Student Performance & Attendance System

A comprehensive database solution tracking academic results and attendance to evaluate student performance and identify support needs.

The Challenge

Identifying At-Risk Students

Manual tracking makes it difficult to spot students with low attendance or grades early enough for intervention.

Performance Trends

Analyzing subject-wise performance patterns requires structured data that manual systems can't provide efficiently.

Actionable Insights

Teachers need data-driven insights to support students effectively and improve educational outcomes.

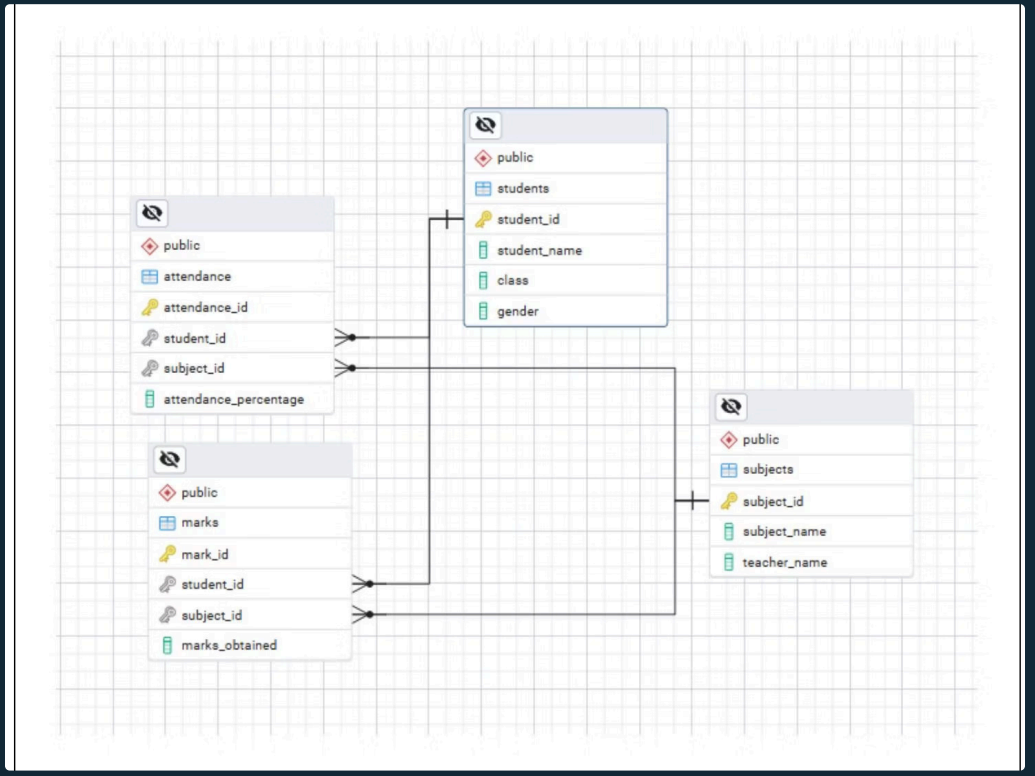
System Architecture

Database Foundation

PostgreSQL powers the system, managed through **PgAdmin 4** for robust data handling and analysis.

Core Tables

- Students - Personal and class information
- Subjects - Course and teacher details
- Attendance - Tracking presence per subject
- Marks - Academic performance records



Student Roster Overview

10

Total Students

Across three class sections

3

Class Sections

10A, 10B, and 10C

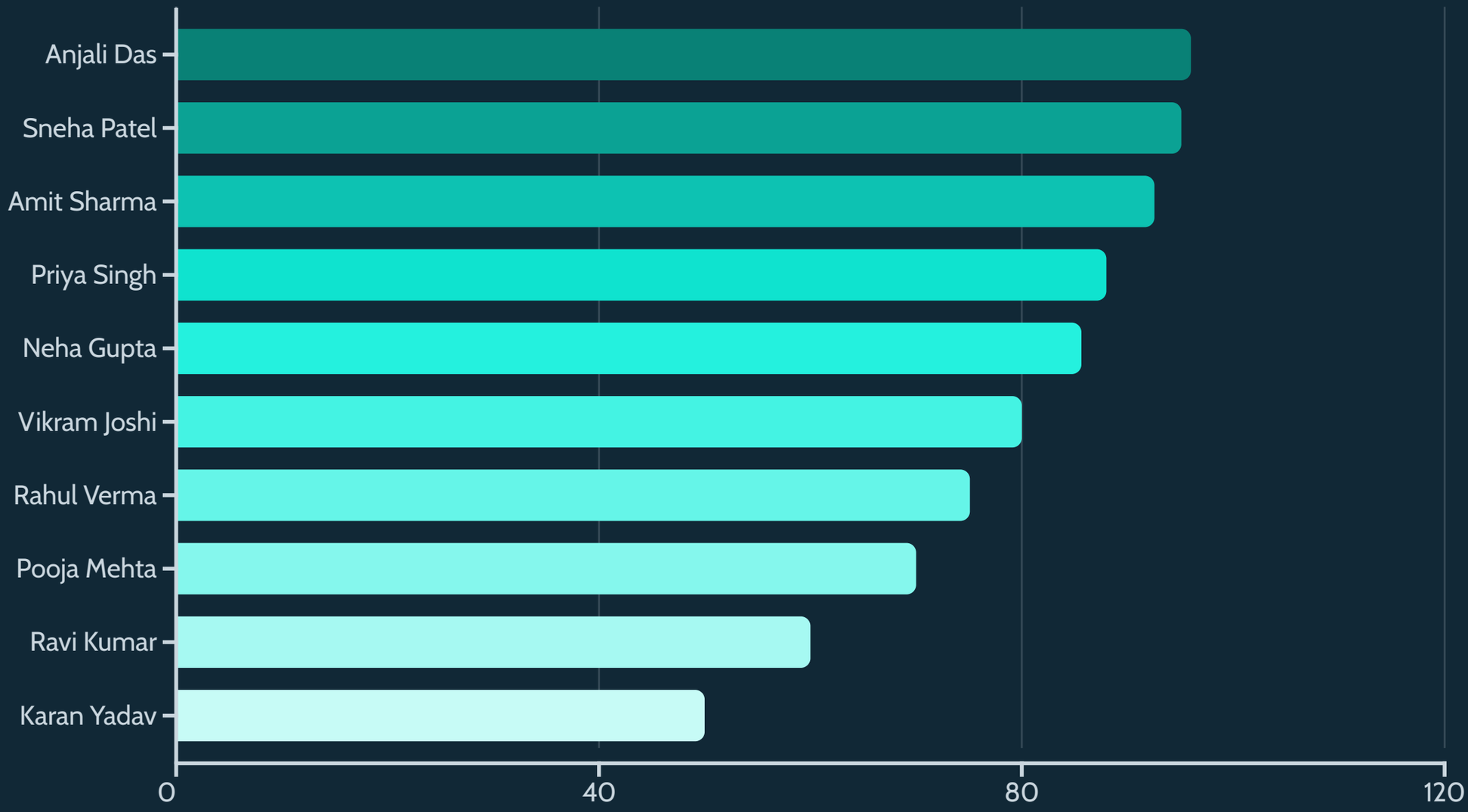
4

Core Subjects

Mathematics, Science, English, Social Studies

The system tracks students like Amit Sharma, Priya Singh, and Rahul Verma across multiple subjects, with dedicated teachers including Mr. Rao (Mathematics), Mrs. Iyer (Science), Mr. Sinha (English), and Ms. Thomas (Social Studies).

Attendance Patterns



Critical Finding: Two students (Ravi Kumar and Karan Yadav) fall below the 70% attendance threshold, requiring immediate intervention.

The Attendance-Performance Connection

Higher attendance = Higher marks

1

Top Performers

Anjali Das: **96% attendance, 95 marks**

Sneha Patel: **95% attendance, 92 marks**

2

Mid-Range

Vikram Joshi: **80% attendance, 75 marks**

Rahul Verma: **75% attendance, 65 marks**

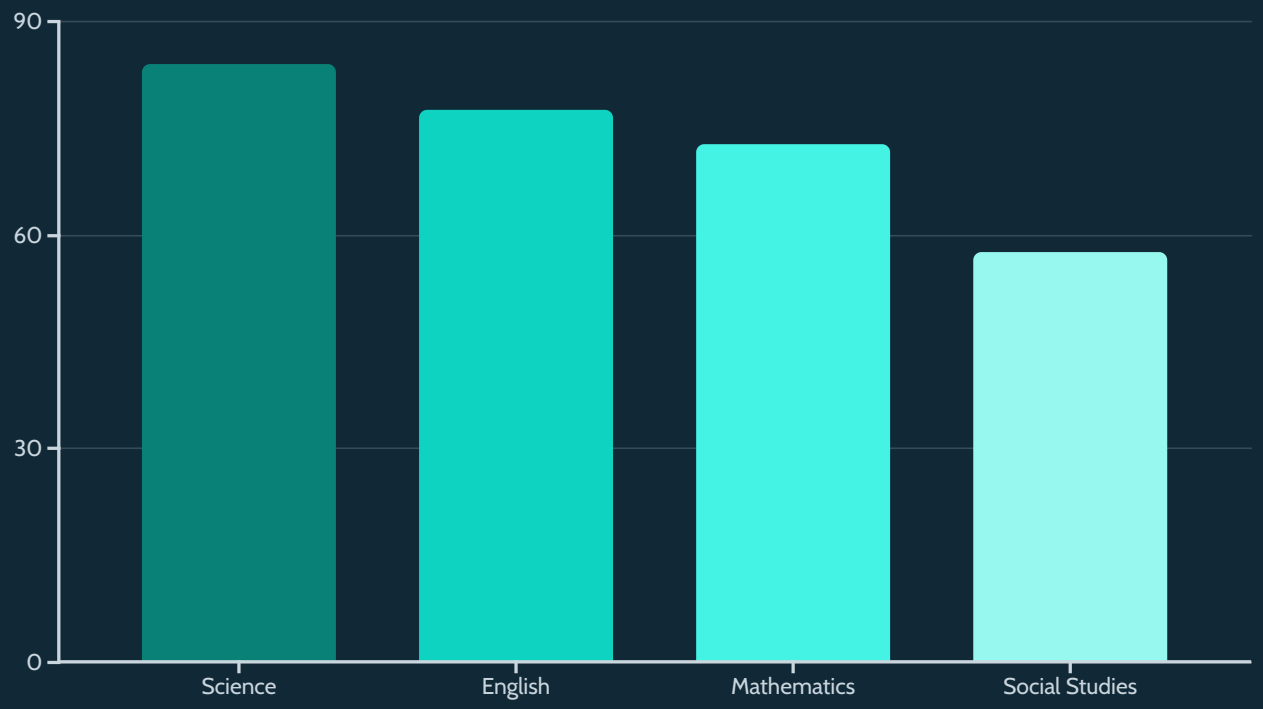
3

At-Risk Students

Ravi Kumar: **60% attendance, 55 marks**

Karan Yadav: 50% attendance, 40 marks

Subject Performance Analysis



Key Insights

Science leads with 84 average marks, indicating strong teaching effectiveness.

Social Studies shows the lowest average at 57.5, suggesting need for curriculum review or additional support.

Student Rankings

01

Anjali Das

95 total marks

02

Sneha Patel

92 total marks

03

Priya Singh

90 total marks

04

Amit Sharma

88 total marks

05

Neha Gupta

80 total marks

Class 10B maintains the highest average attendance at **87.88%**, followed by 10A at **77.63%** and 10C at **65%**.

SWOT Analysis

Strengths

- Efficient tracking of attendance and performance
- Easily scalable system
- Supports detailed insights

Weaknesses

- Depends on data accuracy
- Manual entry can introduce errors

Opportunities

- Dashboard integration
- Machine learning for predicting trends

Threats

- Data privacy concerns
- Security risks if mishandled

Conclusion

The Student Performance & Attendance System successfully demonstrates the **strong correlation between attendance and academic achievement**.

By providing structured data analysis through PostgreSQL, the system enables educators to:

- Identify at-risk students early
- Evaluate teaching effectiveness
- Make data-driven interventions

Future enhancements with dashboards and predictive analytics will further strengthen educational outcomes.

View on GitHub