Lab 1 – RocStar Product Description

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1. Introduction

Mobile devices have quickly taken over as the most popular means for both communicating and “surfing” the Web. Rarely, if ever, do people actually have to wait to get home, get to their desktop or laptop, and access the internet. Because of this gain in popularity, by default mobile applications have become increasingly popular in most everyone’s daily life. If a company or organization does not have a mobile application, then they face the risk of falling behind their competitors. Companies and organizations must keep up with the ever changing times or they will be left in the dust, and possibly become obsolete. The Roc Solid Foundation is no different in this aspect. Currently, Roc Solid relies heavily on outdated means to communicate and coordinate their efforts to help those affected by pediatric cancer. At the moment they use mainly emails, fax, and phone calls for all communication and coordination. This can be both inefficient and complicated at times. They have no notification and/or reminding capabilities. This leads to frustration and a lot of wasted time, things they cannot afford.

The RocStar application will benefit all those involved in the great things that Roc Solid does for those battling pediatric cancer. It would allow Roc Solid to establish better
communication with cancer patients’ families, doctors, hospital staff, Roc Solid staff and volunteers. Roc Solid already gives families tablets in the Ready Bags given to the families when they learn their child has cancer through their “Solid Support” program. So, if the RocStar application was pre-loaded on the tablets, it would increase communication from all those involved in the volunteer process to the families. Also, in their “Play it Forward” program, Roc Solid will build a backyard playset for the child battling cancer. This is no small task, and involves both communication and coordination between Roc Solid, the family, and the volunteers. A mobile application is critical for Roc Solid’s future growth, and that is the goal of Roc Solid. They want to help as many people as they can. By eliminating the wasted time and confusion, not only would they be able to help more children and families, but also get many more volunteers. If the process involved is tedious, then who is to know how many people out there wanted to help, but were maybe turned off by the difficulty of the process. This scenario simply cannot happen. Every year, over 15,700 children are diagnosed with cancer (Roc Solid Foundation Presentation, 2016). As many of these children should be helped as possible, and if they could, Roc Solid would help every single one of them by making it as comfortable and stress-free as possible. Roc Solid, therefore, needs all the help that they can get, so anything to help should be adopted as soon as possible.
2. Product Description

To give an idea of the process involved with Roc Solid helping patients and their families, there are 19 steps, starting with contacting the family all the way through project completion. These steps include communicating with the family, sending the sponsor and volunteer packets out, and the coordinating of volunteers, supplies, and transportation. Figure 1 illustrates Roc Solid’s current process flow. One can easily see that by automating part of this process, Roc Solid will save countless man hours and provide them with the opportunity to help even more children.

![Diagram of Roc Solid's current process flow](image-url)

*Figure 2. Illustration of Current Process Flow*
The purpose of the RocStar Application will be to improve on the coordination and communication of the current process. RocStar will be a web-based app but will be available on Android and iOS platforms. The goal is for it to be pre-loaded on Roc Solid’s Android-based tablets that come in their ready bags, offering a convenient, easy to use way for the families to immediately connect with Roc Solid and the Roc Solid community.

2.1 Product Features and Capabilities

What RocStar offers the user depends on who exactly the user is. Anyone with the app will be able to access Roc Solid’s online store, donate money to Roc Solid’s efforts, or create an account. After creating an account, the user falls into one of four categories. They will either be classified as patient/family member, hospital staff, Roc Solid staff, or volunteer. Patients and family members will be able to access the family forum where families can connect with others dealing with the same issue, personalized family page, and an entertainment page that offers videos and games to help pass time and make their hospital stay a little more pleasant. It will also offer a direct line of communication between the families and both hospital and Roc Solid staff. If logged in as a hospital staff member, the user may access the user info page, manage inventory, request and submit preloaded referral forms, and of course, communicate with families and Roc Solid. Roc Solid staff members will be able to stay on top of all ongoing projects with a projects page, plan and coordinate events with an events calendar, view
volunteer and family profiles, download any pertinent documents that they may need, and communicate with all parties involved in any one of their projects. Volunteers will be able to access information of ongoing and future projects, complete their volunteer waiver form, obtain a volunteer manual, view both project and user profiles, and, once again, communicate with other involved parties.

2.2 Major Components

In order to function properly, the RocStar application will need a device that can connect to the internet. The application will be made using HTML5 and be web-based, but by using wrappers will be accessible by any device using Android or iOS. This will not only provide ease of use, but also make the application more accessible to any user. Also, there is a requirement of a server created using PHP and Apache HTTP connected to a database using MySQL. The “cloud” will be used in order to store the application itself and the database, which will hold the information of all the volunteers, hospital staff, families, and volunteers. The cloud will also be used in accessing and organizing the database. This ensures that all data will be secure, easy to access, and up to date. In short, the user will use the application to interact with the cloud, which accesses needed information that has been populated from the database. The prototype will run on a virtual machine installed a Linux server provided by the ODU Computer Science Department.
3. Identification of Case Study

The prototype is currently being developed solely for the Roc Solid Foundation, their personnel, and anyone involved in their philanthropic efforts. As demonstrated above, there is ample room for Roc Solid to improve their process by adopting automation. At the moment, they use rather archaic means to communicate and facilitate their efforts. There simply is too much paper, manual updating, and slow communication. The RocStar application will enable Roc Solid to simplify and speed up the process, in turn freeing up all those involved to get to the actual task at hand which is helping children with cancer and their respective families. The RocStar application has little in the way of competition mainly because the competitors do not integrate directly with Roc Solid’s customer relationship management software, NeonCRM. Roc Solid’s staff and volunteers, hospital staffs, and families dealing with the stresses of children diagnosed with cancer will all benefit greatly from the RocStar application. And, perhaps somewhere down the line, the application can be adapted to suit the needs of other non-profit organizations.
4. RocStar Prototype Description

The RocStar application prototype will differ minimally from the real-world application. Of course, there will have to be an added user definition of “tester” created in order to test the prototype while in development. The prototype will have to ensure that each type of user has the access and permissions that they are supposed to have. But, in order to avoid data corruption, the prototype will not be fully synchronized with Roc Solid’s NeonCRM.

4.1 Prototype Architecture

The prototype application hardware will also be very similar to the final, real-world application. For the prototype, there will be the use of MySQL for the database. During development, ODU’s Apache2 will be used as the web server, and a virtual machine from ODU’s Computer Science Department will host. PHP 7.0 will be used to build the backend and will connect the database, NeonCRM, and the HTML5 user interface. Swift and Java languages will be used to create the wrappers for the Android and iOS operating systems.

4.2 Prototype Features and Capabilities

The goal of the RocStar prototype is to prove that the application works and would be a viable solution to Roc Solid Foundation’s needs. It will allow Roc Solid users to provide feedback on whether or not it suits their needs and where it can be improved. The prototype
will not contain any real data, but should demonstrate all of the capabilities of the final application. Both prototype and real-world applications will offer the ability to create accounts, new build projects, and notifications. Roc Solid staff will be able to create project pages, associated supply lists, and the ability to coordinate volunteers. Hospital staff will be able to send and receive any and all necessary documentation, including the referral forms, and volunteers will be able to view project pages and select projects of their choosing. Roc Solid can then critique the prototype, determining where any security issues arise or where any functionality is not up to par.

4.3 Prototype Development Challenges

Perhaps the biggest challenge facing the prototyping of the RocStar application will be the integration of NeonCRM. It is new to all but one of the developers and there is the fear that it may not be able to offer Roc Solid with all of the functionality that they need. Also, working with wrappers to create mobile applications is something new for most of the development team. Learning on the fly will be a necessity if the prototype is to be put together in the short amount of time that they have been given. There are some team members that are proficient in certain areas such as the backend development, while others are more proficient in frontend. It will require a lot of true teamwork, where some may have to lean on others in certain areas, but there is a definite confidence that the team can and will get a working prototype completed in the one semester timeframe.
Glossary

Apache2 Web Server – Software for hosting the web server

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 (Hyper Text Markup Language) – Language for web development

MySQL – An open-source relational database management system

PHP – Server scripting language

RSF – Roc Solid Foundation
References

