OPTIMIZED GAS STATION MAPPING MOBILE APPLICATION

INTRODUCTION

A petrol station, filling station, gas station, fuelling station or service station is a facility which sells fuel and lubricants for motor vehicles. The most common fuel sold is petrol and kerosene. According to Keble (1968), petrol station should be located not only where there are in fact accessible but where they can be easily located by strangers and that, in details, they should be placed where they will be little danger and congestion as much as possible.

Filling stations should not be located less than 100.6 meters from school, hospitals, theatre, residentials, clinic and public areas. This is to avoid fire disaster in public places.

**Problem Statement**

Drivers all over the world should be able to drive their cars without having to get stranded on highways when they run out of gas. Even when a driver is new in an area, they should be able to access gas stations easily to help them manage their journey and avoid frustrating delays.

Nonetheless, most drivers often find themselves in new cities and country sides and have no idea of how far ahead the gas stations are or where their preferred brand of gasoline providers are located. The available applications that could helped out with that are not optimized and hence risky to use when driving and also time wasting.

Drivers often get frustrated when their vehicles stall on highways and they have to get alternative means to look for gas. In most cases, time is wasted and the drivers fail to meet their estimated times of arrival. In some places, gas stations close at night and this would require the driver to be on the highway all night with an immobile vehicle. Using an optimized gas station mapping mobile application, drivers can easily locate gas stations and also get an estimate of how far it is from their current location. Drivers are also able to choose gasoline provider brands over others based on user rating ensuring that they get the best quality of fuel. They will also know the prices of gas in the nearby gas stations. Additionally, the optimized application can be installed in the smart vehicles’ computer system allowing for drivers to get mapped-out filling stations at the click of a button.

PROPOSED SOLUTION

To provide easy allocation of the petrol station to residents and strangers

To keep them informed on the prices

**General Objectives**

To develop an optimized gas station mapping mobile application that guides the driver on the nearest gas station, their quality of fuel and services, and their prices.

**Specific Objectives**

1. To gather information on the mapping of gas stations along different routes.
2. To design a mobile interface that maps the gas stations on different navigation routes.
3. To implement the system for use.
4. To test the mobile application for response times and accuracy.

**Literature Review**

**INTRODUCTION**

A petrol station is a retail establishment where motor vehicles are fuelled, lubricated, serviced and sometime repaired (Friedman, 1978).Most petrol stations sell petrol or diesel, some carry speciality fuel such as liquified petroleum gas (LPG), natural gas, hydrogen, bio-diesel, kerosene or butanewhile the rest add shop to their primary basis, and convenience stores (the American heritage dictionary, 2004).

There has been a growing literature both in empherical as well as theoretical to analyse the location of petrol and establish the factors of location of filling station of our town and cities. Important studies include

1. Assessing the environmental sensitivity of petrol stations in Europe Davies,2008.

Davies access location in Europe with emphasis on environmental sensitivity. In his work he focuses on the scale of potential risk of this station on the environment and human resources.

1. Optimal location of petrol pump(integrating GIS with mathematical model) (Ayub, 1998).

The study was contacted for Saudi Arabia by which focuses on the optimal location of petrol pumps by integrating GIS and mathematical models.

1. Application of GIS in locating facilities and services (a case study of petrol station NCBD, Kenya), Nyanya, 2010.

The study employs the use of GIS technology in locating of facilities and services with special emphasis on filling stations. He uses GIS technology to study all filling station on their Spatial context.