Introduction and Objectives

With the introduction of the multi-tasking and multimedia features, smartphones have been positioned as a high-end mobile phone providing many useful features. For example, features such as Mobile internet and GPS (Global Positioning System) have been most important functions of smartphone products, which have attracted many users.

The program allows a smartphone user to communicate with groups of other users more effectively. The driving objectives of this project were:

- Develop a client program with a server-based system to enable dynamic buddy group applications on smartphones;
- Enable more effective and efficient group interactions by leveraging WiFi and GPS.

What is a Buddy Group?

This program facilitates the interactions among people through its major feature, Buddy Groups, in which existing contexts in the phone’s context list can be easily organized into groups. While a buddy group is active, members may:

- Store location and status information;
- Receive reminders about upcoming events;
- Exchange messages.

Why implement a server-based system?

- Data storage at the same location for consistency;
- Efficient data exchange between multiple mobiles and the server.

What does this program support?

Group management (the Group function) provides users with several major functions, such as Events Planning, Building Search, GPS Tracking and Chat Room:

- Share location and status information:
  - Event Planning: Allows users to organize and manage group events;
  - Building Search: Allows users to search for building locations and related contact information;
  - GPS Tracking: Allows users to obtain group mates’ current locations;
- Chat Room: Allows users to have group discussions using text messages.

The GPS Tracking function - An example of many functions implemented

Methodology

A mobile sends HTTP request with user location data group name to the server and the server returns a corresponding Google Map for mobile to display user location. The communication between the server and the database is in PHP and MySQL. Requested data are sent back to the server, then to the mobile.

Discussion and Conclusion

One of the driving objectives of this project was to allow smartphone users to communicate with groups of other users more effectively. We consider this mission accomplished since the group management application facilitates more interactions and increases the dynamic among people. The phone-server feature provides a good basis for future development of other features, such as the chatting, voice conferencing and interactive games.

It should be noted that the GPS tracking function could be supported either by the satellite system or network positioning. Mobile Network positioning was abandoned due to the lack of access authority. Indoor location tracking should be seriously considered for future improvement.