

CMSC 628 MOBILE COMPUTING

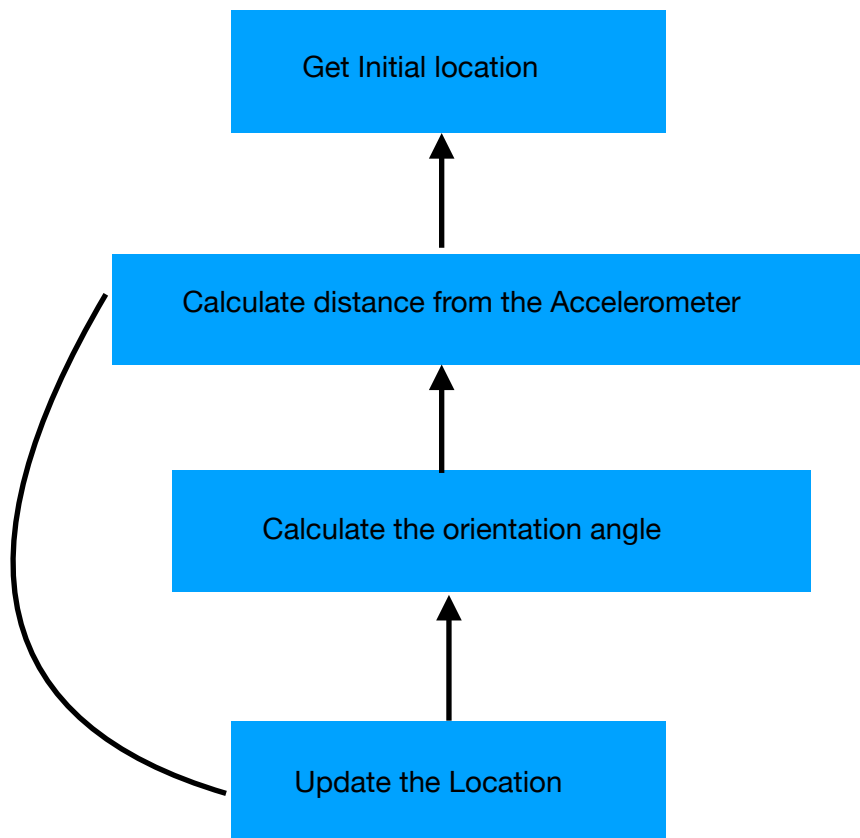
Phani Teja Kesha
KP38691

Method 1 :

For calculating the location in the first method, i checked if the GPS and network is enabled. If any of the GPS or the network provider is enabled then the update for the request is called and the location is updated. If the location is inside a building which doesn't have the GPS then the location is updated by the network. If the location is outside the building the location is updated by the GPS.

Method 2 :

In the second method, i have taken the values of the latitude in the longitude received from the GPS or network for the first time the onLocationChanged function is called. After retrieving initial latitude and longitude, i calculated the distance traveled by using the accelerometer sensor. For the distance calculation the values received from the accelerometer are multiplied by the timestamp between the two callback functions. For finding the changed latitude and longitude from a given initial point we need to have the distance and the angle rotated by the mobile. I have calculated the orientation by the GetOrientation method from the sensor manager. After i have calculated the orientation and the distance i have calculated the updated latitude and longitude from the formula given in the website(<https://www.movable-type.co.uk/scripts/latlong.html>). Once the location is calculated the latitude and longitude are updated in the textview. The location is calculated in the onSensorChanged callback method and the location is updated always when the function is called. The algorithm is as follows



Some of the references i have used for the method 2 are

1)https://developer.android.com/reference/android/hardware/Sensor.html#TYPE_GYROSCOPE

2)<https://stackoverflow.com/questions/14846674/getting-angle-using-gyroscope-in-android>

3)<https://www.movable-type.co.uk/scripts/latlong.html>

4)<https://stackoverflow.com/questions/2187657/calculate-second-point-knowing-the-starting-point-and-distance>

5)<https://gis.stackexchange.com/questions/5821/calculating-latitude-longitude-x-miles-from-point/5822#5822>

6)<https://stackoverflow.com/questions/7222382/get-lat-long-given-current-point-distance-and-bearing/26938066>

The link for the video is given below

1)https://www.youtube.com/watch?v=bCn_Ucwlquo&feature=youtu.be