

#FriendFinder: On-Campus Social Networking

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Outline

Today we will:

- Discuss the purpose of this application.
- View the technologies used in the creation of this application.
- View the design and current implementation progress of this application.

Purpose and Goals

- Develop a social-networking application for college students.
- Target the application at specific campuses.
- Provides features targeted at users with low geographical distance between them.

Features for Users

- User Accounts and Profiles
- Friends
- Events
- Groups
- Calendars
- Mapping Locations

Technologies

- Implementation Language: Java
- Application Platform: Android
- Network Encryption via Secure Socket Layer (SSL)
- Network Communication using Javascript Object Notation (JSON)
- Database Communication using Java Database Connectivity (JDBC)
- Backend Database using PostgreSQL
- Client Side Database using SQLite3

Java

- Standard Language for Android
- Solid Server Language
- Built-in Database Connectivity
- Using the same language for the whole project simplifies development.

C/C++ were considered, but would increase development time drastically.

Android

- Android is one of the most popular mobile platforms in the world.
- Prior experience in both Java and Android
- Majority of available testing devices were Android.

Secure Socket Layer

- Encryption is necessary for any system with private user data.
- SSL provides encryption for all data sent between client and server.
- SSL is recommended by Android.
- SSL support is built into the Android Framework.
- Hypertext Transfer Protocol Secure (HTTPS) could be placed on top of SSL in the future if necessary (e.g. for a web application).

JSON

- Key-value store.
- Built for server-client communication within web applications.
- Built-in Android support.
- Multiple supported Java libraries.

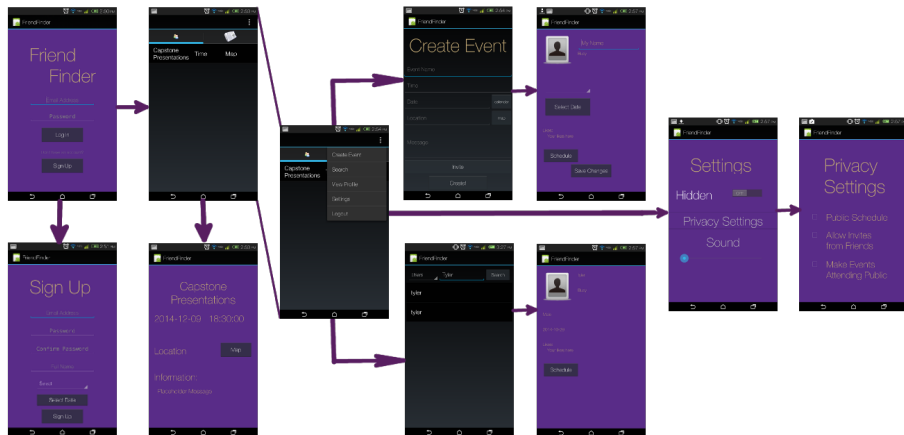
JDBC and PostgreSQL

- JDBC is the default library for accessing databases in Java.
- PostgreSQL is open-source and has JDBC support.
- Prior experience using PSQL for designing a web application.

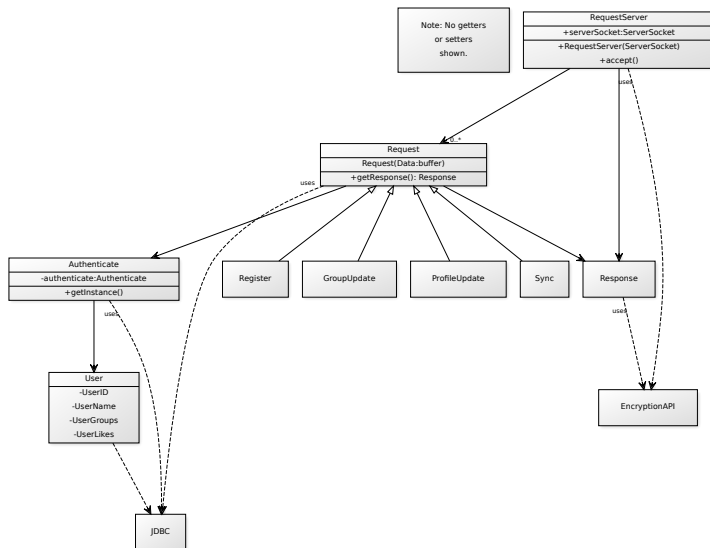
Client-side Databases

- The Android Framework uses *ContentProviders* to store large volumes of data.
- SQLite3 is the Android supported database language compatible with *ContentProviders*.
- SQLite is lighter weight than PostgreSQL, and provides less features, but is suitable for the reduced amount of data stored on each individual client.

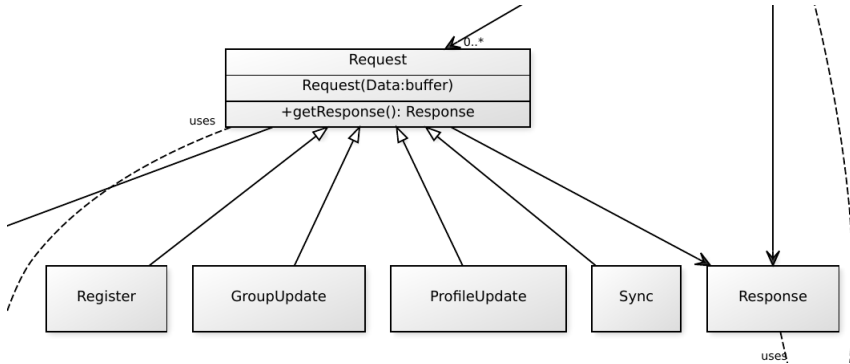
Android Storyboard



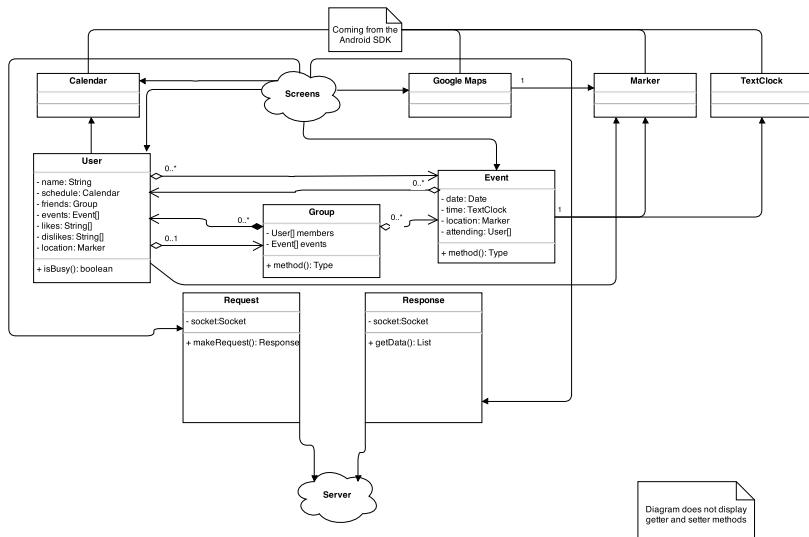
Server UML Class Diagram



Server UML Class Diagram



Application UML Class Diagram



Current Implementation

- Active development server with functioning test PostgreSQL database.
- Client-server communication via Transfer Control Protocol (TCP) and SSL is functioning.
- Client has functioning *ContentProvider* with SQLite Database containing the relevant subset of data received from the server.

Current Implementation cont.

- Layout navigation primarily complete.
- Viewing of events, groups, and users is complete.
- Searching for users and groups are available.
- User login, authentication, and registration is complete.

Demonstration

Summary

- The communication and data storage backbone of the application has been completed.
- A number of viewing, querying, and searching features have been implemented.
- User authentication and registration has been completed.

Future Work

- Allow users to create their own groups, events, etc.
- Allow users to add friends.
- Allow users to set their schedule and make it viewable exclusively to friends.
- Marking event locations on a Google Maps interface for other users to see.
- Allow syncing to be less redundant, more efficient.