

ZoneRate

A New Method of Traveling

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ABSTRACT

Have you ever been nervous to travel to a new city, state, or country? Were you afraid because you did not know what to expect from the environment, the people, or even the food? With this new mobile application called ZoneRate, we wanted to generate an application to promote people to travel more while making sure people feels safe. ZoneRate is a crowd-source review forum that allows users to share their experience of a particular area. Users are able to rate their overall experience, post pictures, recommend restaurants, attractions and more. ZoneRate provides options where users can share their demographic such as their gender, race, and age. Based on users interests and demographics, recommendations of cities will be provided to users. There is also a built in navigation system for users to use to ensure safety is being promoted.

KEYWORDS

Agile Software Development, Mobile Application, Software Analysis, User Stories, Prototype

ACM Reference format:

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1 INTRODUCTION

On September 6, 2019 I received a message from Brianna Barksdale asking if I could develop a mobile application for her. She mentioned she hated taking road trips because she never knew where to stop for gas. As a woman of color, she was afraid something could possibly happen to her in an unknown area. She wanted users to rate different cities and how they felt about the area. Immediately, I agree to creating this application. First, I wanted to utilize my computer science skills to develop an application to improve society. I also wanted to gain experience with working with a customer, using an agile approach to complete this project.

2 MOTIVATION

Every developer has a purpose, reason, or goal when developing an application. Developers typically want to accomplish something with their product. This can be through providing entertainment for individuals, improving peoples' health, or increasing safety within communities.

Some of the motivation behind developing ZoneRate were to first gain experience with working with a customer. I also wanted to use an agile style of development when completing a project for the first time. The overall goal for this

project was to produce an application to promote a safe way of traveling. The customer and I wanted to develop a product to motivate people to travel more by sharing people's personal experiences in certain areas.

3 USER STORY

A user story is a simple and short description a feature told by a customer who wants new capabilities of a system, software, or product. Customers will explain what type of user they are, what they want to achieve, and the reason behind their desires. User stories are typically written down to facilitate planning and discussions. Details may be added to user stories by splitting a user story into smaller stories, as well as adding conditions of satisfaction. User stories are typically created at the start of an agile project.

The process of developing ZoneRate required implementing user stories. When I was approach by the customer to develop an application for her, I immediately asked the customer all the requirements she wanted the app to contain. The customer wanted to implement a system where users can rate their experiences, as well as providing a GPS system within the application. Each month, I met with the customer to expand on her user stories as I continued to further develop ZoneRate.

4. OVERVIEW OF APPROACH

To develop a mobile application, every developer needs a plan. The plan developed for ZoneRate was to first generate an idea, perform research about how to develop a mobile app, software, and tools needed to implement the design, as well as creating a schedule to make sure the project was on the correct path.

4. 1.1 IDEA

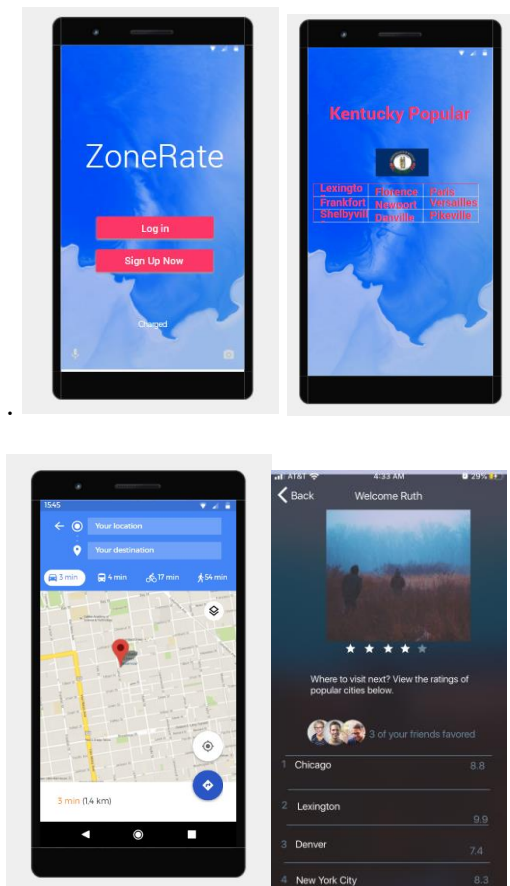
Before developing this application, my customer and I generated many ideas and features we wanted ZoneRate to consist of. We wanted this app to be similar to Yelp, but for traveling. We wanted ZoneRate to be a crowd-source review forum where users can share their experiences, likes, dislikes, etc. of a particular city, state, or country, Users will be able to rate their overall experience of an area based on how safe they felt, and their overall experiences. Users may also upload pictures, provide recommendations on categories such as restaurants and attractions. ZoneRate will recommend users to share their gender, race, and age. When users share this information, another user who may have similar features may take into perspective traveling to a location. For example, being a 22-year-old, African American female, when I share my experience with how safe I felt, the people I met, and my overall experience this may encourage or discourage another person to visit a place. This is important because people can become familiar with an area before even stepping foot there.

4. 1.2 RESEARCH

Many forms of research were performed before creating the application. It is imperative to research many tools and software before creating a mobile app. Having a background knowledge of what is needed to implement an application helps developers in the long run because they become familiar with the tools they are using.

I first researched a prototyping software where I could physically visualize how I wanted ZoneRate to look like. I found a prototyping application called Justmind. Justmind is a free prototyping tool for mobile and web applications.

Some of the prototypes I created can be found below



After prototyping I found an open source mobile application framework created by Facebook called React Native. React Native supports both IOS and Android applications. React Native provides a step by step tutorial to create your first mobile application. As a new application developer, I highly recommend using React Native.

To test ZoneRate, I wanted to use an android phone emulator on Android Studio. Android Studio is the integrated development environment (IDE) for Android application development.

Last but not least, I researched many information on JavaScript. JavaScript was the predominant

programming language I used to develop this application. JavaScript is a scripting language which makes and controls web content. It has many features such as animated graphics, interactive forms, and automations.

4 1.3 AGILE SOFTWARE DEVELOPMENT

I used an agile style approach to complete this project. Agile is the ability to respond and create change. Agile software development focuses on the people doing the work and how they interact and work together. Agile project focuses on time intervals where group members meet up and discuss progress, changes needed to be made, and collaborations on ideas to improve a system.

I used an agile style approach because each month I met with my customer to inform her on the progress I had made on the application. I gave her the opportunity to add additional ideas and features she wanted to include on ZoneRate. I was honest with the customer. If I knew I could not implement a feature she wanted to include, we would reach a compromise on something I could implement similar to her idea. I created a 3 to 4-week sprint system for myself. I knew to complete this project by the end of the semester, I needed a timeline to progress. By creating this sprint system, I was usually prepared for in class presentations, designing, researching and developing the application.

5. CHALLENGES

ZoneRate was the first mobile application I have ever developed. Although I am very proud of the final outcome, I will have to admit I faced some challenges along the way.

The first challenged I faced while developing ZoneRate was a method to test the application.

Android Studio's phone emulator was extremely slow on my computer. To combat this problem, I found a new software to test my application. This software is called Appery.io which can be downloaded on both Apple and Android cellular devices. Appery.io also allows users to test their mobile application on the web.

The second challenge I faced during the development stage was finding a meeting date and time that satisfied both the customer and I's schedule. Because the customer and I were both college students with part time and full-time jobs, finding a time for us to meet became a little difficult. To resolve this issue, we found meeting on the weekends each month were our best option.

The third challenge I faced while creating ZoneRate was being introduced to a new programming language, JavaScript. I had to research everything while programming. Although I faced challenges with JavaScript, I am happy I have gained a greater insight on this scripting language.

The last challenge I faced while creating this mobile application was creating a better user interface. I quickly learned great graphics needed to be incorporated within an application. It was difficult to be creative when developing graphics. I had to research colors that complimented each other, and how to position features within the app such as buttons, banners, and navigation tools.

6. CONCLUSION AND FUTURE WORK

As a developer it is imperative to continuously improve on your software or application. Developers need to receive feedback from users and take it into consideration when updating applications. In the future I would like to improve

the overall functionality of ZoneRate. For example, I will like to incorporate a database system for this application. I want to store users' ratings, comments, pictures, and more so other users can view their experiences. I would also like to develop a logo for this application. A main goal of mine is launch the application on both Android and IOS devices.

Developing my first mobile application was a great experience. Although I face many challenges, I can honestly say I have grown as developer. Being able to interact with a customer using an agile system will definitely prepare me for the future working in the industry.

ACKNOWLEDGEMENTS

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