1.

The initial thoughts of the group are to design a program using C++ as the main language for development. The software should be modular and easy to break down to help the ease of development. Each member of the group will be given task or module to work on to build a functional program. The front end of the system will be done using Qt tool from NetBeans IDE for a foundation and code will be added to make parts of the program. On the backend a database will be attached to the software to track location, rate history for client and competitors, gallons requested, profit margin and fluctuations in seasonal pricing.

Some aspects of design which were discussed was compatibility with desktop and mobile market, the ease use on the interface, security of design, maintainability of software and extensible which is the adding new features along development.

* Front end would be windows visual studios in c++ (CLR)
* Back end would be MySQL

2.

We decided that we would like to use an Agile Methodology. More specifically we decided to use the SCRUM model. A couple of reasons we decided to use the SCRUM model are it is flexible, iterative, and allows us to have constant updates on the progress of our project.

SCRUM uses decision making that is focused in real world results rather speculation. SCRUM has small sprints that lasts for a couple of weeks and at the end of this, team members meet and plan the next step or ship the software. This allows for smart risk management for making a software and constant flow of information between team members.

SCRUM will be used because of the pillars it is built on such as commitment of members for sprints, courage to work on difficult challenges, focus on team goals, openness of the team and clients and respect for members.

3.

User Interface

New Customer View

Returning Customer View

/Login

New User Form/Profile

Profile Editor

Request Fuel/Fuel History Quote

Client Form

(Data Entry)

Client-Server Model

MySQL DBMS

MySQL Database: (Admin View)

-Client Location

-Competitor Price

-Client Rate History

-Gallon Requested

-Company Profit Margin %

-Seasonal Rate Fluctuation

-User Data

User View:

-Fuel Quote Price History

asdf

In the diagram above we show the high-level design of an application used to predict fuel prices based on the data entered. At the highest level is the user interface. The user interface is where the client will interact with new and returning users. Returning user can editor their profile or enter location data for price prediction. All entries of data is connected to a database using the client server model. MySQL will be the DBMS of choice. MySQL will have database with user data. The next database will have pricing, location data, history of rates, company profit and seasonal fluctuations. Everything will be presented in a well layout results interface with a fuel quote and history of previous pricing.