

# PollUp™ Design Document

Version 1.0

CPR E 491

Group 22

Team Members:

Neil Saigal

Team Advisor:

Dr. Ponpandi



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# Introduction

## Project Statement

PollUp™ is a small tech startup aimed to increase communication between the manager and the employee. We strive to be a lightweight, multi-platform, feedback tool for small businesses to be able to integrate very easily into their systems. I have been working on this startup for the past year with two MIS students at Iowa State University. We are finishing up development on a Web application and iOS application. In order to become fully multi-platform we are adding an Android version. The scope of this senior design will include the development of the Android app and maintenance of the iOS app.

## Purpose

Surveys can often be tedious and mundane to fill out accurately. PollUp's purpose is to eradicate the need for end of the year surveys and replace them with frequent one-question polls in the workplace. We offer flexible polling so that responders can feel free to express their opinions of anything happening in the workplace.

## Intended Audience

This product is aimed at small businesses who want to get steady, honest feedback from their employees. PollUp intends to be a virtual assistance to HR managers who want to know the state of their company's morale, fix an inhibiting issue in the workplace, or just get feedback from employees. Eventually, PollUp will branch out to offer services for larger businesses, universities, and small clubs/organizations.

## Goals

The goals of this project are defined by two main deliverables. During the senior design two semesters, we will have submitted an iOS to the app store and will be constantly maintaining it. At the same time, we will have finished development on the Android application and will have hopefully submitted it to the app store. Some stretch goals will be adding Slack integration for PollUp™ and Intercom chat box implementation. Another stretch goal includes being able to export the results of the polls to various formats (PDF, PNG, Excel).

# Deliverables

## **iOS Application for PollUp™**

The submission of the app to the iOS app store. Also, maintaining the iOS application to perform any updates to the UI or functionality as per our clients' requests.

## **Android Application for PollUp™**

The development and submission of the Android app to the Google Play store. Maintenance of the Android app.

## **Slack Integration**

Integration into Slack and other popular software

# Design

## System Specifications

Currently, our software runs on Web browsers. We want to extend this to mobile applications. The iOS application is almost complete, and Android is what this senior design project will focus on.

## Proposed Design and Requirements

### Functional

#### **Admin must be able to register company**

One user must be able to register new company to use PollUp. Sign up requires logging of billing info, signing up users to company, customizing color of company.

#### **User must be able to log in**

Once a user is assigned a company, a temporary password is sent to their email. The first time the user logs in, they are able to change passwords, update profile pictures, and add their job title.

#### **User is able to post polls**

User will be able to post polls to specific departments in the company. These polls can be anonymous, multiple choice, free response, or repeating (automated reposting). A user cannot vote on their own posted polls.

#### **User is able to vote on polls**

A user will be able to vote on polls that they didn't post. After voting, they are enabled to comment on the poll, view the results through a bar graph or line graph (repeating polls), or see other voters' responses.

#### **User is able to change profile details**

User must be able to change their name, picture, or job title in the app.

#### **User is able to be put in a department**

Departments are the groups the users are put in. They can be in more than one department at once. They will only receive polls that are posted to the departments they are in.

### **User is able to create/edit departments**

Users will be able to create a new department and add users to that department. They will also be able to edit a pre-existing department's name and add/remove users to that department.

## Non-functional

### **Data encryption**

All companies' secure data will be encrypted in the database with 124 bit encryption.

### **Database Scalability**

The MySQL database will be able to handle a large amount of users and adapt quickly to an increase in users.

### **User is able to access data on any platform**

Web app, iOS, and Android versions of PollUp must all access the same SQL database to ensure consistency across all platforms.

## Standards

As we are trying to keep everything very professional and documented for our startup, this project will follow suit. The code will be up to IEEE standards and ethics and everything will be properly documented.

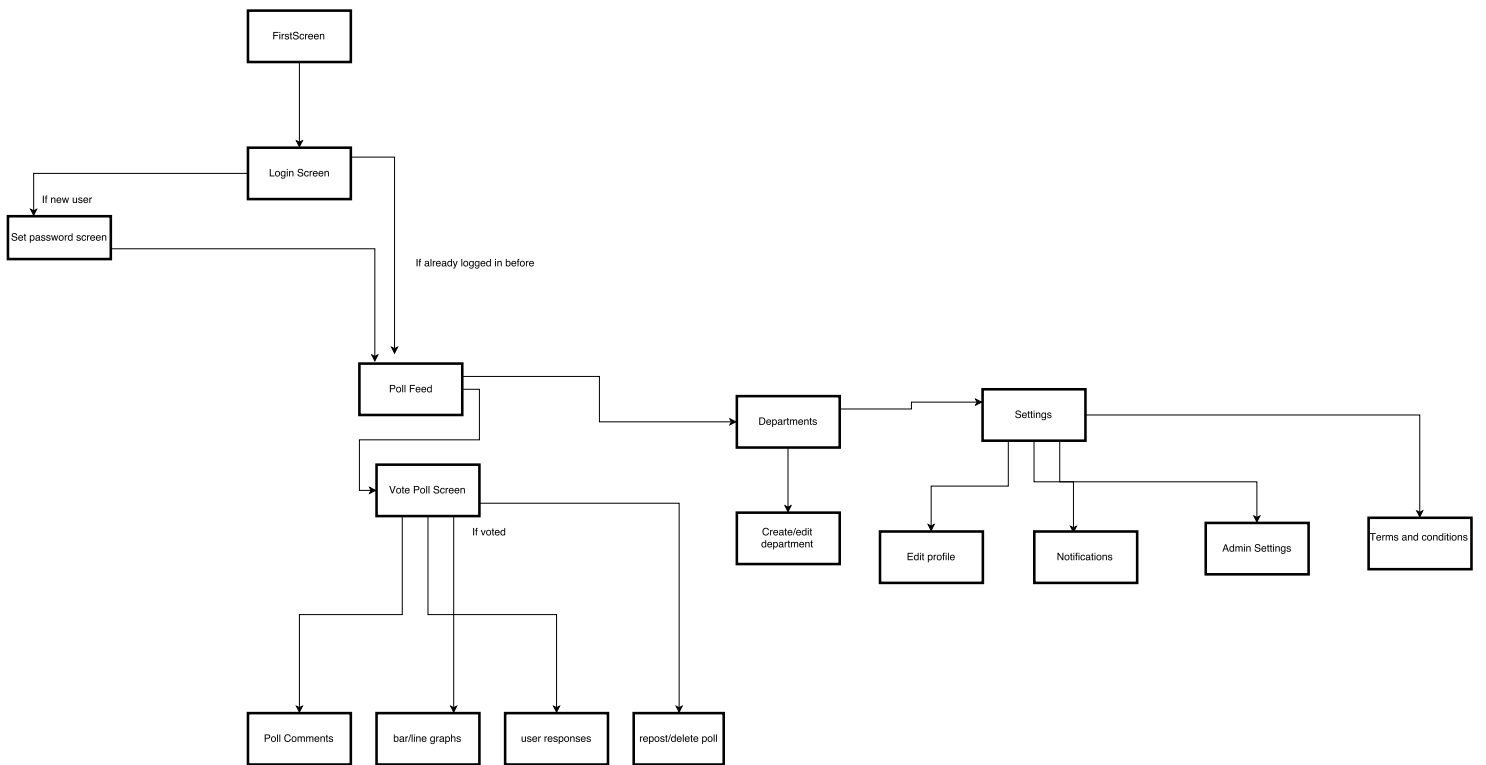
## Design Analysis

There are a few other companies like PollUp™ on the market today. Survey Monkey is our main competitor. However, they do not offer the flexibility of polling as PollUp™. We offer repeating (automating) polling, free response, anonymous responses, and multiple-choice polls. Another company is TinyPulse. They offer similar polling features as we do. However, we have more of a human resources purpose, as we offer previously created polling templates for HR managers to use.

To design these polling templates, we have been working with the Iowa State psychology department and multiple local HR managers. This research is ongoing and we want to become more and more relevant to HR to help small businesses get an accurate feel of their employee satisfaction.

# Testing/Development

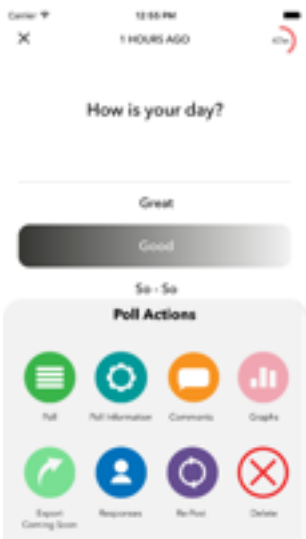
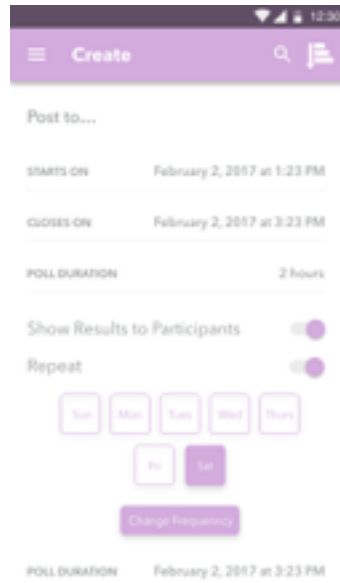
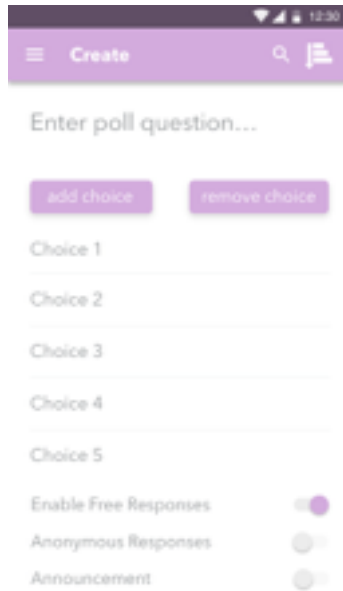
## Interface Layout





# Wireframe

This wireframe will include screenshots of the application for creating a poll and the viewing the results of the poll.



## Interface Considerations

### Tab bar vs Hamburger menu

We decided to stick with the trend and implement a hamburger bar in Android like most Android applications. On the contrary, the iOS PollUp application features a tab bar navigation. This allows faster navigation but its shortcomings include only room for 4 or 5 max tabs. Hamburger menus add extra flexibility to the user experience.

### iOS vs Android

For a polling software, a multi-platform experience is essential. As the iOS is nearing completion for this app, we decided to also develop a **native** Android application for the Google app store.

### Lost connectivity

Mobile phones lose connection all the time, code for this appropriately.

### Auto login

Do not require user to log in every time, perhaps auto login by saving user credential in device keychain.

### Background threads

As we are constantly pulling data from APIs, we need to enable use of background threads to ensure we do not block up the main UI thread and slow app performance. The Android phone is thin on resources and it has to be shared between all the apps.

### Versions to support

Android OS versions are frequently updated. At any time, expect your target user base to be spread across at least 3 different OS versions.

## **Hardware/Software**

All testing is done on mobile phones, both iOS and Android platforms. We must consider different screen sizes and versions to make PollUp compatible with our target audience.

# Results & Challenges

PollUp™ will present some challenges for our team. One challenge will be the calibration between new development and maintaining old development. Since I am working this project as part of a startup, there will be changes and updates needed to be made to the existing project to keep with customer demands. This means that the proposed end project will constantly be changing. Also, as the iOS application is in the middle of testing phases and the Android application is in development stages, there is a bit of juggling that I am doing to keep both on a steady path. This project is feasible for me to complete in the allotted time, however, we had to hire an intern to help out with some development.

We have been successful so far with development, but testing remains a task that we are still in trial and error phases. Something I want to improve on is to become more organized with testing. I have created a very meticulous spreadsheet to help keep me on track with time estimates and dates of completion for each testing phase. We will see if this helps us in the future.

# Conclusion

I'm very excited about the opportunity to work on PollUp™ as part of my senior design project. We will be able to make significant progress on our development by hiring another Android developer. I am currently testing the iOS application and assisting our intern with Android development as well. We are still on track to finish the Android application by May and release the iOS in the coming month.

We publicly released our product last Monday, which was very exciting for us. It will be nice to see the fruits of our labor when companies start using our project. My advisor, Dr. Ponpandi, has been a great reference for me to ask any questions regarding the Android application or in general.