

Database Final Project:

Quality Education

By

ADEOLU Adeleke Peter

This project elaborates how student data should be managed in education setting.

Problems statement

Among many problems facing education setting, this project is addressing these problems so as to achieve standard school management.

1. Data Management.
2. Attendance Tracking.
3. Fee Management.
4. Information Access Security.
5. Information dissemination.

Solutions

1. Streamlines the management of student profiles, making it easier to store, access, and update student data.
2. Organizes class schedules, subjects, and teacher assignments, avoiding any confusion about class details.
3. Allows teachers to mark attendance quickly and maintain accurate records.
4. Enables students and administrators to view attendance records, ensuring transparency and accountability.
5. Ensures that admins, teachers, and students have access to relevant features and data based on their roles, enhancing data security and privacy.
6. Provides a secure login system, protecting sensitive information from unauthorized access.
7. Allows admins and teachers to post notices accessible to students, ensuring important information reaches everyone efficiently.

overview

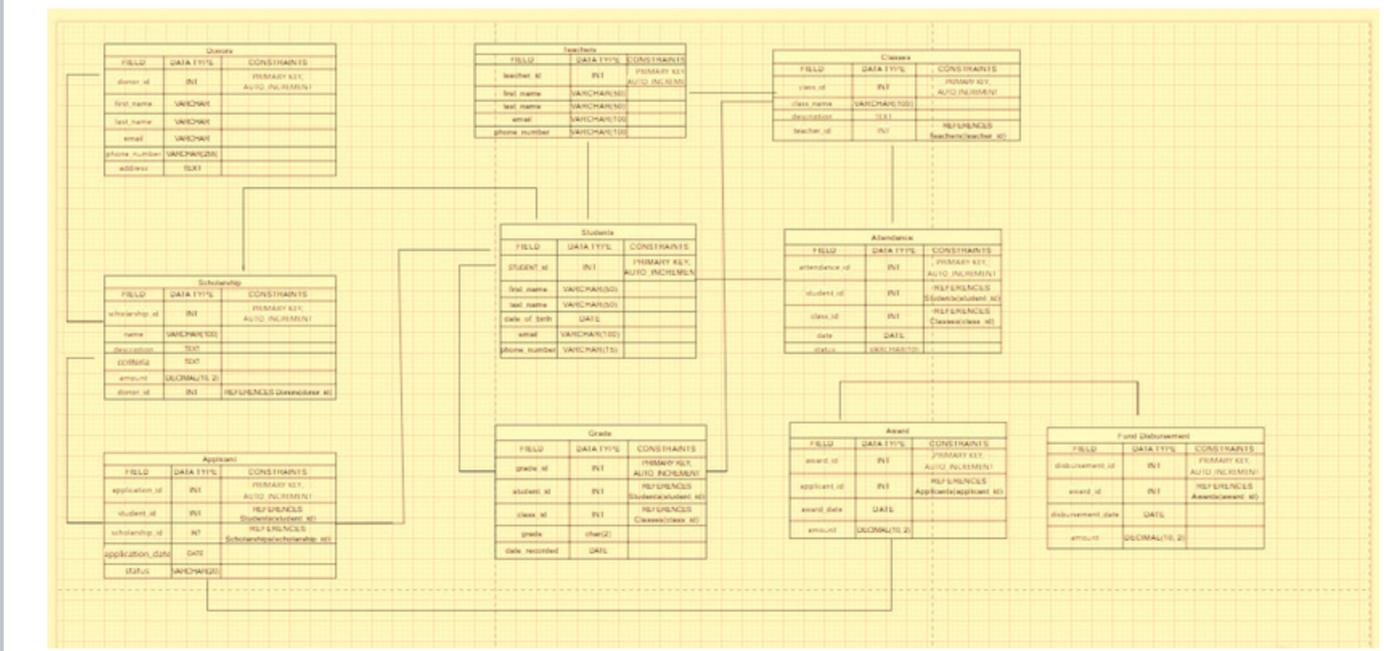
The Student Management System built using Python and Django for the backend, with HTML, CSS, and JavaScript for the frontend. The system supports three distinct user roles: Admin, Teacher, and Student. Each role has its unique functionalities, providing a robust platform for managing student data, attendance, and fees.

Key Features User Roles:

1. Admin Panel: Manage student and teacher accounts. Approve or disapprove student and teacher applications. View and manage student fees. Post notices accessible to teachers and students. Monitor attendance records.
2. Teacher Panel: View and manage student attendance. Post notices for students. Access and verify student fees.
3. Student Panel: Fill out the admission form. Create an account with username and password. View status of application (pending verification). Access notices posted by admin and teachers. View attendance and fee records once verified.
4. Authentication and Verification: Secure login system with separate panels for Admin, Teacher, and Student. Verification process for new student and teacher registrations by the admin.
5. Attendance Management: Teachers can mark and manage student attendance. Students and admins can view attendance records.
6. Fee Management: Admin and teachers can view and manage student fee records. Students can view their fee status.

cont.....

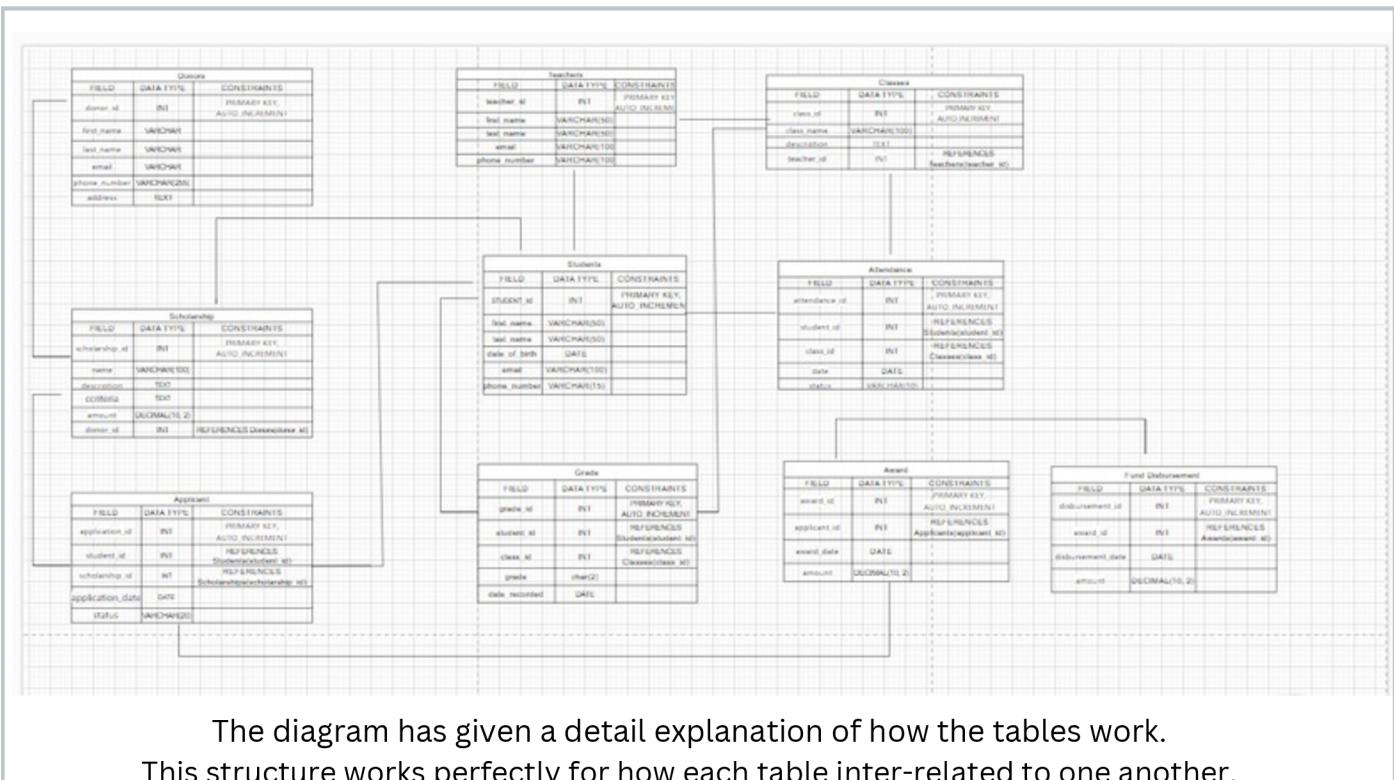
ER Diagram



Tech Stack

I used MySQL and Python.

MySQL was used to develop the database tables while python django was used to develop the school database with vs code.



The diagram has given a detail explanation of how the tables work.
This structure works perfectly for how each table inter-related to one another.

How it works

Step 1: User Authentication and Role-Based Access

1. User Login/Register:
 - Admin: Can manage users, classes, attendance, fees, and scholarships.
 - Teacher: Can manage attendance and view student profiles.
 - Student: Can view their profile, attendance, fees, and scholarships.

Flowchart for User Authentication

```
User Login/Register
    Admin Dashboard
    Teacher Dashboard
    Student Dashboard
```

cont...

Step 2: Student Profile Management

Admin Adds/Edits Student Profiles:

Admin can create and manage student profiles.

Students can fill out their admission forms.

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Step 3: Class and Attendance Management

Teacher Marks Attendance:

Teachers can mark and manage student attendance.

Admins and students can view attendance records.

Flowchart for Attendance Management:

Teacher Marks Attendance

Admin Views Attendance

Student Views Attendance

cont...

Step 4: Fee Management

1. **Admin Manages Fees:**

- **Admin and teachers can view and manage fee records.**
- **Students can view their fee status.**
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2. **Flowchart for Fee Management:**

Admin Manages Fees

Teacher Views Fees

Student Views Fees

Step 5: Scholarship Management

1. **Admin Manages Scholarships:**

- **Connects donors with students.**

Tracks applications, awards, and fund disbursements.

cont...

Step 6: Interaction with Database

1. Django Models interact with the database to perform CRUD (Create, Read, Update Delete) operations.

Example of Database Interaction

Student Model:

```
from django.db import models
from users.models import User

class StudentProfile(models.Model):
    user = models.OneToOneField(User, on_delete=models.CASCADE)
    age = models.PositiveIntegerField()
    personal_interests = models.TextField()
```

View for Adding a Student:

```
from django.shortcuts import render, redirect
from .models import StudentProfile
from .forms import StudentForm

def add_student(request):
    if request.method == 'POST':
        form = StudentForm(request.POST)
        if form.is_valid():
            form.save()
            return redirect('student_list')
    else:
        form = StudentForm()
    return render(request, 'add_student.html', {'form': form})
```

cont.....

Key Interface Examples

- **Admin Dashboard:** Overview of student profiles, attendance records, fee management, and scholarships.
- **Teacher Dashboard:** List of classes, option to mark attendance, view student profiles.
- **Student Dashboard:** View personal profile, attendance records, fee status, scholarship applications.

Benefits & Impact

Benefits of Using the Student Management System

1. **Improved Efficiency:**
 - o **Centralized Data:** All student-related information is accessible in one place, reducing time spent searching for data.
 - o **Automated Processes:** Streamlines tasks such as attendance tracking, fee management, and scholarship applications.
2. **Enhanced Data Accuracy:**
 - o **Real-Time Updates:** Ensures that data is always current, reducing errors and miscommunication.
 - o **Consistent Records:** Maintains uniformity across various data entries, enhancing reliability.
3. **Increased Transparency and Accountability:**
 - o **Role-Based Access:** Ensures that only authorized personnel can view or edit sensitive information.
 - o **Clear Audit Trails:** Tracks changes and updates, holding users accountable for their actions.
4. **Cost Savings:**
 - o **Reduced Paperwork:** Minimizes the need for physical records, cutting down on paper and printing costs.
 - o **Optimized Resource Allocation:** Efficiently allocates resources by identifying areas that need attention, such as overdue fees or scholarship disbursements.
5. **Enhanced Communication:**
 - o **Instant Notifications:** Allows admins and teachers to post notices that are immediately accessible to students.
 - o **Accessible Information:** Ensures that important updates reach the intended audience without delay.
6. **Better Student Engagement:**
 - o **Self-Service Portal:** Empowers students to check their profiles, attendance, and fee status, fostering a sense of responsibility.
 - o **Personalized Experience:** Tailors the educational experience to meet individual student needs through accessible data.

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Impact of the System

1.
 - Time Savings: Reduces the time spent on administrative tasks, allowing staff to focus on more strategic *activities*.
 - Process Automation: Automates repetitive tasks, freeing up human resources for more impactful work.
2.
 - Cost Reduction: Decreases administrative overheads and resource wastage, leading to cost savings.
 - Accurate Financial Tracking: Helps in efficient management of fees and scholarships, ensuring financial accuracy.
3.
 - Data-Driven Decisions: Facilitates better decision-making based on accurate and comprehensive data.
 - Student Performance Monitoring: Enables close monitoring of student performance and attendance, identifying areas for improvement.
4.
 - Transparency: Builds trust with students and parents through clear and consistent communication.
 - Engagement: Encourages active participation from students, teachers, and donors, enhancing their overall *experience*.

This system fundamentally transforms how educational institutions manage their operations, paving the way for more efficient, transparent, and effective administration.

Impactful statement

This Student Management System revolutionizes educational administration by centralizing data, automating processes, and enhancing communication, resulting in improved efficiency, accuracy, and engagement for all stakeholders.