RunCircle Status Report

Magnus Frennberg, Kenji Fujita, Fergus Scott

Northeastern University, Boston, MA, USA

# 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)**

In the abstract, provide a summary overview of your project, its goals and accomplishments. For the mid-project status report, I don’t expect this report to be complete, but I do want, at minimum, the sections on System Architecture and Database Design to be completed so that the TAs and I can begin to offer you technical feedback.

# 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

Describe and diagram the architecture of your application and how different components communicate with one another. Include, for example, application components, data sources, databases, web-servers, application servers, etc. What we want is a high-level summary of how your project is intended to function as an integrated system.

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.

* Describe friendship table
* Circle membership
* Messaging – although that’s a whole new table, which can always be added later
* Runs can be scheduled but not happen, and they can happen without being scheduled.
* Circles can earn trophies, but at the moment there’s no requirement in the trophies.
* Run-has-users table so that multiple users can run the same run.

**Explain your database design. Include a figure with your ER Diagram / Conceptual Model. Explain the *key* entities and their relationships. Use the MySQL modeling tool to address both these requirements. We’ll assess the quality of your design and its effectiveness in addressing your project requirements. We may offer suggestions to improve your design. If you are using a non-relational database like Mongo, explain your document model including collection structure, document layout, fields, etc.**

# 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.