Milestone 3: Writeup

Database Software Tool

For this project, we had to look outside the capabilities of a typical mySQL database. Because the app requires users to take and store images, we needed to build on a platform that supports storage of pictures. Google Firebase is a BAAS platform that is used by major companies around the world (EXEMPTION REQUEST BELOW). Being Google, they have excellent compatibility with Android apps, and offer a variety of services. Additionally, as this is a class project, we were looking for free options, and Firebase fits the bill. They have generous limits on all their services for hobbyists and tinkerers, easily enough for us to establish the app.

Data Model

Firebase, given no structure preference, defaults to a JSON tree structure. The primary data we'll be storing are users pictures and that is done with Firebase Storage. The data we'll actually be recording in the database is more along the lines of basic user information, id's to connect that information to Firebase Authentication, and then references to the images stored in Firebase Storage.

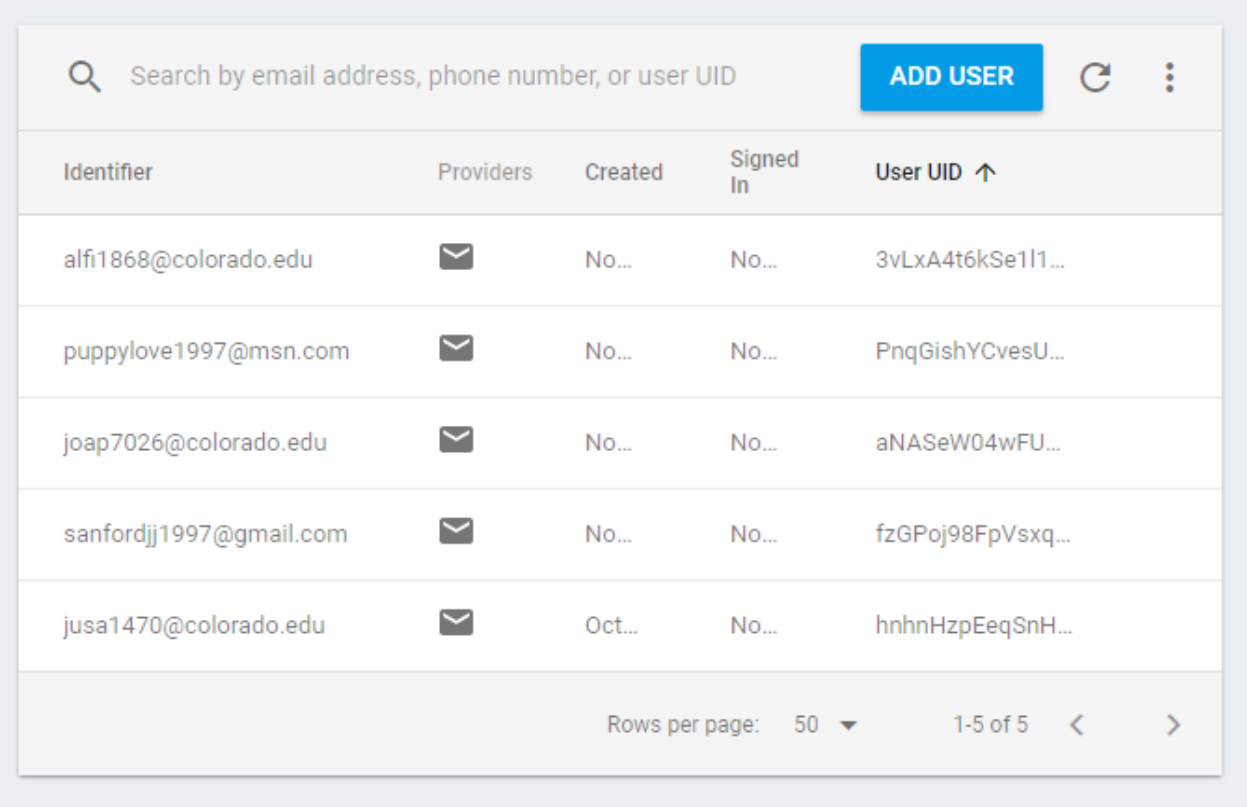
The structure for the database is laid out below:

Complete | Close | Stretch Goals (Only if core functionality finished first)

Users
- User A
- Username
- User ID
- Images
- Activity
- FirstLaunch Boolean
- Number of Completed GridPics
- (Other Usage Stats)

Usage (To be added if we finish core functionality)
- Users
- Percent Active
- (Other stats)

Screenshot of existing users:



Non-Relational Database Exemption Request

For our GridPic photography app, we request an exemption for the requirement to use a relational database for several reasons that directly impact the core functionality of our application. We have selected Firebase, a database platform created by Google, for our application. The first and foremost reason we have selected Firebase over MySQL is because a key aspect of our application is storing user-created image files in our database. Seeing as there is no free cloud storage provided for us to use for this class, we had to look for outside resources in order to find a way to do this. Firebase is an excellent option because it gives us plenty of free cloud storage space to store user photos, and it integrates very well with Android Studio, the program we are using to develop our application. Additionally, we wanted a way to securely store the usernames and passwords of our users, and Firebase provides a way to do so. We had concerns that storing passwords (which users often use across multiple accounts they have) would be a security risk that would not be ideal for account creation, so since we are using Firebase for our cloud storage solution anyway, we decided to use Firebase's username/password storage database as well. As can be seen, these two critical aspects of our application could not be completed with a relational MySQL database, so it is necessary for our group to utilize the tools provided by Firebase instead.