VisionED

Empowering Student Success Through Smart Insights

OUR TEAM

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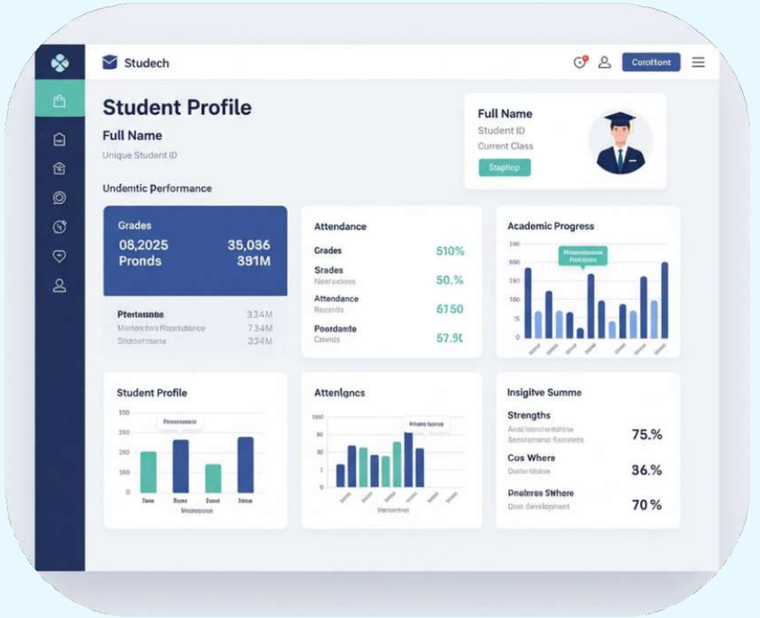
INTRODUCTION

VisionED is a web application that employs **machine learning** to predict student performance and identify at-risk students early for timely interventions.

Developed with **Python**, **Scikit-learn**, and **Flask**, it offers secure data management and a user-friendly interface using **HTML**, **CSS**, and **Bootstrap**.

It also incorporates **Pandas** and **Matplotlib** for performance visualizations, aiming to enhance educational support and student outcomes through data-driven methods.



GOALS

1. **Accurate Predictions:** Use Python and machine learning to predict student grades correctly.

2. **Easy-to-Use Website:** Build a simple, mobile-friendly website with HTML, CSS, and Bootstrap.

3. **Clear Visuals:** Show student performance trends with easy charts using Pandas and Matplotlib.

4. **Safe and Fast System:** Store data securely in MySQL and deliver fast results with Flask.

PROBLEMS

1. **Late Student Support:** Teachers often notice struggling students too late to help.
2. **Too Much Data:** Schools have lots of student data but no easy way to understand it.
3. **Inaccurate Guesses:** Manual predictions of student performance can be wrong or unfair.
4. **Slow Systems:** Existing tools can be slow or struggle with large datasets.

SOLUTIONS

1. **Early Student Support:** Use Python and Scikit-learn to give initial predictions of student performance based on previous batch data, enabling early interventions.

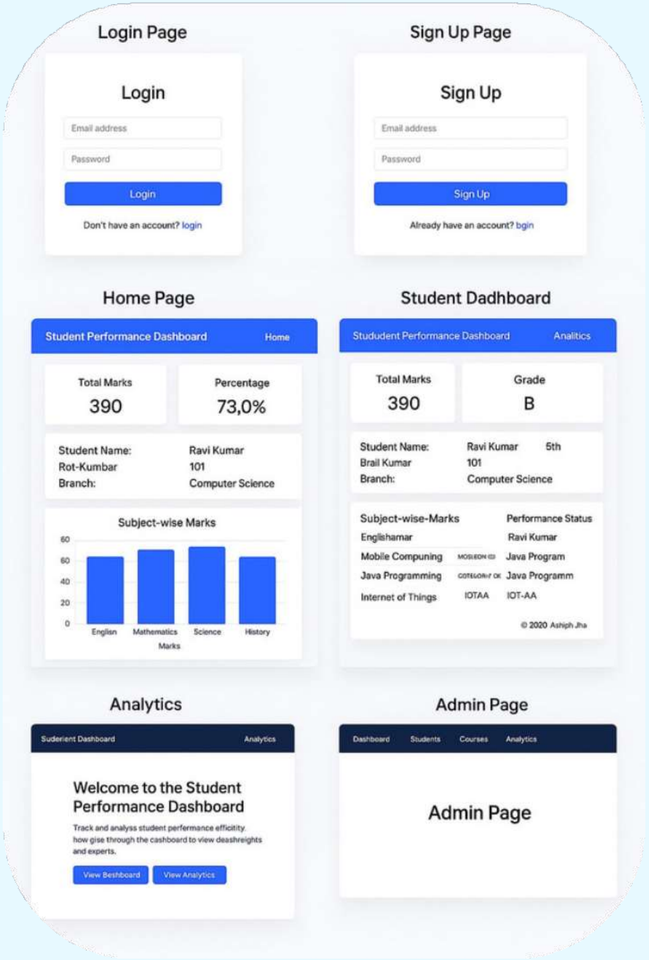
2. **Handle Too Much Data:** Process large datasets efficiently with Pandas to provide clear and actionable insights.

3. **Fix Inaccurate Guesses:** Develop accurate machine learning models to ensure reliable student performance predictions.

4. **Speed Up Slow Systems:** Implement Flask and MySQL for a fast, scalable system to handle data quickly.

WORKFLOW

- **Visit Website:** Users open the easy-to-use website made with HTML, CSS, and Bootstrap.
- **Login/Sign Up:** Choose role (Teacher or Student) and log in or sign up, saved securely in MySQL.
- **Student Dashboard:** Students see:
  - Future grade predictions in graphs from machine learning (Scikit-learn, Matplotlib)..
  - Tips to improve based on data (Pandas analysis).
- **Teacher View:** Teachers check student predictions to offer help.
- **Data and Predictions:** Flask and MySQL update data fast, and models predict grades accurately.



FEATURES

- **Grade Prediction:** Utilizes past data for reliable forecasts (Scikit-learn), not always 100% accurate.
- **Interactive Dashboard:** Visualizes trends with Matplotlib charts.
- **Responsive Design:** Accessible on all devices using Bootstrap.
- **Secure Data: MySQL** ensures safe storage of student information.
- **Real-Time Updates:** Flask enables dynamic data inputs.
- **User Roles:** Role-based access for educators and administrators.

FUTURE SCOPE

- **Advanced AI:** Use deep learning for improved predictions.
- **Personalized Plans:** Provide customized study recommendations.
- **Multi-Institution Support:** Enable use across various schools.
- **Mobile App:** Create iOS/Android apps for wider access.
- **LMS Integration:** Connect with Moodle or Canvas.
- **AI-Assistant:** Introduce a chatbot for user guidance.

THANK YOU