
Team Name: Worthday

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Project: UniD

UCSB CS Capstone 2017-18 Vision Statement

Background

At UCSB, especially during their freshman year students tend to forget to bring access cards with them to the recreation center, campus events, and the dining commons. Moreover they misplace their access cards for months at a time and are forced to buy another one. It would be much more convenient for students to have all the functionality of the access cards encapsulated within their cell phones, which they are more likely to bring with them to any location that requires student authentication. Furthermore, by moving this process to the mobile sphere, we open it up to incorporation of many other functionalities as well as utilization of related data that can be analyzed, providing valuable information to students about goings-on at their school.

Outcome

Our goal is to replace student's access card with a mobile QR code that students can use to check into various school activities such as the recreation center, dining commons or school sanctioned events. Students should be able to access their QR code through a passbook or a wallet application, replacing the current physical form of identification with a virtual one. This outcome also requires the development of an accompanying native mobile app that scans the students' QR codes and is used by event administrators.

MILESTONES

1. Mobile app skeleton with
 - a. Login
 - b. event selection/creation (creation possible if on list of approved admins)
 - c. QR code scanning (recognize from pre-populated list of codes)
2. Web app with login/creation that authenticates via Workday Student
 - a. Uses .edu email account and perm number (?)

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- b. Auto-generates and displays QR code for student (permanent)
 3. Back-end database that maintains information about students
 - a. Who is already at an event/dining common
 4. Upgrade mobile app to recognize students' QR codes
 - a. Authenticate them against the Workday Student database
 - b. Send necessary information regarding student to custom database
 - c. Communicate with custom/Workday database containing admins/events
 5. Extend database functionality: meals left, crowdedness
 6. Bring database's new functionality to frontend (web app)
 - a. Track crowdedness/traffic hopefully in real time
 - b. Track past meals/meals left
 7. Ensure that QR code generated and displayed by web app can be added to native mobile passbook applications (like Apple Wallet)

Solution Specifics

- Native mobile app on Android using Kotlin primarily and Java where needed
 - Using Google Mobile Vision Barcode API
- Already-existent Workday Student API for creation, storage, and validation of student accounts via OAuth 2
- React for frontend web application
- MongoDB via AWS Lambda for backend custom database
- Github for version control
- Jira for sprint organization
- Slack for group communication/coordination