RunCircle Status Report

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# Abstract

The RunCircle application is a unique, social, and exciting application that encourages users to not only get out and be active, but to also meet people while doing it. As all three of us are avid athletes, the idea for RunCircle was conceived fairly naturally. Through discussion, we decided we wanted the design of the application to focus on the social aspect of running, as much as the athletic, as we felt there was something of a gap in the market. Most applications of this nature focus, almost microscopically, on the performance and analysis aspects of running (among other activites). We have created a variety of tables which enable users to create a profile, meet other runners, and track activity. We also focused specifically on designing these tables in such a way that would enable us to scale the application later on, with a plethora of other exciting features (smart-watch integration, advanced run matching capabilities, etc). **(This abstract will be completed further into the project)**

# Introduction

Running alone is boring. The bane of many people’s existence, oftentimes runners dread the idea of going out on a training run, or even a gentle jog, alone. Enter, RunCircle. RunCircle is an exciting new application that allows users to not only find people to run with, but allows users to specify what type of Run they would like to go on, through a variety of filters. The aim of RunCircle isn’t only to get people active, it’s to allow users to meet other runners, and make new friends. The application provides filters for your search such as speed, duration, number of people, length, and several others. The ‘circle’ aspect of the application is essentially a running group. Any user can create a circle and structure the group however they would like in terms of the types of runs that the circle will go on. RunCircle has the potential to make running fun again for a great many people, and we’re excited to be a part of that process, and bring that famous ‘runner’s high’ to all of our users.

# System Architecture

We will be using MySQL to create our database and tables. This is where we have created the conceptual model so it will be easy to use that to build the tables in the workbench. Then, we will use the MySQL Python connector as the Python driver to communicate with MySQL. From there, we have looked into either building a web app or mobile app that will act as a basic UI. If we cannot do this, then we will build tables within Python. The most important part of our system architecture is the communication between MySQL and Python.

# Database Design

The ER diagram is attached, and you can see the relationships as they are currently structured. We have set up the model such that there is a table each for Running information, Users, and Account information. An obvious qualm with the design is to question the reason for the separation of these tables, as they represent many similar features. Our thought process was essentially this; we wanted to have the Account table store information that was purely pertinent to the backend of a person’s account, the information that no one else will see (password, email, etc). We figured these would be logical things to separate from the User table which will hold the information about the user that will be visible to (or optionally hidden from) “friends” on the application. These might be things like age, gender, phone number, name, etc. The third table with this biographical style of information is the running information table (named “profile”). This table will contain all of the running information necessary for users to find other users to run with. Average speed, average duration, preferred location, handle, average distance per run, etc.

We have designed a “Run” table that will store all of the information that is related to individual runs that users go on. This will contain the standard and expected information for runs such as duration, length, speed (which will probably be a function of duration and length), etc. There will also be a foreign key to a “Location” table which will contain information that will be accessed by several other tables. The location table will contain latitude, longitude, country name, and city name. Obviously, the location table is incredibly important to the way that the application works with regards to how people can choose “circles” to join and determine where these circles are. The “circle” table will be a table that contains all of the information regarding the circles such as their name, creator, average pace, number of members, etc. This table will have relationships with the run table, the location table, and the profile table. The circle concept is pivotal to the social aspect of the application and we wanted to make sure it had relationships with enough of the other tables. We have also included a table named “trophies” to enable us to expand upon this concept later on but the idea is to essentially encourage circles to go on runs by providing various trophies that groups can win. This is a fairly standard concept in applications like ours however we thought it might be a unique twist to try and get brands, shops, or even races, to give discounts on their products after users unlock certain trophies. For example, a circle might unlock a trophy after 50 runs, and they all get a reward to the local bar saying “Bring your circle in to enjoy 20% off your next meal here!”, or something to that effect.

Finally, given that the social aspect of this application is paramount, we have included a self-join table on the “profile” table, enabling users to become friends with one and other. This was, of course, the inspiration for the whole application. Users can become friends with other users and look at their friend’s information. They will also be able to see what circles a person is part of and potentially join some of those circles if they would like to.

# Data Acquisition

Explain step-by-step how you acquired your data including all data sources. Use numbered citations like this [1] or like this [2, 3] and list any references at the end of your report following a consistent style. Describe any work you did to modify or clean the data prior to being loaded into the database. If you made up your data as part of an application prototype document any assumptions that may have been built into the data-generation process. Provide sufficient detail to enable the reader to reproduce your results.

# User Interface

If you created a proof-of-concept application then describe your user-interface and its capabilities, use-cases, etc. Include one or two screen shots that conveys to the reader what it is like to use your application. For the status report, it is sufficient to include mocked diagrams or even a hand-drawn sketch.

# Analysis and Results

Those of you doing a data-analytics-type project should present the results of your analysis here. Include charts, graphs, and other visualizations that demonstrate key insights.

# Conclusions

Summarize your results. Be concrete about your accomplishments as well as what perhaps didn’t go so well.

# Author Contributions

Describe how each member of your group contributed to the success of your project. There are many ways to make meaningful contributions to a project. I don’t expect each person to contribute to each aspect of the project. Some of you are more experienced web-developers, others make tackle the database design, or you may be primarily responsible for creating the class presentations and the writing of this report.

# References

1. Adibuzzaman, M., et al., *Big data in healthcare - the promises, challenges and opportunities from a research perspective: A case study with a model database.* AMIA Annu Symp Proc, 2017. **2017**: p. 384-392.

2. Murthy S., A.R., Goodwin R., Keskinocak P. Rachlin J., Wu F., Yeh J., Fuhrer R., Kumaran S., Aggarwal A., Sturzenbecker M., Jayaraman R., Daigle R., *Cooperative Multiobjective Decision Support for the Paper Industry.* Interfaces, 1999. **29**(5): p. 5-30.

3. Rachlin, J., et al., *Biological context networks: a mosaic view of the interactome.* Mol Syst Biol, 2006. **2**: p. 66.