MINISTRY OF SCIENCE AND HIGHER EDUCATION OF THE RUSSIAN FEDERATION Federal State Autonomous Educational Institution of Higher Education

"South Ural State University (National Research University)"

School of Electrical Engineering and Computer Science

Department of Electronic Computing Machines

DEVELOPMENT ATTENDANCE ACQUISITION & INFORMATION MANAGEMENT SYSTEM USING BIO-METRICS AND IOT

of the master graduate qualification work for the student of the group KE-228

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Introduction

- Biometric identification systems are widely used for unique identification, mainly for verification & identification.
- Biometrics is used as a form of identity access management and access control.
- Biometrics in student attendance management system offers faster and efficient solutions.
- There are many types of biometric systems like fingerprint recognition, face recognition, voice recognition, iris recognition, palm recognition etc. In this project, we are dealing with fingerprint recognition system.
- The goal of this work is to define a new approach to attendance management system and provide an application for monitoring student attendance by using fingerprint comparison with a novel hybrid technique to improve response time and accuracy in finding the closest match in a massive fingerprint database.

NOVELTY OF MY WORK

This project mainly deals with the development of a student attendance management system that is basically done with the help of a fingerprint verification system.

Problem Statement

Attendance marking is a very important activity in any university or school. Manual marking of attendance is time consuming and difficult, especially with a large group of students.

Problems encountered while using paper-based registers:

Aims and Objectives

- To develop an electronic system to manage student attendance.
- To develop a system to measure the performance of students.
- To develop an effective and efficient method for student roll call.
- To improve upon the attendance system by making it easier and faster.

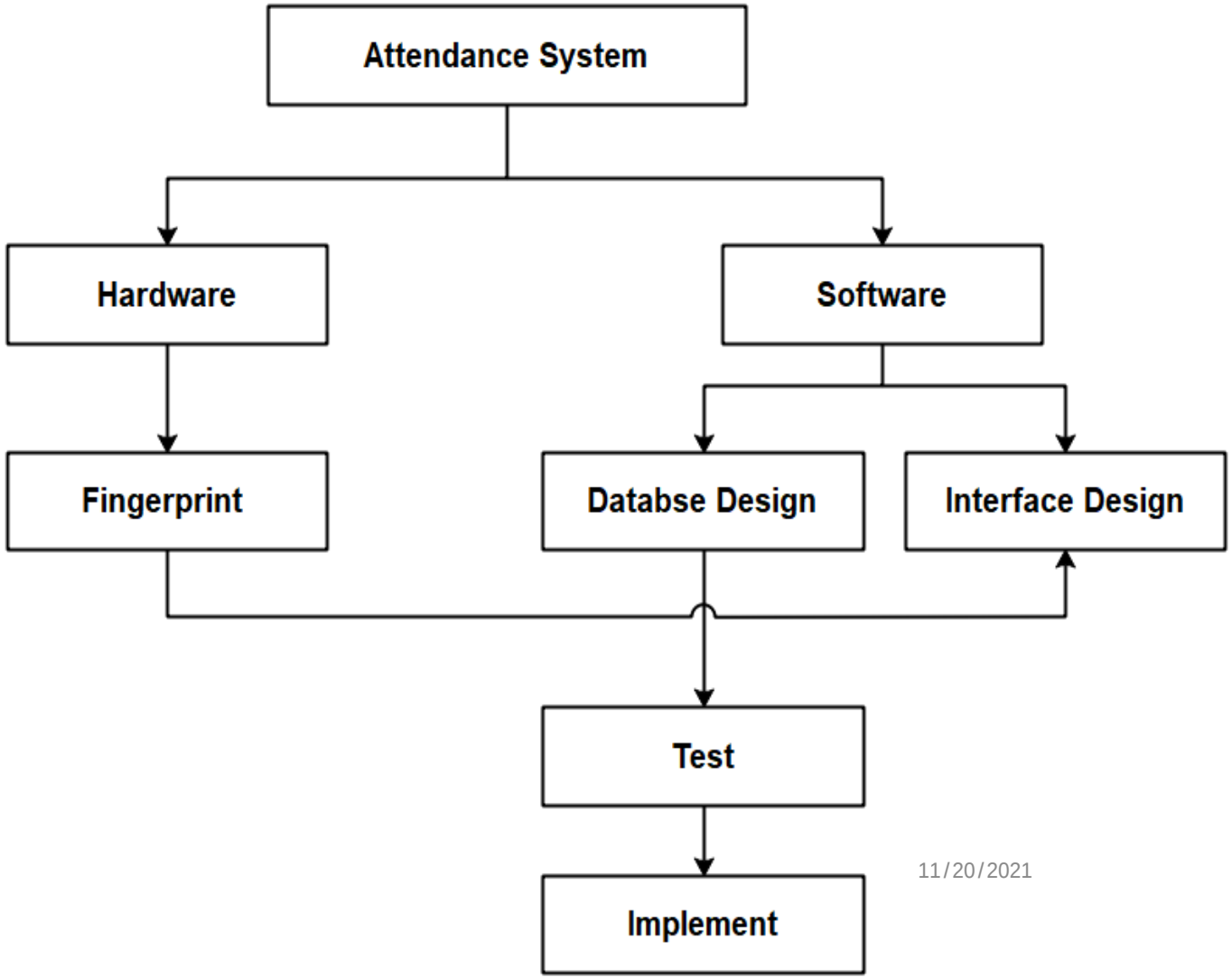
Strength of Current Work:

- It was able to be keeping some records of students which could be used to assess the students' attendance at the end of the semester.
- It was very helpful when the class size because with a large number of class, calling the names of every student would take time, which is meant for lectures.

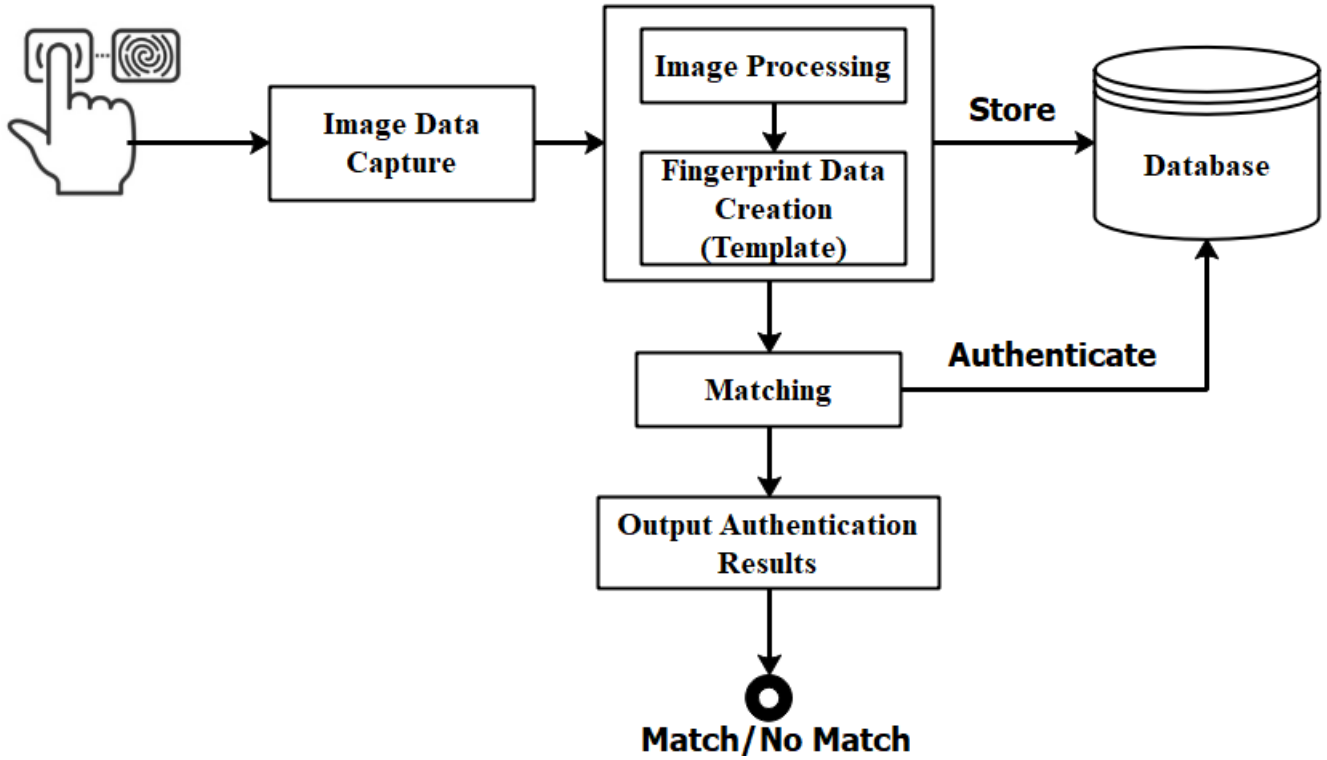
Future Enhancements:

Numerous enhancements can be made to the module. While some have been previously discussed like inclusion of an SD-card reader.

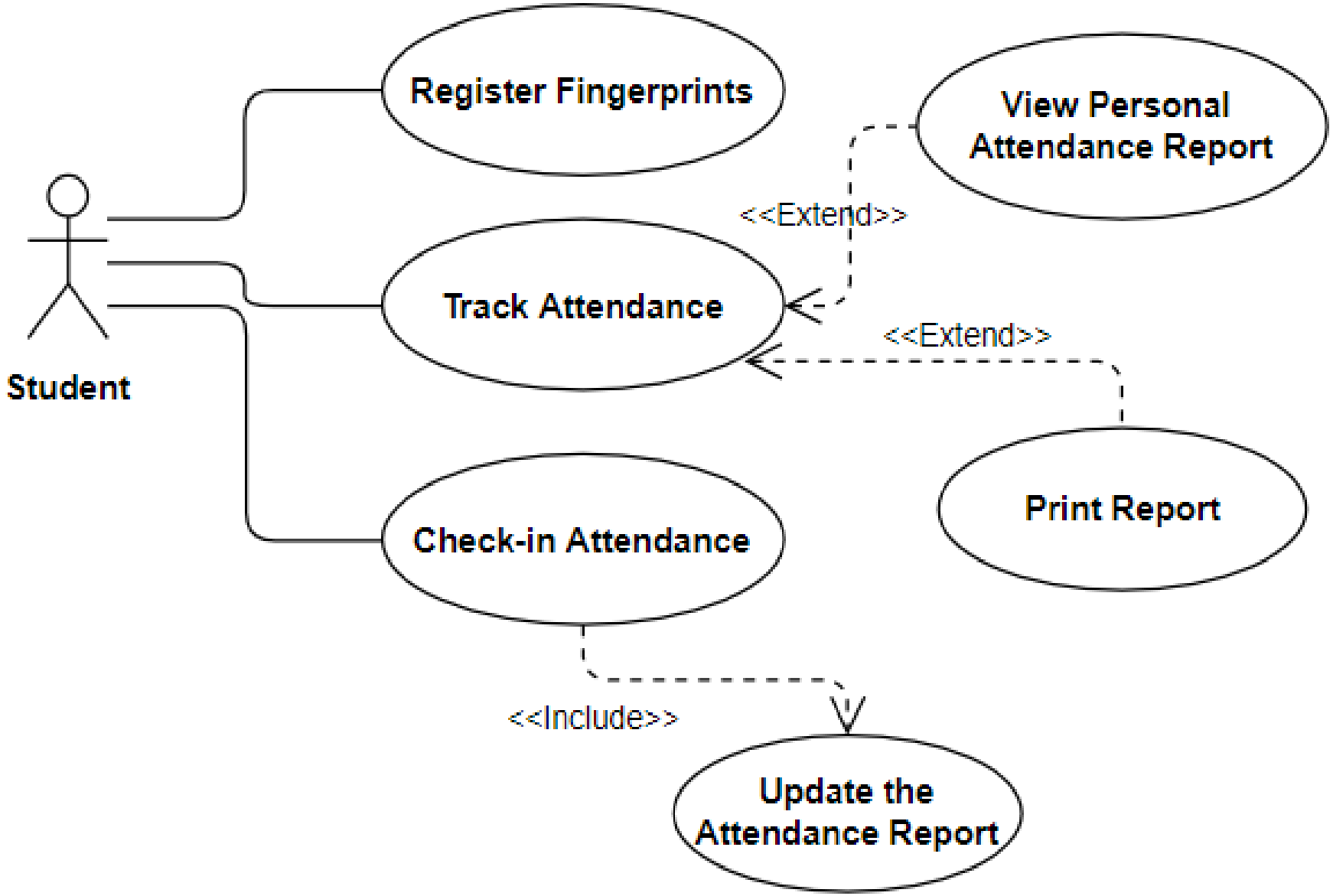
Architecture of Proposed System



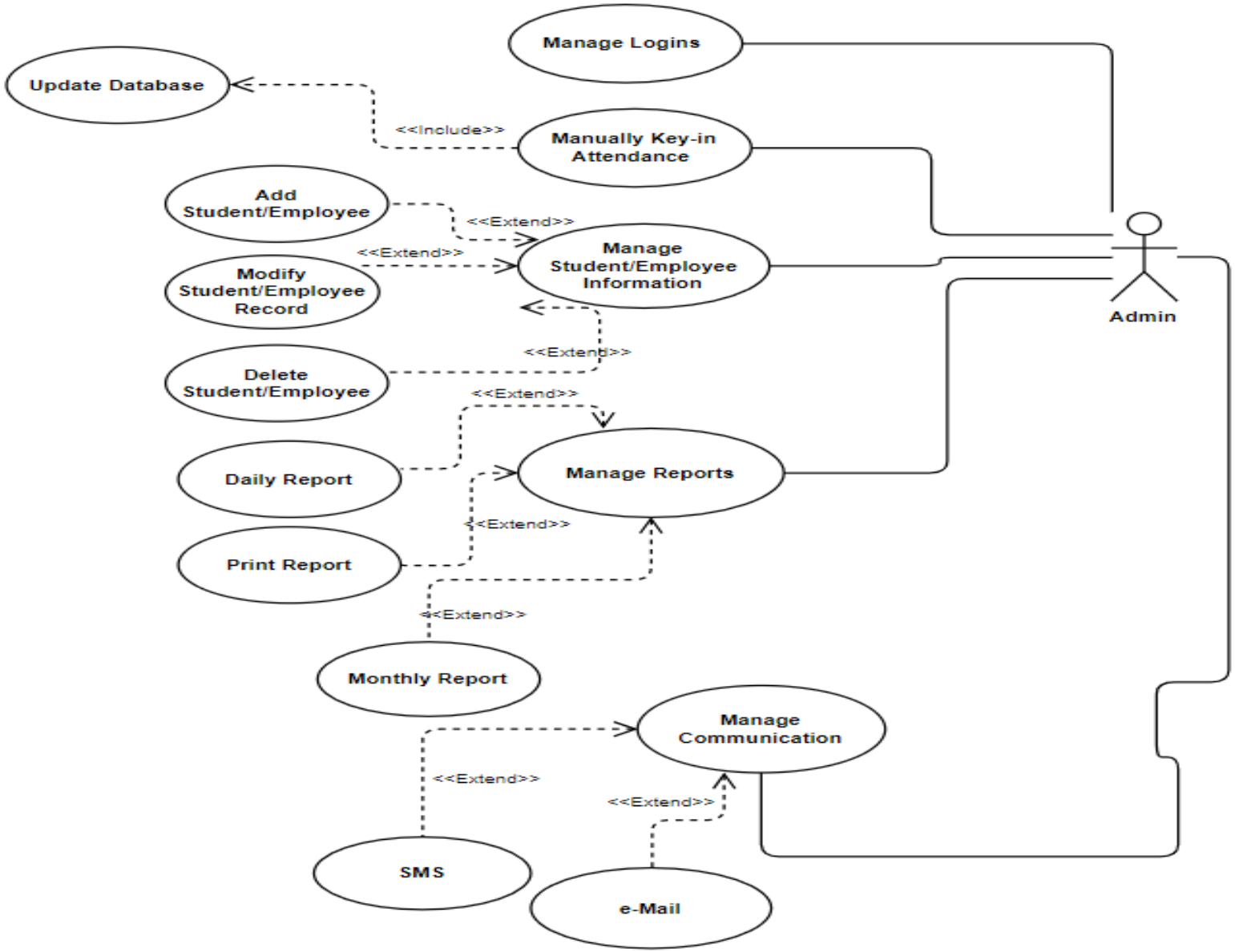
Algorithms for Solving the Problem



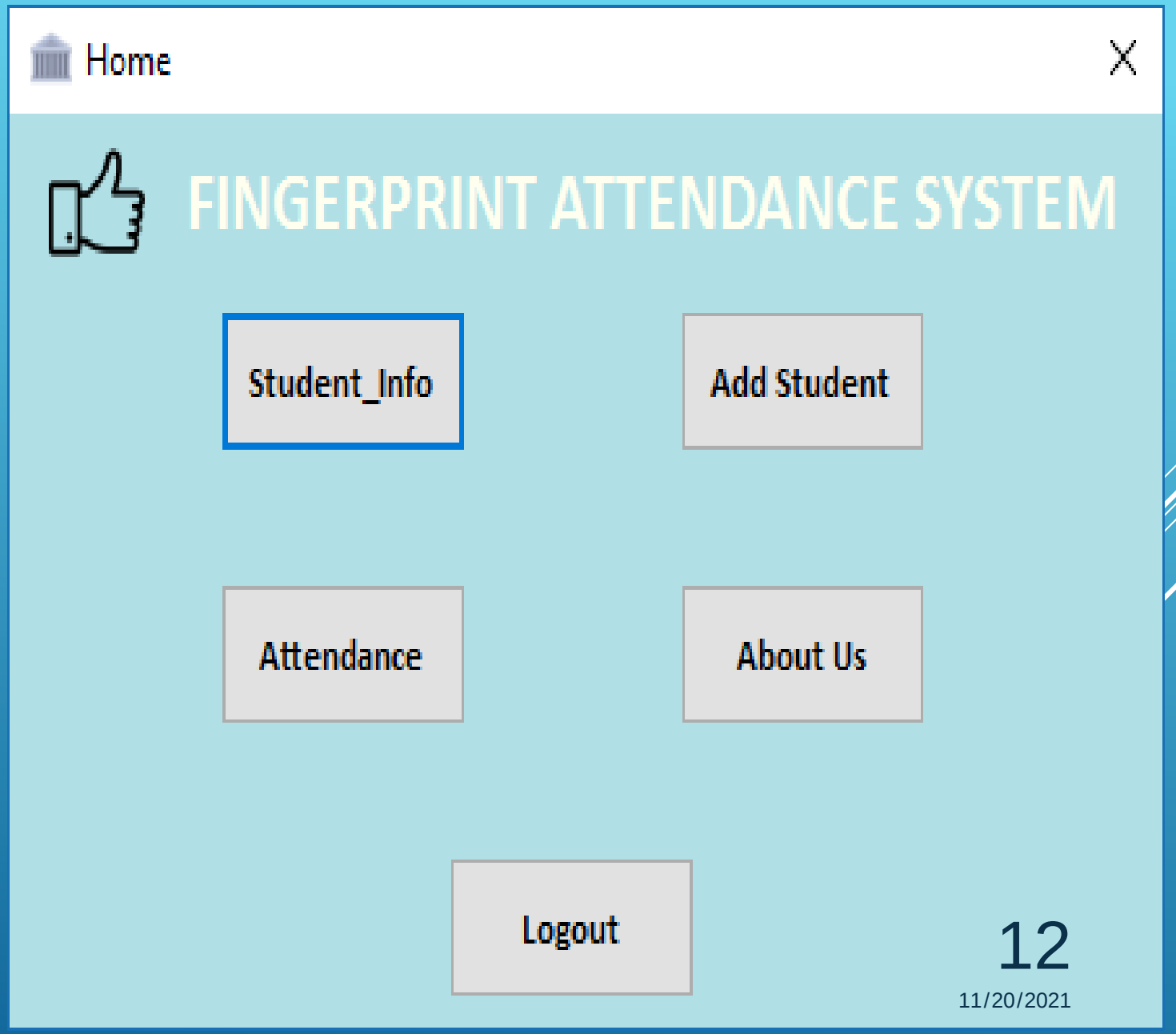
Use Case Diagrams for Student



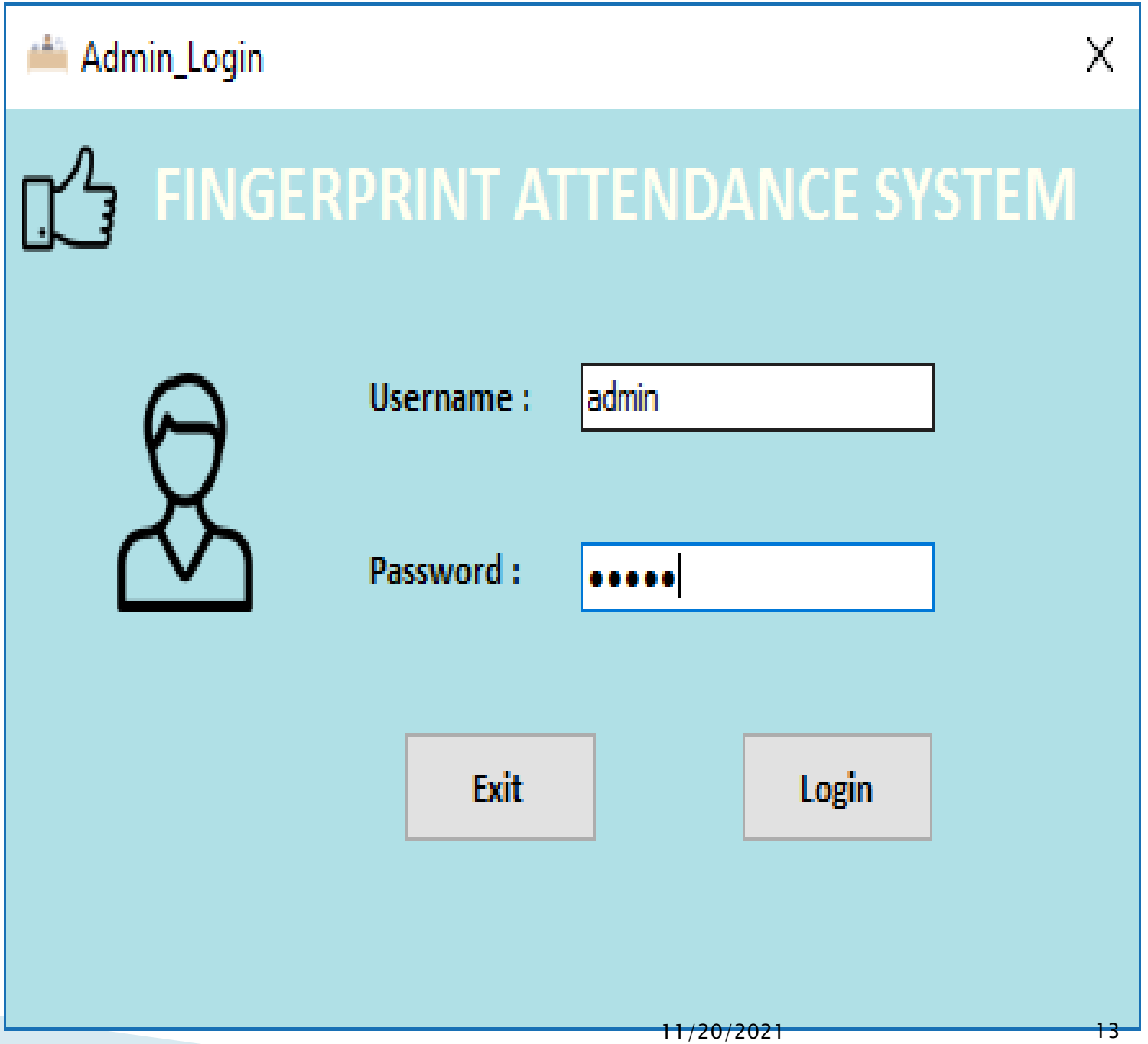
Use Case Diagrams for Admin/Faculty



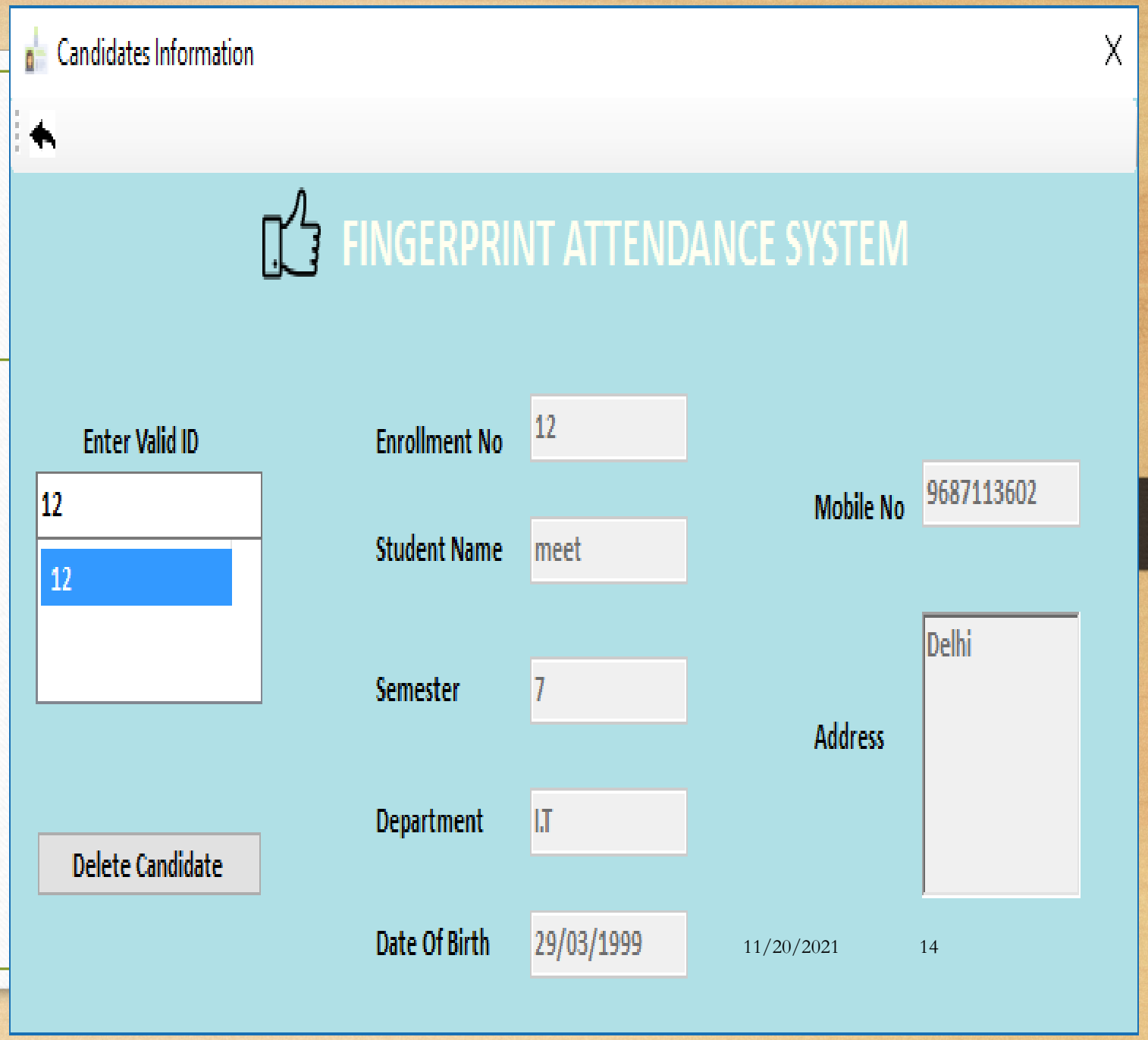
IMPLEMENTATION HOME PAGE



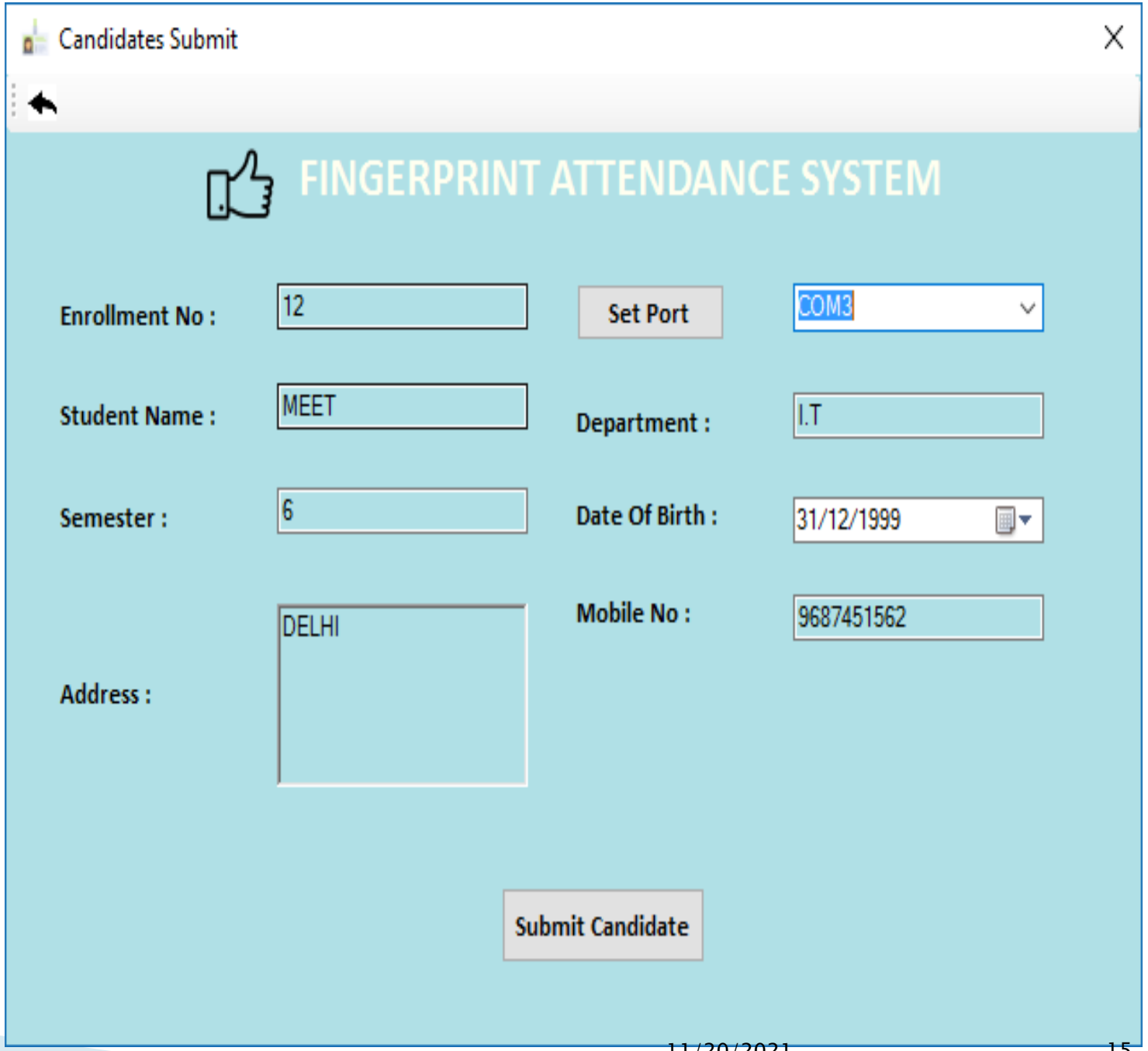
IMPLEMENTATION
Login Page (Admin)



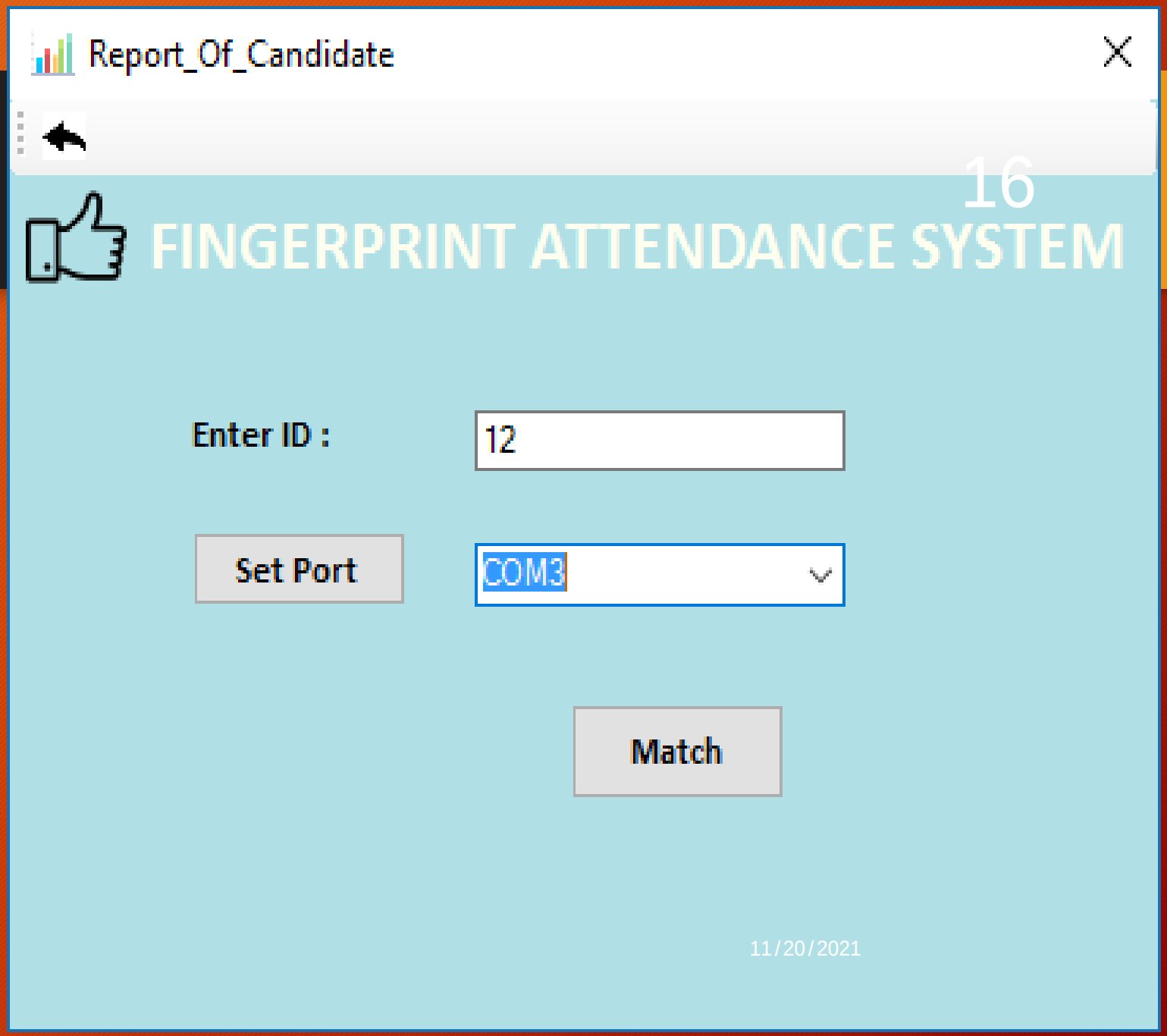
IMPLEMENTATION
Student Information



IMPLEMENTATION
Add Student

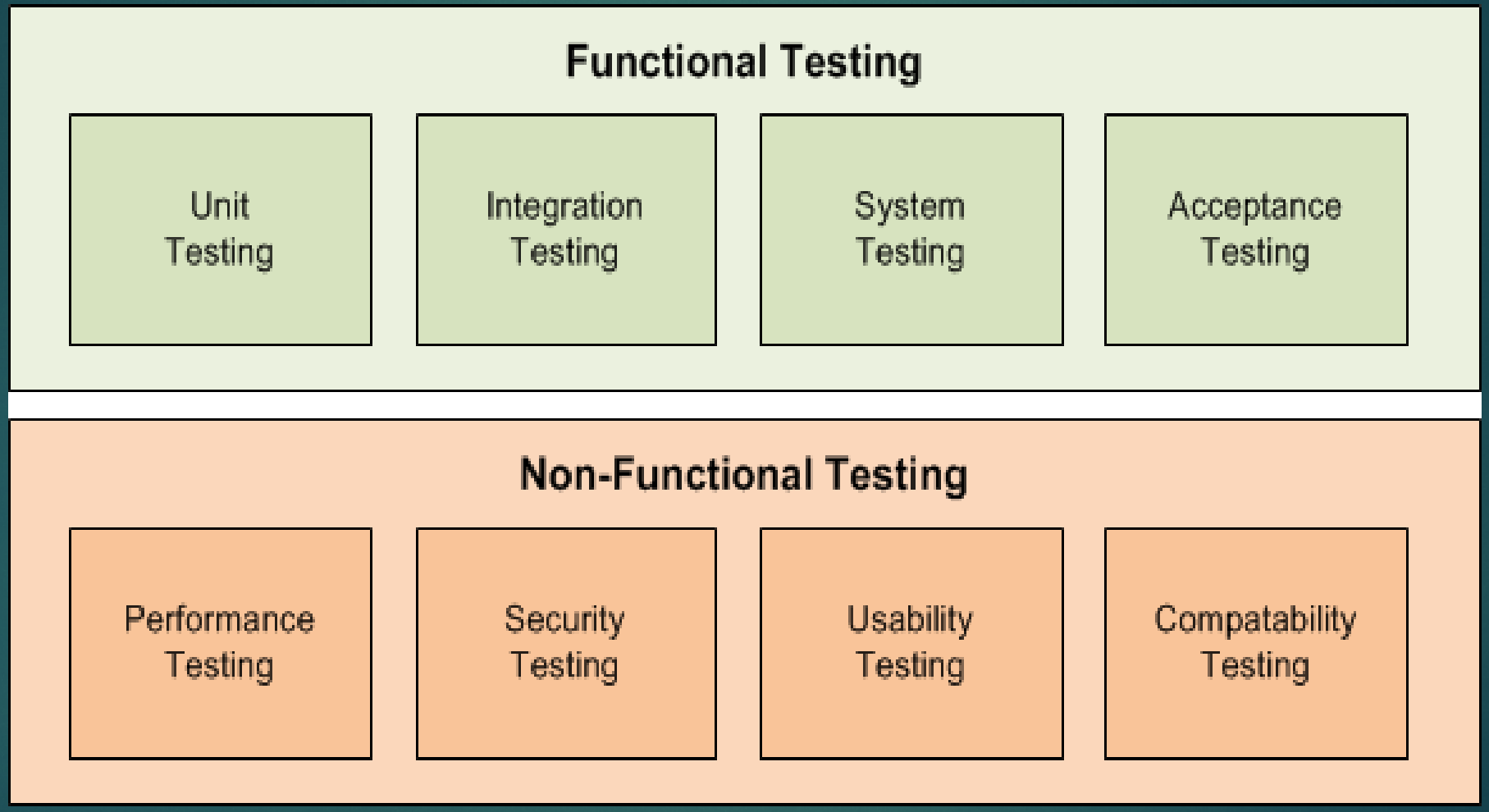


IMPLEMENTATION
Check Attendance



IMPLEMENTATION
Fingerprint Enrollment Window

TESTING


Functional Testing
Unit Testing
Integration Testing
System Testing
Acceptance Testing
Non-Functional Testing
Performance Testing
Security Testing
Usability Testing
Compatability Testing

Conclusion

- This project mainly comprises of development of student attendance management system with the help of fingerprint verification system.
- This project represents a framework with which attendance management can be automated and on-line.
- We have designed and implemented database for attendance system using MySQL.
- We have learnt fingerprint recognition process, based on minutia extraction of fingerprint image.
- The template generated in fingerprint recognition system is successfully stored and retrieved from database.
- The developed system is more efficient and time saving than the old traditional attendance taking methods.

THANK YOU FOR YOUR ATTENTION