

**Capstone Project: Phase 01**  
**Web-based attendance management system**

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**Group Members:**

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# High Level Requirement

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1. This attendance Management will be web-based.
2. There will be two types of users- instructors and students.
3. This attendance management system will have three features for taking attendance:
  - a. Code based attendance
  - b. Instructor manual marking attendance
  - c. Attendance based on face recognition
4. Whenever the user opens the web page, the system will display the home page. The home page will have two options: Sign Up and Sign In.
5. First time users will have to create an account by signing up.
  - a. When the user clicks sign up, the system will display two options:
    - i. Create Student Account and
    - ii. Create Instructor Account.
  - b. Under Create Instructor Account, the instructor will need to enter his full name, email address, password, and institution name.
  - c. Under Create Student Account, the student will need to enter his full name, email address, password, and institution name.
  - d. System will prompt the student to scan his face for enabling the facial recognition attendance feature.
6. Existing user will log in using the Sign In button. When the instructor logs in, the system will display the instructor portal. The instructor portal contains the list of courses the instructor is teaching and Add a New Course Button to enroll new course. When a student logs in, they will see the list of courses in which they are currently enrolled.
7. For adding a new course, the instructor clicks Add a New Course Button visible on the instructor portal. The system displays Add a New Course Page. The instructor will need to enter the course ID, course name, and number of students. The instructor will then need to pass the course ID to the students so that they can enroll in that particular course.
8. The student will have to enter the corresponding course ID to enroll in the course. The instructor will also have an option to manually enroll a student into a particular course.
  - a. Once the student is enrolled in the course, the student will be able to see the names of all the course in which he is enrolled.
  - b. On the student portal, the student will be able to click on a particular course name. The system will redirect the student to that course page. On the course page the student will be able to see his previous attendance records.
9. For taking the attendance the instructor clicks the corresponding course. The course webpage will display list of all students and the prior attendance record. For taking the attendance the instructor will click “Take Attendance Button”. The instructor will be directed to “Take Attendance Page”.
10. The instructor will be prompt to choose from any of the above three attendance features (mentioned in #3).
11. For Code based attendance:
  - a. System generates a random five-digit code.
  - b. The instructor will have to provide the same code to the students to successfully mark the attendance.
  - c. The student clicks the corresponding course, and the system directs him to that course page. On the course page the system will prompt the student to enter the attendance code. The student gets three attempts to enter the correct attendance code. After successfully entering the correct code, the student will be marked present.

12. For Instructor manual attendance:

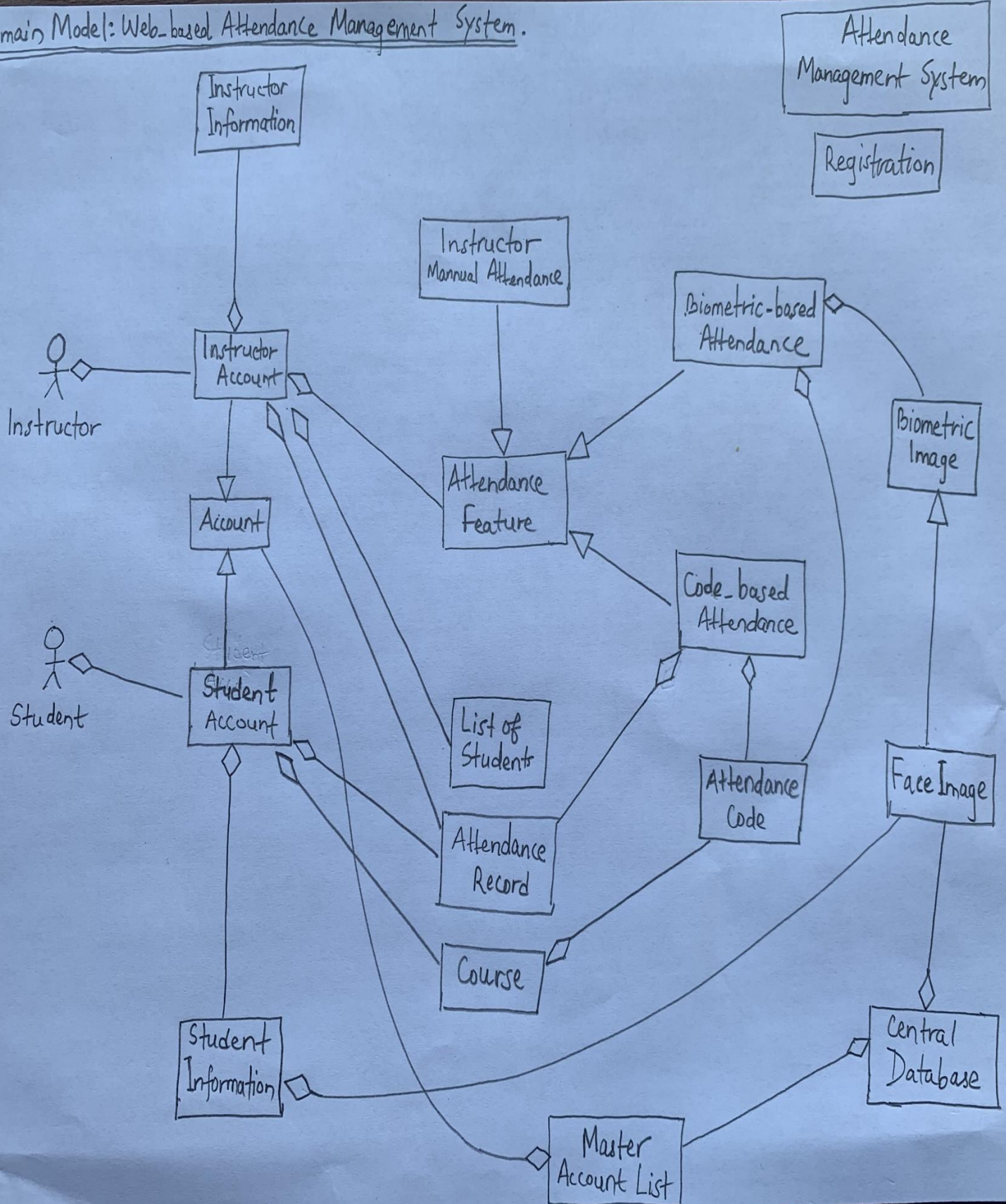
- a. On the corresponding course page, the instructor will be able to see all the students enrolled in the course.
- b. Against each student's name, the instructor will be prompt to mark the student as present or absent.

13. For facial recognition-based attendance:

- a. The student will be asked to enter the attendance code similar to step #7.
- b. In addition, once the student enters the correct attendance code, the system will prompt the student to scan his face.
- c. After student scans his face, the system will match the scanned face with the face image saved in the database which was stored at the time of registration.
- d. If there is a successful match, the student will be marked present.
- e. In case of an unsuccessful match (which might be caused because of poor lighting, or poor quality of camera), the system marks the student as absent. The student will have to inform the instructor and the instructor will have to manually mark the attendance.

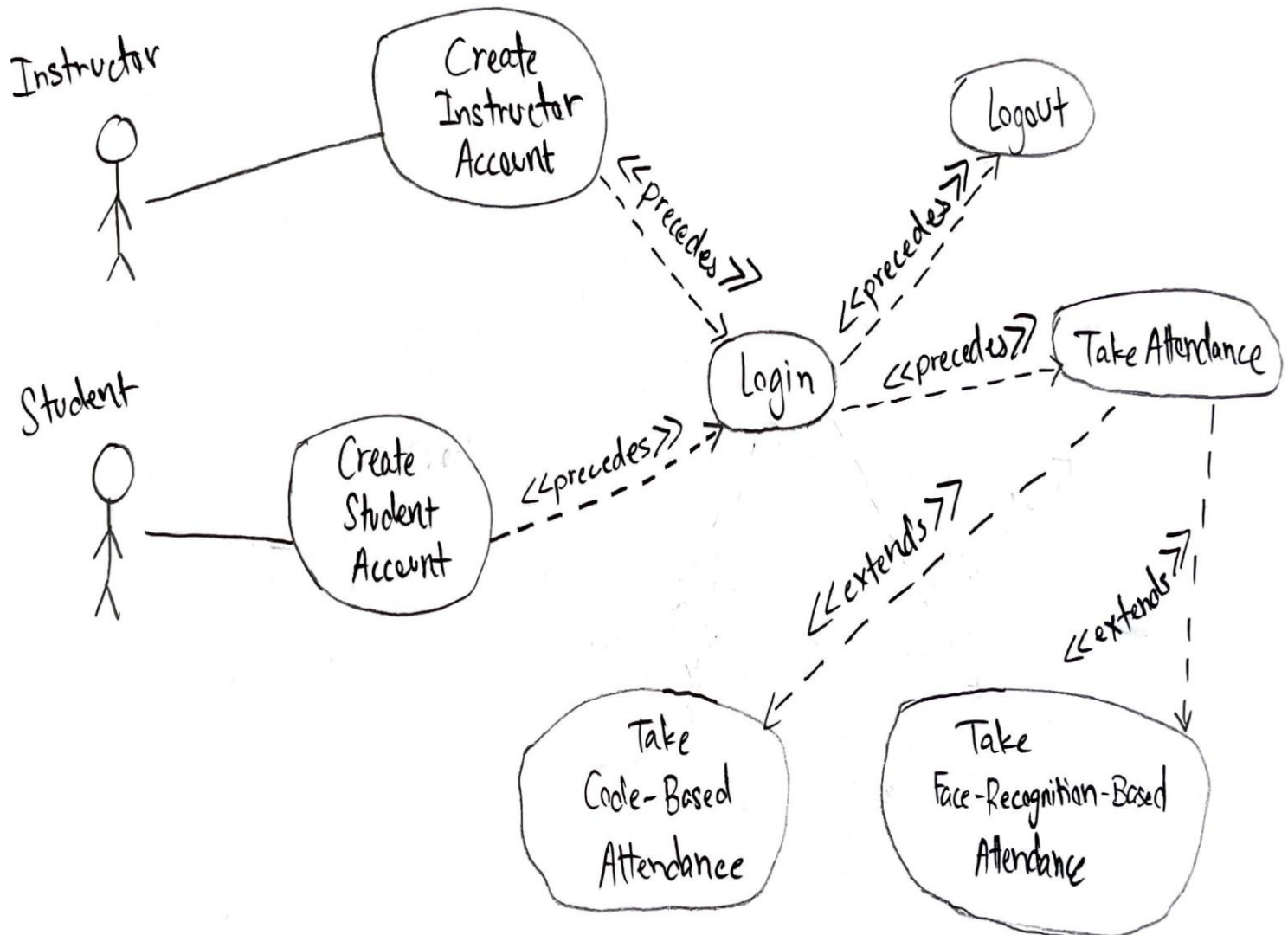
# Domain Model

Domain Model: Web-based Attendance Management System.



# Use Case Diagram

## Use Case Diagram



# Use Case Text

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## CREATE INSTRUCTOR ACCOUNT

Basic Course:

Instructor clicks Sign Up Button visible on the Attendance Management system Home Page. System displays Sign Up Page. The instructor clicks Create New Instructor Account Button visible on the Sign-Up 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. 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.

Create New Instructor Account

First Name :

Last Name :

Email :

Password :

School / Institute :



## TAKE CODE BASED ATTENDANCE

### Basic Course:

Instructor clicks Take Code Based Attendance button visible on the Take Attendance page. The system generates a 5-digit attendance code. The instructor passes this code to the students. The students open the corresponding course page. The system prompts the students to enter the 5-digit attendance code. The system checks that the attendance code matches the code generated by the instructor and displays "You have been marked present" message on the corresponding course page. The system stores the attendance data in the database.

### Alternate Courses:

**Student enters incorrect attendance code:** The system rejects the attendance code and prompts the student to reenter the attendance code. The system allows 3 attempts for entering a correct attendance code. After the third wrong attempt, the system marks the student as absent. The system stores the attendance data in the database.

# Code - Based Attendance

Enter Attendance Code Below:

Done!

## TAKE FACE RECOGNITION BASED ATTENDANCE

Basic Course:

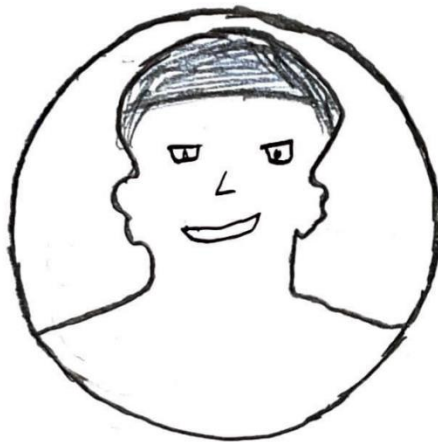
Instructor clicks Take Face Recognition Based Attendance button visible on the Take Attendance page. The system generates a 5-digit attendance code. The instructor passes this code to the students. The students open the corresponding course page. The system prompts the students to enter the 5-digit attendance code. The system then prompts the students to scan their face. The system scans the student face and makes sure that it matches with the student face scan data stored in the database. The system marks the student as present.

Alternate Course:

**Student Face Scan does not match with the student face scan data stored in the Database:** The system displays "Face Scan match failed, please contact your instructor" message on the corresponding course page. The system marks the student as absent. The system stores the attendance data in the database.

Face - Recognition Based Attendance.

Position your face within the circle:



Take Photo