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An Application Infrastructure to Support the TRIO Upward Bound Program

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An Application Infrastructure to Support the TRIO Upward Bound Program

By
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April, 2017
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A project submitted in partial fulfillment of the requirements for the degree of
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Dr. Robert Adams
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Abstract

TRIO Upward Bound program helps high school students from traditionally underserved backgrounds reach their potential by earning a college degree. They help students to build the academic skills, motivation and self-confidence necessary for success in a college by providing university tours as a part of the program. During a university tour, the Upward Bound staff members are responsible for tracking attendance for students by carrying separate files to each location and recording information in them. Of course this is extremely cumbersome and error-prone. At end of the day, staff members have the additional burden of counting the number of hours each student spent on a location, meals ordered on each day, placing a food request order, and also preparing a manual report for scholarship purposes.

The Summer UB application was created to support Upward Bound staff members. This application reduces the manual effort needed to take attendance and manage information by providing a mobile application. Summer UB makes it easy for a staff member to track any student if they get separated at any location during the tour. The app also makes it easier for staff member to track the number of meals served per day and make an appropriate decision in placing order to food services department the next day. The Summer UB application also provides a web dashboard for staff. The dashboard produces a detailed student activity and meal reports about any given day, which reduces manual effort for staff members in preparing reports. These reports are compatible with any system. The dashboard also has an options for staff members to add, view, edit, delete and modify any student activity if necessary. The Upward Bound staff will pilot test the Summer UB app in Summer 2017 and planned to use for daily purposes. This project has also been planned to be scalable for other schools and universities.

Introduction

TRIO Upward Bound program is housed in the College of Education, located on the Pew Campus in downtown Grand Rapids, MI. The program is designed to assist GRPS (Innovation Central and Union) high school students from traditionally underserved backgrounds reach their potential by earning a college degree. The goal of the program is
to help students build the academic skills, motivation and self-confidence necessary for success in a college setting by providing academic advising, SAT/ACT test preparation, tutoring, cultural activities, service learning opportunities and community service experiences.

During university tour, the upward bound staff members is responsible to track attendance for students by carrying separate files at each location and recording them. It was very painful to locate student in huge campus. At end of the day, it was a hectic task for staff members to count number of hours each student spent on a location, meals ordered on each day, placing a food request order and also preparing a manual report for scholarship purposes. When I was working as a staff member for Upward Bound program. The amount of time which we spend for this activity was unproductive for student progress during tutoring them.

The problem seems to be more important for me and the staff because we figured that it was challenging for all of us when there are large number of students coming to each location. The staff members tried couple of methods to make the process simpler by using excel sheet, but still the process is error prone when a student miss the activity.

I feel there is a way to streamline the process and make it simpler for staff members. So, I have created a mobile application to record student activity and web portal to generate detailed reports.

**Program Requirements**

**Mobile Application:** The programming language used is SWIFT. The project is developed in XCode IDE [Integrated Development Environment]. This game can be developed with the help of the mentioned requirements and a computer that runs OSX is required. The project has been included with pList file which is linked with Firebase account. To keep the project running, we need to keep it stay alive whenever we update database account.

**Web Application:** The programming language used is HTML, JavaScript, Bootstrap. The web application is developed using Google Chrome Browser. This project is developed
is linked with Firebase account details. To keep the project running, we need to keep the database script alive.

**Story Board**

![Storyboard Image](image)

**Results, Evaluation, and Reflection**

I have submitted my application for App Store and I have created developer certificates for my project. As a part of deployment my services, I used Amazon s3 for web hosting. Screen shot reflects my work.

*Web Hosting: (Amazon S3)*

![Web Hosting Image](image)

*iTunes Connect:*


The App has been revised twice in App Store.
**Version 1.0:** Summer UB app was created to simplify the tracking process for the TRIO Upward Bound Summer Program. This app is used to track sign and sign outs for students at particular locations and during meals. App users have the ability to generate QR codes specific to individuals. Once students and staff are assigned a QR code the code can be printed as an image and scanned with any device. QR codes can be used to track attendance at activities, monitor sign in and sign out times, count the number of meals served in a day and in many other ways.

**Version 1.2:** Updated with Alert Messages, SignIn,SignOut and Meal time format internally.
Dear Rakesh Neela,

The following app has been approved and the app status has changed to Ready for Sale:

App Name: Summer UB
App Version Number: 1.0
App Type: iOS
App SKU: 02222017
App Apple ID: 1208559481

If your contracts are not in effect at this time, your app status will be Pending Contract. You may track the progress of your contracts in the Agreements, Tax, and Banking module in iTunes Connect.

To make changes to this app, sign in to iTunes Connect and open the Manage Your Applications module.

It can take up to 24 hours before your app is available on the App Store. This delay is dependent on any app availability issues.

Before you market your app, read the App Store Marketing and Advertising Guidelines for Developers. The guidelines include information on using the App Store badge, best practices to market apps on the App Store, and details on the use of Apple product images.

If you have any questions regarding your app, use the Contact Us module on iTunes Connect.

Regards,
The App Store team

Web URL: https://itunes.apple.com/us/app/summer-ub/id1208559481
Conclusions and Future Work

The upward bound staff members is willing to pilot test this application for Summer and they have planned to use this application for their daily activity. This project is also been planned to be scalable for other schools and universities. This project is also under processing of licensing application with a company and planned with similar type of applications.

References

2. Stack Overflow from http://stackoverflow.com/
3. QRCreaderViewController from Yannick Loriot. https://github.com/yannickl/QRCreaderViewController