Project Plan Presentation
ROCKY Team Challenge Application

The Capstone Experience

Team Rocket Mortgage
Kyle Terryn
Thomas Bos
Huanduo Yang
Justin Kappler

Department of Computer Science and Engineering
Michigan State University
Fall 2021
Functional Specifications

• Web based application for employees of Rocket Mortgage to compete in wellness challenges

• Accessible UI to be used by everyone including non-technical employees

• Leaderboard system to encourage participation and help staff determine winners

• Powerful tools for admins to create and curate challenges
Design Specifications

• Web application designed to improve Rocket Mortgage employee satisfaction

• Users
  ▪ Can join challenges individually or with teams
  ▪ Can join challenges by browsing or with a code

• Admins
  ▪ Can create, edit, and delete challenges
  ▪ Can also manage groups
Screen Mockup: Challenges Page
Screen Mockup: a Challenge Page

Walk Challenge

In this challenge, you will be counting the steps you have for each week.

Benefits of Walking:
- Burn calories
- Strengthen the heart
- Lower your blood sugar
- Eases joint pain
- Boost your energy

Let’s join the challenge right now.

Add Progress

Add

Leaderboard
Screen Mockup: Leaderboard

<table>
<thead>
<tr>
<th>Rank</th>
<th>Name</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Deer</td>
<td>19860</td>
</tr>
<tr>
<td>2</td>
<td>Dog</td>
<td>7347</td>
</tr>
<tr>
<td>3</td>
<td>You</td>
<td>1302</td>
</tr>
<tr>
<td>4</td>
<td>Panda</td>
<td>66</td>
</tr>
</tbody>
</table>
Screen Mockup: User Page

- Invitations:
  - Wellness Team (Steps Challenge Invite)
  - Finance Team (Health Challenge Invite)

- Challenge Table:
<table>
<thead>
<tr>
<th>Challenge</th>
<th>Category</th>
<th>Attribute</th>
<th>Individual / Team</th>
<th>Challenge Date</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sleep Challenge</td>
<td>Wellness</td>
<td>Hours slept</td>
<td>Individual</td>
<td>10/05/2021-11/15/2021</td>
<td></td>
</tr>
<tr>
<td>Runners high</td>
<td>Wellness</td>
<td>Miles ran</td>
<td>Team</td>
<td>09/01/2021-10/01/2021</td>
<td></td>
</tr>
</tbody>
</table>
Screen Mockup: Admin Page
Screen Mockup: Create Challenge Page
Technical Specifications

• A frontend User Interface made using Angular 9
• A database made through Amazon Relational Database Service's Aurora
• A backend API on top of the database made in .Net core 3.1
• API and UI deployed to AWS EC2
System Architecture

Amazon Aurora

Queries
Returns data

HTTP Request
HTTP Response

Amazon EC2

Deployed to

.NET Core

Deployed to

Angular
System Components

• Hardware Platforms
  ▪ Any internet-connected device

• Software Platforms / Technologies
  ▪ Angular 9
  ▪ Amazon RDS Aurora
  ▪ .Net core 3.1
  ▪ Amazon Elastic Compute Cloud
Risks

- Ease of use
  - The application is only successful if many people use it, therefore it must be easy to use
  - Streamline the User Interface to minimize unnecessary steps in using entering activities and joining challenges
- Group Management
  - The application's group system requires a lot of database space and is difficult to edit and keep track of
  - Create a better user interface for editing groups
- Authentication System
  - The application supports multiple levels of administrator accounts
  - Further research on methods of varying authentication based on privileges
Questions?