Walk North Hills

Project Proposal

Team: Abhay Gupta, Gaurav Halbe, Mayank Chacko, Rohit Kandhal

Problem Statement: North Hills is an outdoor shopping area located in midtown Raleigh, North Carolina. It includes nearby stores, restaurants, commercial offices and residential living community. When people visit North Hills, most of them are not aware of the places in their proximity, or they rather prefer to drive to their intended location, even though it is within walking distance.
Our idea is to encourage people to prefer walking over driving to any nearby location within vicinity of current location of the person.

Approach: Using the google maps API and our database (having information about the locations in North Hills), this application will show the nearby places along with the time required to reach there on foot. Depending on the current location coordinates of the user, this application will find out the destinations which are walkable (within 'vicinity radius'). This list of locations will be shown to the user sorted such that the nearest destination is displayed on top. These destinations are divided into categories like Restaurants, Parks, Monuments etc. and are available on user demand.
As the purpose of this application is to make operations for naive as well as advanced users easy, the interface and functionality would be kept simple and easily understandable. On selection of a particular destination, user will get walking direction to destination from current location.

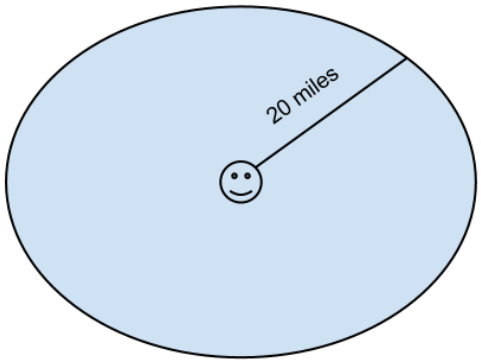

Fig 1. List all nearby places (taking an example of 20 miles as 'vicinity radius')

Prototype:
Application displaying nearby places in the vicinity radius from the current location:

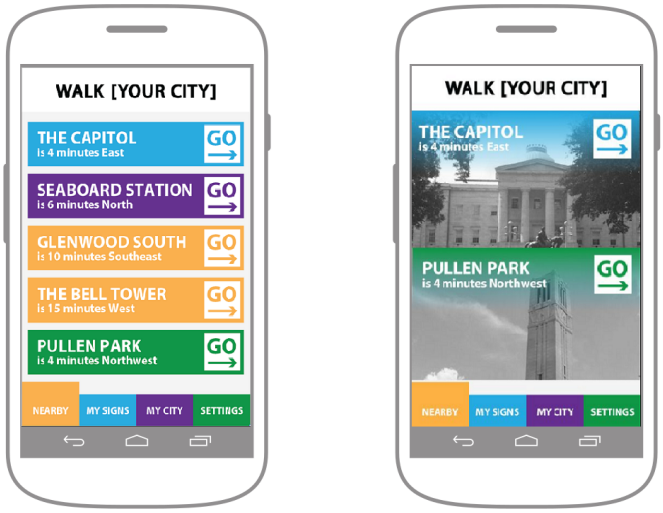

Fig 2. Prototype of the home screen of application

Grading milestones:
Milestone 1: 20%
Data collection and Analysis:
1. Collect location data for North Hills, including all the key location information (name, coordinates of location, location category, location description)
2. Store the data in the default database for user.
3. Analyse the data to decide and calculate the 'vicinity radius'

Milestone 2: 35%
Design and development:
1. Design and develop application front-end to include the key features that should be available to the users.
2. Implement the Google maps functionality to display the locations within 'vicinity radius' in list view.

Milestone 3: 45%
Integration and Test:
1. Integrate maps and showing walkable minutes for the places of interest and displaying list in sorted order (nearest first).
2. Show directions from current location to the destination location on Google map.
3. Refreshing list based on time period and user location change.
4. Perform component and integration testing of the application.

Additions considered for Extra Credits:

1. Provide web forms to the admin to securely add and edit the destination lists that app uses. (Done)
2. Allow users to feed-in a location and store it in local device for future search (declined by client)

References

1. Walk Your City Project http://walkyourcity.org/
2. Android SDK. Google, Inc. http://code.google.com/android
3. Manav Singhal, Anupam Shukla “Implementation of Location based Services in Android using GPS and Web Services” International Journal of Computer Science Issues (IJCSI); Jan2012, Vol. 9 Issue 1, p237-242, 6p
4. Reference Apps: Foursquare,Google Local, Field Trip