SMART CITY

Location based route analysis for urbanized Travelers

THU FRI SAT SUN MON TUE WED
84   77   67   75   83   88   89

WED MAY 6 2015
Some clouds
Low 64°F 70°F High 87°F

61   53   52   57   63   65   66

Hourly

Abstract

This proposal is prepared for Sri Lanka Institute of Information Technology (SLIIT that describes the Location based crisis analysis and day planning with artificial intelligence and IOT for smart city. These matters are solved traditionally. But this information is not enough. So this has motivated us to develop a system.

The concept of a Smart City highlights the need to enhance quality, interconnection and performance of various urban services with the use of information and communication technologies (ICT). Smart City technologies promote Internet of Things (IoT) based services in which real-world user interfaces use smart phones, sensors and RFIDs. IoT is presently one of the most important ICT models that are shaping the next generation of computing. This concept has major impact on how we build and deploy smart applications/solutions for smart cities.

The aim in this research is to keep people prepared for those uncertain unprepared events by setting up this application. A smart city is a high-performance urban context, where citizens are more aware of, and more integrated into the city life. In this proposal the authors design, implement and deploy a smart application that retrieves the user relevant information on the user's surroundings. This case study application let us discuss the challenges involved in creating a location-aware mobile service based on live information coming from the city IT infrastructure.

Introduction

- **Purpose**

The purpose of this document is to specify the requirements for the following component of this system SMART CITY which will be implemented as a result of the research project 'Location based crisis analysis and day planning with artificial intelligence and IOT for smart city'.

This document contains the functional and non-functional requirements, technologies, assumptions, interfaces etc.

- **Scope**

With this accelerated rise of urban population, cities throughout the world are facing many risks and concerns. This situation has created an urgency for finding smarter ways to manage the challenges.

Introducing our app is a great step towards a better and faster smarter city. Because with our app people will be able to travel here and there without any trouble because they will be able to plan ahead. It will cause people to be more efficient and time saving in the busy world.

|	Google map	Culture and new digital technologies Transforming world cities	Proposed app	Pick me
Analyze the time taken for reach the destination	✓	✓	✓	✓
When we submit the time to reach the destination show the start time	✗	✗	✓	✗
When we start travelling show us the weather report on the passing areas	✗	✗	✓	✗
Identifying the closest department relevant to the report	✗	✗	✓	✗
Shows the closes route according to the weather and traffic data	✗	✗	✓	✗

Methodology

This section includes detailed descriptions about the techniques and mechanism employed to make our "Smart City App" a reality. The descriptions include how software implementation of our project is carried out, what are the materials and data needed, and how they will be collected. It also includes time frames and schedules that are required in achieving its objectives. In addition to them, the research areas that we have identified to carry out this project are explained rationally.

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Results

1. Create a special automated function for the selected objects in google map to collect data automatically and store them in the database,
   Technology: -
   - Selenium tool
   - TestNG framework
2. Analyze weather data from weather API according to daily travelling root plans. Implement an algorithm for calculate time delays happen in rain days.
3. Providing the user with the easiest and the closest route to reach his/her destination by creating an algorithm with the traffic analysis data and the weather report data. Also, users will be able to share the situations using a chatroom.
   Technology: -
   - fusion techniques
4. Getting the user inputs through the app to collect the abnormal activity data and inform the users through an alert notification.
   Technology: -
   - Geofencing technology

Figure 01 – techniques
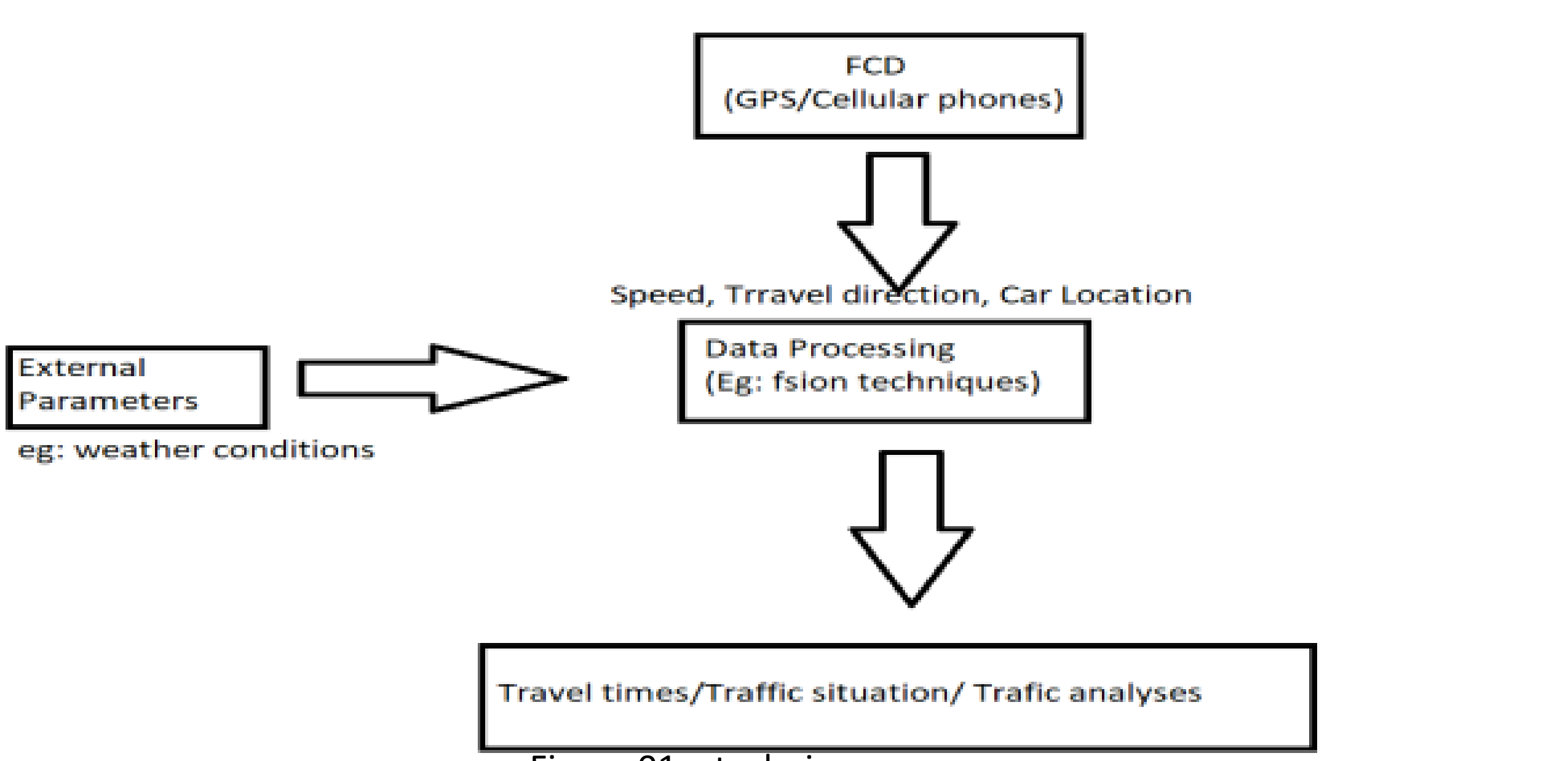
Discussion

"Location based crisis analysis" project is mainly targeting to increase the accuracy level of the public transport system as well as the travel routes in urbanized areas in Sri Lanka.

People these days always look for the easiest way for them to accomplish a task. Therefore, it'll be much better if they can report an abnormal or a dangerous activity via an application so the others also get to know faster rather than report it to the police stations.

Getting to know the future climatic and traffic information through an application is also a time saver. While doing this project, the research team was faced some problem regarding to the implementation. They are given below.
1. Getting the correct details of climate and traffic data.
2. Locating the traffic areas using objects
3. There is no way to prove there is an abnormal activity in the area
4. User inputs cannot be always trusted

Finally, team met with travelers to discuss the issues. After that we took some ideas on the user's perspective and planned how the user's mobile application must be worked, They are given below,
1. Getting users to upload an image while reporting something unusual.
2. Getting the user's National ID number so the information will be always trustworthy.
3. Provide the facility to the user's so they can quickly report the illegal or emergency activities through the application.

Conclusions

I. Registration for both departments and users
When a user installs the mobile application, the user needs to register via the application using Name, NIC, Email, Phone number and other necessary details. At the same time, we need to register departments with a separate database with only the admin privileges.

II. Show the user's location on the map
As GPS installed in every smart phone the application will interact with it to provide the user's current location and provide him/her with the closest locations and routes to destinations.

III. Show ambulance and emergency vehicle
When an emergency vehicle is deployed from a department it will show on the map. It will assume how long it will take to come and what route it takes to reach the destination.

IV. Traffic analysis
Take the live location of the user and by predicting movements of the user's vehicle while he is driving get the traffic details of the current location and distribute it with the other users when they request for the traffic data when making daily plans.

References

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