System Overview

This system will enable users to search for specific gas stations by name or brand. In addition users will be able to see gas prices and what types of fuel is available at specific gas stations. Users will also be able to add their own information to the database in the form of; adding new gas prices to existing gas stations, adding new gas stations, and to notify the database administrator when a gas station is no longer available. This will be done using databases and tables to house all of the information. Since this system will be built on already existing GPS systems then we will only need to make sure that our system is compatible with theirs. This software design document will cover all of the different aspects of the system in more detail in the following sections.

Data Design

1. Data description

MySQL database and ability to communicate with GPS servers.

1. Data Structure

Database

Gas Stations

Tables

A table for each state

(Ex. Alabama, Alaska,… ,California, … ,Washington)

Table Layout (Same for each table)

|  |  |  |  |
| --- | --- | --- | --- |
| **Name of Gas Station** | **Location** | **Type (Gas or Diesel)** | **Prices** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

Users can update gas and diesel prices of the gas stations they visit.

Component Design

1. Data Dictionary

**Gas Location Object:**

*Description:* This object contains location information such as state, city, and street address. The state value serves as a primary key in the database.

*Usage:* This object is used to associate gas station locations with the proper state and city that the user is in.

**Gas Type Object:**

*Description:* This object contains information about the different types of fuel is available at any particular gas station.

*Usage:* This object is used to allow users to search for gas stations that have the type of fuel they need.

**User Input Object:**

*Description:* This object contains information such as location, name of gas station, types of fuel, and fuel prices.

*Usage:* This object is used to allow users to update or add new gas prices and gas stations.

**Station Name Object:**

*Description:* This object contains information on the name or brand of the gas station.

*Usage:* This object is used to allow users to search for stations by the name or the brand of the gas station. Users can limit their search to a specific type of gas station such as Shell. Or they can search for more than one type of gas station.

**Administrator Object:**

*Description:* This object contains information such as the administrator’s full name, permissions, and passwords.

*Usage:* This object is used to represent the administrator in the Gas Station database object.

**Gas Station Database Object:**

*Description:* This object contains pointers to gas location, gas type, gas prices, station name, and user input type objects.

*Usage:* This object will house all gas station types in the database.