The Vine Mobile App

By

Eli Amara, Andrew Culbreth, Joel Wickham

A Proposal Submitted to
The Faculty of the School of Information Technology
in Partial Fulfillment of the Requirements for
the Degree of Bachelor of Science
in Information Technology

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Eli Amara, Andrew Culbreth, Joel Wickham

Russell McMahon, Faculty Advisor

University of Cincinnati
School of Information Technology
College of Education, Criminal Justice, and Human Services

April 2014
# Table of Contents

1. Project Description and Intended Use.................................................................4
   1.1 Abstract...........................................................................................................4
   1.2 Introduction.....................................................................................................5
   1.3 Description.......................................................................................................6
   1.4 User Profile.....................................................................................................6
   1.5 Use Case Diagram...........................................................................................8

2. Project Planning.....................................................................................................9
   2.1 Budget...............................................................................................................9
   2.2 Timeline...........................................................................................................10

3. Testing................................................................................................................11

4. Proof of Design....................................................................................................13

5. Conclusion............................................................................................................13

6. References............................................................................................................18
List of Figures

Figure 1 ........................................................................................................8
Figure 2 ........................................................................................................11

List of Tables

Table 1 ...........................................................................................................9

List of Illustrations

Illustration 1: Login Screen ........................................................................14
Illustration 2: User Home Screen ...............................................................14
Illustration 3: My Groups List .................................................................15
Illustration 4: My Events List ....................................................................15
Illustration 5: Event Attendees List ............................................................16
Illustration 6: Group Attendees List ..........................................................16
Illustration 7: Groups Attendees List with A Date Picker .......................17
Illustration 8: Member Contact Information ..............................................17
Project Description and Intended Use

Abstract

Vine is an open source mega church management system developed and used by the Vineyard Cincinnati. The church previously used a Web based version that does not meet the needs of users on mobile devices. The project developed an Android app and a Web app that is the front end for Vine. The main features of the apps include the ability to view events and small groups and check people in at those meetings. The project built a back-end that replicates Vineyard's environment to develop and test the Web services for the apps. The development back-end was a VPS that ran Ubuntu with Apache, MySQL and PHP. The project was tested on the replicated development back-end, then implemented the Web services and apps with the Vineyard’s back-end and tested them in the live development environment.
Introduction

Vineyard Cincinnati is a church group that has multiple locations in the greater Cincinnati area. This church has a rapidly growing community, and the need for a mega church system to accommodate the growth has resulted in their current open source system called Vine.

Vine is a mega church management system that is currently Web based; it has a lot of functionality such as providing slot based registration, data querying, updates, reports, and scheduling. It allows the users to look up hundreds of volunteer roles and select the date and time of the event that they want to serve in. This system can be set to send reminders about the meetings, print rosters and name tags of the event attendees, and create a permanent record when a person has participated in an event.

However, things are changing so fast, the church staff members have become more mobile and the volunteers are more empowered now than ever. Therefore, Vineyard Cincinnati wants to put some of the functionality mentioned above into mobile Apps that can be more suitable and convenient to their staff and volunteers to access anywhere, anytime by anyone who has the proper credentials.

One of the most urgent priorities to Vineyard is to have a mobile app that keeps track of attendance during their events and group meetings. Our project team was introduced to Vineyard through our Senior Design technical advisor Professor Russell McMahon who was approached by one of the church group members looking for volunteers to work on this project.
Description

This project created a Mobile App for Vineyard Cincinnati that keeps track of the attendance at scheduled events and group meetings. These meetings are sometimes held in places where people don’t have access to a computer and this is where a mobile App comes in handy. The App allows the users to get the name of the event or the group, the time and the date from a back-end Web service. After loading the necessary information on the phone screen, the event’s or group’s leaders check the names of the attendees who sign up for the event and submit the data back to the Web service. This App also allows the users to search the database for the scheduled events. In addition, the users can create, view and save reports into a database through the Web services for future use. As a networking part of this project, the team replicated the development environment and packaged the project as an open-source that can be used by any church system. The project also built all the back-end Web services that communicate between the apps and the database.

User Profile

All the events' and groups' leaders at Vineyard have experience using Apps on their phones. They also work with and get trained on using the Vineyard website to complete almost the same functionality. Therefore, the users are familiar with the tasks assigned to them on the App. They can perform these tasks with no additional training. In addition, the project created a user friendly UI that is very simple and easy
to use. This App is very frequently used because Vineyard has over 1000 events and group meetings scheduled throughout the month. For example, let’s take a look at small groups alone, there are approximately 350 small groups, these groups meet at least once a week. This is just to give the reader an idea on how frequently this App will be used. The user interface of this app is designed based on the following requirements:

- Simple design
- Easy to use
- Repeated usability testing to make sure nontechnical users won’t have problems with the system.
- Consistency (layout and design)
- Familiar UI pattern
- Visual hierarchy that reduced the complexity.
Use Case Diagram

Vineyard Event/Group Attendance Tracker App

Group/Event Leader

 Administrator

- Login
- View My Events
- View My Groups
- View Help Page
- Record Event Attendance
- Record Group Attendance
- Add Member

Figure 1: Use Case Diagram
**Project Planning**

**Proposed Budget**

The development tools of this project are free for both software and hardware. However, if a company was contracted to develop the project the hourly rate average is $50/hour, there is also a $25 annual fee to post the App on the Android play store, and about $200 Android phone for testing. Therefore, the estimated budget is:

<table>
<thead>
<tr>
<th>#Hrs.</th>
<th>Cost/Hr</th>
<th>Subtotals</th>
<th>WBS Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Hardware</td>
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<td></td>
</tr>
<tr>
<td>2. Software</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>3. Development</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Web Service</td>
<td>120</td>
<td>$50.00</td>
<td>$6,000.00</td>
</tr>
<tr>
<td>Android App</td>
<td>160</td>
<td>50.00</td>
<td>8,000.00</td>
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<tr>
<td>Optimized Web App</td>
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<td>6,000.00</td>
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<tr>
<td>Design</td>
<td>80</td>
<td>$50.00</td>
<td>4,000.00</td>
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<tr>
<td>4. Miscellaneous</td>
<td>225.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Android Play Store Membership</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Android Phone Device</td>
<td>$200.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Project Cost Estimate</strong></td>
<td><strong>$24,225.00</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Estimated Budget.
Timeline

The timeline of this project is based on how long it took to complete the three main components of the project; the Web services, the mobile Web App, and the Android App. There is also some additional time allocated to fix the problems faced through the development process. The first three and half months of the project development (September-December) were dedicated to planning and putting all the project management pieces together.

The development started late December. It took four weeks to build all the back-end Web services that query the database and communicate back and forth between the apps and the database. It also took approximately four weeks to develop the Web app and another five weeks to finish the programming of the android app.

The testing took place from March to the first week of April. This included fixing all the bugs and the problems that the development team faced during the development process. Since the project has three separate components (Web services, Web app, and Android App), it allowed each team member of the group to start on a component at the same time which made it easier for the team to finish all the development on time.
Testing

This project testing is mainly focused on acceptance testing. It is conducted to make sure that all the requirements of the apps are met correctly. This ensures that all the functionality of the apps work properly and all the client requests about the look of the GUI are satisfied. This project testing can be divided in two categories:

A. Functional Testing:

1. The system should only allow access to authorized users.
   1.a. Username must be in database.
   1.b. No special characters allowed in username.
   1.c. Password shouldn’t appear on the screen while entered.
   1.d. Unauthorized user cannot login to the system
1.e. Appropriate feedback/error message should be provided.

1.f. Unique session id should be generated.

1.g. Session id should time out after 1 hour.

2. Visible groups and events should be listed based on the user logged in.

2.a. A group leader or event assistant should be able to access the following menu items

   2.a.1. List My Groups
   2.a.2. List My Events
   2.a.3. Add Members
   2.a.4. Log Out

B. **Non Functional Testing:**

   1. All the screens’ background color should be consistent throughout
   2. All buttons should be labeled
   3. Vineyard’s logo should appear on the top of the login page
   4. All background text should be black
   5. Consistent font and styling throughout.
Proof of Design

This project created an android app, and a mobile Web app that allow Vineyard events’ and groups’ leaders to login, search events and groups, and record the attendance for any particular event or group. The users also can create, view, and save reports into a database. There is also another functionality of the app that allows the users to look up groups’ or events’ members contact information. In addition, the project created back-end Web services that implement the functionality of the Apps by communicating the apps’ requests to Vineyard’s database. The project also replicated the back-end development environment.

Conclusion

Vineyard Cincinnati groups’ and event’ leaders now have a user friendly mobile app that help conveniently track the attendance of all meetings (groups and events) in places where these users don’t have access to desktop computers. The leaders of these meetings can now use these apps on their mobile devices and submit the information into the Vineyard’s database instead of writing the attendance on a piece of paper and going back on different time and putting it in the system. This app communicates with Vineyard’s database through secured back-end Web services that implement the functionality of the apps. This project helps saving time and resources for Vineyard and provides a better solution to the problems of their current system.
Illustrations:

This is a list of screen shots made from the app on a mobile device to illustrate the user interface of this mobile app:

1. Login Screen:

   ![Login Screen Image]

   - Vineyard Cincinnati
   - Username: [Blank]
   - Password: [Blank]
   - Login

2. User Home Screen

   ![User Home Screen Image]

   - Welcome Menu
   - Home
   - Contact
   - Help
   - Logout
   - My Events
   - My Groups
   - Main Website
   - Log out
5. Event Attendees List

Premarital Sessions 2013/2014
Date: 2014-01-24 18:30:00

Select Attendees:
- Jordan
- Silies
- Teng
- Tholen

Save

6. Group attendees List

VinCin Developer Team
Date: 2014-04-06

Select Group:
- Felton, Amirah
- Widget, ilore
- Wehby, Lynell
- Heckle, Alysha
- Kordos, Amin
- Mourer, Hayleigh
- McConaha, Evert
- Emch, Byanghoon

Save
7. G. Attendees List / D. Picker

Vincin Developer Team
Date: 2014-4-6

Select All

Sun, Apr 6, 2014
Mar 05 2013
Apr 06 2014
May 07 2015

McConaha, Evert
EmcH, Byunghoon

Save

8. Member Contact Info.

Member Information

Name: Alysha Heckle
E-mail: Heckle@example.com
Cell: 513.555.0845
Work: 513.555.5720
Home: 513.555.5753
References


<www.developers.android.com/>