RocStar Product Description

CS 411W - LAB I

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1. INTRODUCTION

The Roc Solid Foundation (RSF) is an organization that strives to help children diagnosed with cancer. Their charitable work focuses on helping the patient and their families during those unfortunate times. They try to alleviate the shock and distress caused by the unfortunate diagnosis by providing a relief in the form of bags filled with supplies that a family might need when unexpectedly forced to stay at a hospital for a prolonged time. The organization will also build playsets and remodel young patient’s rooms in order to bring some additional positive energy into their lives.

All this effort requires involvement of many people. The patients have to be contacted, the volunteers and supplies coordinated. That puts a lot of pressure on everybody participating, and can become very difficult, especially when there is no efficient and accessible tool to help with the endeavor. The elements of the aforementioned workflow can be seen in Figure 1.

RSF have identified a need for such a tool: a centralized hub for improved communication and coordination. Today’s technology makes choosing the form of such a hub really simple: a mobile application. The ubiquity of smartphones, tablets and personal computers, as well as reliable access to the internet allow for the appropriate solution to be handed to virtually anybody. Such a solution is our product, RocStar.
2. PRODUCT DESCRIPTION

RocStar is a cross-platform web application that is tailored to suit the needs of Roc Solid Foundation. Its main purpose is to facilitate the communication and coordination between the parties involved in RSF workflow. That includes:

- hospital staff members
- patients and their families,
- project managers,
• volunteers,
• Roc Solid Foundation staff.

The application will allow for quick communication between its users, easy creation of forms and waivers required during the process, as well as tracking of all the current projects of the RSF. RocStar will also give the families an easy access to pertinent materials gathered by the RSF, and an option to create a forum that can be shared and accessed by other family members and friends.

2.1 Key Product Features and Capabilities

The system will allow to:
• create and manage user accounts,
• send referral forms using preloaded forms,
• send and receive notifications regarding projects,
• create and edit project pages,
• assign users to project in different roles (project manager, volunteer, etc.),
• add required supply lists,
• tracking project progress,
• access family forum boards.

Additionally the application will be able to communicate with NeonCrm, the customer relationship management system used by RSF.
2.2 Major Components

The application is developed using HTML5 technology, capable of running on any environment through a browser without the need to install the program prior to using it. Additionally iOS and Android wrappers allow for native implementation on the aforementioned systems, which will provide the ease of use and greater accessibility. This will allow the user to use any mobile device using one of the two aforementioned systems as a discrete program, and any kind of device that is capable of running a browser.

*Figure 2: Major Functional Component Diagram.*
The features of the application will be available to its users through a responsive user interface. The UI will be divided into sections that will be accessible to different users based on their role, with each registered user capable of editing their personal information, and the administrator being able to set and edit access privileges.

The backend server created using PHP and Apache HTTP Server technologies will facilitate the connection to the database, which in turn will be implemented in MySQL. Both elements will be hosted on a private server belonging to Roc Solid Foundation, or in the cloud through a reliable third party provider. The data will be synchronized with NeonCRM through the provided API¹.

¹ https://developer.neoncrm.com/api/
3. IDENTIFICATION OF CASE STUDY

The product’s main, and currently only recipient is Roc Solid Foundation, as well as individuals associated with them. Currently, there is little automation being used in the RSF workflow. The referral forms are completed manually and submitted via fax or email, there isn’t any centralized method for the project managers and volunteers to communicate. All the important information has to be entered manually into the RSF’s CRM system. Every single one of these areas can be improved with the use of technology. The adoption of our proposed solution has a potential to improve efficiency of the foundation, reduce cost of operation, and facilitate future planned expansion to other geographical areas. Additionally, such application will enhance community reach through improved online presence of the RSF.

With some minor changes the application could be adapted to be used by other non-profit organizations.

4. RocStar PRODUCT PROTOTYPE DESCRIPTION

The prototype will strongly resemble the final product with only minor differences between them. The prototype will:

- include an additional user type: tester,
not fully synchronize its database with NeonCRM to avoid data corruption.

The application will allow its users access to different parts of it based on their security level. There will be different areas available to hospital staff, family, volunteers, RSF staff. During the prototype phase all the information used in testing and demonstrations will be test data, created specifically to validate specific aspects of the product.

Figure 3: Prototype major functional component diagram.
4.1 Prototype Architecture

The prototype architecture will closely resemble that of the final product, and can be seen in Figure 3. The application will be hosted on a virtual machine provided by Old Dominion University’s Computer Science Department. It will be build using Apache2 web server, and the data will be stored in a MySQL database. Linux will be used as the operating system.

The backend will be created using PHP version 7.0, and will be used as a bridge between the database, NeonCRM, and the user interface. The latter will be constructed using HTML5, and additional wrapper will be build using Swift and Java programming language to provide native adaptation for iOS and Android operating systems respectively. Push notifications will be provided as a major feature to improve communication between the RSF and other users.

4.2 Prototype Features and Capabilities

The prototype will be demonstrate all of the capabilities of the final product. It will allow generation and manual creation of push notification, as well as sending and receiving them. RSF staff members and project managers will be able to create and edit project pages along with associated supply lists, and add or remove volunteers. The hospital staff will be able to send referral forms, that will be pre-populated with user data. The volunteers will be able to view project pages and send requests to be added to them. Additionally, all the stored information will have the option to be synchronized with NeonCRM.
The prototype will not contain any real data, nor will it allow for creation of family pages or forums.

The goal of the prototype is to provide validation for the designed product and allow for feedback from future users, mainly Roc Solid Foundation’s staff. This will help to mitigate some of the identified risks, i.e. the users will be able to familiarize themselves with the product, the development team will be able to ensure that proper security features have been implemented, and the application is able to communicate with NeonCRM in a manner that satisfying to the RSF staff.

4.3 Prototype Development Challenges

The most important non-technical part of the development process will be establishing effective communication between the team working on the application, and the users. Correct bidirectional communication will greatly enhance the value of the complete prototype. Failure to establish such communication might result in a product that will not have any chance to be successfully adopted.

On the technical side the most unpredictable factor will be NeonCRM integration. The provided API might not suit all the needs of RocStar, and in that case, the development team will not be able to proceed with the implementation without establishing cooperation with Z2 Systems (creators of NeonCRM).
Glossary

Apache2 Web Server – software for hosting the web server

CSS (Cascading Style Sheets) – language for formatting content displayed on a web page

HIPPA (Health Insurance and Portability Act of 1996) – United States Act that provides data security for medical information

HTML (HyperText Markup Language) – language for web development

MySQL – an open-source relational database management system

PHP – server scripting language

RSF – Roc Solid Foundation
References
