Lab 2 - RocStar Prototype Specification

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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 that time. They by provide 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’ families have to be contacted, and the volunteers and supplies coordinated. Altogether the RSF has identified 19 steps that have to be taken from the moment a child is diagnosed with cancer to the completion of a project (see Table 1). These tasks are done manually and often with a use of outdated technology. That requires a lot of effort from everybody participating, and can become difficult.

<table>
<thead>
<tr>
<th></th>
<th>Application from Hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Contact Family</td>
</tr>
<tr>
<td>3</td>
<td>Meet/Skype Family</td>
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<tr>
<td>4</td>
<td>Family Waiver</td>
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<td>5</td>
<td>Child Photo</td>
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<td>6</td>
<td>Family Interview Questions</td>
</tr>
<tr>
<td>7</td>
<td>Pre-Build Report</td>
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<tr>
<td>8</td>
<td>Send Sponsor Packet</td>
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<td>9</td>
<td>Send Volunteer Packet</td>
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<tr>
<td>10</td>
<td>Sponsor Agreement</td>
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<tr>
<td>11</td>
<td>Food Sponsor Agreement</td>
</tr>
<tr>
<td>12</td>
<td>Project Info Report</td>
</tr>
<tr>
<td>13</td>
<td>Order Lowes Material</td>
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<tr>
<td>14</td>
<td>Order Porto John</td>
</tr>
<tr>
<td>15</td>
<td>Order Limo</td>
</tr>
<tr>
<td>16</td>
<td>Confirm Hotel</td>
</tr>
<tr>
<td>17</td>
<td>Confirm Transportation</td>
</tr>
<tr>
<td>18</td>
<td>Order Table/Chairs</td>
</tr>
<tr>
<td>19</td>
<td>Confirm with Family on Activity</td>
</tr>
</tbody>
</table>

Table 1: List of steps taken by the RSF from the moment of receiving a new referral form.
The RSF has identified a need for a software solution: a mobile application that would help improve communication and coordination (see Figure 1) between the foundation and other involved parties (patients’ families, volunteers, and hospital staff), and modernize the current workflows. The ubiquity of smartphones, tablets and personal computers, as well as reliable access to the Internet, allow for the application to be accessed by the majority of people in the United States.

Such a solution is RocStar, which will allow the users to easily communicate with each other, provide easy access to the pertinent information about patients, projects, and volunteers. The amount of effort required from the RSF staff will be decreased thanks to automatization of several workflows. That includes digital referral forms, which can be prepopulated with relevant data, decreasing the amount of time that is needed to complete them, as well as automatic notifications, allowing the users to quickly communicate with each other.

Figure 1: Roc Solid Foundation’s current process flowchart: This figure identifies the areas that can be improved by a software solution.
1.1 Purpose

RocStar is a mobile web software solution that is being developed to help Roc Solid Foundation modernize their workflow. The application shall improve the communication and coordination between the RSF and other parties that are involved in the process, that includes patients and their families, hospital staff and volunteers. The adaptation of RocStar will help the foundation improve their online presence. The application will be available for download in Google Store and iTunes, where anybody will be free to install it on their mobile device. In addition, all the important information can be transferred between RocStar and NeonCRM allowing to limit redundant work and to maintain a centralized data system for the RSF.

User will be allowed to create accounts within the program, and, after being granted appropriate security privileges, access specific parts of the application according to their role. Hospital staff will be able to complete and send referral forms, which will be prepopulate with their personal data, if it has been provided by them. Family members will be able to access their family pages and view any materials provided by the foundation. Volunteers will be able to join projects, that will be managed by project managers. The application will let every user to see only information that might be pertinent to her and her role. It will be used for efficient communication through the internal messaging system. Project managers can send push notifications, that will be received by interested parties, e.g. the users that have signed up to participate in a project, or have declared their willingness to receive information pertinent to it. The messages will be auto-generated from a template, but can be customized before being sent.

An event calendar will be populated will all the projects and their steps, and any users will be able to view its personalized version.
All the above feature will be included in the prototype except for family pages. That functionality shall be included in the final product. The application will be secure enough to comply with all the necessary regulation regarding the safety of patient information.

The prototype will not allow for automatic creation or deletion of users or any other elements that may exist in the application, save for the test data that will be written into the database upon its creation.

1.2 Scope

RocStar is intended for the Roc Solid Foundation, and is adapted to fit the requirements of their workflows and business processes.

The application could be modified to be used by other non-profits and/or organizations who provide volunteers opportunities.

RocStar is a web application and is meant to provide an easy-to-use and accessible GUI. Android and iOS wrappers will be created to allow for native implementation for devices running one of these operating systems.

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.

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
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 hardware and software configuration of the RocStar prototype application. The remaining section gives a brief description of capabilities, and features of RocStar including the external interfaces, GUI, and communication methods and protocols. The specification will establish the goals of the software solutions and the prototype, and will conclude with a detailed list of requirements that shall be implemented in this project.

2 General Description
The prototype of RocStar will demonstrate all the major features that are going to be a part of the final product. The functionality that will be presented consists of creation and edition of user accounts, creation of referral forms, creation and edition of volunteer projects, creation and edition
of push notifications, viewing and editing of a calendar of events, and edition and creation of volunteer and supply checklists. The prototype will also serve as proof for the security measures whose implementation will assure the safety and integrity of all the contained data. Unlike the final product, the prototype will not implement family pages, and will contain an additional user role: Tester.

2.1 Prototype Architecture Description

The prototype is a web-based application hosted on a server running on a virtual machine provided by ODU. Devices running iOS (version 8.0 or above) and Android (version 5.0 or above) operating systems will be used during the presentation to demonstrate those versions of the product. The native versions of the application will be available on the Apple App Store and Google Play Store.

One of the main features of the prototype will be to allow to create a user account. After that step is complete, the user will be able to request access to a specific user group. The available groups are hospital staff, family members, volunteers, Roc Solid Foundation Staff, and volunteer coordinators. The application administrator will be able to accept or reject these requests.

The user will be able to access their profile page and edit their personal information. In case of Hospital Staff, that data will be used to populate the corresponding information on the referral form.

Roc Solid Foundation staff users will be able to create a page for a build project, room remodeling or iPad project.

The option of sending push notifications will be available after creating or editing an existing project, and will be received by all the participating users. Additionally, the RSF staff will receive a message when a new referral form has been sent.
2.2. Prototype Functional Description

When a user opens the application the first thing will see is a home page that will contain a short description of RocStar and the RSF. From there the user will be able to use one of the provided links that will take her to the RSF’s Online Store, or to the Donate page. The user will also be able to navigate to the login page, either directly or once they have finished the account creation process. Logging in will give them access to other parts of the application based on their user role.

The area common to all users logged in users will consist of two elements: the user profile, that allows to edit personal data and the message inbox, that will contain all the received messages, as well as create new ones. All that information, including user’s credentials will be stored in the application’s database.

The full picture of the shared elements can be seen in Figure 2.

![Common site map. These elements are shared by all users.](image-url)
The Hospital Staff users will be able to create referral forms that will be partially prepopulated with the information from the user’s profile. Submitting the completed form will send it to the designated RSF staff user, who will have the capability to send it further to NeonCRM. The Hospital Staff user will be able to see a list of the previously sent referral forms as well as their status. Additionally, they will be given access to the inventory page, which will contain the current count of Ready Bags that are available at their hospital. The site map of elements that will be available to a Hospital Staff user can be seen in Figure 3.

![Site Map of Hospital Staff User](image)

**Figure 3:** Hospital Staff user site map.

The Volunteers will be able to view the list of all the ongoing projects, alongside the map that will contain their locations. Visiting a project page will allow to see the detailed information and request assignment to that project, which can be accepted by a Project Manager. The Volunteer will receive notification regarding important changes that have been made to the project the user is signed up for. The message can also be sent manually by a Manager or an RSF Staff member. Before participating in any activities, the Volunteer must complete a Volunteer Waiver form,
which can be accessed through RocStar’s user interface. Additionally, Volunteer Manual and Fundraising Tools pages, containing pertinent information, will be accessible to this type of users. Events Calendar will contain dates of relevant projects and their milestones.

The Project Manager user will have access to the same elements of the application as Volunteer, but with the ability to create new projects and to edit the projects that the user has created previously. All these elements can be seen in Figure 4.

Figure 4: Volunteer/Project Manager site map.

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The Roc Solid Foundation Staff users will have access to all the elements of the application. That includes previously mentioned pages: Projects and Project Map, and Events Calendar. Hospitals page will contain a list of all the participating hospitals along with their addresses and contact information, as well as list of employees who are RocStar users. Family Profiles will lead to a page containing a list of all the families who are participating in RSF projects. Navigating to Documents will allow the user to view any files that have been completed and sent by other users, i.e. referral forms, and volunteer waivers.

Figure 5: Roc Solid Foundation Staff user site map.

The notification algorithm (Figure 6) will allow to display relevant information to the appropriate user when an event takes place through push notifications. The process flow will also let users to edit the message or cancel sending it completely.
2.3 External Interfaces

RocStar will require an internet browser that adheres to the W3C standards, or an Android device running Android version 5.0 or above, or an iOS device running iOS version 8.0 or above.

2.3.1 Hardware Interfaces

RocStar will be hosted on an Old Dominion University virtual machine. The Apache web server and the relational database will connect with RocStar through Laravel programs and integrate with NeonCRM to facilitate a working prototype application.

2.3.2 Software Interfaces

The application will take advantage of MySQL database for storing all the information. The user interface will be written in HTML, PHP, CSS, Java (for Android OS), and Swift (for iOS). The back-end will be implemented in PHP with the Laravel framework.