

# Calvary Chapel Corvallis

## Progress Report

### CS 462 Winter 2017

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Group #62

#### **Abstract**

The purpose of this project is to produce an iOS/Android application for Calvary Chapel of Corvallis that will allow members to access a plethora of information all in one localized space. The Church's current website does not provide an interface where current members of the church can very quickly access important information such as events, bulletins, and messages from the service. The desired application will be simple enough for anyone to use while providing back end access for staff to easily upload new information to the app. The priorities lie in maximizing the usability of the app and providing bulletin, schedule, video, and giving functionality. We will work with the existing Calvary Chapel web development team to create a product that is seamlessly integrated with their already existing network.

## I. PURPOSE AND GOALS

The purpose of our project is to create an application for Calvary Corvallis Church that will act as a connection between the congregation and the administration. The church already has a website that has some of this information, but they want the website and app to serve different functions. The website will be to introduce people to the church. The app will be used for the existing congregation as the go to place to access the most commonly used or needed information. Some of the features being provided within the app are: having sermons available, listing the bulletin, having the church schedule, and allowing members to donate to the church. Our client explained to us that these were the features that they wanted in the app as they are the most needed services by their members.

Our client has requested that the app be as automated as possible in regards to updating the information hosted within it as to reduce any upkeep as much as possible. So we will be working with their existing infrastructure as much as possible to pull our information from. We are also creating both an iOS and Android application and we want to make the applications as functionally similar as possible. This will allow for greater understanding of the app across users who may or may not be super tech savvy. Our final goal in this project is to reduce costs wherever possible for our client. If that means suggesting newer cheaper infrastructure or setting up our app in a way that reduces how often it will need to be updated, we want to do it.

## II. FALL 2016

### A. *Progress report*

Currently, we are still in the planning phase of the project. We have just finished the design document which detailed how we plan on implementing our app and how it will be designed. However, we have not begun the actual implementation of either app quite yet. Our immediate plans include extensive research on iOS and Android app development which we will focus on during Winter break.

### B. *Problems*

One of the first issues we ran into was the fact that there are multiple platforms to run an app on. At first our client did not know, but it became quickly apparent that they wanted their app to be available to all their members. This meant that we had to switch from creating just one app, to developing two apps that will perform the same task. This adds a substantial amount of work to our project. We are looking into coding platforms that will allow us to reuse some of our code if possible but it seems we will just need to budget more time to this project to develop for both Android and IOS.

The rest of our problems ended up being small things like needing to change the name of the project in the requirements doc or figuring out which platform we will be coding on. These all had simple solutions like going in and adjusting the name and looking up the pros and cons of the different platforms. Occasionally we had the problem of running a little close on the due date of papers and had a struggle of getting them out and signed in time. This was solved by communicating with our client in advance so they knew we were on a tight timeline and having quick turnaround on when the documents were sent and received.

Finally, our last thing we need to work on is learning about app development. Notice, I did not say that this was a problem. I would say it is more of a hurdle that we need to get over. We have all of winter break to get the fundamentals down along with starting the framework of our app. I think come early January that we will be set up well with our project.

### III. WINTER 2017

#### A. Courtney Bonn

At the beginning of this term, I had a hard time getting started on this project for many different reasons. First off, though it was encouraged, I ended up not being able to work on research or the project itself during Winter break due to family obligations and working. Not doing any of the research I had hoped to do meant I felt behind before the term even began. Second off, the research and learning how to use Xcode and Android Studio has been much harder than I expected.

During the first week of school I was able to get Android Studio downloaded and began working with the program. Because I'm also in Mobile Development, we are using Android Studio in that class so I began learning Android studio in an assignment for that class. We also began the iOS app for our project. At first, we decided to focus on one app at a time so we wouldn't overwhelm ourselves and we decided to go with iOS first. Kevin was able to get a skeleton iOS app that we were able to pull to our local computers from Git and successfully run and view updates from each other. This week I got in touch with our client, whom we had not spoken to the entirety of Winter break. We updated her on our progress, letting her know that we have just started on the projects. At this point we agreed that we did not need to meet face-to-face because neither the client nor us had any deliverables to show each other at this time.

In week 2 I shifted my focus to Xcode and learning Swift. While Swift is similar to other languages I have learned, I have never coded in it and still need to learn the proper syntax. Not only did I need to learn Swift, I also had to learn how to use a new interface—Xcode. I began following a Swift tutorial provided by Apple that helps users learn how to use Xcode and build a Food Tracker app. I did not finish the tutorial, but I got far enough in it to assist me in working on our own application. I also did some additional research on the church's new website. The new website seemed to be a Wordpress website, which would help in terms of pulling information from the website directly to the app. Before I did anymore research on using Wordpress' API, I emailed our client to verify that I was correct and that we would be able to have access to the Wordpress site if needed. If I am correct and we are able to pull from Wordpress' API, the web development team would only have to update their website as normal and the changes would be reflected in the app. At this point I decided to wait until I heard back from the client and then I would continue researching how to use Wordpress' API.

The third week of term is the first week I actually began working on the iOS app. My goal was to get Calvary's logo up on each page. While this seems like it would be an easy task, it actually was rather difficult and took me two days to accurately do it. In order to have the images show up centered on every device and not just the device I was working with, I had to use constraints on the images. I was having trouble setting the constraints correctly and the images were not in the same spot on every page. Eventually, I was able to successfully get the logo centered on the top of each page in the app and it will stay centered no matter what the screen size is. I received confirmation from our client that the new website is Wordpress and we can have access to its API. The client will work on getting us access to the Wordpress site and until then I will continue researching how to use its API.

#### B. Max Dimm

#### C. Kevin Stine

#### D. Extra

This stuff is from the progress report sent to Vee. We'll want to reword everything into our own sections above.

In the past few weeks, we have begun the development of the iOS Application. It took about two weeks to get the basic skeleton up and running with each page set up with it's own View Controller. Once the outline was taken care of, we added Calvary Corvallis' logo to each page of the application. On the Bulletin page, we have added code to fetch and parse JSON data and print it onto the app. Just recently we were given administrative access to Church Community Builder's API. There was a delay in getting this information, so that has slowed progress. Once that information was received, we began working on fetching the Calendar data so that can be printed onto the app. We are also waiting for the administrative access to the church's Wordpress API, which, once received, will replace the current JSON data that is being printed on the bulletin page. The donation page will be a UIWebView that connects to their existing donation platform, Authorize.net. The messages page will be a UIWebView where the video of the most recent message will play.

Currently, we have not started development on the Android application. Rather than trying to completely finish the iOS application first, as was our original plan, we are now going to begin the implementation of the Android app concurrently.

Despite the overall simplicity of the applications we are planning, we have run in to quite a few issues since starting development. First off, mobile development is much harder than any of us had anticipated. While we are familiar with many coding languages, learning a new language (Swift) has taken more time than expected. Secondly, we have not had the information we need from our client as quickly as we need it. While the client has been very good at getting back to us, she is coordinating with other people in her own team who have not always responded right away. This issue led us not getting access to the required APIs until week 4. Currently, we are still waiting for access to the Wordpress API which has stalled part of the iOS app.

When developing the video player on the sermons page Max ran into issues with linking the storyboard ViewControllers to the actual viewcontroller codebases. This took a while for him to diagnose the issue as he had not worked with xcode or swift before and had a hard time locating resources to troubleshoot the problem. He was able to figure out the issue by week 4 and quickly implement the desired function because he had worked on it in a seperate project file. However this did take a significant portion of time off the table for him.

Finally, we have not even begun the Android development portion of this application. After doing a lot of research in the beginning of this project, we decided to implement two native applications, rather than attempting a cross-development app. While this is giving us the opportunity to learn both iOS and Android development, it has also proven to be more time-consuming and work than we imagined. At this point in the project, it is not ideal to switch to a cross-development platform versus continuing to develop both native applications at the same time.

## IV. REFLECTION

TABLE I  
RETROSPECTIVE ON FALL 2016

Time	Positives	Deltas	Actions
Week 3	We met with our client for the first time in week 3. We found out a more detailed idea of what they wanted from us. Also we got to meet 2/3 of their development team.	No changes needed as of week 3	We needed to become more familiar with working with LaTeX.
Week 4	We had a second meeting with our client. We met the last developer on their team. He had minimal app experience but had an apple developer account.	No changes needed as of week 4	We need to start thinking about problem statement document.
Week 5	We met our TA, Vee, for the first time. We also finished up our problem statement.	No changes needed as of week 5.	We need to figure out if we need to develop one or two apps for the different platforms.
Week 6	We focused on finishing our requirements document and planning a timeline for the rest of the project.	Our client wanted us to change the app name to its official name in the requirements document.	We need to start researching our technology review and begin the design document.
Week 7	We began working on our technology review and splitting up the parts of our system.	No changes as of week 7	We need to continue researching the different technologies and keep researching our respective parts.
Week 8	We finished our technology review and began looking into the design document.	No changes as of week 8	We have to put a lot of effort in our design document in order to get it to our client on time.
Week 9	We got a headstart on the design document, but didn't get as far because of the Holiday.	No changes as of week 9	With the term coming to an end, we have to finish up the design document and send it to our client.
Week 10	We finished up the design document and met with our client for the last time until January	We do not have much knowledge in mobile development	We need to continue researching iOS and Android app development so we are more prepared for the project.

TABLE II  
RETROSPECTIVE ON WINTER 2016

Time	Positives	Deltas	Actions
Week 0	Got the framework started and began learning xcode	This notes the start of our IOS development	We all began the process of familiarizing ourselves with x-code and Kevin started the IOS project
Week 1	Courtney and Max tested our ability to build the framework Kevin had created and added our work to github	no code changes this week	Got the starting code distributed to the whole team
Week 2	We delegated which parts each of us were to complete	We now have direction and started researching relevant methods to accomplish our goals	Began the process of teaching ourselves the relevant swift functionality
Week 3	Began development of main pages	have functioning homepage, bulletin (awaiting wordpress API) and running into issues with sermons page	Closer to our goals with a few hiccups
Week 4	Figured out issues with sermons functionality and began progress report	Overall tuning of the app and still awaiting client to send us more info that we need to continue	Beginning android project and the donations page