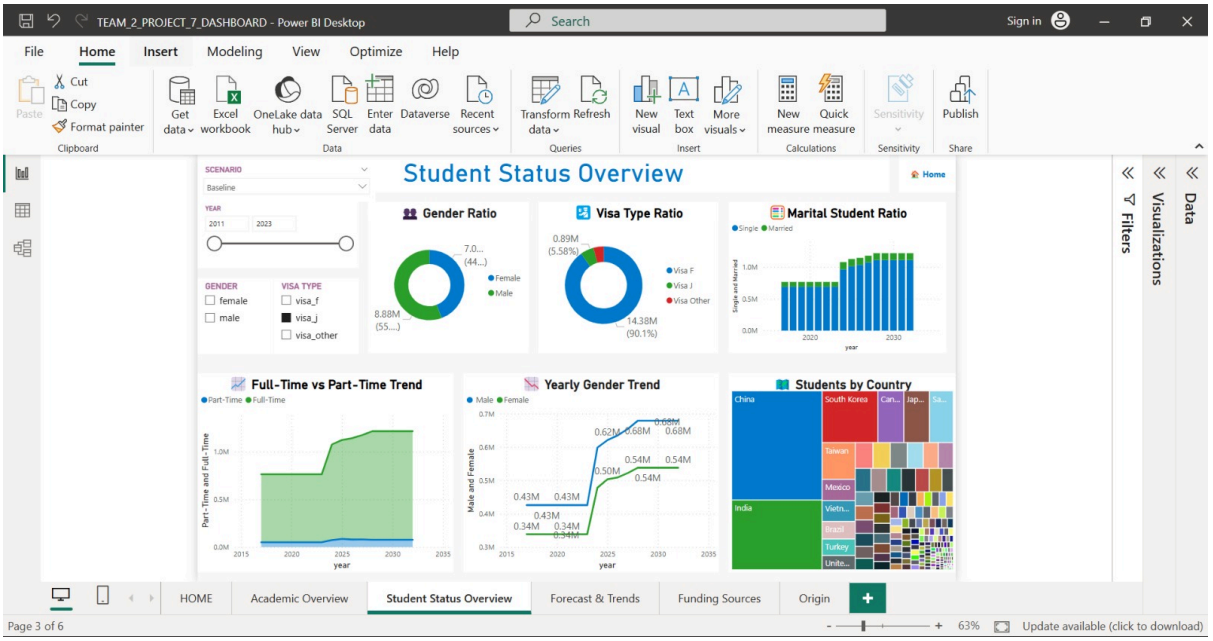
Breakdown of international student demographics by:

- Gender (Male/Female)
- Visa Type (F, J, Other)
- Marital Status (Married/Single)
- Enrollment Type (Full-time/Part-time)

Key Visuals

- Donut charts for gender, marital status, and visa types

- Bar/line charts for full-time vs part-time trends
- Scenario dropdown for adjusting projections

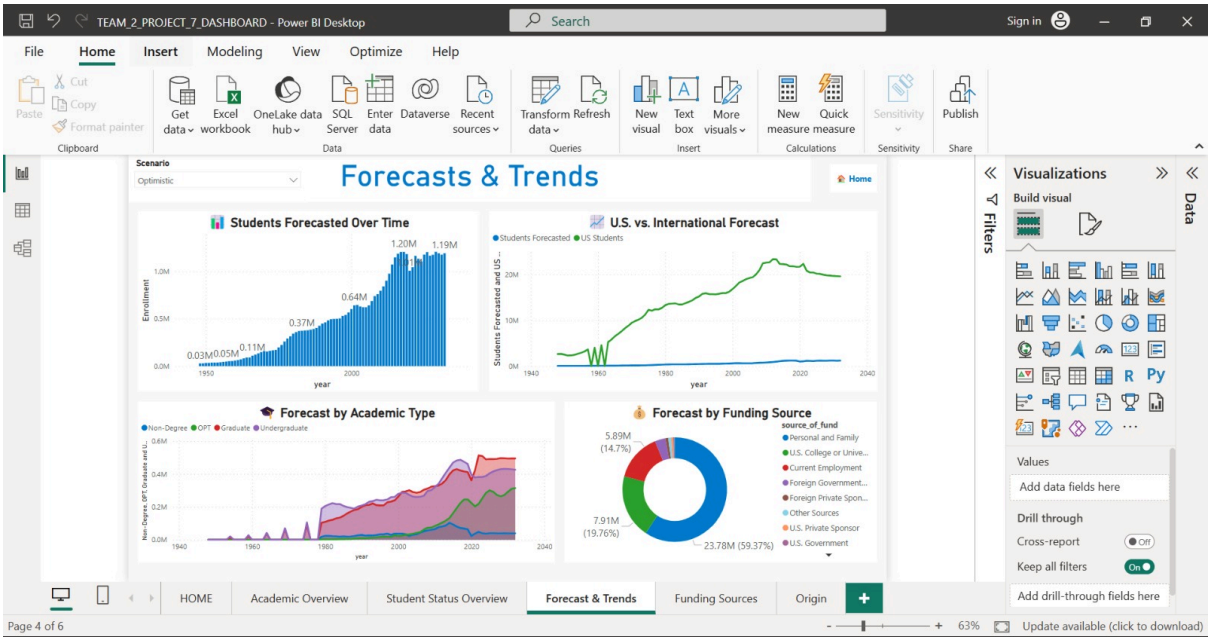


3.2 Forecasts & Trends

Projections of student types and origin forecasts over time.

Key Visuals

- Line charts for total students, U.S. vs international split
- Forecast breakdowns for:
    - Undergraduate
    - Graduate
    - Non-Degree
    - OPT
- Year-over-year scenario comparison

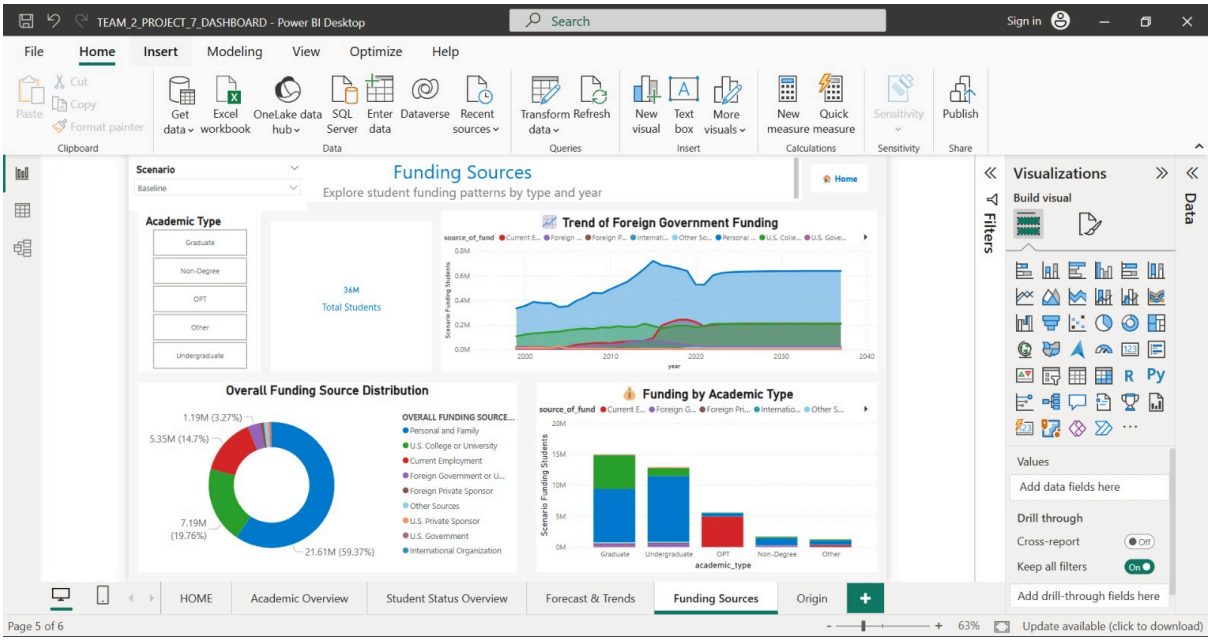


3.3 Funding Sources

Analysis of how students are funded across categories and time.

Key Visuals

- Donut chart: funding source breakdown
- Area/line chart: funding trends
- Bar chart: funding by academic type
- Total student count card (scenario-adjusted)

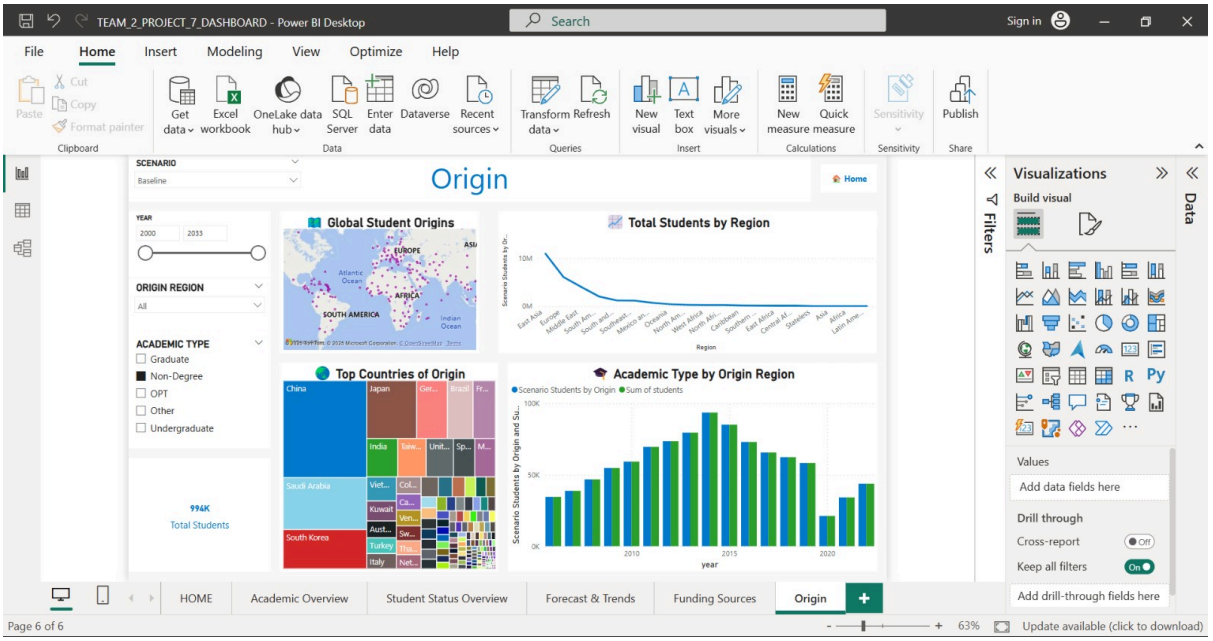


3.4 Origin

Displays student origin by country and region.

Key Visuals

- Map or treemap by country
- Bar chart: students by region
- Bar chart: academic type by region
- Total students (scenario-based)

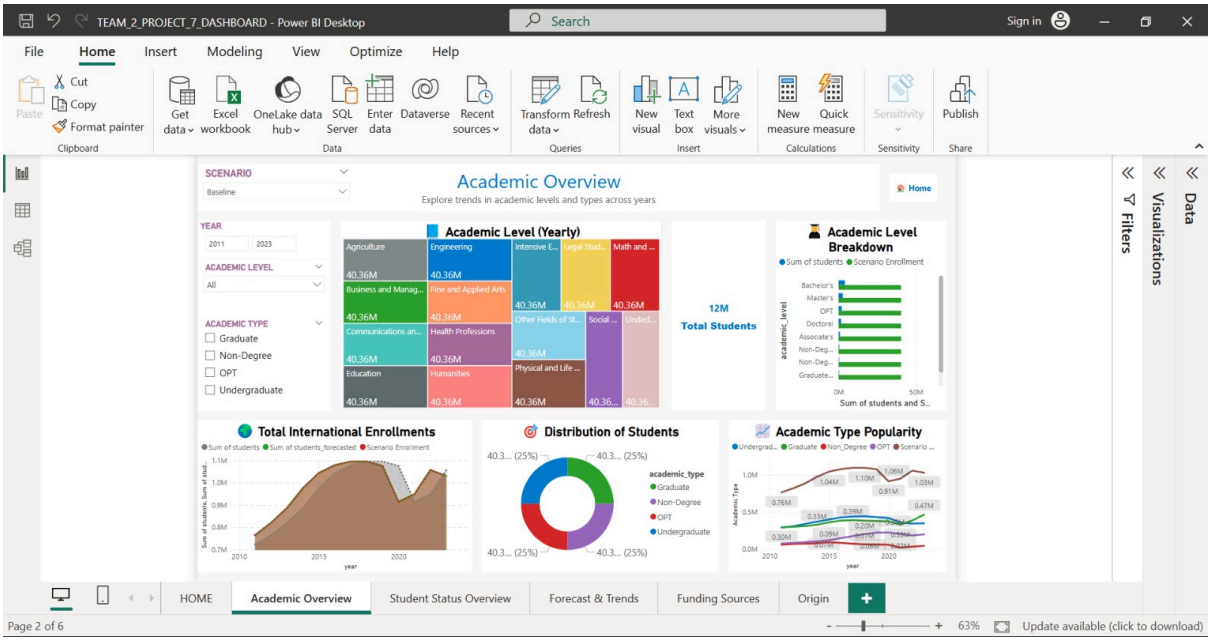


3.5 Academic Overview

Focuses on academic levels pursued by students and their trends over time.

Key Visuals

- Line chart for:
    - Undergraduate
    - Graduate
    - Non-Degree
    - OPT
- Cards or bar charts for academic totals
- Scenario-driven projections



4. Deployment Instructions

4.1 Publishing to GitHub Pages

This MVP is deployed using **GitHub Pages**. Power BI reports are embedded via public link, and Tailwind CSS ensures responsive layout.

4.2 Folder Structure

- 📁 root/
- ├── docs/
- │ ├── index.html
- │ ├── dashboard.html
- │ ├── assets/
- │ │ └── styles.css
- │ ├── embed-code.html
- │ └── README.md

4.3 Embedding Power BI

1. Open report in Power BI Service

2. Click `File → Publish to web`

3. Copy iframe embed code
4. Paste into `dashboard.html`
5. Commit and push to GitHub

4.4 Activating GitHub Pages

1. Go to GitHub repo → Settings → Pages
2. Set source to `main` and `/docs` folder
3. Live URL will be:
   `https://yourusername.github.io/your-repo-name/`

4.5 Updating the Dashboard

- Re-upload updated PBIX to Power BI Service
- Replace iframe embed code in `dashboard.html`
- Commit and push — site updates instantly

5. Limitations & Appendix

5.1 MVP Limitations

- Static data (manual update required)
- No user authentication
- May not be fully mobile responsive
- No backend/API integration

5.2 Appendix

Included Files

- forecasted_data_all_columns_until_2032_status.csv
- forecasted_values_separate_tables.csv
- forecasted_students_country_by_year.csv
- final_forecasted_source_of_fund.csv
- ScenarioList table

Forecasting Method

- SARIMAX time series model (offline)

GitHub Repository

- https://github.com/priyankaboddoju/EduPredictTool/tree/main

Live Dashboard

- https://priyankaboddoju.github.io/EduPredictTool/