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Google Maps API Project Part 2

Application Enhancements:

* Implementation of Step Counter.
* User provided Limitations.
* Determination of running and walking.

Version 1 Description:

Created an application that find the users current location, which is then represented by a marker. As the user walks the application grab information (longitude and latitude) from the devices GPS every 500ms and displays a polyline of the path that the user took. This polyline or path is then displayed on the Google Map with a red colored line.

Version 2 Description:

The user now has the ability to see how many steps they have taken. On the top left corner there is a “Steps Taken” text box, which updates as the user walks. This is a built in feature in the Android API, a call to the Sensor of TYPE\_STEP\_COUNTER. The value stored in its event array helps determine how may steps the user has taken. There is an issue regarding the data for this sensor type. It starts recording the steps of the user when the phone turns on, and only when it turns on does it reset the counter to 0. A work around was made and I created a variable that stored the currently known amount of steps in the sensor, this value acted as a weight in order to have the correct number displayed in this application.

WeightedSteps = event.values[0]-stepsAlreadyTaken;

The user also has access to two buttons, that increase or decrease a set limit. In the demo application this increment and decrement set is only 5, this was done for easier testing. When a user reaches their predefined threshold two events unfold. A marker is set on the location where the user met the threshold and is defined as the endpoint. Then a Toast appears to let the user know that their goal has been reached. The code I wrote helped me understand how data is manipulated so that other uses could also be implemented easily into my program. Other notable uses for knowing the steps and setting a limit can open up the opportunity for a health and fitness app. To determine a user’s calorie burn from the steps taken and then displaying that number in real time, along with their path.

Lastly, the polyline now takes into account whether a user is running or walking. This is done by accessing the devices accelerometer. Using real world testing, I determined that the axis that exerts the most force when running is the Y axis. With this information, my algorithm was quite simple. Once the device detects that a user’s Y axis is greater than 19, either the phone was thrown, or the user is running. Then as such the polyline is displayed with a red line rather than a green line.

As of 10/18/2014 I have also introduced live location tracking. The information on where you currently are is displayed on the map in the form of a blue dot that follows the user in real time. In addition, the application also shows traffic data and a hybrid map. Traffic data is represents by green/orange/red lines on streets to signify traffic conditions and the hybrid map allows for more locally accessible information for the user, attributes such as building names, business names and street names are now all available for the user.



 

