
 Marwadi University Marwadi Chandarana Group 	Marwadi University Faculty of Engineering & Technology Department of Information and Communication Technology	
Subject: CP (01CT0715)	Aim: System Design and Architecture	
	Date:	Enrollment No: 92200133036

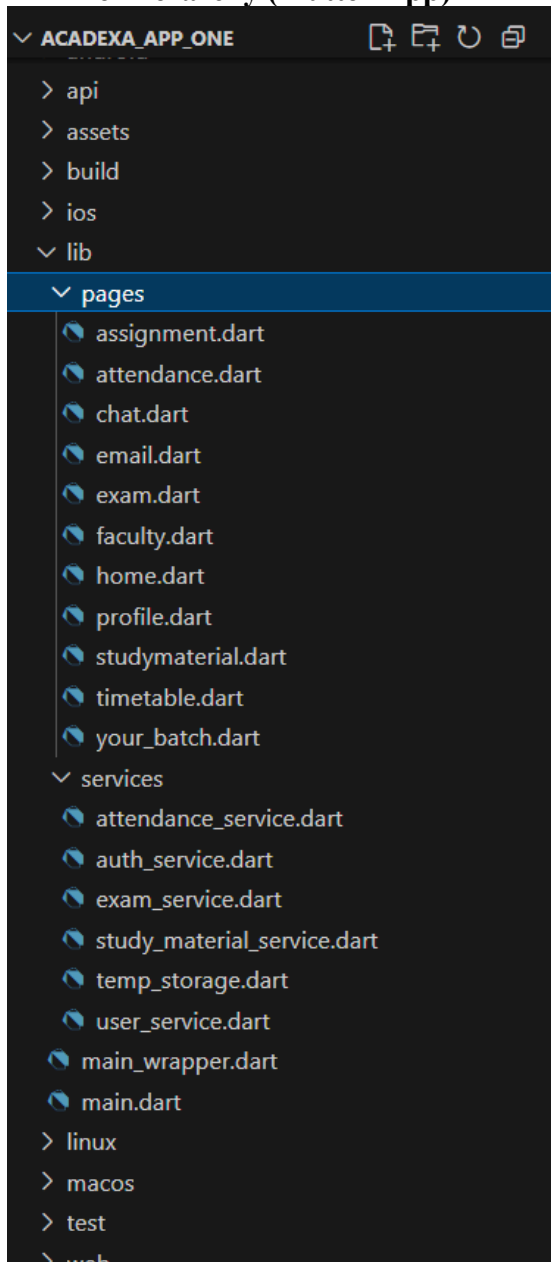
1. Overview



The *Acadexa Student App* is a mobile application developed to serve as the student-facing interface of the Acadexa web platform. It allows students to view batch details, attendance, fees, assignments, exams, chat with batchmates, access study material, and view faculty profiles. The app was built using **Flutter** for the front-end, **PHP** for backend APIs, and **MySQL** for data storage. The implementation focused on clean code practices, modular architecture, and seamless integration between components.

2. Code Structure and Organization

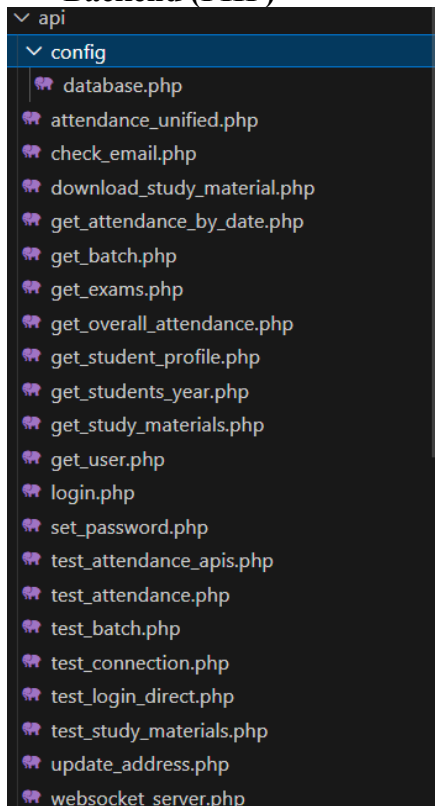
The project follows a modular structure to ensure maintainability and scalability.

File Hierarchy (Flutter App)



 Marwadi University Marwadi Chandarana Group 	Marwadi University Faculty of Engineering & Technology Department of Information and Communication Technology	
Subject: CP (01CT0715)	Aim: System Design and Architecture	
	Date:	Enrollment No: 92200133036

Backend (PHP)



3. Implementation Details

Technologies Used


- **Flutter** (v3.10): Cross-platform mobile development
- **PHP** (v8.0): RESTful API development
- **MySQL**: Relational database for storing student records
- **Git**: Version control with detailed commit history

Key Features Implemented

- **Authentication**: Secure login using token-based validation
- **Attendance & Fees**: Real-time data fetch from MySQL
- **Assignment Upload**: File picker and upload via API
- **Chat Module**: Batch-wise messaging using timestamped entries
- **Study Material Access**: PDF viewer integration
- **Profile & Faculty Info**: Dynamic rendering from backend

Error Handling & Validation

- Input validation for login, assignment uploads, and chat messages
- API error responses handled with user-friendly messages
- Try-catch blocks in Flutter to prevent app crashes

 Marwadi University Marwadi Chandarana Group	Marwadi University Faculty of Engineering & Technology Department of Information and Communication Technology	
Subject: CP (01CT0715)	Aim: System Design and Architecture	
	Date:	Enrollment No: 92200133036

4. Integration Across Components

The system integrates three major components:

- **Flutter App** → Sends requests to → **PHP APIs**
- **PHP APIs** → Fetch/store data from → **MySQL Database**

Integration Flow

1. Student logs in → Flutter sends credentials to login.php
2. API validates → Returns token → Flutter stores locally
3. Student views attendance → Flutter calls attendance.php → Data fetched from DB
4. Student uploads assignment → File sent to assignments.php → Stored in DB

This flow was tested using both emulator and real device, ensuring smooth interaction between all layers.

5. Testing Procedures and Results

Testing was conducted at both unit and integration levels.

Unit Tests

- Flutter widget tests for login, dashboard, and chat modules
- PHP endpoint tests using Postman (e.g., login, attendance fetch)

Integration Tests

- Verified end-to-end flow: login → dashboard → assignment upload
- Tested API responses and database updates

Sample Results

Test Case	Expected	Actual	Status
Login API	Token returned	Token received	Pass
Attendance Fetch	Correct record	Accurate data	Pass
Assignment Upload	File stored	File saved	Pass
Chat Message	Delivered to batch	Visible instantly	Pass

6. Setup Instructions



To run the system:

Flutter App

1. Clone the repo: git clone https://github.com/HARSHILVADHER/Acadexa_app.git
2. Run flutter pub get
3. Connect device/emulator
4. Execute: flutter run

Backend

1. Host PHP files on XAMPP or live server
2. Import MySQL schema
3. Update API URLs in Flutter services/ folder.

 Marwadi University Marwadi Chandarana Group 	Marwadi University Faculty of Engineering & Technology Department of Information and Communication Technology	
Subject: CP (01CT0715)	Aim: System Design and Architecture	
	Date:	Enrollment No: 92200133036

7. System Architecture Diagram

Here's a simplified architecture showing component interaction:

