Attendance System based on Face Recognition

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Student Attendance System based on Face Recognition

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Main ideas

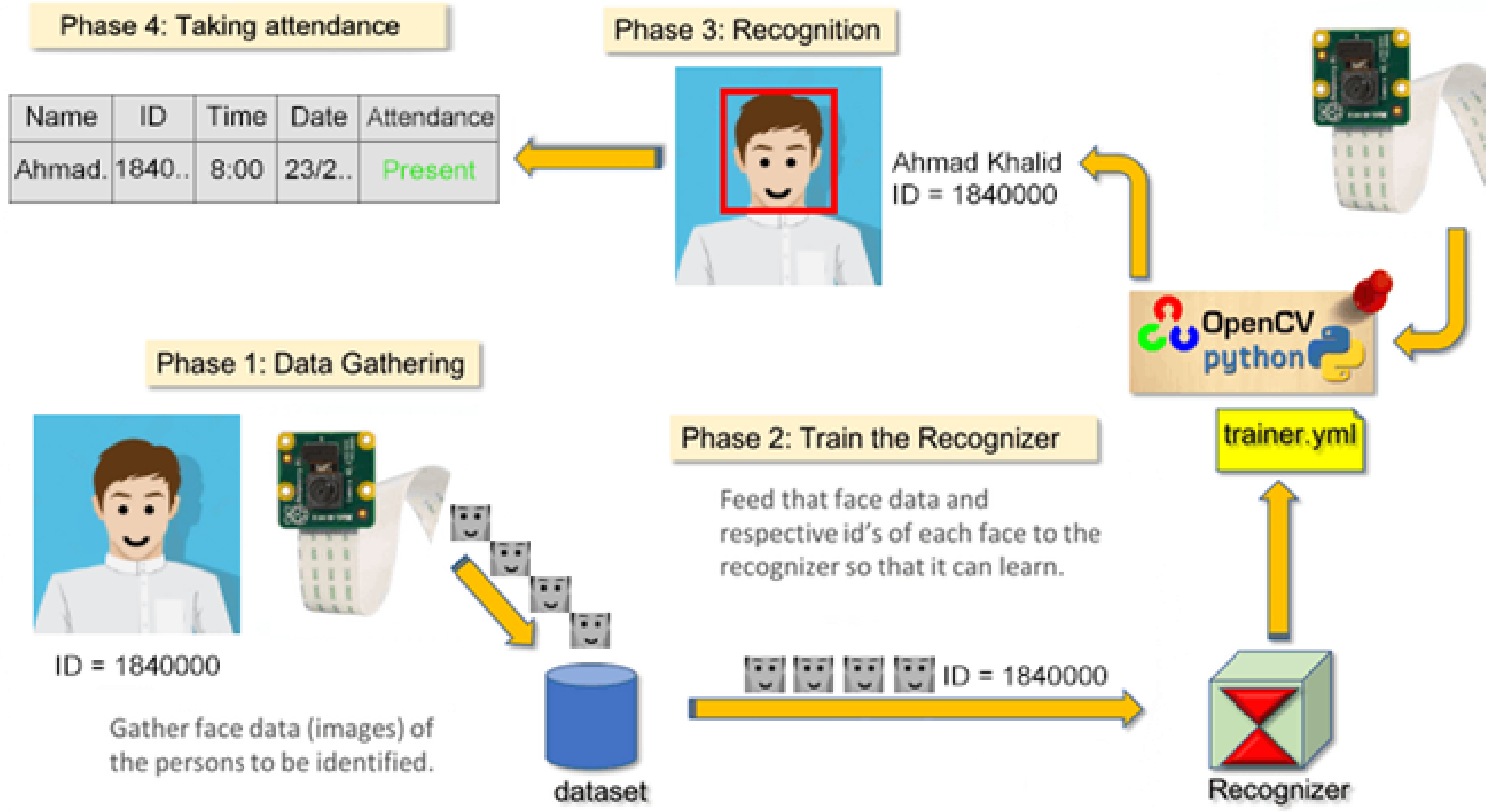
- Identifying multiple faces in real-time to see and mark the attendance of the students.
- The students are marked as present, absent, or late.
- Administrator can change the student’s attendance status manually.
- Administrator able to print attendance reports.

Proposed System

We propose a modular solution to the problem of student attendance by face detection and recognition.

- Face recognition in real-time to the attendance of the student.
- Build an automated system to increase the accuracy of the system.
- The all information of the student entered will appear in the system after the face recognition.

Analysis Phases



Requirements

Functional Requirements:

- Faces on an image must be detected.
- Compute the total attendance based on detected faces.
- Store the cropped faces in a folder.
- Train faces for recognition.
- Display the name and ID of the output image down the image in the plot area.

Non-Functional Requirements:

- The user will inform the students when taking a photo with clear instructions on how to position their faces.
- The system can detect the face from a live-stream video.
- The system is reliable because of the advanced technology that is used to develop the system, the system can achieve a face detection accuracy of up to 90%.
- The system will have a response time of many seconds.

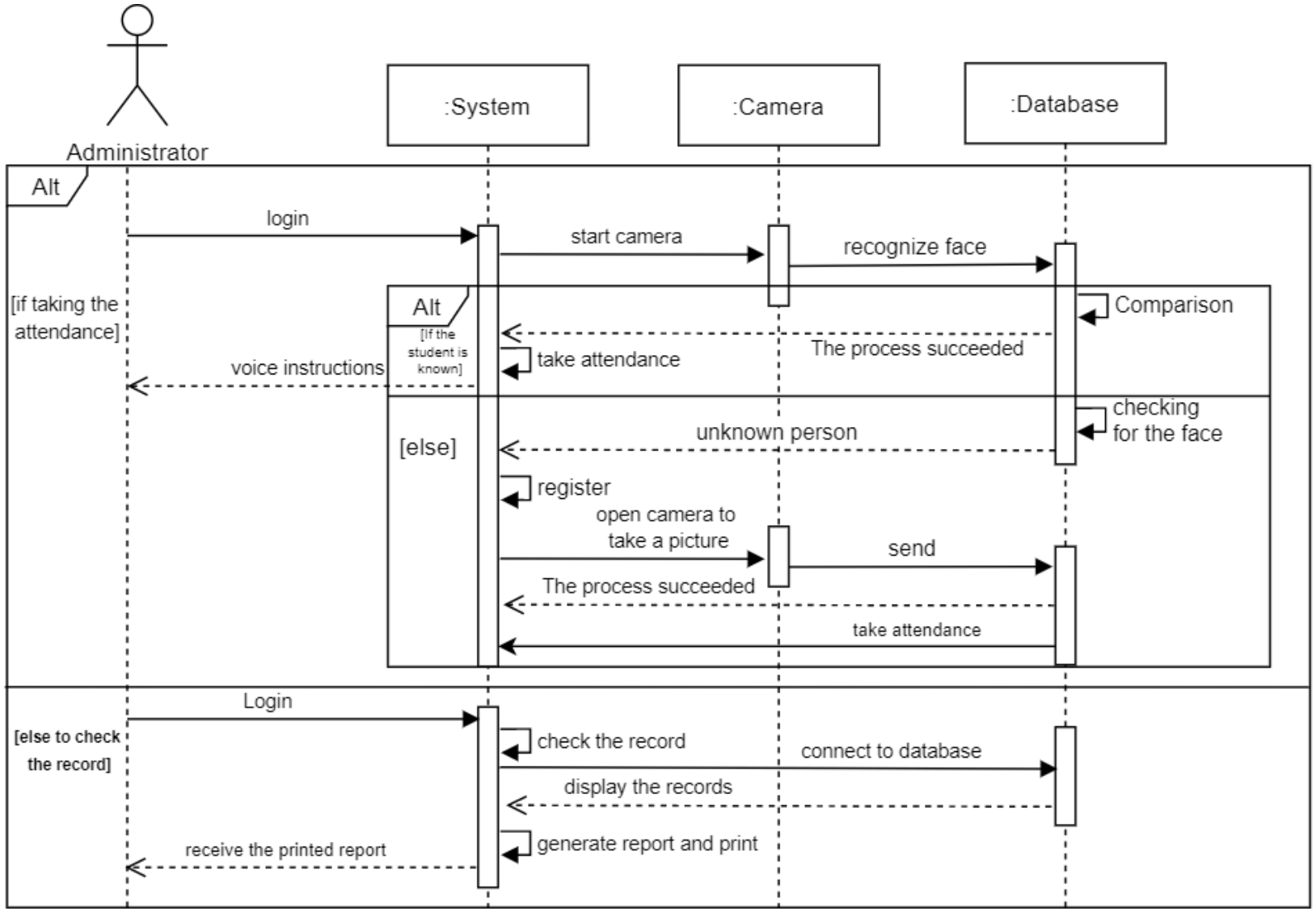
Diagrams

We describe our system structure & functions, the interactions between the components of the system, and the expected behavior in the following system representations.

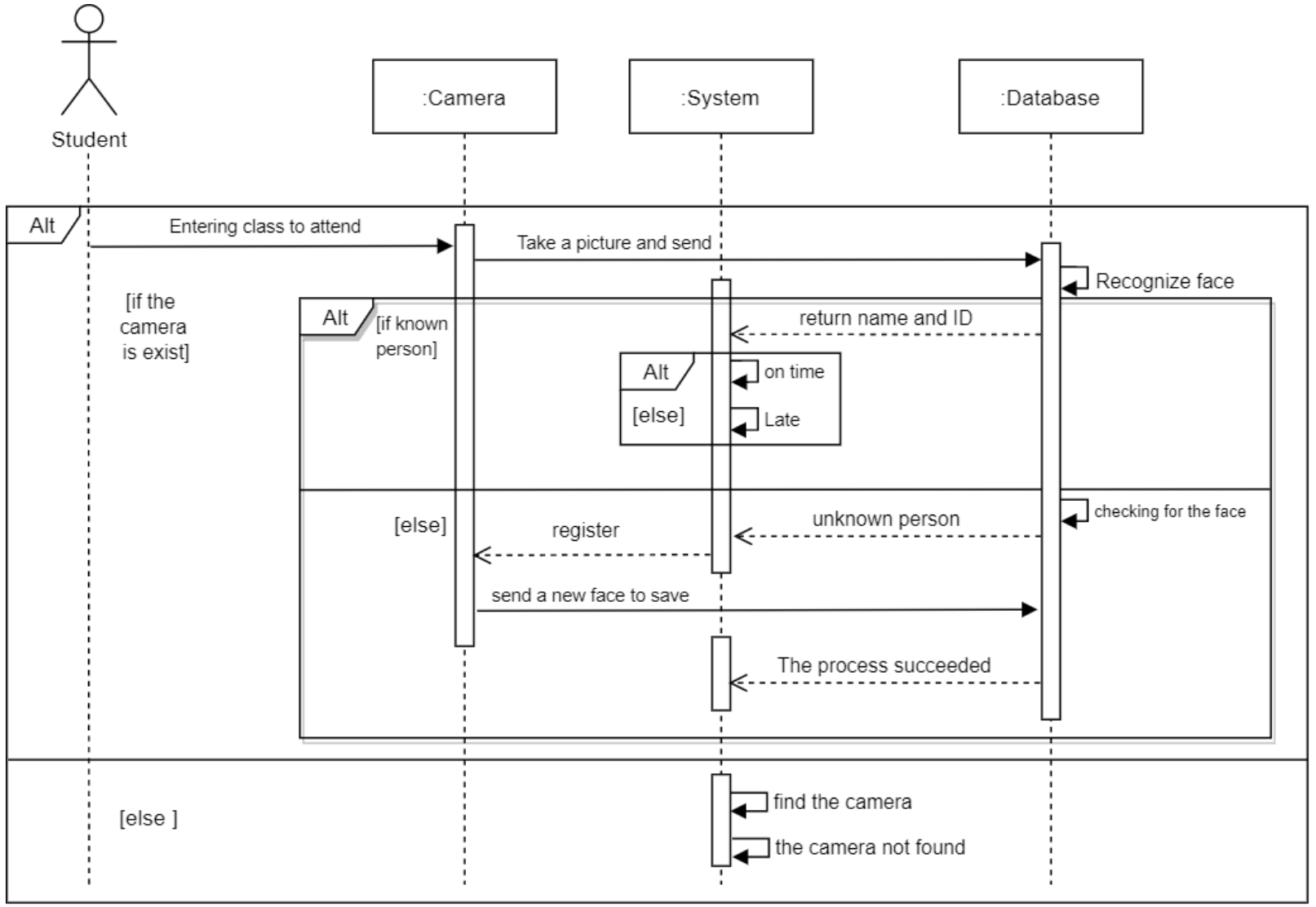
- Use case Diagram
- Sequence Diagram
- Activity Diagram

Use case Diagram

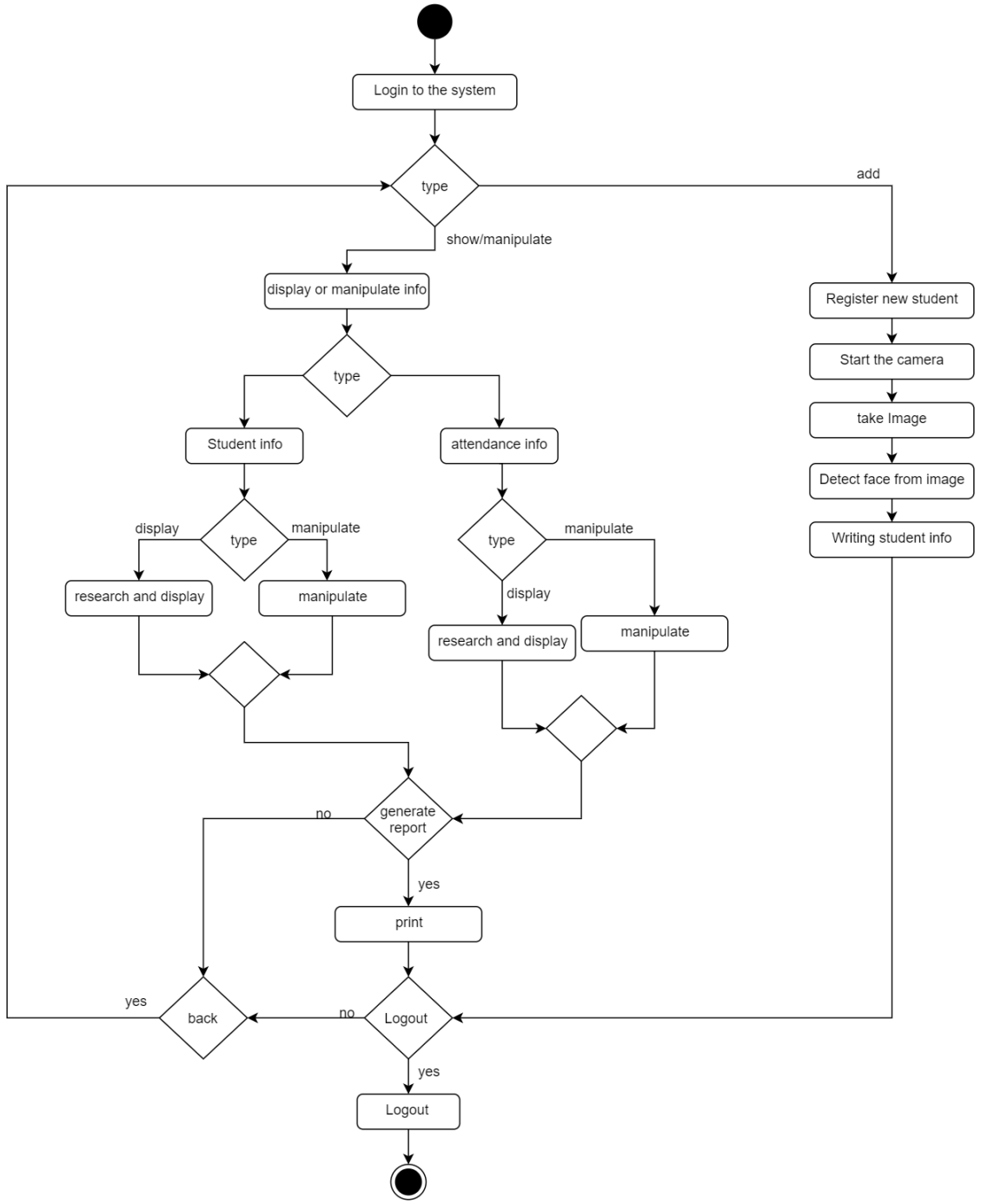
Sequence Diagram - Administrator



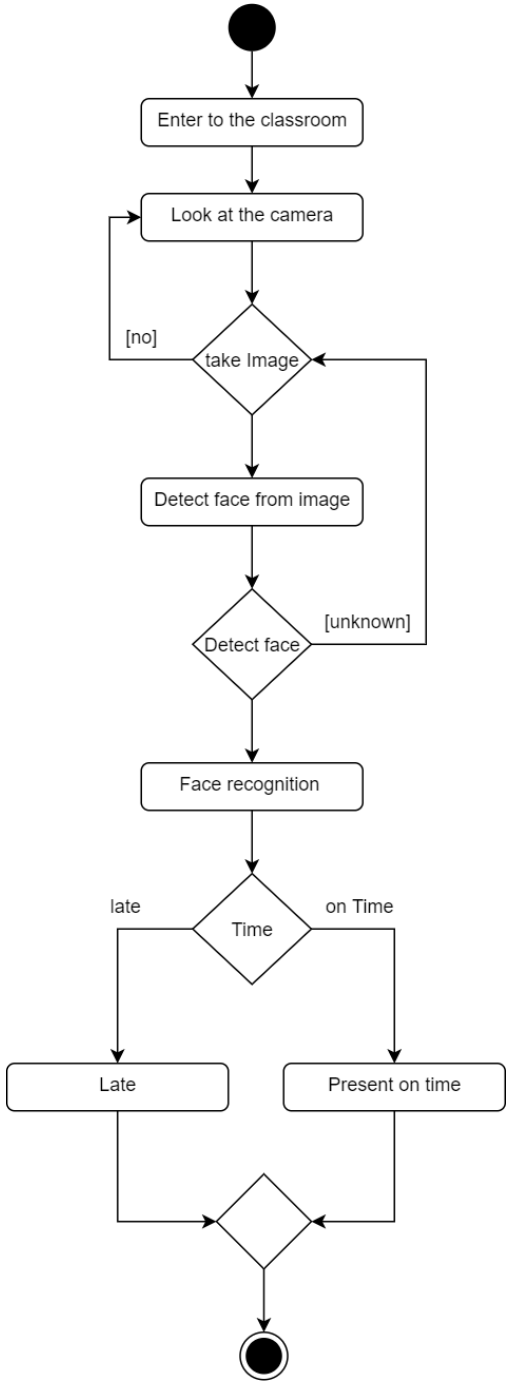
Sequence Diagram - Student



Activity Diagram - Administrator



Activity Diagram - Student

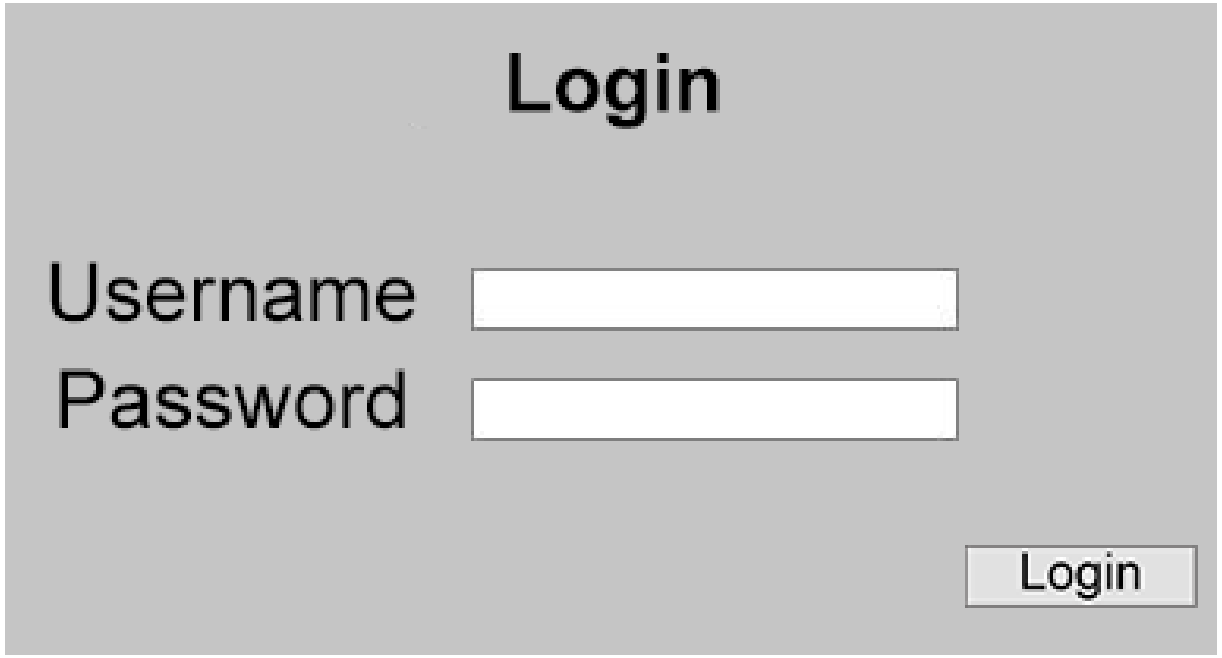


Screens

We show some of the available screens of the following:

- Login Display
- Main menu
- Enroll Students
- Edit Student Information
- Attendance Report
- Attendance Marking screen

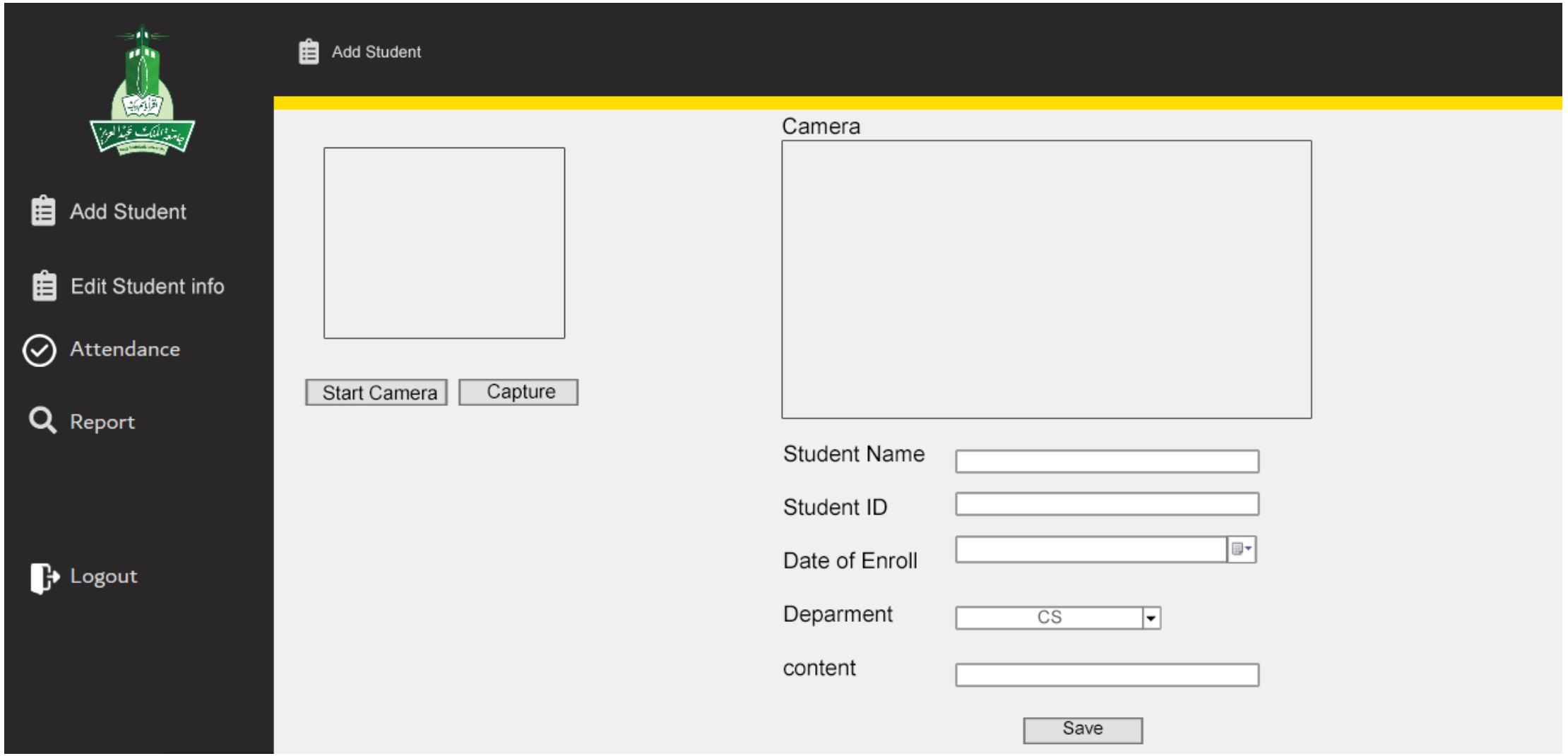
Login Display



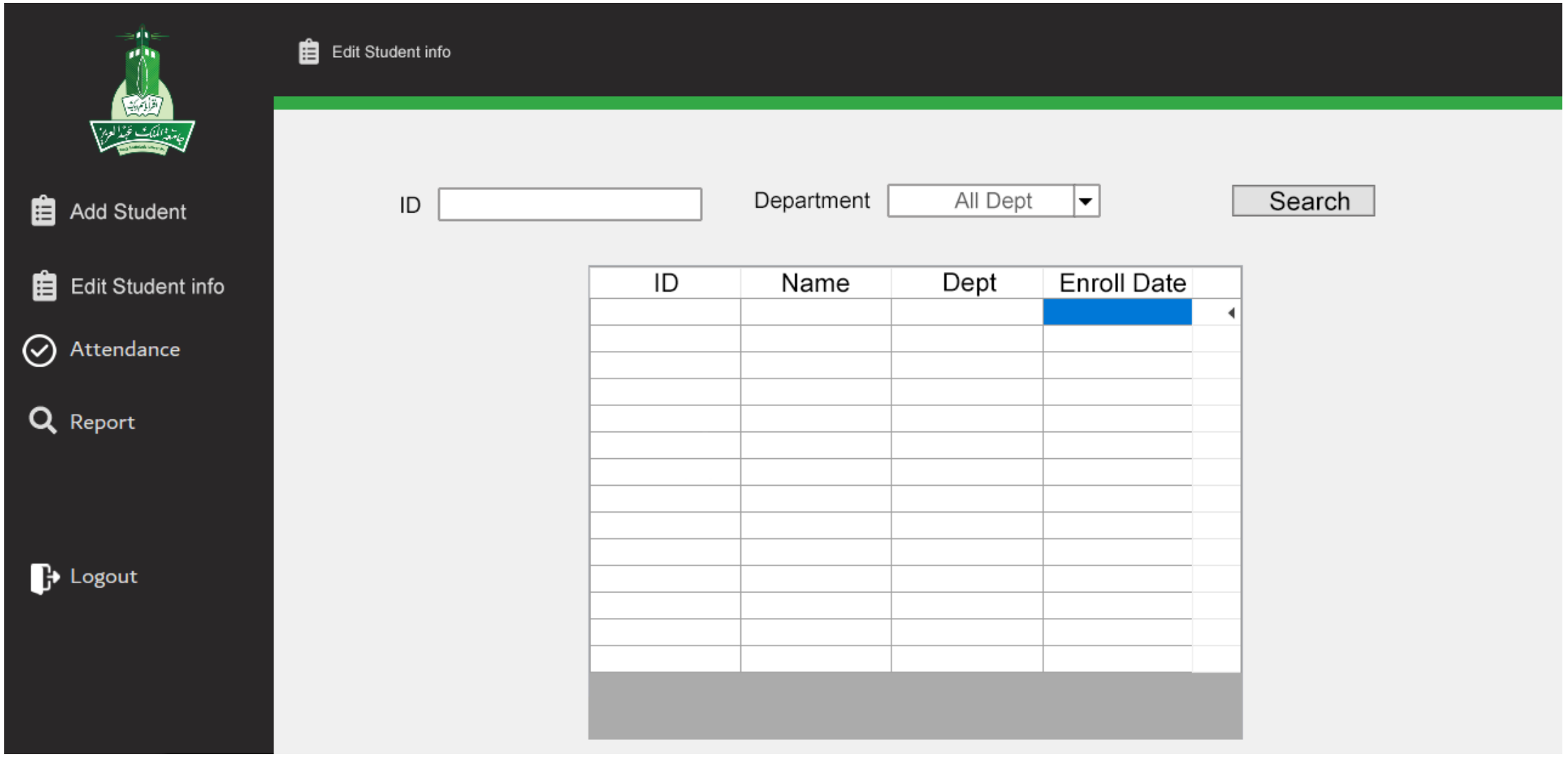
Main menu


Home
Add Student
Edit Student info
Attendance
Report
Logout
جامعة الملك عبد العزيز
King Abdulaziz University
23:03:22
الخميس ١٤٤٢/٠٧/٢٧

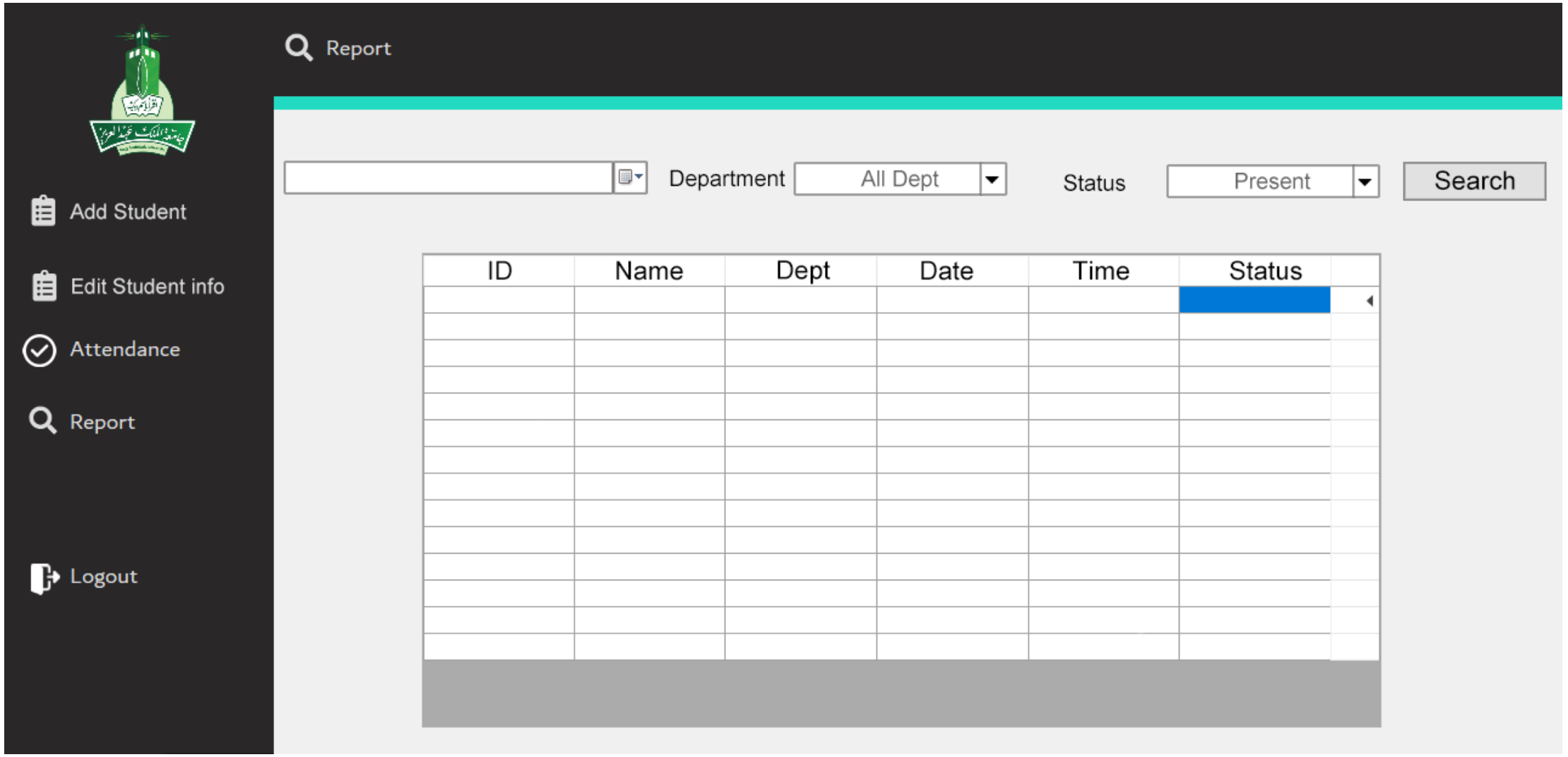
Enroll Students



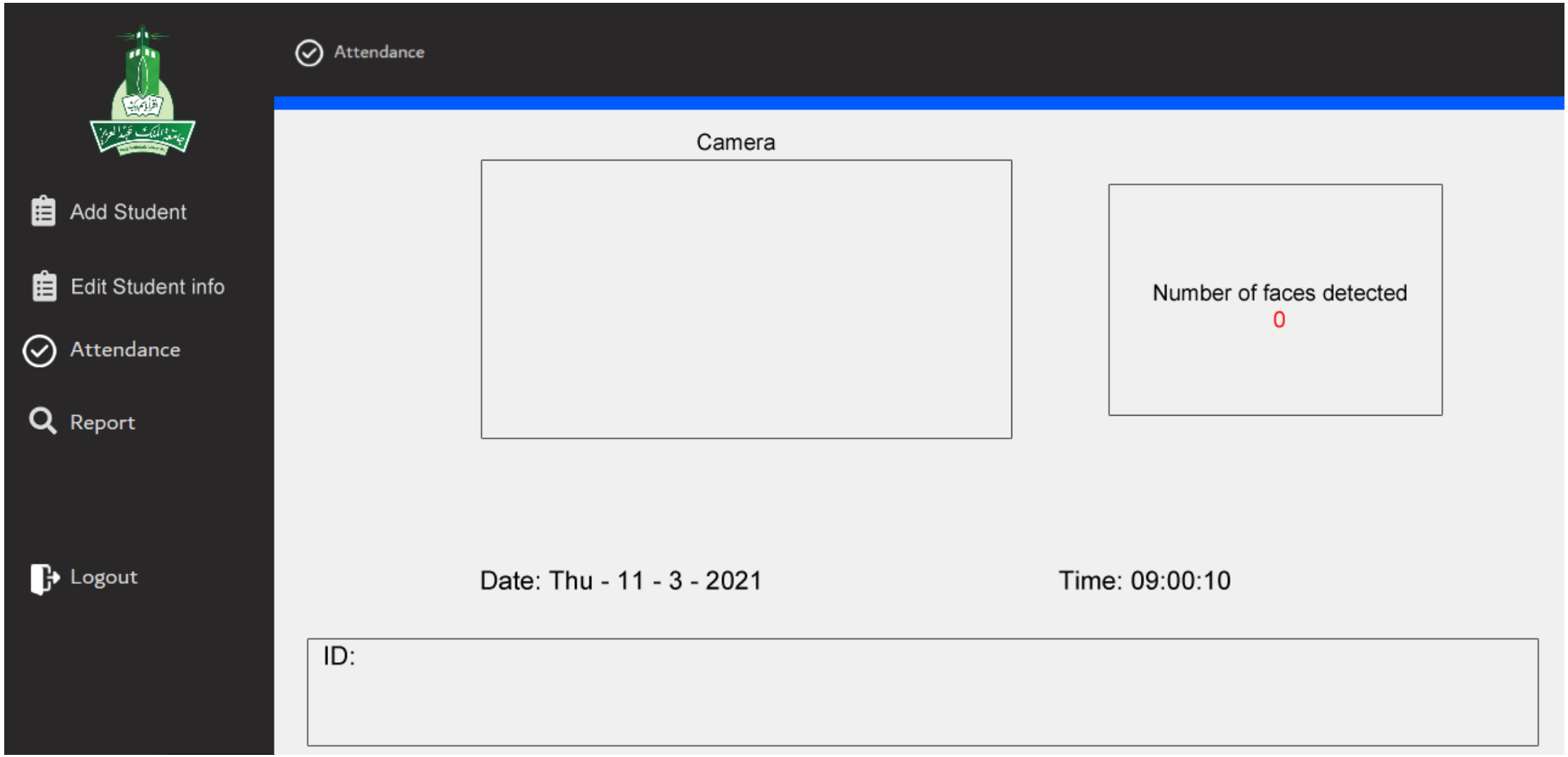
Edit Student Information



Attendance Report



Attendance Marking screen



Conclusion and Future Works

Conclusion

We have developed a system that automatically detects and recognizes students' faces and displays their information and whether he was registered or not. This would be possible by applying deep learning and image analysis algorithms to detect student's faces.

Future Works

- the coding, debugging, and testing all topics will be existed in the project.
- The system in its implantation will focus on non-functional requirements like quality, reliability and usability in addition to non-functional.