

Capstone Project: Phase 02
Web-based attendance management system

Group Members:

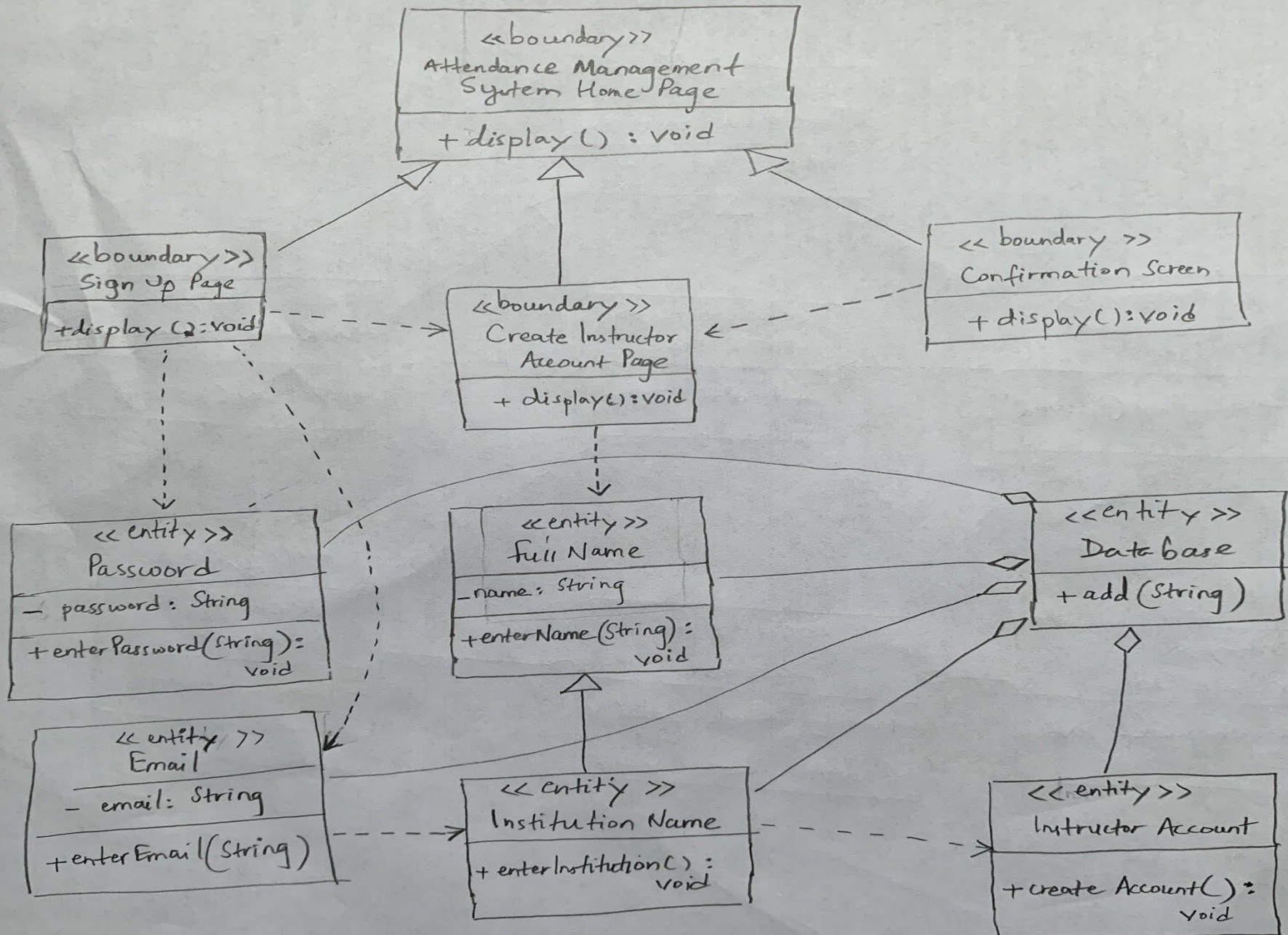
Het Patel
Jaishil Bhavsar
Devansh Shah
Hari Subedi

Selection of Architecture/Framework

- ☐ **Angular**
- ☐ **Java**
- ☐ **SQL**
- ☐ **Python**
- ☐ **OpenCV**
- ☐ **ML/AI Algorithms**

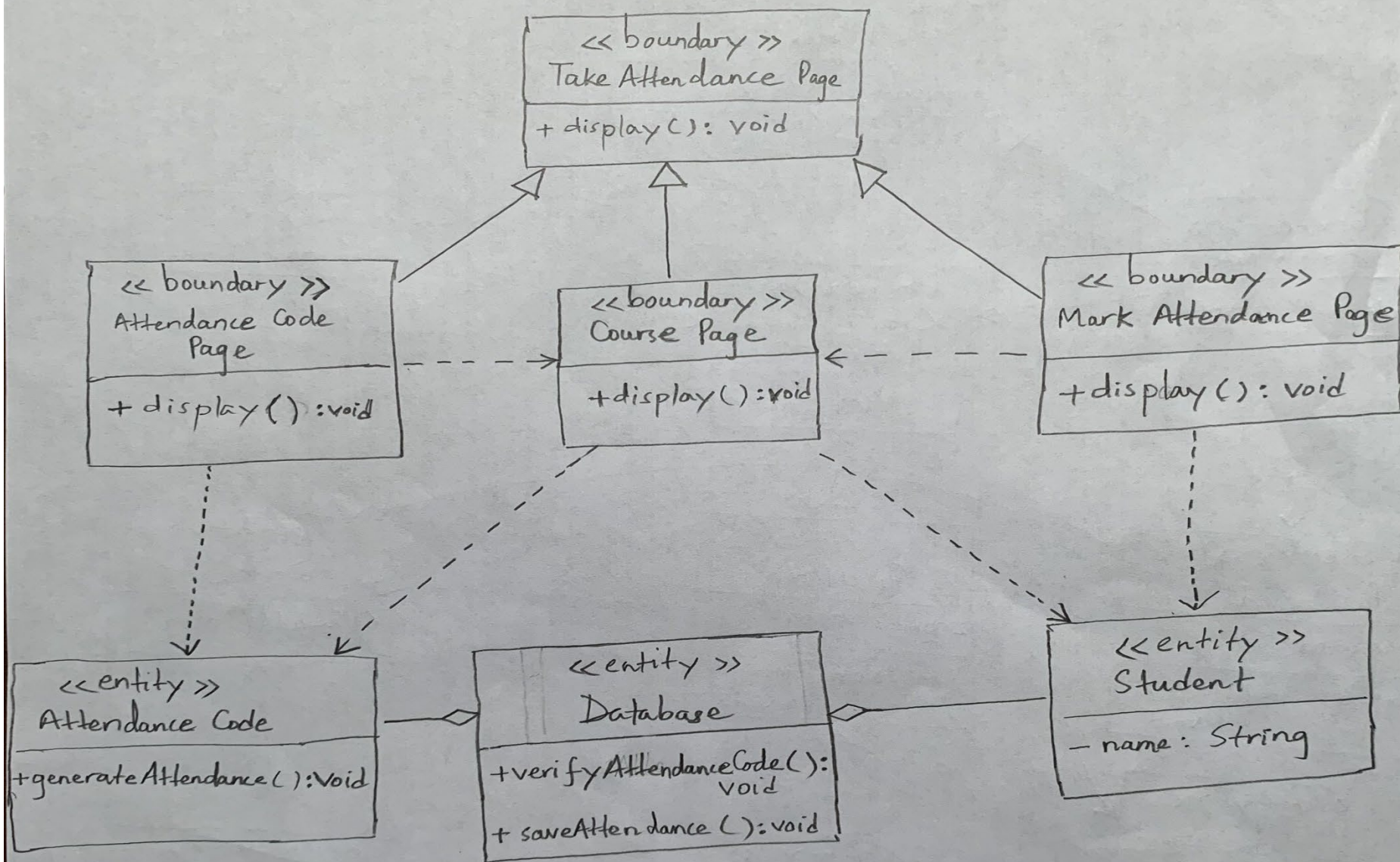
Create Instructor Account

Class Diagram: Create Instructor Account



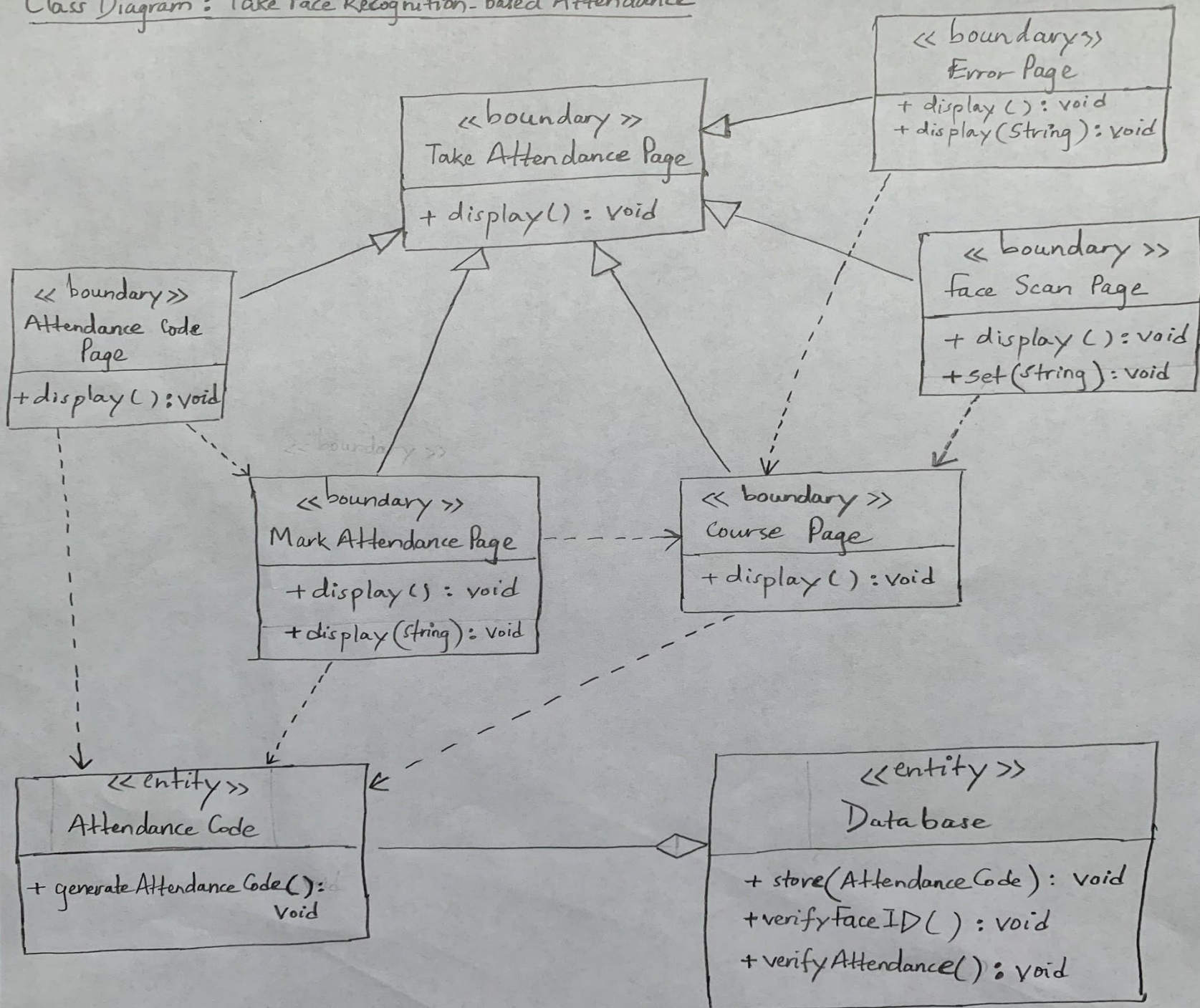
Take Code-based Attendance

Class Diagram: Take Code-based Attendance



Take Face Recognition-based Attendance

Class Diagram : Take Face Recognition-based Attendance



Create Instructor Account

Basic Course:

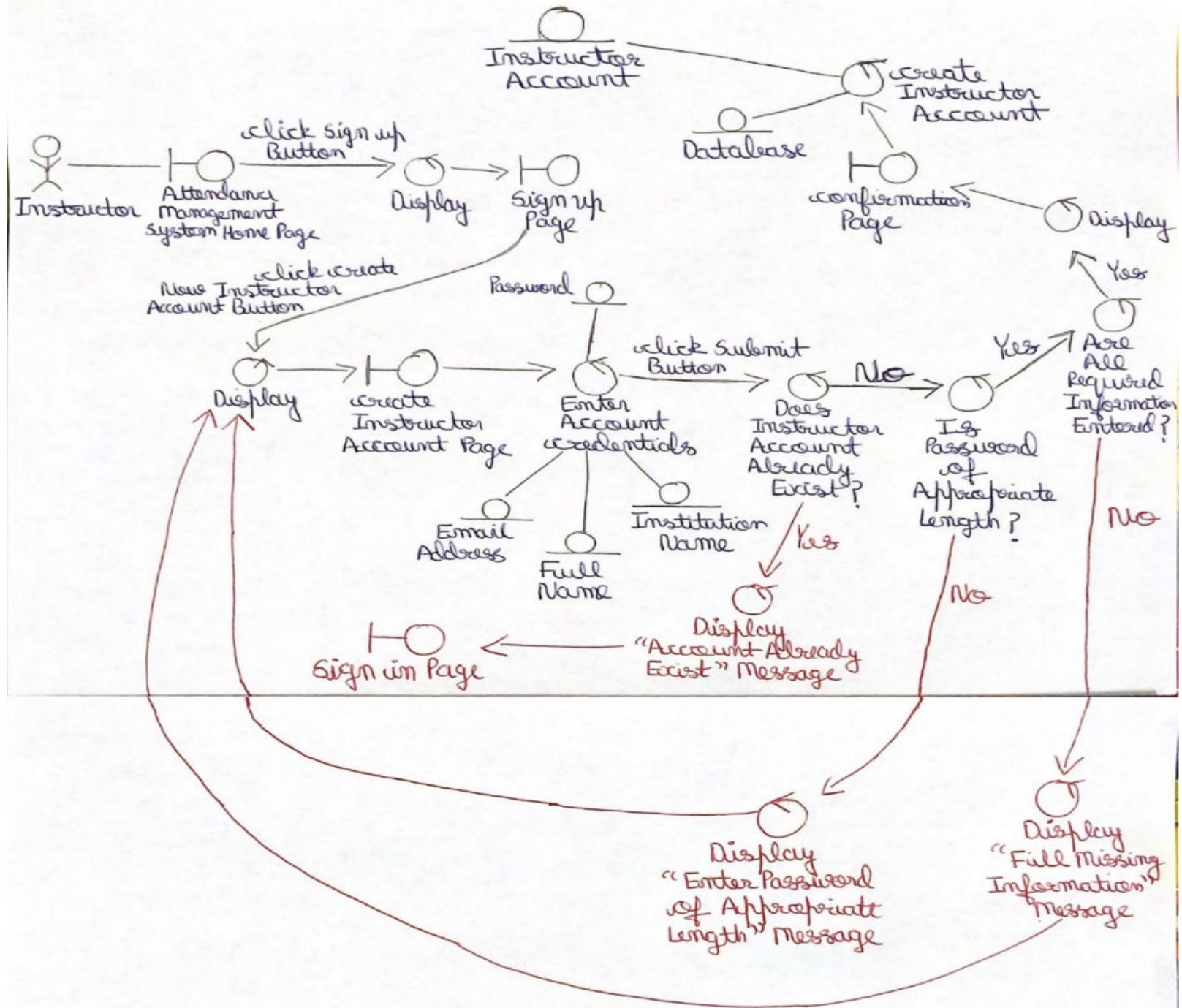
Instructor clicks Sign Up Button (SUB) visible on the Attendance Management system Home Page (AMSHP). System displays Sign Up Page. The instructor clicks Create New Instructor Account Button (CNIAB) visible on the Sign-Up Page and the system displays Create Instructor Account Page. The instructor enters full name, email address, password for the account and the institution name. The instructor then clicks Submit button. The system ensures that the password entered is of appropriate length and meets the minimum password requirements. The system displays Confirmation screen (CS). The system then creates the instructor account in the Database.

Alternate Course:

Instructor enters too short password (less than 8 characters): The system rejects the password and responds with a message explaining why the password was rejected.

Instructor fails to enter any of the required information: The system prompts the instructor to fill the missing information.

Instructor Account already exists: The system responds with a message explaining that the instructor account already exists and displays the Sign In Page.



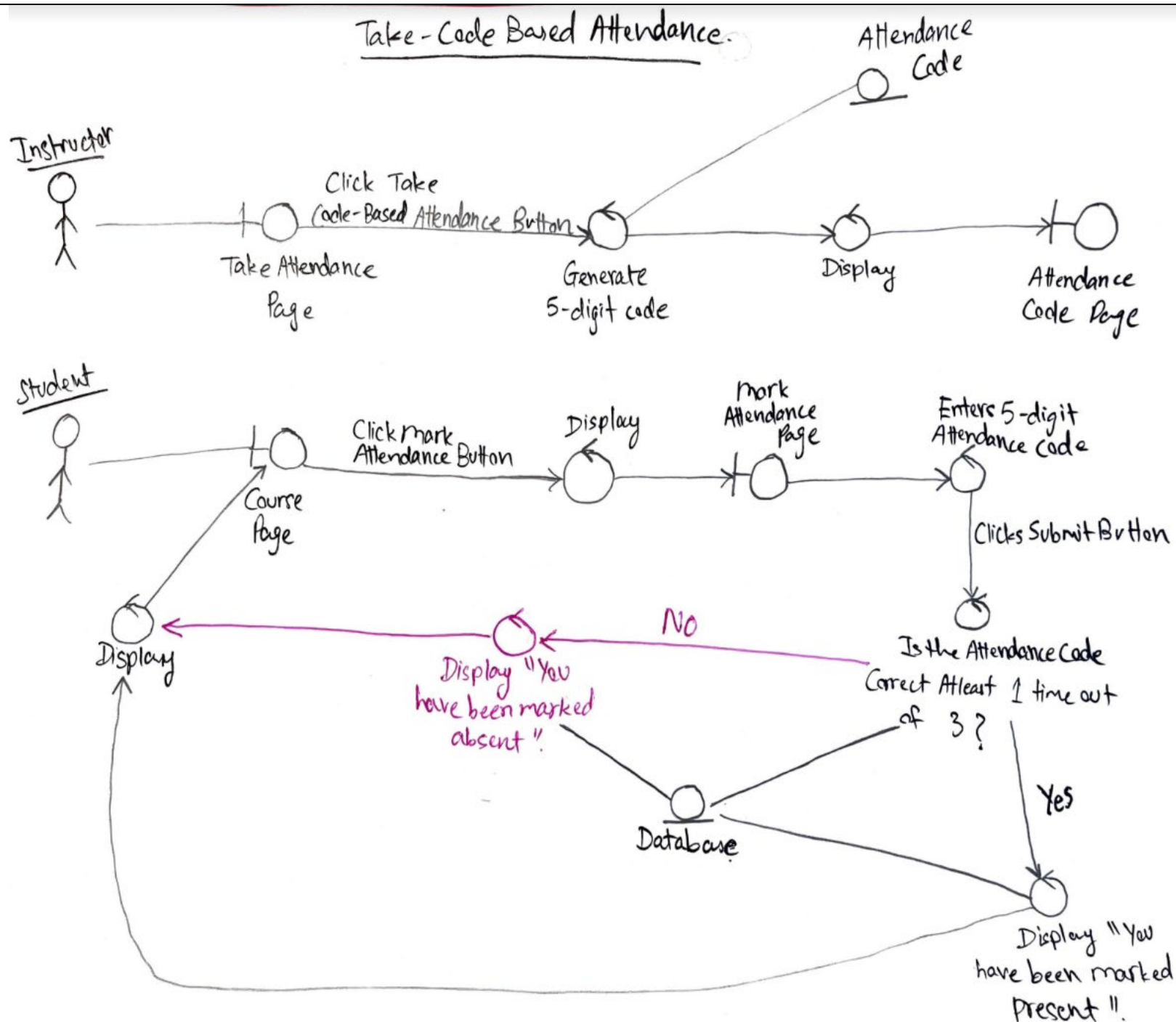
Take Code-based Attendance

Basic Course:

The instructor clicks the Take Code Based Attendance button (TCBAB) visible on the Take Attendance page. The system generates a 5-digit attendance code and displays the attendance code on the Attendance Code page. The system displays the Course Page on students' devices. The student clicks the Mark Attendance button (MAB) on the Course Page. The system displays the Mark Attendance page. Then, the system prompts the user to enter the 5-digit attendance code. The user enters the 5-digit attendance code and clicks the Submit button. The system checks whether the attendance code matches the code in the database and displays "You have been marked present". The system stores the attendance data in the database. The system redirects the student to Course Page.

Alternate Course:

The student enters an incorrect attendance code: The system rejects the attendance code and gives the student 2 more chances to enter the correct attendance code. If the student fails to enter the correct attendance code at least 1 time out of 3, the system displays "You have been marked absent" message and stores the attendance data in the database. The system redirects the student to Course Page.



Take Face Recognition-based Attendance

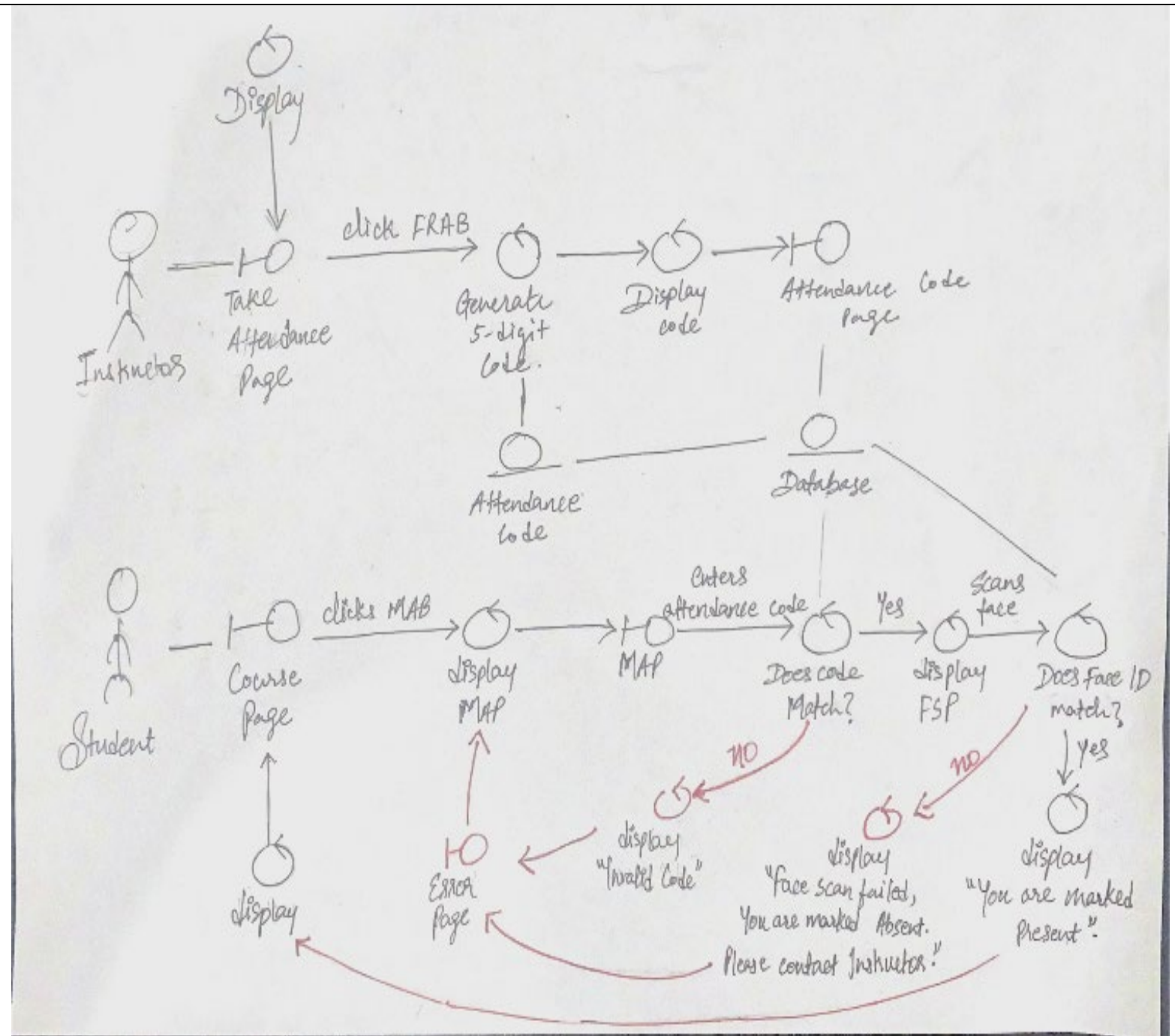
Basic Course:

The Instructor clicks (FRAB) Take Face Recognition Based Attendance Button on the Take Attendance Page. The system generates a 5-digit attendance code. The system stores the code in the Database and displays the code on the Attendance Code Page. The system displays the corresponding course page on the student's device. The student clicks the (MAB) Mark Attendance Button on the Course Page. The system displays the (MAP) Mark Attendance Page and prompts the student to enter the 5-digit attendance code. The student enters the code and the system verifies the code with the code stored in the Database. The system displays the (FSP) Face Scan Page and prompts the students to scan their faces. The system scans the student's face and verifies it with the Student face ID stored in the database. The system then displays "You are marked present" message.

Alternate Course:

Student enters wrong attendance code: The system displays "Invalid Code" error message on Error Page and prompts to re-enter the code on Mark Attendance Page.

Student Face Scan does not match with the student face scan data stored in the Database: The system displays "Face Scan match failed; you are marked absent. Please contact your instructor." message on the Error Page.



Create Instructor Account

Basic Course:

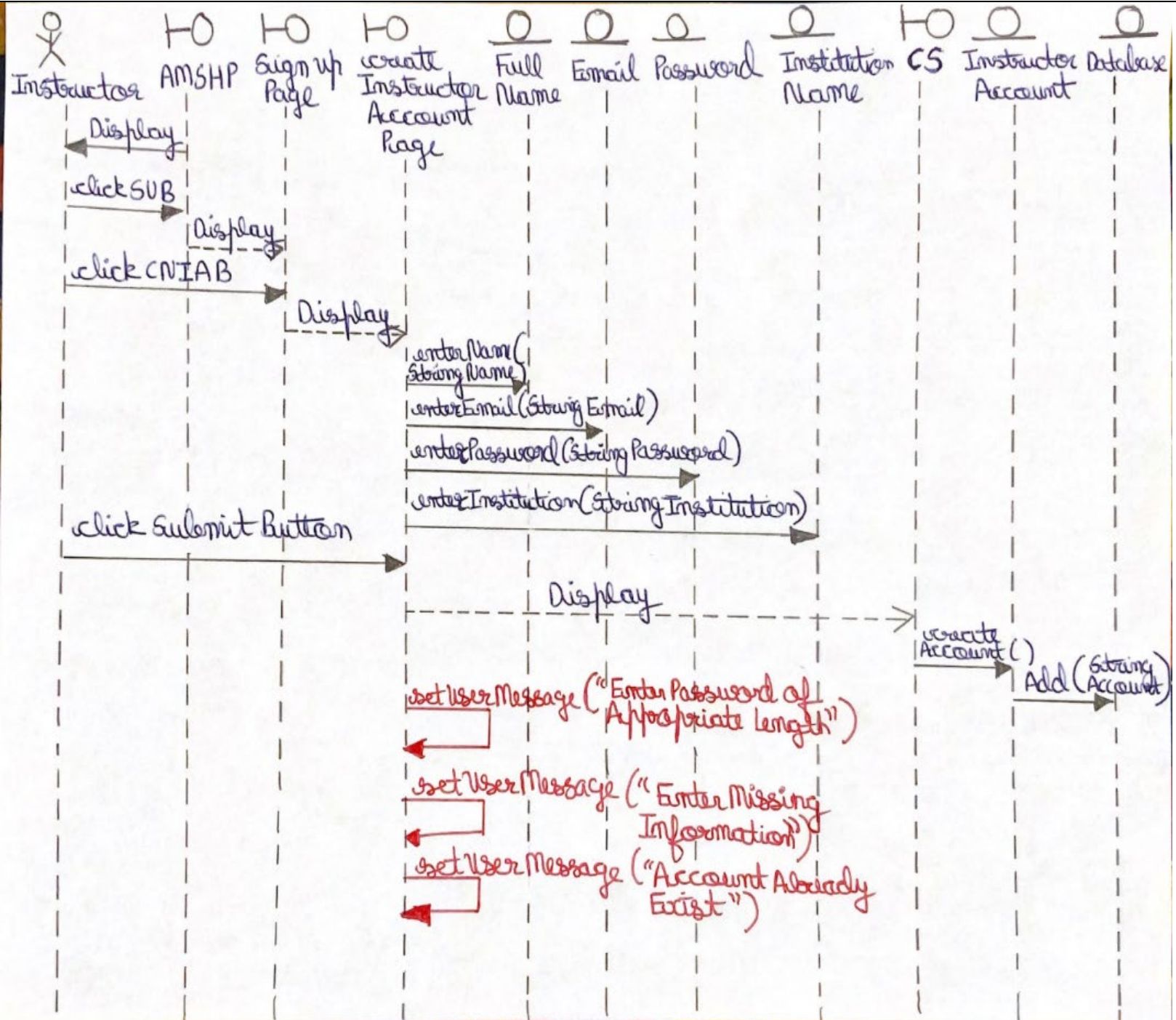
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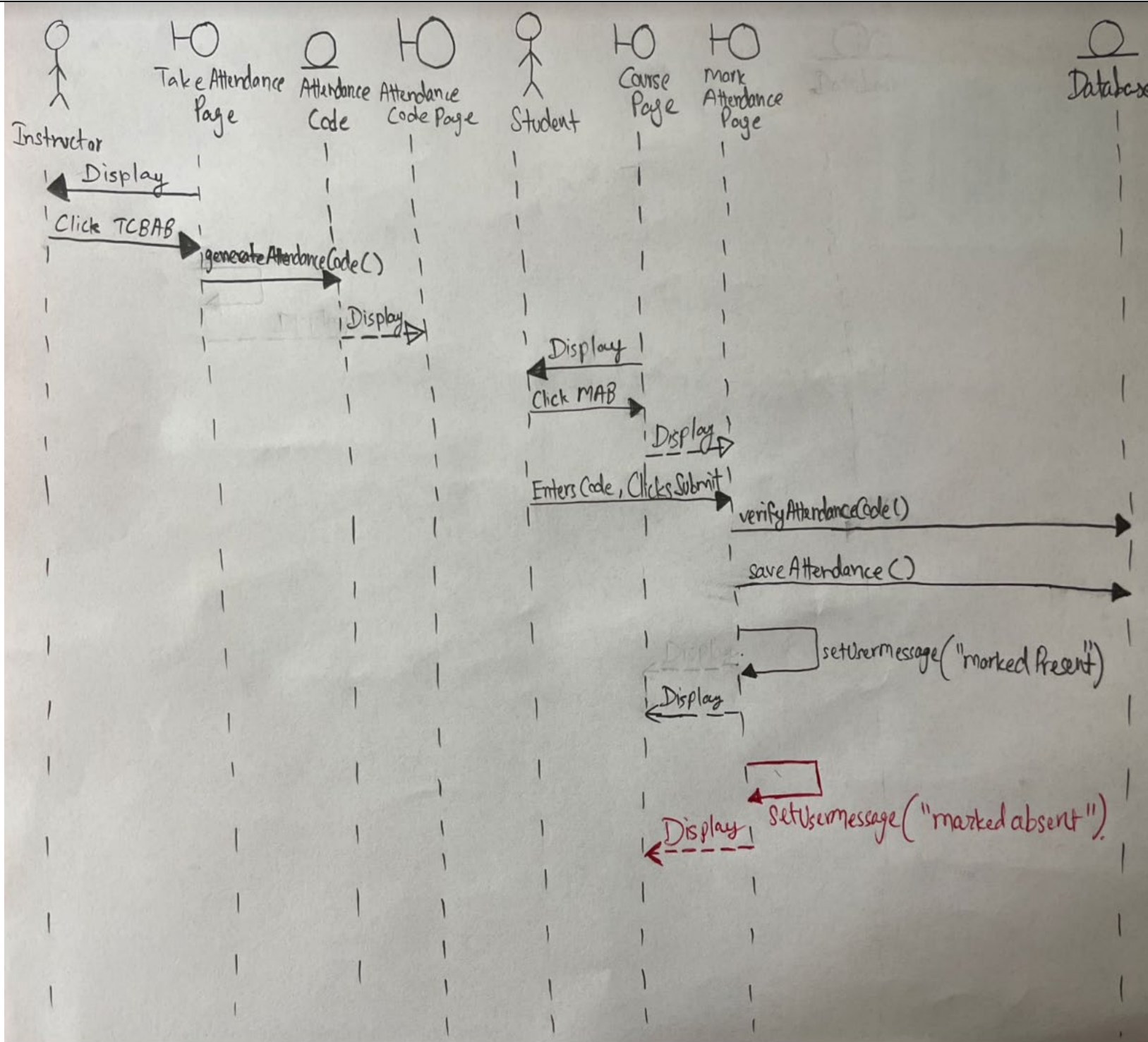
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Take Face Recognition-based Attendance

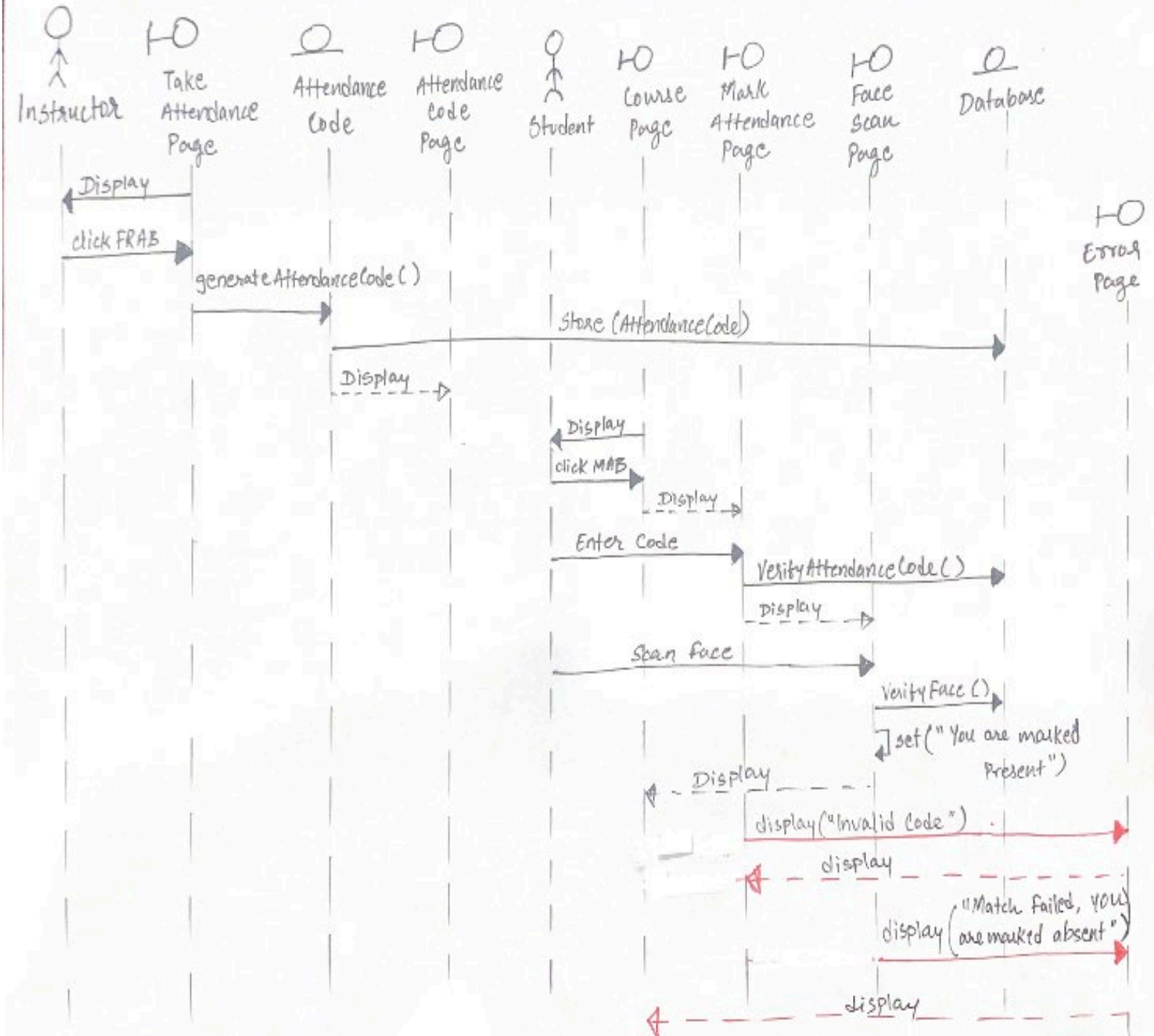
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Alternate Course:

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Student Face Scan does not match with the student face scan data stored in the Database: The system displays “Face Scan match failed; you are marked absent. Please contact your instructor.” message on the Error Page.



Weekly Schedule

Week 1: Start working on the frontend using Angular.

Week 2: Build Login page, Course Page by using angular by deciding proper color scheme.

Week 3: Build Instructor Portal and Student portal using angular.

Week 4: Start working on backend using Java to develop the logic of the application.

Week 5: Creating database tables appropriately.

Week 6: Connect the appropriate database tables with backend functions of the application.

Week 7: Start implementing code-based attendance feature and do some testing.

Week 8: Implement machine learning/AI algorithms to implement the face recognition feature of attendance and do unit testing.

Week 9: Do heavy testing of the web application to ensure that it's working properly as expected.

Week 10: Finish testing and host it to production.

Week 11: Finish all necessary documentation.

Week 12: Start preparing for final capstone presentation.

Gantt Chart

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