Test-Driven Development (TDD)

TDD is an essential part of the development process, which ensures that your application works as expected by writing tests before implementing features. Here's a plan to implement TDD in your project:

1. **Test Cases for Student Registration (Application Form):**
   - **Test Case 1:** Ensure that the registration form accepts all necessary fields (e.g., Name, Email, Phone, etc.).
   - **Test Case 2:** Verify that files (e.g., degree certificate, ID proof) are being uploaded successfully.
   - **Test Case 3:** Ensure that the student data is being saved correctly into the database.
2. **Test Cases for Admin:**
   - **Test Case 1:** Verify that all student records are displayed correctly in the admin section.
   - **Test Case 2:** Ensure that approving an application changes its status to 'approved' and generates a PDF.
   - **Test Case 3:** Ensure that rejecting an application changes its status to 'rejected'.
   - **Test Case 4:** Verify that the admission letter PDF can be downloaded after approval.
3. **Test Cases for Student Login:**
   - **Test Case 1:** Verify that the student can log in with proper credentials (i.e., email and phone).
   - **Test Case 2:** Ensure that the student can view their application status.
   - **Test Case 3:** Ensure that the student can download their admission letter if the status is approved.
4. **Test Case for PDF Generation:**
   - **Test Case 1:** Ensure that a PDF is generated when an application is approved.
   - **Test Case 2:** Verify that the PDF contains all relevant student information.
   - **Test Case 3:** Ensure the correct PDF can be downloaded by the student.

Functional Requirement Document (FRD)

The **Functional Requirement Document** outlines what the application is supposed to do. Below is a template you can use for your FRD.

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1. Project Overview

This web application manages student admissions for a college or university. It allows students to submit their application with personal details, certificates, and ID proofs. Admins can review and either approve or reject applications. Upon approval, a PDF admission letter is generated and can be downloaded by the student.

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2. Functional Requirements

2.1 User Stories

1. **Student:**
   ○ As a student, I want to fill out a registration form with my personal and academic details, so that I can apply for admission.
   ○ As a student, I want to check the status of my application, so that I can know if it was accepted or denied.
   ○ As a student, I want to download the admission letter if my application is accepted.
2. **Admin:**
   ○ As an admin, I want to view all student applications, so that I can review them.
   ○ As an admin, I want to approve or reject student applications.
   ○ As an admin, I want to generate a PDF admission letter for students whose applications are approved.
3. **Student Login:**
   ○ As a student, I want to log in with my credentials to view my application status and download the admission letter if it is approved.

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3. Functional Components

3.1 Home Page

- Contains links to:
  ○ Student Registration
  ○ Admin Dashboard
  ○ Student Login

3.2 Student Registration Form

- Fields: Name, Email, Phone, Date of Birth, Gender, Degree, Institution Name, Passed Year, Degree Certificate (File Upload), ID Proof (File Upload).

3.3 Admin Dashboard

- List of all students with their application status.
- Options to approve or reject applications.

- If approved, generate an admission letter PDF.

3.4 Student Login Page

- Login form with email and phone.
- After logging in, the student can see their application status (Approved/Rejected).
- If approved, the student can download the admission letter PDF.

3.5 Admission Letter PDF

- A PDF with student details and their admission approval.
- PDF generated when the admin approves the application.

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4. Non-Functional Requirements

- The system must handle a high number of simultaneous requests.
- The application must be user-friendly and responsive.
- The application must ensure secure handling of student data (e.g., secure file uploads, password protection).