



**Senior Project Report**  
**Department of Computer Science**  
**Calvin College**

Web Application for Global Evangelism

Authors: Gavin Martin, Sarah Hendriksen, Sameer Mall, and Valeria Martínez

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Mentor: Victor Norman

## **Vision and General Overview of Project**

### **Background and Problem**

Mike Benson, the leader of the Conquerors International Strength Team, has been a missionary for the past fifteen years of his life. He has travelled the world sharing the good news of the Gospel.

He wants to grow his ministry, but one of the only things he lacks is a proper website for his ministry. For that reason, we would like to work on a project that will provide Mike with a website that will allow him to further his ministry. Mike's current website:

<http://www.theconquerors.net/> is out of date and he is unable to change any of its content.

### **Brief Description of Solution Being Provided**

Our solution for the problem is a responsive web application that will host all of Mike's ministry updates, an event calendar, newsletters, archives of sermons, and an online store and donations page that will allow users to stay up to date and support his ministry. We will make this site HTTPS secured, mobile friendly, and authenticate the login system through Google.

Furthermore, we envision adding a content management system such as UmbracoCMS that will allow him to add, remove, and edit updates to his store, bio, video downloads, and any text blocks within the website. Our goal with using UmbracoCMS is that we will make the process of editing the website as easy as possible for Mike. We will on our part do all the heavy lifting of laying the content out on the website and giving Mike very simple textboxes, macro and partial views (which we will create according to our theme in code) and he will simply be

able to drag and drop them on the page. Mike's wish is to have a more modern responsive website, which would look something like this: <http://robbydawkins.com/>.

### **Interest and Qualifications**

Individuals in our group are interested in full-stack web development. We have all worked with web development in the past (whether in previous internships or personal projects) and are looking to further our knowledge in different frameworks, servers, and hosting environments.

As a group, we have experience with JavaScript, React, SQL, HTML, CSS, .Net Core, ASP.NET Razor, Vue.js, Progressive Web Applications, Ionic, and Umbraco. Furthermore, our advisor, Victor Norman, will mentor us in the areas in which we have not achieved a level of expertise yet.

### **Mentor Selection, Expert User and Collaboration**

We decided to choose Victor Norman as our advisor. We made this decision based on the fact that Victor Norman has spent the last year working at Atomic Object as well as for a missions organization in Germany doing web and app development.. We plan on developing our Web App in an agile method and plan on working closely with our mentor and client.

### **Research Question**

How to best develop a progressive web app for an evangelical missionary.

### **Development Approach**

Our development approach was iterative. We worked in one-week sprints. We had specific tasks and goals that were divided among the group. Additionally, we worked alongside our client to make sure that our product was meeting his expectations and standards.

### **Quality Assurance**

We ensured quality throughout the process by maintaining a dialogue with our client as we work and develop with Agile. In addition to this, we will test each other's features and code before we deploy to production to maintain a working master branch that the Client can use while we improve and provide updates to the project.

## **Reviews**

Each of us worked approximately 6 hours per week. We met as a team every Wednesday morning. Additionally, we held weekly stand-up meetings with our mentor. We discussed plans for the coming week, demonstrated our accomplishments from the past week, and talked about strategies to accomplish future problems.

## **Testing**

Every time a feature has been completed, someone else was required to test that feature in every way, shape, and form to find every possible bug that may cause issues in the future. After someone completed a task on the kanban board, they would move it from the “doing section” to the “testing section”. There it was tested and when proven safe, it was moved to the “done section”. We pushed to production approximately every week. Once pushed, we asked the client to use all of the features created and to provide feedback on what we had done, so we could adequately plan for the coming weeks.

## **Final Product**

Our primary objective was to provide our client with a responsive web application that is both easy to manage and is mobile friendly. During the design and development phase, many changes and updates we made many changes to our original design. Nonetheless, we successfully developed a responsive web application tailored to our client’s needs. The web application will be hosted by PEC technologies and is running on Umbraco. The code can be found in the Azure repository.

The page can be accessed at <http://theconquerors.azurewebsites.net/>. In the coming weeks, we are changing the domain name to <https://mike-benson.com>.