**CS Senior Project (CS 4850)**

**KSU Go Final Binder**

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# **Abstract**

The purpose of this project is to deliver a mobile app that is focused on improving the faculty, student, and guest experience at Kennesaw State University (KSU), called KSUGo. Our primary objective and purpose in creating this stems from KSU’s many resourceful outlets, which we seek to compile in a clear and concise platform. This is to be done by providing useful information, making this information easy to access, and by delivering an app through a user friendly interface.

# **Introduction**

## **Motivation/Background**

During the past four years of our college experience at KSU, we see that KSU provides many outlets. However, we found that many of the outlets are neither decentralized nor easily accessible. Therefore, we pitched a project because we see an opportunity to help the KSU communities to have a better experience during their time at KSU.

## **Planned End Product**

The planned product of KSUGo is to deliver an Android app that has fully functional features, which pulls dummy data from the database or connects to the end build of current available features using integration. The main target of this application is students, faculty, and KSU guests. These main features include the following:

* D2L
  + D2L is is a hub for students and faculty to connect virtually. Our version will include multiple features from the website version of D2L, such as the instructor’s ability to send announcements out to the class, create and modify discussion posts, sort classes, check assignment/ quiz due dates, and verify grades.
* BOB
  + Big Owl Bus (BOB) is a hub for users to see all possible routes and where the next bus is with real time updates. This location feature can identify current routes with estimated times. Another feature is to filter out unused routes or irrelevant routes.
* Owl Life
  + Owl Life is a hub for students and faculty to learn about clubs, organizations, or volunteering opportunities on campus. It also allows KSU students to receive notifications from clubs they currently participate in.
* KSU Social Feeds
  + KSU Social Feeds is a hub for users to receive the latest official updates announced from Kennesaw State University on both Facebook and Twitter feeds. This would allow students to be informed of both in one place.
* Handshake
  + Handshake is a hub for students (including alumni) and some faculty to learn about Career Opportunities. It offers the ability to upload a resume and receive feedback on it, as well as the ability to talk with other students on career paths.
* Emergency
  + Emergency is a hub for users to make emergency calls for injury-related reporting, or non-emergency calls for other reporting, such as being locked out of a building or dorm.
* Directory
  + Directory is a hub for users to access the faculty information, including name, email, telephone number, department, office location, and office hours.
* Basic Campus Map
  + Basic campus map is a hub for users to access either Kennesaw or Marietta campus maps.

On top of the core functionalities, we proposed to deliver bonus features to help users to become familiar with the building locations and activities that are available at KSU. These bonus features include the following:

* Interactive Campus Map
  + Interactive campus map is a hub for users to access real time directions for either the Kennesaw or Marietta campus.
* Events
  + Events is a hub for users to find ongoing and upcoming events that are happening within their department or the entire campus.

The student and faculty accounts will require login, and contain all of the core and bonus features. However, guests are not required to login, and they only have access to BOB, Events, News, Basic Campus Map, Interactive Campus Map, Directory, and Emergency.

## **Current End Product**

The current end product of KSUGo follows the planned end product as we are able to deliver all the proposed features in a fully working Android app. We created a database using Amazon EC2 that possesses dummy data for D2L, Events, and Directory. We also created a custom API to manage connections and pull data from the database. Overall, the current end product has a strong suit build to perform as a marketed product.

* D2L
  + The end product of D2L offers users the ability to see all announcements for all enrolled courses. They can see any scheduled assignments as well as grades for each course. A working discussion board allows professors to create new discussion boards, as well as reply to or create new discussions. Students can view the discussion boards for each course and reply to the discussion board and individual classmates.
* BOB
  + The end product of BOB contains the real-time location of the buses based on their route services. The route services include the Kennesaw-Marietta Route, Busbee Drive/ Stadium, West Campus, Frey Road, Skip Spann, Chastain Pointe, and Town Point. Users can also view if the bus is on its current track along with estimated times.
* Owl Life
  + The end product of Owl Life contains information regarding clubs, organizations, or volunteering opportunities on campus. Faculty will serve as advisors or facilitators, and students can join the clubs, organizations, or volunteering events.
* KSU Social Feeds
  + The end product of Emergency contains two buttons to access live social media posts of Kennesaw State University. The Twitter button contains posts from Kennesaw State’s Twitter account, while the Facebook button contains posts from Kennesaw State’s Facebook account.
* Handshake
  + The end product of Handshake contains information regarding job opportunities, career services events, mock interviews, job application management, (including the resume and application center). Faculty will serve as career services advisors, and students will be able to use all of the career services features.
* Emergency
  + The end product of Emergency contains two call systems to make a direct call for emergencies and non-emergencies. Emergency calls will route to 470-578-6666 and non-emergency calls will route to 470-578-6206.
* Directory
  + The end product of Directory contains faculty information, including their name, email, telephone number, department, office location, and office hours. This data is pulled from the database.
* Interactive Campus Map
  + The end product of Directory contains access to either Kennesaw or Marietta campus maps based on user choice. The map also allows real time directions for KSU buildings and facilities on either the Kennesaw or Marietta campus.
* Events
  + The end product of Directory contains information of ongoing and upcoming events that are happening within a department or the entire campus. The data is pulled from the database.

## **Explanation of Differences**

* D2L
  + The main difference with D2L is the inability to post to the database.
* BOB
  + The main difference with BOB is not having full access to KSU’s BOB API, because of this, we implemented the second best solution of the front end view that most users see on the mobile BOB page.
* Owl Life
  + The main difference of Owl Life feature is the inability to connect to KSU’s database and services. It currently connects directly to the working component of KSU Handshake.
* KSU Social Feeds
  + The main difference in the social feeds feature is the inability to access Facebook’s API following the recent privacy breaching events. Due to this limitation, only Twitter’s API was able to be fully implemented.
* Handshake
  + The main difference of Handshake feature is the inability to connect to KSU’s database and services. It currently connects directly to the working component of KSU Handshake.
* Emergency
  + There is no difference in the Emergency feature as both emergency and non-emergency calls are successfully directed.
* Directory
  + The main difference of Directory is the inability to connect to KSU’s database as it would contain full details of faculty information. The strategy is to add a confirmation box to prevent false calls.
* Basic Campus Map
  + The main difference of Basic Campus map is that we see an opportunity to combine the Basic map with the Interactive map to provide more visibility of each building and enhance ease of use since it is based on real-time directions.
* Interactive Campus Map
  + The Interactive map does not have any major differences. The Google Maps API is a lesson learned and was fully implemented into the Interactive map.
* Events
  + The main difference of Events is not being able to connect to KSU’s database as it would contain more events from each users’ department and all events from KSU communities.

# **Technical Documentation**

The SDP, SRS, and SRS will be attached as separate documents within submission. The updates section within these technical documents are based on the feedback given by the instructor as the current end product follows the documentations.

* SDP Updates section
  + The SDP is updated with team role assignments and detailed project schedule.
* SRS Updates section
  + The SRS is updated with sequence diagram and backend use cases.
* SDD Updates section
  + There is no update for the SDD document.

# **Evaluation**

## **Test Plan**

|  |  |  |  |
| --- | --- | --- | --- |
| **Test** | **Expected Outcome** | **Actual Outcome** | **Final Result** |
| Login Screen | User is able to log in | Login Successful | Pass |
| Login Screen Fail | User is not able to log in | Login Unsuccessful | Pass |
| Home Screen | User brought to Student Screen | Student Screen displayed | Pass |
| Guest Screen | User brought to Guest Screen | Guest Screen displayed | Pass |
| D2L Post Announcement | Announcement Posted | Announcement Posted | Pass |
| D2L View Assignments | All user assignments are revealed | User assignments successfully shown | Pass |
| D2L Discussion Board | Create Discussion Board | Discussion Board successfully created | Pass |
| Handshake | Handshake Page Opened | Handshake is opened | Pass |
| OwlLife | OwlLife Page Opened | OwlLife is Opened | Pass |
| BOB | BOB Page Opened | BOB is Opened | Pass |
| Events | Events Successfully Pulled In | Events are shown from database | Pass |
| NewsFeed Facebook | Facebook Page Opened | Facebook is Opened | Pass |
| NewsFeed Twitter | Twitter posts populated on screen | Twitter posts are shown from API | Pass |
| Map Marietta Campus | Marietta Campus destinations working | Destinations are fully functioning for paths | Pass |
| Map Kennesaw Campus | Kennesaw Campus destinations working | Destinations are fully functioning for paths | Pass |
| Directory Search | Search directory for Faculty | Directory returns faculty searched | Pass |
| Emergency Call | Call emergency number | Dialer populated with emergency number | Pass |
| Non-Emergency Call | Call non-emergency number | Dialer populated with non-emergency number | Pass |

## 

## **Testing Conducted**

KSUGo was regression tested upon each feature implementation and a final full functionality test was implemented as indicated by the plan above. Clean installations of the application along with upgrades were performed and working as intended.

## **Results of Testing**

The results of KSUGo’s testing was that all features were fully working and tested. The API’s speed of access was high enough to produce minimal delay for user interaction and as such the user experience was smooth.

# **Future work**

As KSUGo is a first place award winning project during the C-Day event for Best Undergraduate Project, it is currently being proposed to the CIO, Provost, and President by Dr. Jon Preston, the Interim Dean for the CCSE department, for future implementation to be available to KSU students. The next step of this project is to connect the application to the KSU’s database in order to receive fully detailed data to perform at its full potential. It is also possible to create an implementation of KSUGo as an iOS application in addition to the Android implementation.

# **References**

Android Studio & SQLite

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