Android Attendance application

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Dr. Calabrese 8 steps

1 List criteria and Constraints

2. Data Gathering – things you don’t know yet

3. Paper and Pencil Analysis – Do the problem by hand knowing what the outcome should be

4. Design Flowchart

5. Do the code

6. Test

7. Document

8. Generalize – where can this fit into a bigger picture for reuse

Criteria and Constraints

The Criteria is all the things needed in order for the Android Attendance Application to be successful.

Criteria:

* Android Application for Phone
* Hardware to scan ID
* Present/ Absent/ Tardy options when signing in
* Class Roster
* Manual Sign In

The Constraints are the limitations on the design.

Constraints:

* Access to Johnson & Wales student records Database
* How to scan the users ID?
* Hardware - To scan the ID card
* Time - How long do you have to finish the program (6 weeks)
* Schedule - How often you work on the program day to day (EX: Class time or Personal time)
* Programing language ex: (GitHub Scrum) - “Somebody has to learn Scrum” Scrum 101 Videos
* Use of specific library scripts or frameworks
* Team composition and makeup - Do you need a specialist to be on the team (Specific individuals, perhaps for training purposes)
* Lack of accountability
* Groups need platform for development
* Team Burn out over the course of the project (Velocity)
* Missing Student ID’s
* Cost of project

Data Gathering – Things you didn’t know

When creating this mobile application there where many different obstacles that were faced, the first one was what type of code were we as a team going to use to accomplish this program. There were also issues with the type of scanner to use, whether to use a camera as the scanner. In addition to what code was going to be used to read the student ID card. The next problem was where the ID information is going to be stored. The solution was to find a database that can hold the stored data and accurately time stamp the sign-ins and dates. There was a plethora of challenges that the team and I went through to create this app.

**HARDWARE**

* Android device that will be used to scan card.

**SOFTWARE**

* **Android Studio** - Android Studio is the official integrated development environment for Google's Android operating system
* **Java** - Java is a general-purpose programming language that is class-based, object-oriented
* **XML** - Extensible Markup Language (**XML**) is a markup language that defines a set of rules for encoding documents in a format that is both human-readable and machine-readable.
* **API Google Mobile vision (For text)** - A framework for finding objects in photos and video. The framework includes detectors, which locate and describe visual objects in images or video frames
* **Google Firebase (Database)** – Firebase is a mobile and web application database that runs real time data and can read and write files on android.

Sign Up Flow Chart

A close up of a logo

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Home Activity Flow Chart

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Student Flow Chart

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Main Activities Flow Chart

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Login Activity Flow Chart

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OCR Capture Activity

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OCR Detector Processor

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5. Do the code

6. Test

Please check the code out at

https://github.com/lewis1234victor/Attendence\_App

**ANDROID Attendance Application**

# The GOAL

The goal is to create an android based mobile application in which users(teacher), would sign onto their smartphones and download an app from the Android market or Google play store. First the teacher signs into the app and verifies their credentials, then they are able to pull up the correct class roster, next they can allow students to sign into class via scanning their ID.

## The objective is to work hand in hand with software developers, database developers, scrum masters and researchers and other important team members to create and build the attendance application. The tools used to achieve this goal is as followed

**HARDWARE**

1. Android device that will be used to scan card.

**SOFTWARE**

1. Android Studio
2. Java
3. XML
4. API Google Mobile vision (For text)
5. Google Firebase (Database)

# the usefulness and aim of the Application

## The usefulness of this application would allow professors to take a step into the future. By using this attendance mobile check in application before class starts. The intention of this project is to allow students to take responsibility for their own attendance, rather than have the professor/ teacher take the attendance which can cause inconsistent data between the student and class days.

Generalize- Where Does this fit the bigger picture

When working on the Android mobile App, once the project began is where the true ideas began to flow for what else this application can do. The team drew up a couple of ideas that could be attached to the mobile device application to help the teacher with ease of use in addition to advance options for teachers that want more control when taking attendance

* Creating an easy mode, which can be switched back in forth in which teachers who are less tech savvy can use this part of the application for easy sign ins and out and not get confused with the advanced options that the application has to offer
* Changing the time stamp, for example as the professor you have a doctor’s appointment, you want to change the start of class for 9:15 AM to 10:00 AM. After you set the changes on the application and all the students will be marked present until 10:00 AM in which they would be marked tardy.
* Attendance Alerts, this would check the attendance of all the students in the class. For example, you can set an alert for 5 missed classes and once a student has missed 5 class the professor will be sent a notification in which he can choose to respond or ignore.