Mahidol University

report for mobile devices programming project EGCO-463



C:\Users\Gigabyte\Desktop\Classibilitylogo.png

Classibility

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Abstract

One of the project goal is to examine the possibility create a mobile application which is aim for education boundary. Now a day Education is considered to be one of the most important departure in order to develop skilled labor. There are many sessions which are occurs all the time. The problem is managing classroom is quite hard task to archive.

Classibility is an application for education system which scoped for managing classroom session, checking in for student using camera and face recognition system and history store based application.

Since we were assigned to create mobile application from "Mobile Devices Programming EGCO 428". so this project was planned to develop programming skill, learn how to work coordinately and use plentiful technology we have now a day in useful way.

Project Description

Classibility, the name came from class plus ability. It is mean an ability to control and manage the class. The project was all about the possibility to create an application to solve repetitive problems in the past

In the past, Once students attended into class, instructor lost their time checking student attendance most of the time. considering those little constantly lost time it was huge proportion of time.

Classibility developed check-in system for student. once student got to the class all they needed to do was to using application to authenticate themselves. checked in data was stored in extra web service database called "Firebase". It let instructors access all data students made.

One thing we do concern is false attendance, Classibility use developed face recognition system for an authentication. It can recognize student faces precisely.

We hope our project will deliver a nice easy and clean way to solve classroom problem.

Mobile Platform

Classibility is develop and operated only on iOS Platform using Swift 4.0 language.

The project is also use Xcode 9 as a compiler and mobile stimulator. We decides to develop Classibility on iOS because We want to study basic fundamental mechanism of iOS and deliver more diversity platforms into our Mobile Device Class.



figure: swift 4 language



figure: Xcode - complier

Back-End Development

while the front-end talks about the user interface, user interaction, and how content is presented, the back-end handles the business logic, data storage, and security.

Classibility implemented two backend service which will be explained following sections:

Firebase

Firebase is Google's mobile platform that helps developer quickly develop high-quality applications and grow their business

**Build apps fast, without managing infrastructure**

Firebase gives developer functionality like analytics, databases, messaging and crash reporting.

**Backed by Google trusted by top apps**

Firebase is built on Google infrastructure and scales automatically for even the largest application.

**One platform, with products that work better together**

Firebase products work great individually but share data and insights, so they work even better together.

Classibility implement two major functions from Firebase web service which are

'Firebase/Auth'

this function is used to develop authentication system like sign-in, sign-up and account management.

'Firebase/Database'

This function is used to develop database system which is used from an entire application even from class, member and user data.

'Firebase/Storage'

This function is used to store Images for face recognition and identify student attendance.

Kairos API For Face Recognition

Kairos has established itself as a leading AI engine provider in the facial recognition space. in this project we used Kairos API for the check-in system. Application will ask for user profile picture, once user upload their picture from profile page. it will be uploaded to Kairos server. doing so allow API for recognize user face next time they want to check-in into the class.

Functions in Application

The following list are to display all functions in Classibility.

**Login in**

- Classibility start with log-in page

-Two text fields for ID (E-mail format) and Password (6 alphabets)

-There are sign up (Click Don't have an account)

and forgot password (Click Forgot your password)

-After Click Forgot your password, apps will navigate to Password recovery page.

-back button at top-left corner for go back to Login Page

- text field for User Email, input an existed Email account then tab re-send button for Password recovery.

-Apps will transit page to information page. this page inform user about Password Email that has been sent. and click "Back to Login Page" button to go back to Login Page.

-After Click Don't have an account, apps will navigate to Account Registration Page.

- There are two text fields ask user for Email(ID) and Password (6alphabets) for creating account

- Once both fields is filled, tab "Sign-up" button to sign in

**Classibility: Home page**

- Once log-in, apps will transit to Home page. this page display all the class that user have joined from Database

- Top bar display "class" for title. left button is for activate navigation panel and join button for joining new class.

- Join button for join Class, user will be asked to fill class information.

- Each cell is clickable, tab to transit to Class detail page. The detail page will display class details which are Class-code, class name, location and time.

- "Check-in" button is for attendance segment. once clicked apps will transit to attendance segment.

**Classibility: Check-in**

-Lectures page display all the lectures of the Class so far. it contains some details i.e. day time room.

- Tab to check-in in the lectures. Apps will automatically open camera for checking-in once your face picture is analyzed. apps will store attendance data in database \*\*note that opening camera requires physical device. running apps in simulator will cause app to crash\*\*\*

- In camera page, There are two buttons check-in and Member

check in is used for user attendance. While Member button is to display amount of students who already checked-in the Lecture.

**Classibility: Profile**

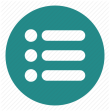
-Profile Page is display user details. the details are the following surname, last name, faculty, campus, gender and about me (allow user to display anything).

- \*Profile picture is require for face recognition tab the picture for activate photo picker.

- Edit button at top-right corner is for edit profile page. Edit profile page allow user to edit any detail by typing in text fields then tab save button to apply any changes.

**Classibility: History**

- History page contains table view of classes that user joined. tab in the interested class to check for lecture record.

- from table of lectures from the selected class, tab each cell will display member of students who checked-in the lecture in time.

**Classibility: Navigation Panel**

- "Three lines icon" is appear most of the pages in application. it is there for activate navigation panel which will lead user to their desire page.