

CSE-250(Android Project)

Assigned Group No : 49

Selected Project Idea No : 01

Team Members

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Digital Attendance Management App

Software Requirements Specification:

1. Introduction

1.1 Purpose

The core purposes of this Android Application is to alleviate the burden on teachers by **automating attendance tracking**, allowing them to focus more on their primary responsibilities. The app not only reduces the time required for attendance management but also minimizes **the likelihood of errors associated with manual data entry, ensuring the accuracy of attendance records**. Real-time reporting features empower teachers and administrators with up-to-date information, facilitating prompt decision-making.

1.2 Scope

The attendance tracker system will allow users to mark attendance securely using their smartphone's fingerprint sensor. The system will include user enrollment, attendance tracking, and reporting functionalities.

2. System Overview

2.1 System Description

The system will consist of a mobile application compatible with Android devices. The application will utilize the fingerprint sensor API to capture and verify user fingerprints for attendance tracking.

2.2 System Features

- User Registration and Enrollment
- Fingerprint Authentication
- Attendance Tracking
- Database Integration
- Notifications
- Reporting

3. Functional Requirements

3.1 User Registration and Enrollment

- The system shall allow users to register and enroll their fingerprints securely.
- During enrollment, the system shall capture and store fingerprint data in a secure manner.
- Users shall be able to manage their enrollment information.

3.2 Fingerprint Authentication

- The system shall use the smartphone's fingerprint sensor for user authentication.
- Fingerprint authentication shall be performed securely, and the system shall validate the user's identity.

3.3 Attendance Tracking

- The system shall allow users to mark attendance using the enrolled fingerprint.
- Successful attendance marking shall be recorded in the system database.
- Attendance records shall include date, time, and user information.

3.4 Database Integration

- The system shall integrate with a secure and scalable database for storing user information, including fingerprints and attendance records.
- Data storage shall comply with security and privacy standards.

3.5 Notifications

- The system shall provide notifications to users upon successful attendance marking.
- Notifications shall be configurable and user-friendly.

3.6 Reporting

- The system shall include reporting tools for administrators to view and export attendance records.
- Reports shall include filters for date, user, and other relevant parameters.

4. Non-Functional Requirements

4.1 Security

- The system shall encrypt and securely store fingerprint data.
- Access to sensitive data shall be restricted to authorized personnel.

4.2 Performance

- The system shall respond to fingerprint authentication requests within a reasonable time frame.
- The database shall handle a scalable number of users and attendance records.

4.3 Usability

- The user interface shall be intuitive and user-friendly.

- The system shall provide clear instructions for user enrollment and attendance marking.

5. Constraints

5.1 Platform Compatibility

- The system shall be compatible with Android smartphones with fingerprint sensor support.

5.2 Regulatory Compliance

- The system shall comply with relevant data protection and privacy regulations.

6. Assumptions and Dependencies

6.1 Assumptions

- Users have smartphones with functional fingerprint sensors.
- Users are responsible for the security of their smartphones.

6.2 Dependencies

- The system may depend on third-party libraries or APIs for fingerprint sensor integration.

User's Point of View :

- (i) Hardware : An android phone with good fluency and compatibility.
- (ii) Software : Android version 7.0(Nougat) or above
- (iii) Personal Information : Student's name, E-mail, password.

Developer's Point of View :

- (i) Workstation : Android Studio
- (ii) Database : MySQL, NoSQL
- (iii) Frontend : Android Jetpack Compose
- (iv) Backend : Kotlin

Database Functionalities for the app

Table_name : **Teacher's Login Details.**

Primary Key : **Teacher's Email**

Foreign Key : _____

Teacher's Login Details

Teacher's Name	Email_Id	Password
Teacher 1	teach1_sust_edu@gmail.com	si879@3
Teacher 2	teach2_sust_edu@gmail.com	lie(*2@23
Teacher 3	teach3_sust_edu@gmail.com	eur1889@*
Teacher 4	teach4_sust_edu@gmail.com	dfjd*9S0

Table_name : Student's Login Details.

Primary Key : Student_ID

Foreign Key : _____

Student's Login Details

Student_ID	NAME	Email_ID	Password
2020331100	Sabna	sh_39@gmail.com	eoi244@@3
2020331011	Lafi	lf34@gmail.com	*08u*799
2020331003	Taj	tj695@gmail.com	ury2*9uu(@
2020331040	Sofiq	sfi234@gmail.com	uy**25y@

Table_name : Registered Courses

Primary Key : Course_Id

Foreign Key : Student_Id

Course_ID	Course_Title	Student_ID
CSE-239	Numerical Analysis	2020331100
CSE-234	Data Science	2020331011
CSE-232	Algorithm	2020331003
CSE-238	Object-Oriented-Programming	2020331011

Table_name : Attendance_Management

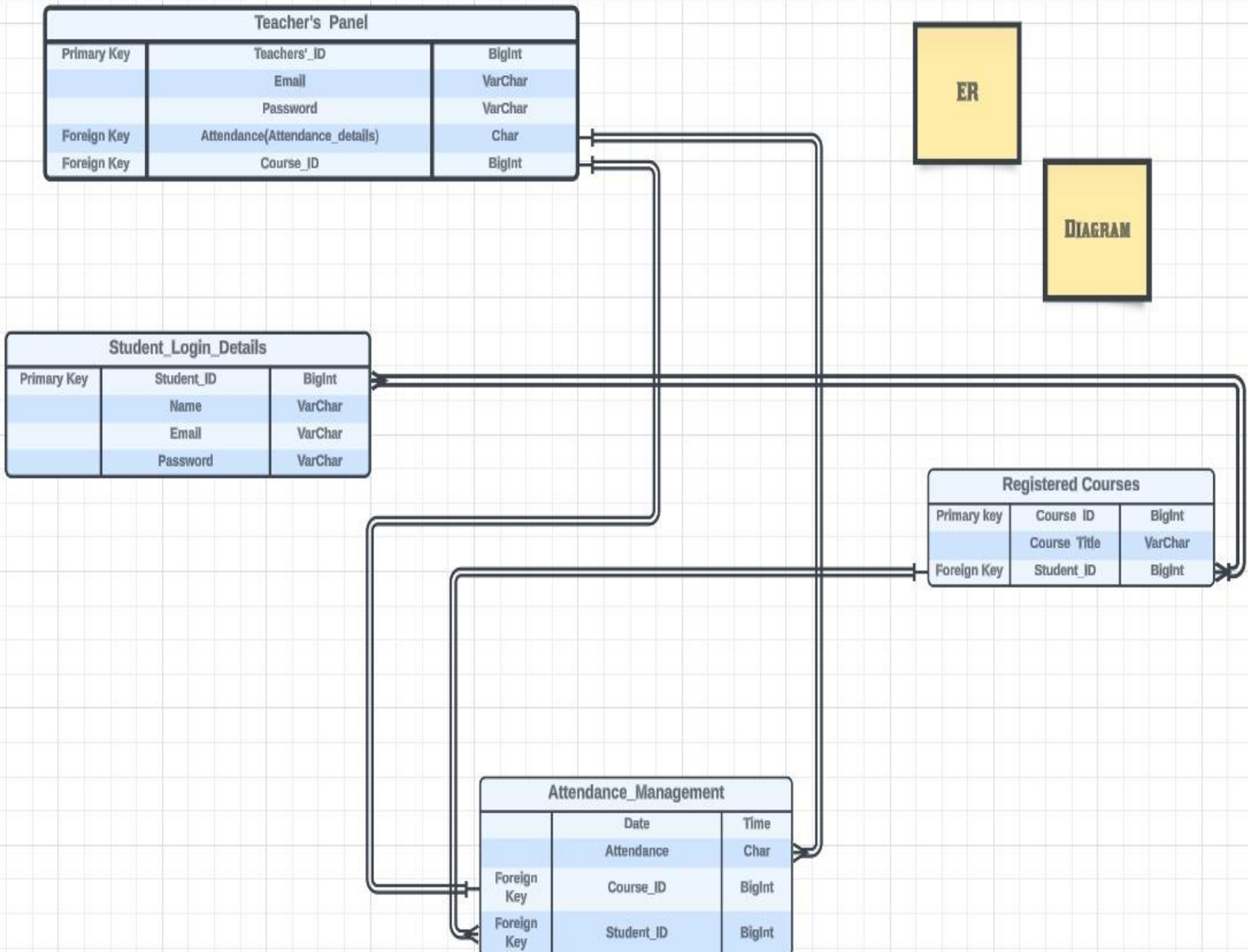
Primary Key : _____

Foreign Key : Student_Id,Course_Code(composite key)

Attendance

Date	Attendance	Course_Code	Student_ID
2-03-2023	A(Absent)	CSE-239	2020331100
3-03-2023	P(Present)	CSE-234	2020331011
4-03-2023	A	CSE-232	2020331003
5-03-2023	P	CSE-238	2020331011

ER(Entity-Relationship Diagram)



UI Design:

Home Page:



Who Are You?



Teacher



Student

Login Page:



Sign in as student

Email

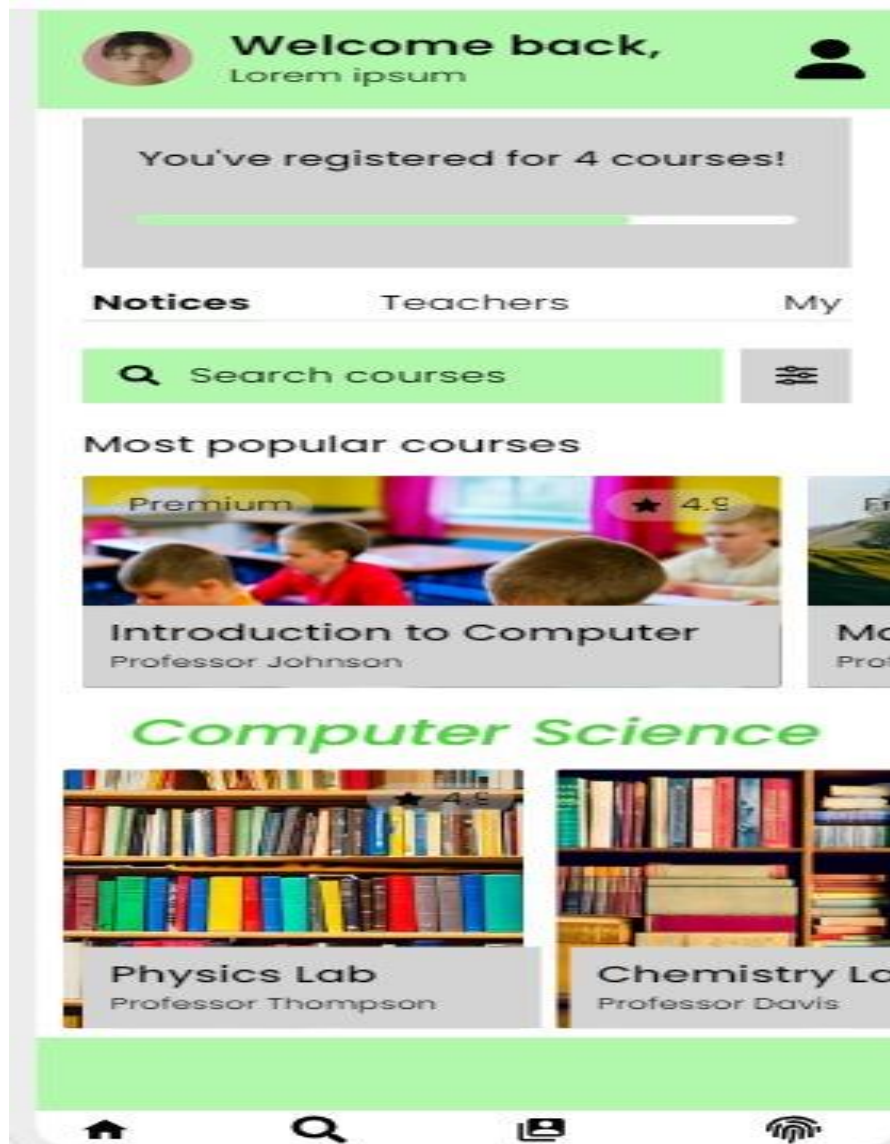
Password

[Forget Password?](#)


LOGIN

Doesn't have an account? [Sign Up](#)


Student Home Page:



Attendance Tab:



Welcome back!
John Doe




Your registered courses
Attendance


Course 1
80%


Course 2
90%

Course 3
75%

Your schedule for Today ▾


Course 1
1h 30min >

Course 2
30 minutes >

Course 3
45 minutes >

Add new course

Announcements ⋮



Mr. Smith
Important Notice


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Courses Info:


Registered Courses





Attendance Percentage


English: 80%	✓
Mathematics: 75%	✓
Science: 85%	✓
History: 90%	✓
Geography: 70%	✓
Computer Science: 95%	✓
Add New Course	

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Teacher Panel / Home Page:





Course Selection

Course

Enter Course Name


Course

Enter Course Code


Course

Select Course Schedule

Course Permissions

 Save Course Data

☒

 Allow Attendance Tracking

☒



Attendance

Save Attendance Report

Overview



Present
75%



Absent
25%



Total
40

Present Rate

80% 70%

