



SMART ATTENDANCE SYSTEM

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Abstract

It is time-consuming for teachers to keep track of students' attendance. This system aims to control student's status in the class with the help of bluetooth low energy (BLE) 4.0. iBeacon is the preferred BLE device for the project. This device communicates with students' smartphones. The mobile application on the smartphone detects that the student enters the lecture hall and records this information for follow-up. For registration to occur, the student must have a certain amount of time in class coordinates. After that students can check-in . According to the preferred option, the information of the students is sent to the web application through database. The web application is designed for use by teachers. Teachers have the right to open lessons, delete lessons and access student absenteeism through web application. The system consists of three basic components: (1) iBeacon, (2) Web application, (3) iOS mobile application.

Keywords: Bluetooth Low Energy, iBeacon, Web Application, Mobile Application , iOS

Introduction

The target audience is teachers and students. Smart attendance system allows students to record their attendance knowledge via phone. This project will provide teachers and students with time-saving opportunities in the lessons. The main purpose of the project is to introduce technological practice and safe new methods instead of traditional attendance methods. This project is designed with bluetooth low energy technology and iBeacon device is used. This device will enable to communicate with student's phones.

Solution

1.Related Technologies are :

- Swift language
- JavaScript , HTML language
- BLE 4.0 (iBeacon)
- No-SQL

2.System Features for Mobile Application :

- Login
- List Attendance
- Check-in

2.System Features for Web Application :

- Login
- Add Course
- Report Attendance

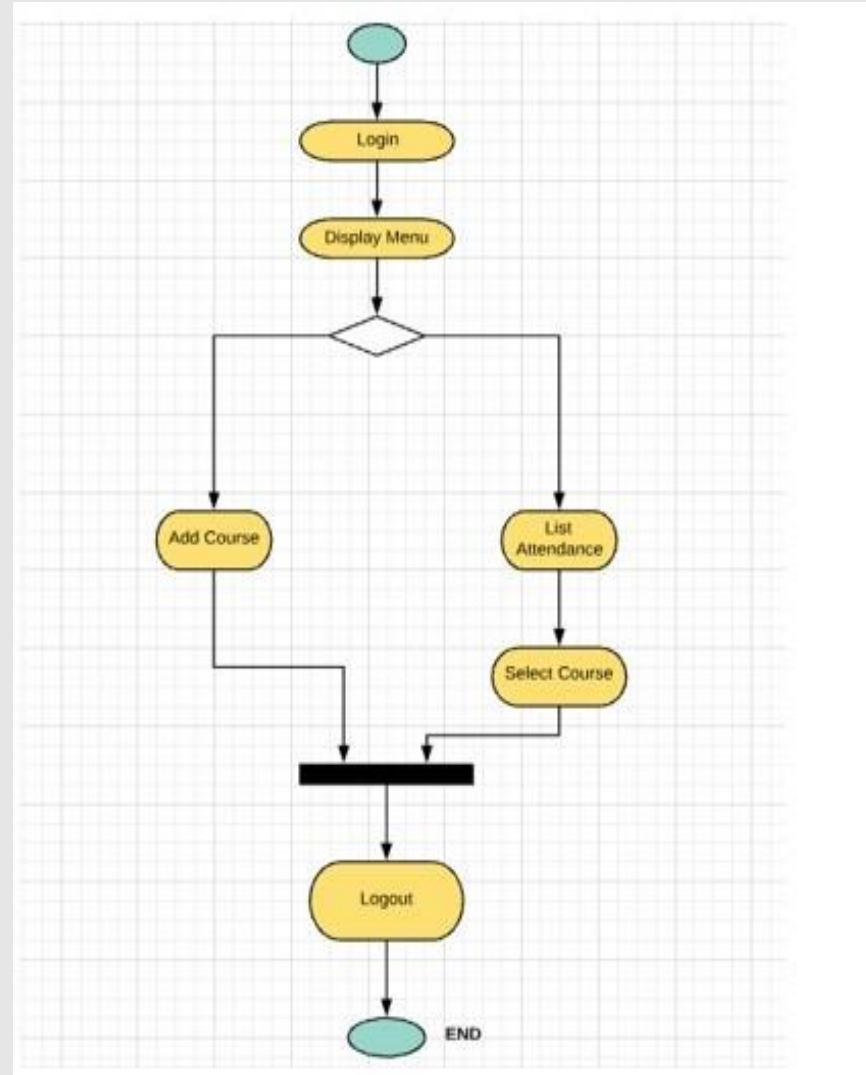


Figure 1 – Web Application Flowchart

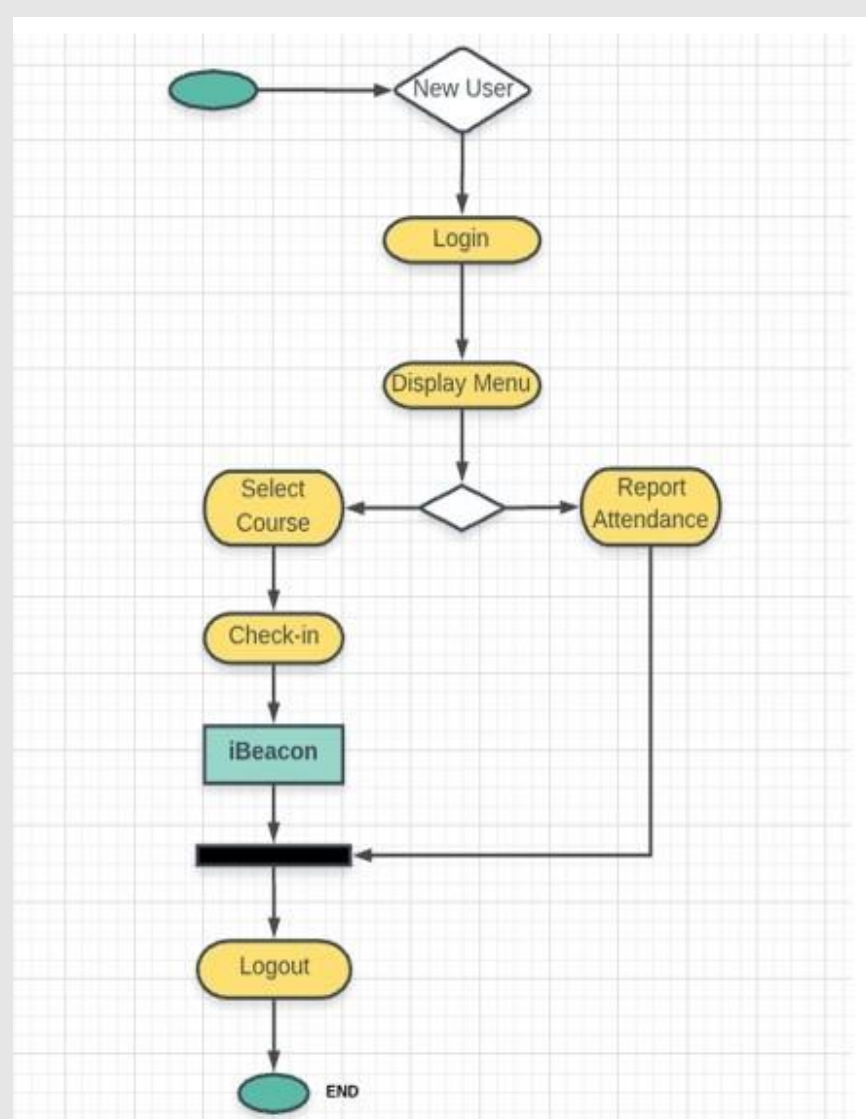


Figure 2 – Mobile Application Flowchart

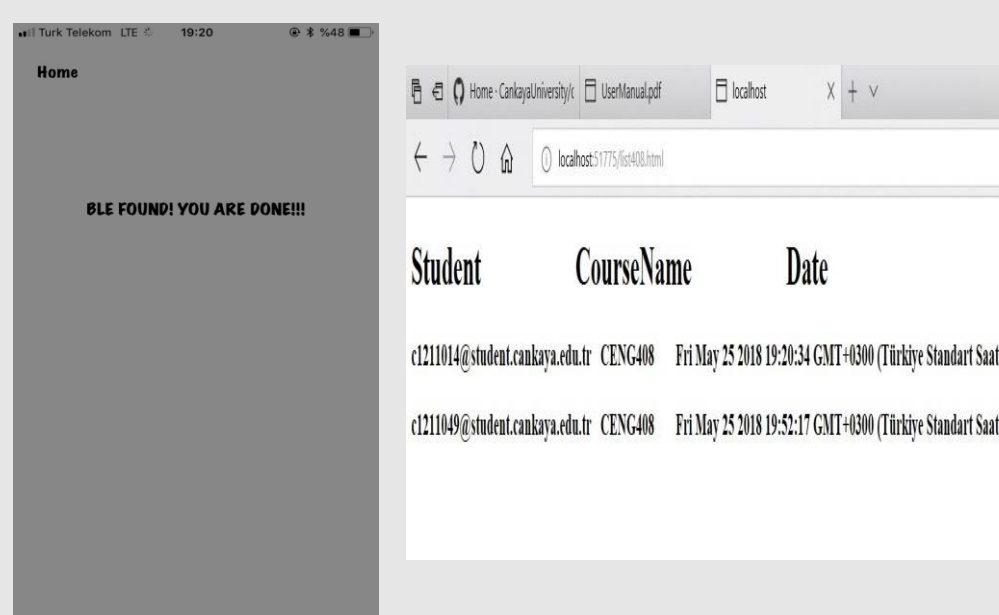


Figure 3 – Mobile Application Check-in Page

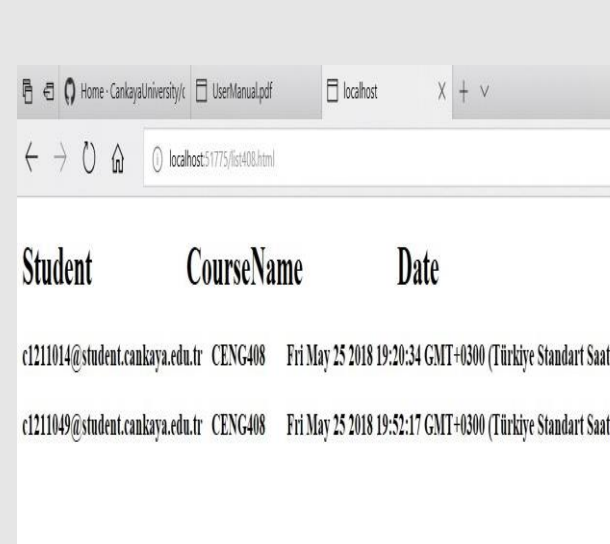


Figure 4 – Web Application List Attendance Page

Company Info

Çankaya University department of Computer Engineering is our company.

Results & Conclusion

The Smart Attendance System aims to be a system of documenting student participation through mobile phone. Advantages of our Project which are more secure system, using less energy , low cost and time consuming. We have learned using new programming language including swift as programming language. In addition, we used No-SQL Technologies such as Firebase Cloud Firestore.

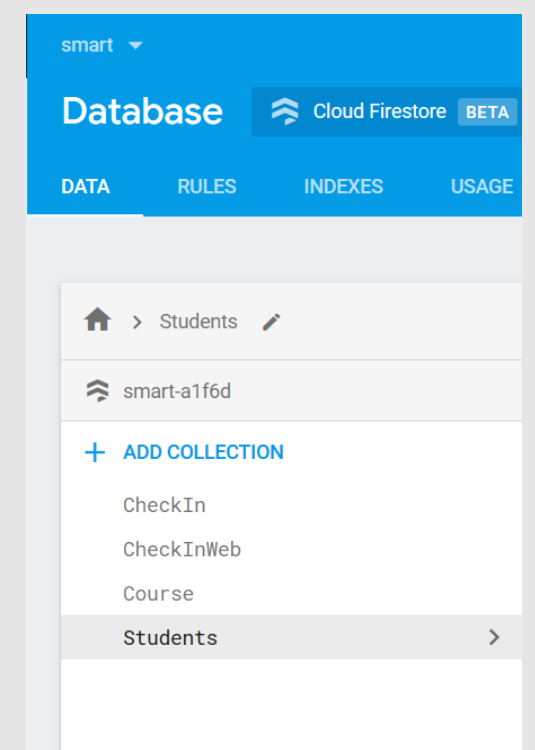


Figure 5– No-SQL Database

Acknowledgement

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