Lab 2 – RocStar Product Specification

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1. Introduction

Every year, thousands of children are diagnosed with cancer. Organizations such as the Roc Solid Foundation recognize this, and they provide philanthropic efforts to help those children and their families through, no doubt, the toughest times of their lives. Nonprofit organizations such as the Roc Solid Foundation need to have an online presence to help others learn about their efforts so that they can gain support to assist more families. Having a solid web presence, as well as a responsive mobile application available on the major mobile platforms helps ensure that Roc Solid can continue to grow as an organization. The online presence will also benefit the families that the Roc Solid Foundation helps. The addition of a unified, mobile application and web interface that instantly connects families, hospital staff, and Roc Solid staff and volunteers will help ensure that all parties remain connected throughout the entire time the Roc Solid Foundation assists the families.

The Roc Solid Foundation's methods of communication are severely outdated, and they must be updated so that they are able to efficiently communicate with all involved parties from the point of first contact with the families until they have completed the build project or other form of assistance. To date, the Roc Solid Foundation has built over one hundred custom playsets for children who are battling cancer. They also aid families in room remodels and iPad projects (Roc Solid Foundation). Currently, the Roc Solid Foundation employs methods of communication such as fax and hard copies of forms that families and hospital staff must complete. In the digital age that we live in today, this method of communication is severely outdated, and it makes a simple task of staying in contact much more difficult than it should be. The implementation of a unified, mobile communication solution that is available to Roc Solid staff, volunteers, hospital staff, and families being helped can greatly streamline the
communication of these parties. A mobile solution will also help improve the coordination of events, such as build projects, room remodels, or iPad projects. The ability for volunteers to have access to checklists for build projects, for example, greatly improves the coordination of the project goals because they can all remain informed on the status and progress of a particular project that is relevant to them.

For the RocStar mobile application to be considered a success, the solution must be available on the major mobile platforms, it must be easy to learn and use, it must maintain user privacy, and it must have a positive impact on the communication and coordination problems listed above. The RocStar application must be easier to use than the form of communication in place at the Roc Solid Foundation today. Employing the mobile, digital solution will improve the handling of documents, as it decreases the possibility of the documents getting lost or misplaced; it will improve the response time of messages, as it does not rely on antiquated forms of communication such as fax or using paper forms; and it improves the coordination of volunteers because they are always able to access the checklists for projects, as well as the ability to be scheduled by the Roc Solid Foundation for new projects.

1.1 Purpose

The purpose of the RocStar mobile application is to provide a streamlined, digital solution that will improve the communication and coordination of the Roc Solid Foundation. RocStar is intended to improve the discovery of the Roc Solid Foundation by those outside its scope of influence, as well as those who are being affected by Roc Solid’s efforts. By having a presence on a mobile application store such as the Google Play Store or the Apple App Store, the Roc Solid Foundation may see an increase in the number of people who find out about their philanthropic efforts, and they may see an increase in donations because of this increased
discovery. The RocStar mobile application will also integrate with Roc Solid's customer relationship management system, NeonCRM. Providing this integration will ensure that the data that is submitted within the application is appropriately stored and maintained so that Roc Solid can use this information to better serve the families they aid. Figure 1, below, illustrates the current process flow of the Roc Solid Foundation before the implementation of a mobile application such as RocStar.

Figure 1: Current Process flow: This figure illustrates the steps that RSF must take from the point of first contact with a family to the completion of a build project. Reprinted from "Lab-1 RocStar Product Description," by Author C. D. Covington, 2017. Reprinted with permission.
1.2 Scope

RocStar is a web-based application that is available on both mobile and desktop machines, and it facilitates the communication and coordination of the involved parties. It will increase the productivity of RSF staff, volunteers, and hospital staff as they refer children and order Ready Bags. Implementing an all-inclusive application such as RocStar enables the Roc Solid Foundation to move forward with their efforts and broaden their reach as they strive to reach more families affected by childhood cancer. The main objective of this application is to facilitate this communication and coordination to assist the Roc Solid Foundation in increasing their scope of impact to more areas across the world and better organize these efforts into one centralized location. Figure 2, below, illustrates how the implementation of the RocStar mobile application will streamline the process flow of the Roc Solid Foundation.
1.3 Definitions, Acronyms, and Abbreviations

**Apache2 Web Server**: Software for hosting the web server

**API (Application Programming Interface)**: A set of rules and specifications that software programs follow to communicate with each other.

*Figure 2: Future Process Flow: How RSF staff’s tasks can be automated with RocStar.*

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CRM (Customer Relationship Management) software: This type of software consolidates customer information and documents into a single database so business users can more easily access and manage it.

CSS (Cascading Style Sheets): Language for formatting content displayed on a web page

Firebase: Modular web-based tools designed for use in building software applications

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

NeonCRM: CRM software used by Roc Solid Foundation

PHP: Server scripting language

RSF: Roc Solid Foundation

1.4 References


1.5 Overview

This product specification provides the configuration for both the hardware and software components that will be used to create the RocStar application prototype. It also includes pertinent information about the external, user interfaces, capabilities, and the features for specific users of RocStar. The objective of this document is to establish the goals and purpose of
developing this prototype application and how Team Orange will accomplish the goals set forth by this course.

2. General Description

The development of RocStar will begin as a prototype in the scope of Old Dominion University's CS 411W course. There are some differences between the functionality of the prototype application and the real-world application. Namely, the prototype application will not display features such as family messaging forums, coupons, or events calendars. Another major difference in the prototype application versus the real-world application's functionality is that the prototype will authenticate users that are already present in Roc Solid's customer relationship management system, NeonCRM. For the purposes of the prototype, the application will authenticate against a small number of users stored in the prototype's SQL database. The other capabilities and functionality of the prototype will be very similar to an application deployed in the real world for the Roc Solid Foundation. The prototype will also simulate the different levels of user permissions and how users will create or edit their user profiles.

2.1 Prototype Architecture Description

The RocStar prototype is a web-based application that runs on a virtual machine on the Old Dominion University Computer Science Department's servers. The prototype's hardware consists of the Apache web server and a database server. The software components of the RocSolid prototype include MySQL, PHP, PHPMyAdmin, and Facebook's React Framework. The RocStar application prototype consists of a web interface optimized for mobile and desktop, a notification system, and the database; it also integrates with NeonCRM. The user interface utilizes PHP, HTML, CSS, and JavaScript. Material is also used for device optimization. Figure 3, below, describes the major functional components of the RocStar application prototype.
Figure 3. Prototype Major Functional Component Diagram. This figure illustrates the major functional components found within the RocStar prototype. Reprinted from "Lab-1 RocStar Product Description," by Author C. D. Covington, 2017. Reprinted with permission.

There are various levels of user interaction that can be found within the RocStar application; these users consist of Hospital Staff, Family, Volunteer, and Roc Solid Foundation Staff. Each of these different user types will display the relevant information relating to only their user account permission level. During the account creation process, the users will be
authenticated with sample information in the database to determine what type of user level they may have. See Figure 4 for more information about the login and account creation process. This type of validation is similar to the validation process that will be present in the real-world product.

![User Login Page](image)

*Figure 4. User Login Page. This page illustrates the login page presented to new or existing users. They are prompted to either sign in with their existing credentials or to create an account.*

After a user is authenticated, they will have the capability of changing the information in their user profile, as shown in Figure 5. The user's user profile information will also vary, depending on what type of user is signed into the application. For example, Hospital Staff may have a profile element that lists their role in the hospital, as well as what hospital they work for.
Users may also view their family page, as well as other families' pages. If the user is a Volunteer, a Family Member other than a member of the family the build project is for, or a Roc Solid Foundation Staff member, he can view current and past build projects, as well as the status of each. Examples of how build projects are displayed in RocStar can be found in Figure 6.

![Bookmarks Page](image)

*Figure 5: Bookmarks Page. This page displays information about changing a user profile, visiting the RSF Shop, donating, referring a child, account settings, contact RSF, help, and logout.*
Figure 6: Build Projects Page. This page displays information about current and past build projects. This page may be viewed by RSF staff and Volunteers, as well as Families.

The RocStar mobile application will also send users notifications about important events relevant to their user type. The notification system will alert families of people added to their family page. It will alert RSF staff and volunteers of new information regarding a build project. It will also send users push notifications when they donate to the Roc Solid Foundation. Examples of how RocStar sends notifications may be seen in Figure 7.

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2.2 Prototype Function Description

The edit user profile page is a web page form that provides an authenticated user the ability to modify and save their profile information. When a user chooses to edit his user profile, the edit page appears and is pre-populated with the personal information they previously saved and stored in the database. Upon clicking the save button, RocStar will save any newly-updated user profile information in the database.

Hospital Staff may refer children to the Roc Solid Foundation for their support. Within the application, after a Hospital Staff member authenticates, he or she will have the ability to complete the child referral form and submit it. When a Hospital Staff member submits a referral
form, a Roc Solid Foundation Staff member gets a notification that a new referral needs to be reviewed. Figure 8 illustrates the capabilities of a Hospital Staff user.

![Figure 8: Hospital Staff Site Map. This site map lists the available actions a Hospital Staff member can take within the RocStar mobile application.](image)

An authenticated Volunteer user may view important information relevant to current and future build projects. This information may include: current and upcoming projects, a volunteer waiver, the volunteer manual, and fundraising tools. All Volunteer-related information will reside in the Volunteer area of the RocStar mobile application, which is only visible to authenticated Volunteers and RSF Staff. See Figure 9 for the capabilities of a Volunteer within the RocStar application.
Figure 9: Volunteer Site Map. This figure illustrates the capabilities authenticated Volunteers have within RocStar.

As stated previously, RSF Staff members will have all the previously-mentioned information available for viewing within RocStar. This is necessary because RSF Staff should be able to see information about families, volunteers, and hospital staff. See Figure 10 for more information about RSF Staff's capabilities within RocStar.
Users, before they login, will also have some public-facing information available to them. None of this information is sensitive, so RocStar can display it to users before they login. Some of the information that can be displayed to unauthenticated users is: the online store, account login or creation, and the donations page. Only after authentication will users have the capability to view more information.
Notifications are essential to the success of a mobile application such as RocStar. RSF Staff should be notified via a push notification when a Hospital Staff member, for example, requests additional Ready Bags. Volunteers should get a push notification when a new build project is created. Families should get notifications when other users join their family page on RocStar. These are just some examples of how notifications should be sent within the RocStar application. Functionality such as notifications is important because it improves communication and coordination. Users will receive up-to-date, real-time information about events that occur that are relevant to them. A notifications page is present within RocStar to view all recent notifications that were delivered to them.