

# Requirements Specification

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## oldGMCTrucks Mapper



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**oldGMCTrucks  
Mapper  
Requirements  
Specifications**

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## 1. Product Overview and Summary

For many people who take joy and pride in their classic automobiles, it is difficult to find others to enjoy their cruising experience with. People with an interest in a more specific vehicle may even have a harder time finding people that understand their passion. Dr. Timoth Lederman, an active participant and administrator of an antique GMC truck forum, has expressed the interest in an easy to use web based mapping system for finding people with common interests in antique GMC trucks. The purpose of this system is to provide an intuitive map based interface that allows for GMC truck owners to arrange meetings, gatherings, and cruises with fellow forum members. Such a system would assist in the organization of social events, provide for cruising route suggestions, and even insure them that there would be someone around with the tools to help if they were to break down.

## 2. Development and Production Environments

### 2.1 Development Environment

#### *Server*

Operating System: CentOS 5.2, Kernal 2.6.18-92e15

Server Name: oraserv.cs.siena.edu

CPU: Intel Xeon 2.66 GHz

RAM: 8GB

#### *Macintosh Computer*

Operating System: OSX Version 10.7.4

Proc: Intel Core i5 @ 2.5GHz

Ram: 4GB 133 MHz DDR3

HDD: 500GB

#### *Windows Computer*

Operating System: Windows Vista

Proc: Intel Core 2 Duo E7500 @ 2.93 GHz

Ram: 4GB

HDD: 297GB

## 2.2 Operating Environment

The solution will be a web-based application by Web Hosting Pad. The web-based application will be accessible by oldGMCTrucks.com forum members.

## 2.3 Maintenance Environment

There should be minimal if any maintenance of the solution, however, if needed, the maintenance environment will include all the same software and hardware used in the Development Environment.

## 3. User Case Narratives

### 3.1 Non-oldGMCTrucks Member

The Non-oldGMCTrucks Member (random user) will not be able to see anything except for a link to create an account. Once the random user has created an account on the oldGMCTrucks forum site, they will become a new user, and will inherit functionality designated by the new user rank.

### 3.2 oldGMCTrucks Forum Member

The oldGMCTrucks Forum Member (new user) is a user who can only see a map. Their membership to the oldGMCTrucks forum site will have to be confirmed either by our Mapper system or the System Admin. The new user will be able to view the information for the event that corresponds to the link they clicked. A new user can also become a user by creating an account for the oldGMCTrucks Mapper.

### 3.3 oldGMCTrucks Mapper Member

The oldGMCTrucks Mapper Member (user) is someone who is a member of oldGMCTrucks Mapper and has a membership with the oldGMCTrucks forum. When the user reaches the oldGMCTrucks Mapper site, the user will be greeted with a page asking to login or signup. The user is able to perform maintenance on the user's own profile. This maintenance includes managing what information is visible in the user's "shout-out." The shout-out is the bubble that appears when a user clicks on another user's pin on the map. Users have the ability to create an event. Along with this ability, a user can edit any event on the map for the purpose of fixing incorrect information displayed by the event or simply updating the information. Users will be able to get directions from a selected starting pinpoint to another user's home, garage, or event locations.

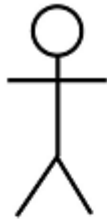
## 3.4 System Administrator

The System Administrator (admin) is responsible for the inspection of user data inputted into the system as well as for maintaining users' data.

The admin is the only user with the ability to modify anyone's information, confirm a user is a member of the oldGMCTrucks forum, and respond to requests by users for assistance. The admin will be greeted with a control panel when logging on to our system. Here, the admin will have access to all data, including events and users' personal information. In addition to being able to access all data, the admin can modify any user's data. The admin has access to each user's email and can receive notifications if issues arise from a user's profile. The admin will also be in charge of confirming that the user has an account on the oldGMCTrucks forum site. The admin will receive an email whenever a new user creates an account and will have to send a confirmation to the new user that they are now able to create an account on the oldGMCTrucks Mapper site.

## 4. UML Use Case Diagram

### 4.1 UML Use Case Diagram Legend



**An actor is represented as a stick figure that is an internal or external entity that interacts with the system. The actor(s) of a system describes the internal and external entities.**



**The association of two objects is represented by a line. This describes the relationship and interaction between an actor and its use case.**



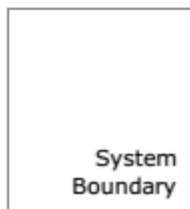
**The includes association is represented by an arrow labeled <<Includes>>. This association describes that the base use case is dependent upon the included use case and cannot stand alone.**



**The extends association is represented by an open arrow labeled <<Extends>>. This association is dependant upon the base use case and adds another step to the use case.**

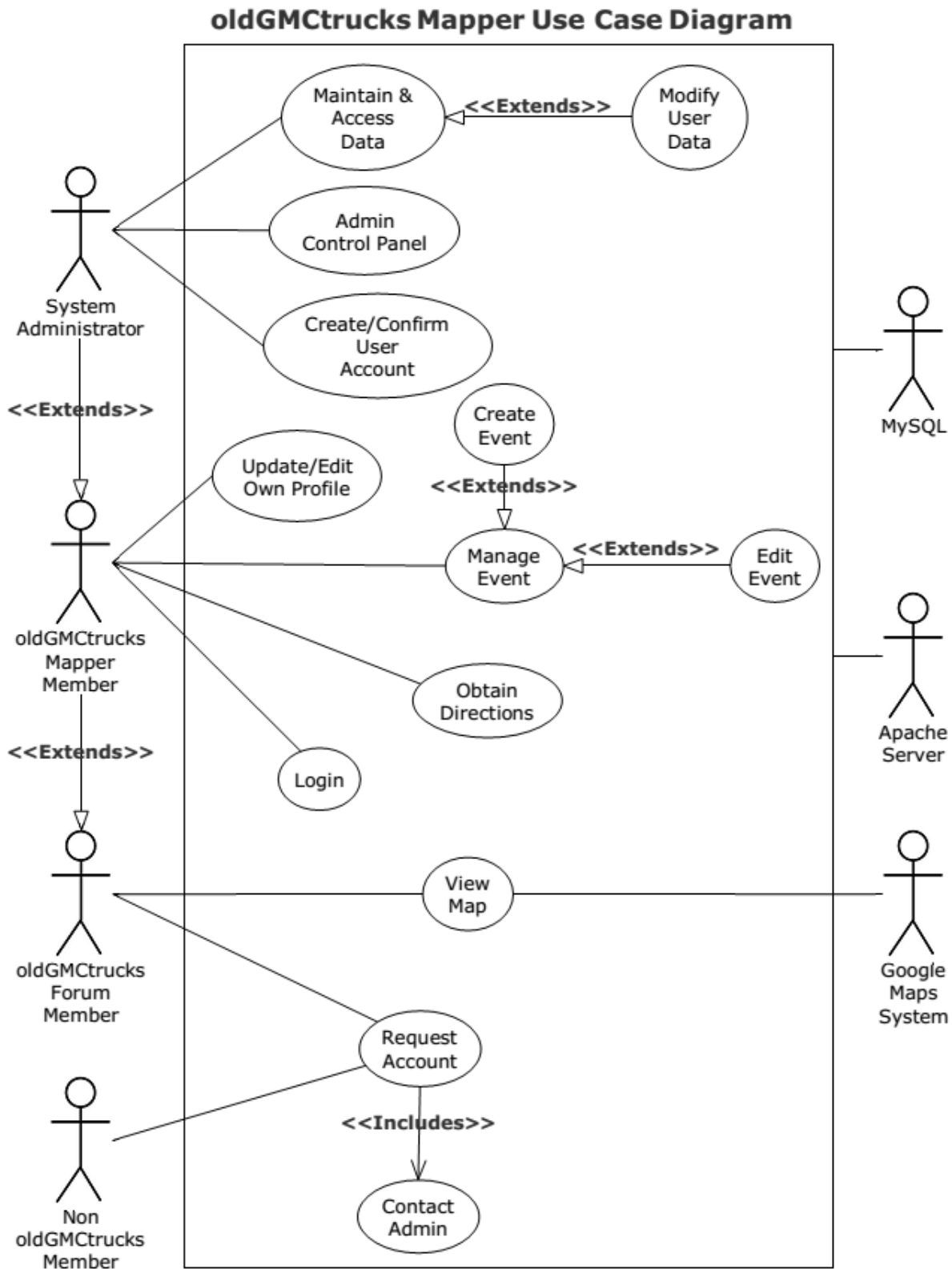


**A use case is represented with an oval shaped object. There is often a name inside of the oval, giving the name of that function.**



**A system boundary is represented by a large rectangle, encapsulating the use cases inside. The actors remain outside of the system boundary but can interact with the use cases inside.**

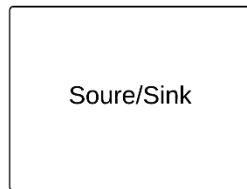
## 4.2 Use Case Diagram



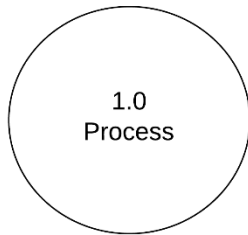
## 5. Data Flow Diagrams

### 5.1 Data Flow Diagram Legend

#### Data Flow Diagram Legend



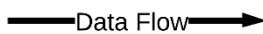
Source or sinks are represented by a closed rectangle. A source or sink is either human or non-human where data originates from or ends up at. The name of the source or sink is written within the closed rectangle.



Processes are represented by a circle. A process is anything that performs an action on data. The process name is written inside the circle along with its process number.



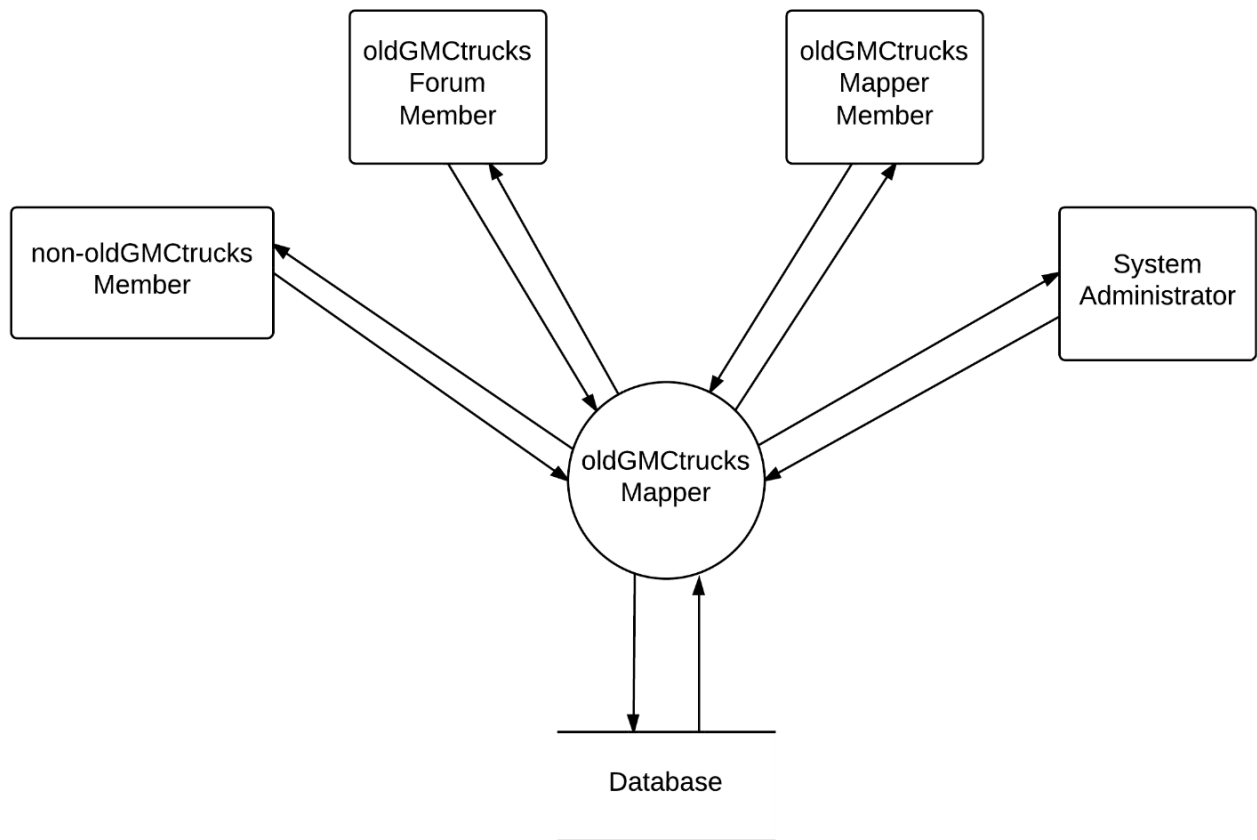
Data stores are represented by a rectangle that is open on both the right and left side. Data stores are physical or electronic locations where data is kept. The data store name is written inside the open rectangle.



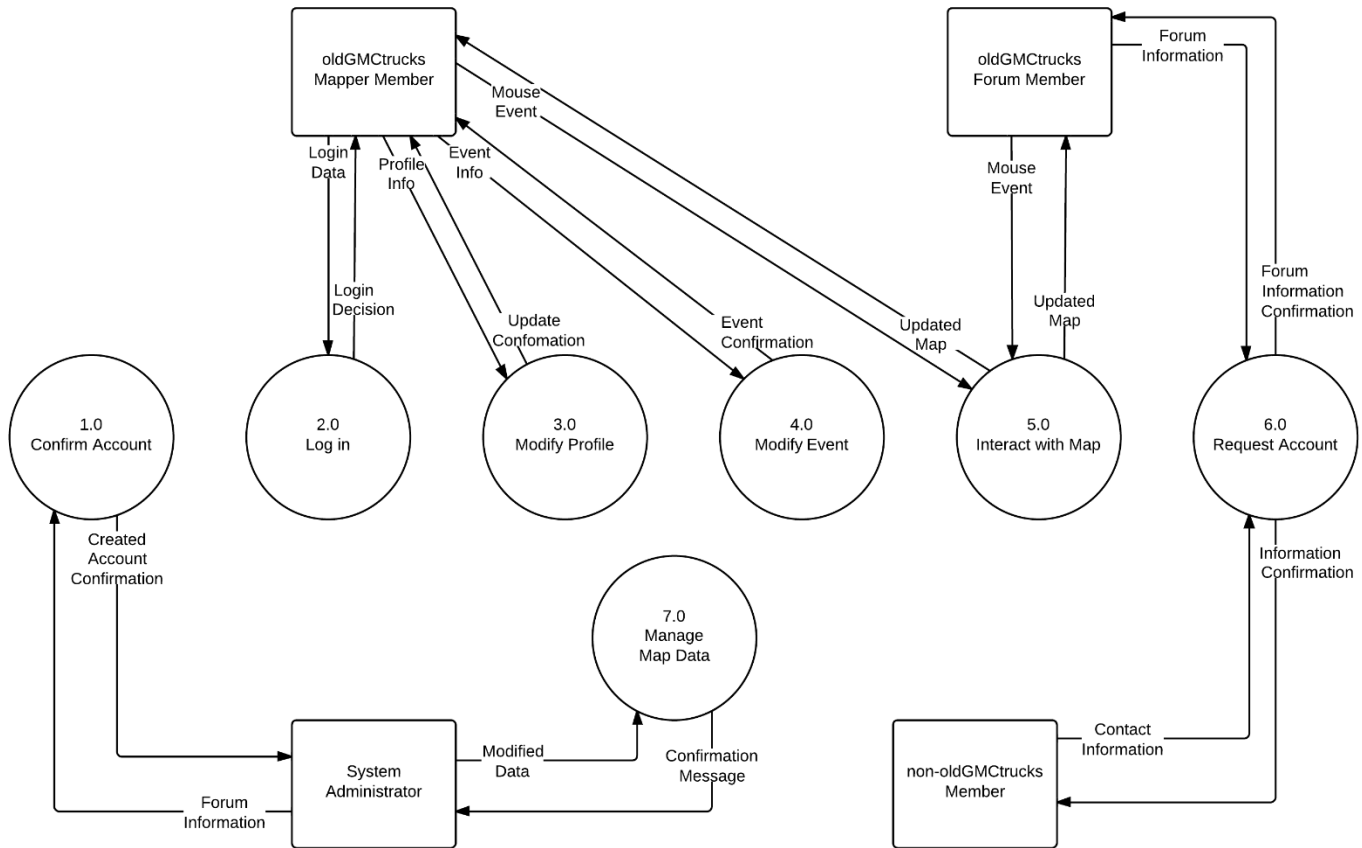
Data flows are represented by an arrow, the direction of the data flow is indicated by the direction of the arrowhead. A description of the data is written on the arrow.



## 5.2 Context Diagram



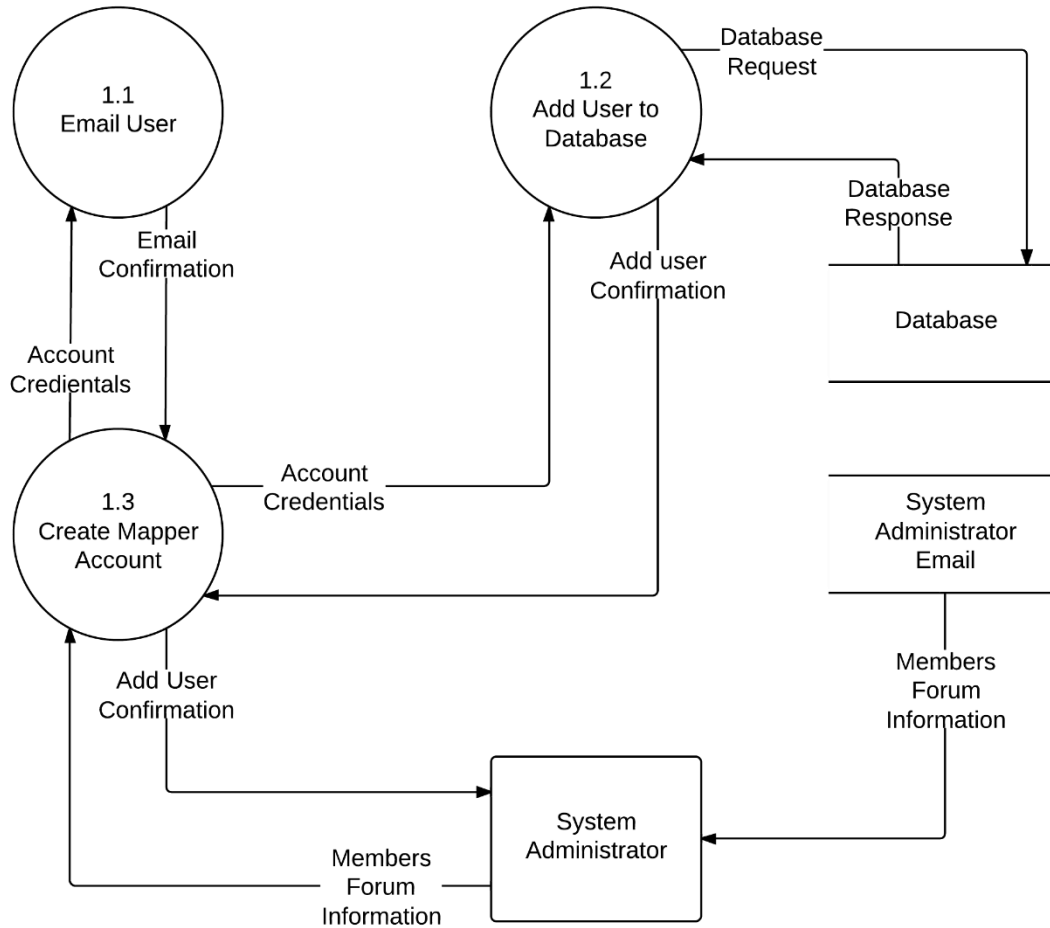
## 5.3 Level 0 Diagram



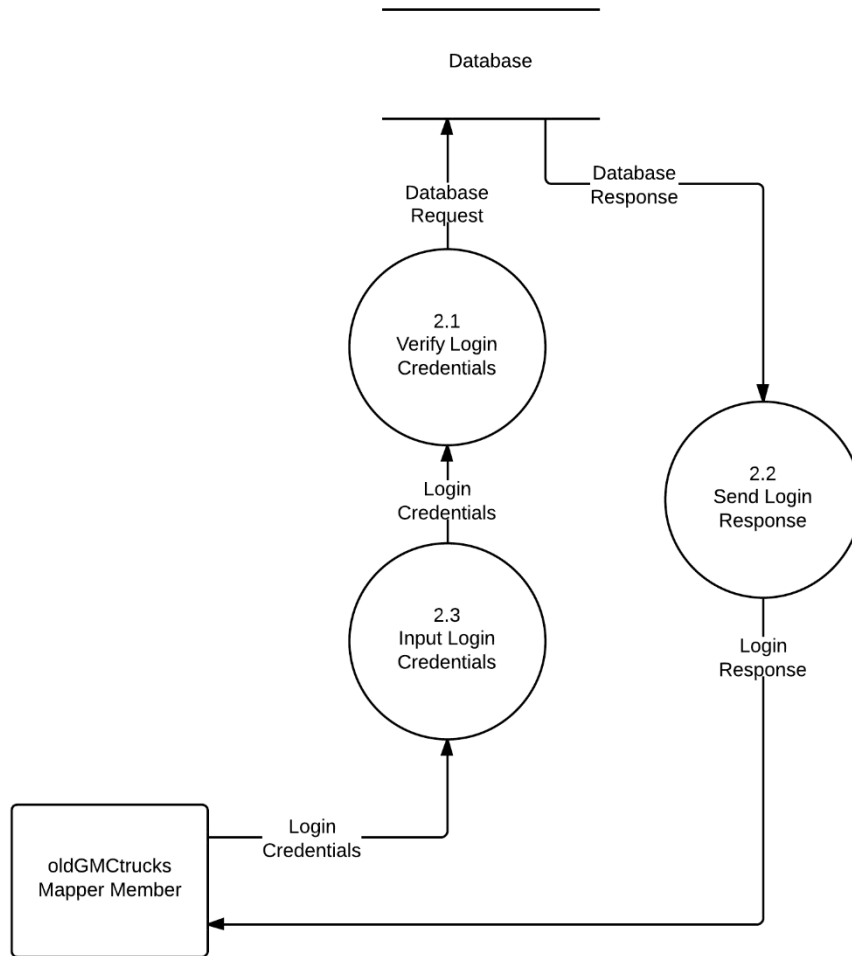
The System Administrator also acts as a oldGMTrucks Mapper Member and will have all the functionality of a oldGMTrucks Mapper Member

### 5.4 Level 1 Diagrams

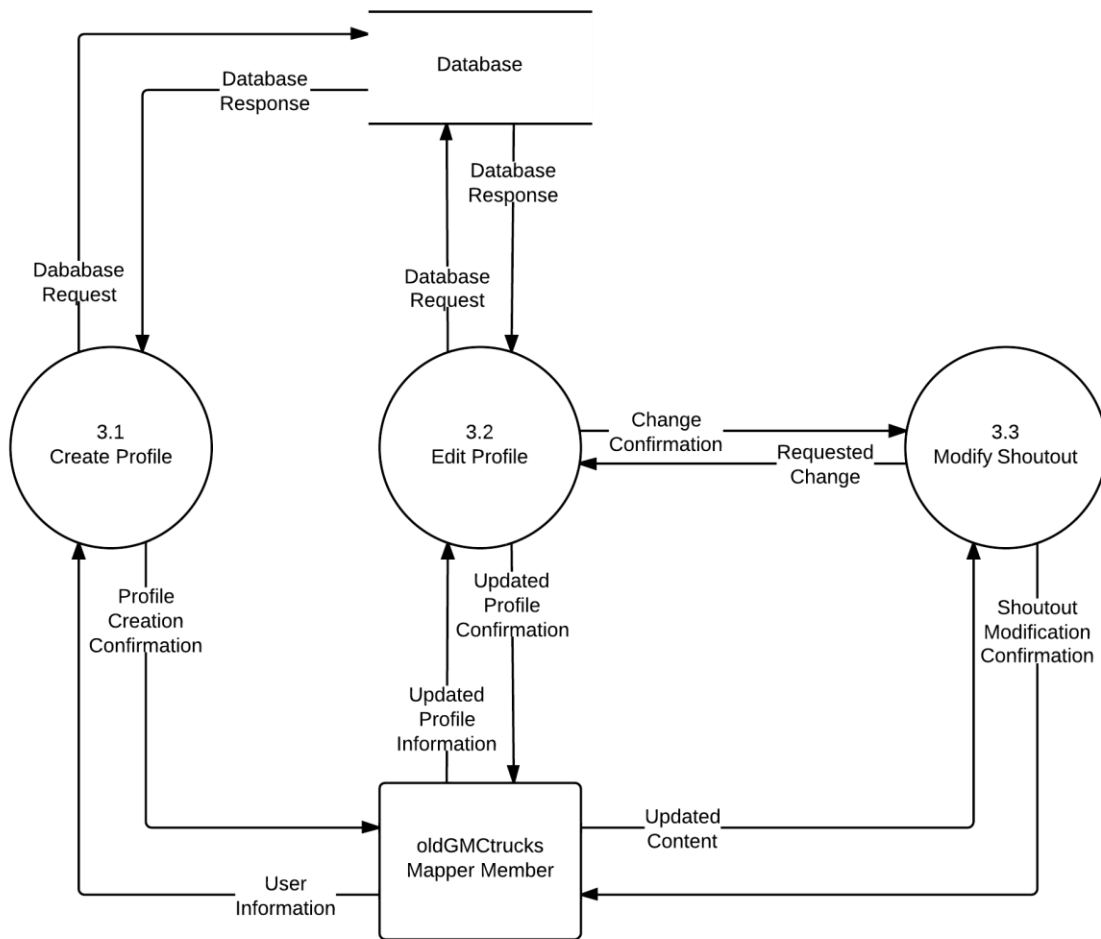
#### 5.4.1 Confirm Account Level 1 Diagram



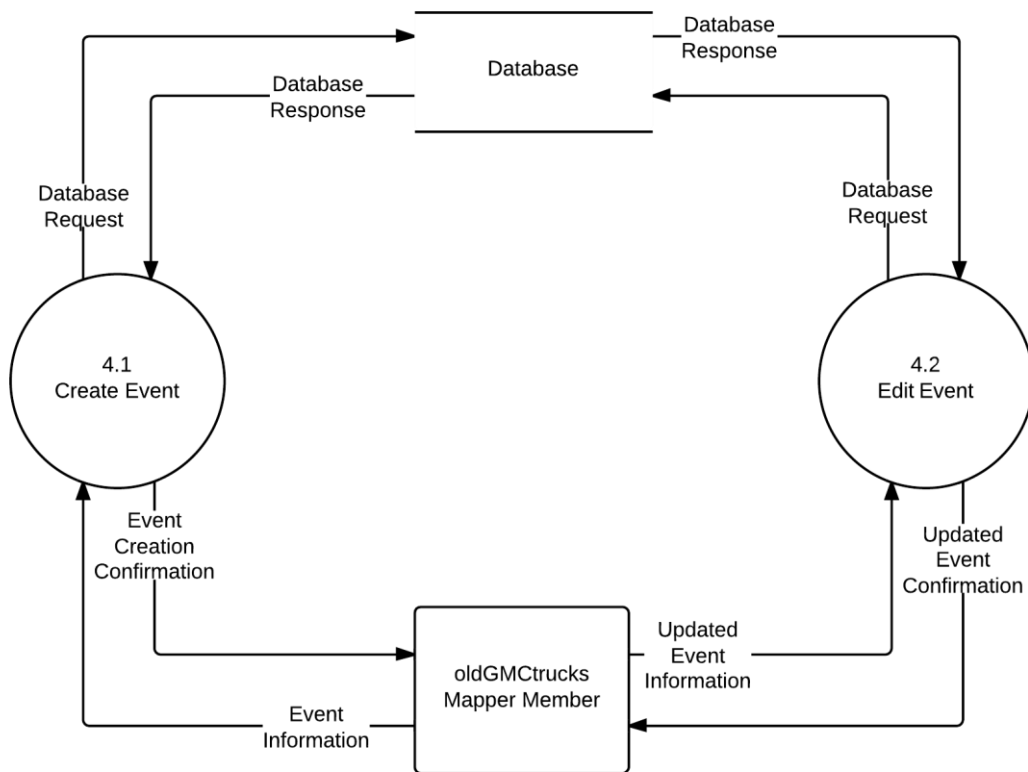
## 5.4.2 Login Level 1 Diagram



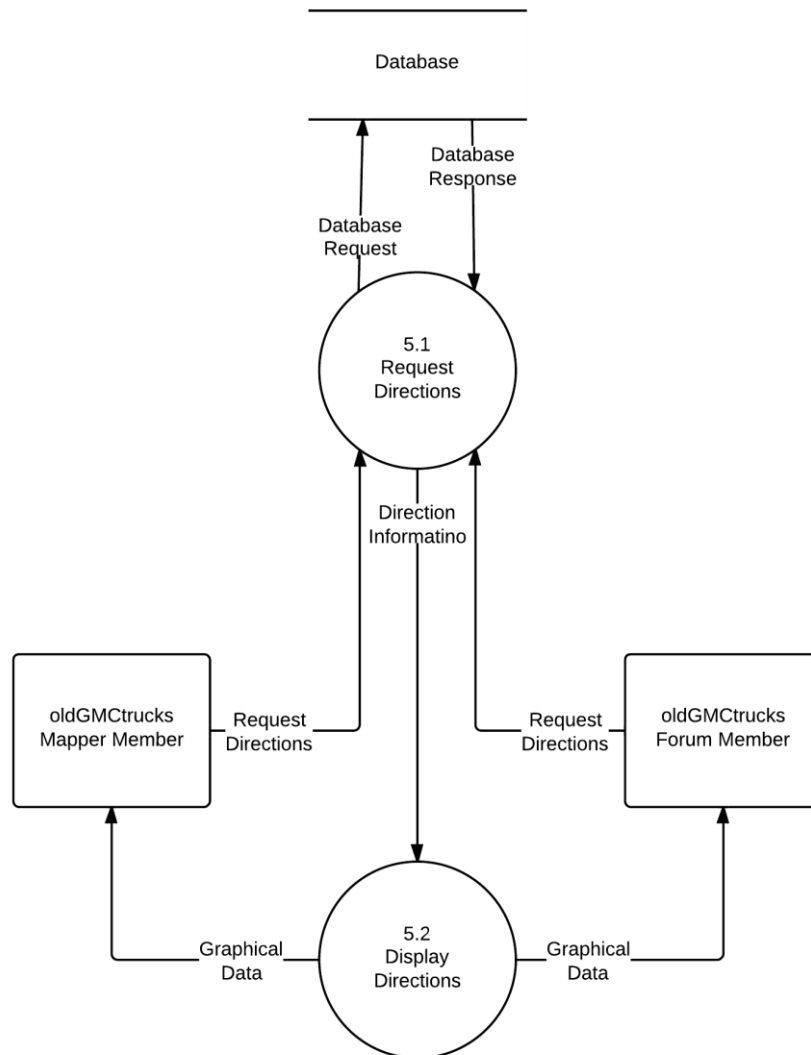
## 5.4.3 Modify Profile Level 1 Diagram



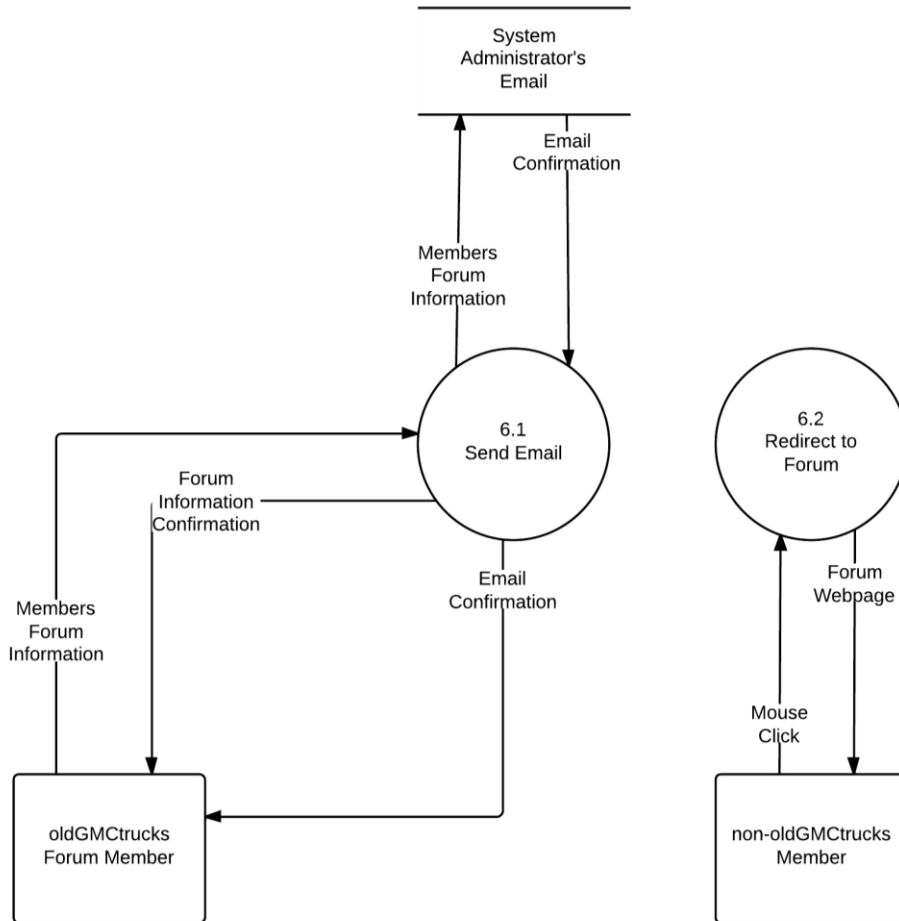
## 5.4.4 Modify Event Level 1 Diagram



## 5.4.5 Interact with Map Level 1 Diagram

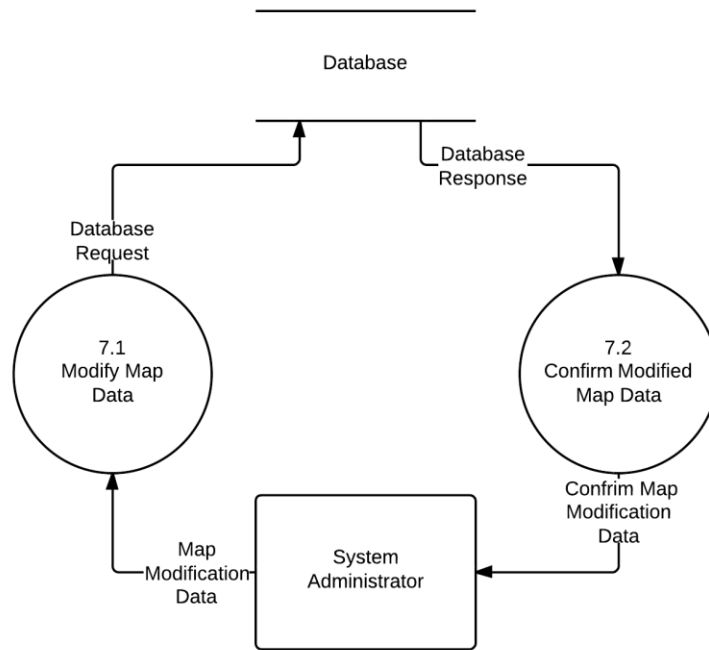


## 5.4.6 Request Account Level 1 Diagram

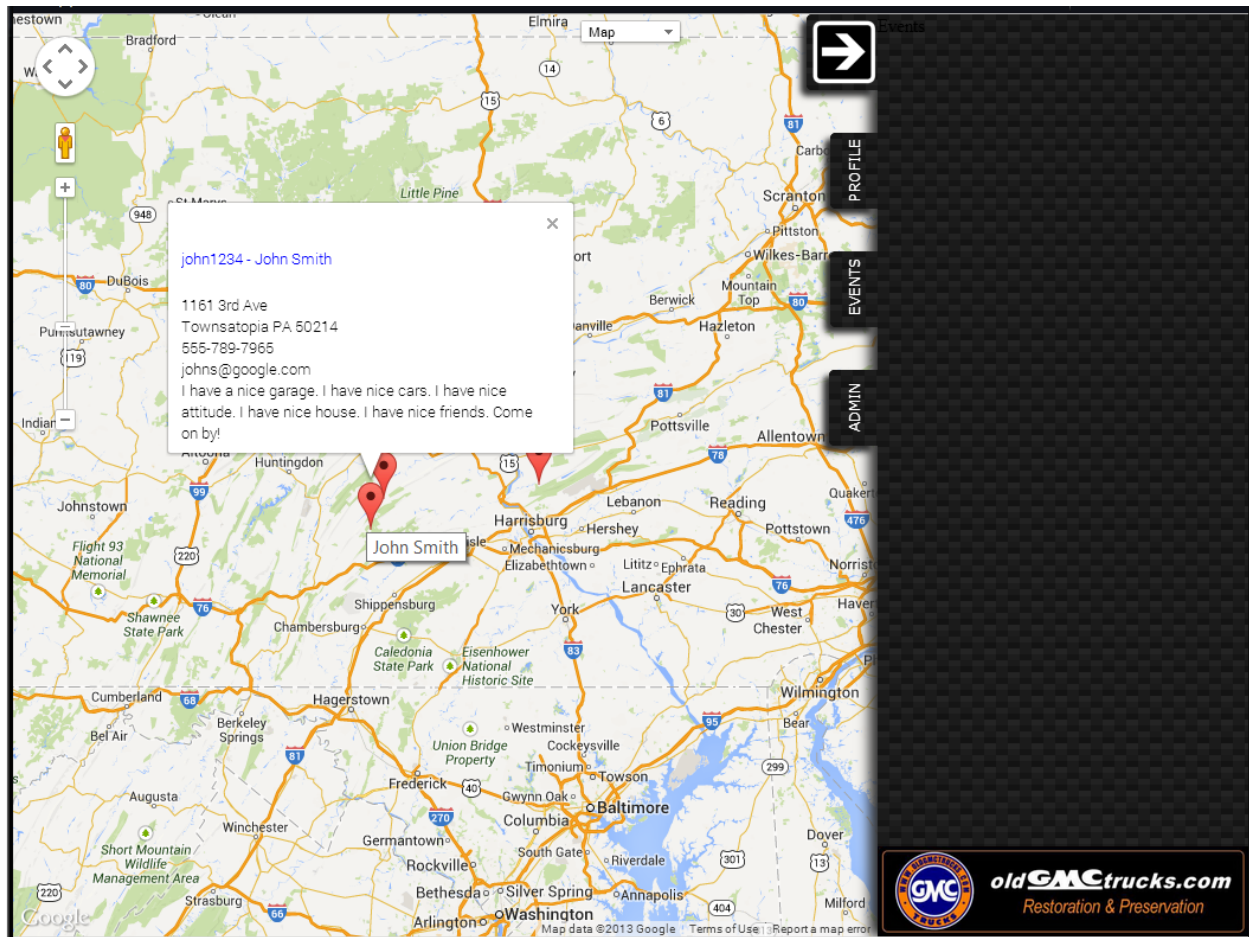




## 5.4.7 Manage Map Data Level 1 Diagram



## 6. Prototypes Used For Discovery



Above is the current map style that has been chosen by the client and members of BitSize Solutions as a prototype toward a more detailed design of the oldGMctrucks Mapper site. It features a slide-out panel that includes multiple tabs for displaying various kinds of information. This panel can slide away for the user to view the entire map.

## 7. Functional Requirements Inventory

The functional requirements inventory serves to define each function the system will provide for each different actor. Each function will include a set of inputs, the behavior (data transformation etc...) and outputs.

### 1) General User Interface Functional Requirements

- Map with pins representing member and event locations
  - Upon click, each pin displays with a “shoutout” containing member or event information
- At least two distinct pins for users and events
- Will have a slide-out right aligned panel with the following tabs
  - Members
    - Will have a search bar to search for members via the members’ first or last name first name, last name, username, or address.
  - Events
  - Directions
    - Will have the ability to create a trip between member’ locations and events
  - Profile
  - Admin
    - Will only exist for Administrators

2) Random Actor – Will not be able to see anything. Redirected to create an account on the oldGMCTrucks forum.

- Will see blank map
- Will have the ability to sign up for an account on oldGMCTrucks forum.

3) oldGMCTrucks Forum Member Actor:

- Will have the ability to access the site through the oldGMCTrucks forum.
- Will have the ability to view a map with user information on the map.
- Will have the ability to create an account on the oldGMCTrucks Mapper site.

4) oldGMCTrucks Mapper Member Actor:

- Will have the ability to log in.
- Will have the ability to update information in their profile.
  - Update First name
  - Update Last name
  - Update Home address
  - Update Phone numbers
  - Update e-Mails
  - Update “about me”
  - Update Pictures
- Members can derive directions to an event or to another member’s location.
- Members can create events.
- Members can update any events.

5) oldGMCTrucks Mapper administrator:

- Will have a profile with the same functionality as an oldGMCTrucks Mapper Member.
- Admin will also be able to modify any member's data.
- Admin will be able to create user accounts.

## 8. Non-Functional Requirements Inventory

Non-functional requirements are non-specific behaviors of a system used to judge the overall quality of the operation of that system. For the oldGMCTrucks Mapper (the system), we have judged the following to be our non-functional requirements:

- 1) The system will run efficiently on the following browsers.
  - a. Internet Explorer 6.0+
  - b. Firefox 2.0+
  - c. Safari 3.1+
  - d. Chrome
- 2) The system will be compliant with the Google Terms of Service.
- 3) Interactions with the system will be intuitive for non-tech savvy people.
- 4) The system will be well documented.
- 5) The system will be extensible.
- 6) The system will be reliable.
- 7) The system will be secure.

Because non-functional requirements are non-specific behaviors, running acceptance tests on non-functional requirements is near impossible, and can really only be tested through user testing.

## 9. Exception Handling

Bitsize Solutions will design a secure system that will only allow oldGMCTrucks forum and oldGMCTrucks Mapper members to only access the oldGMCTrucks Mapper website. An exception will arise when a non-oldGMCTrucks member tries to access the Mapper website. In order to do so, Bitsize Solutions must ensure that non-oldGMCTrucks members must not be able to access the map website if they were given a link from an outside source. The oldGMCTrucks Mapper website will be a private site, only allowing access to oldGMCTrucks forum members and oldGMCTrucks Mapper members.

## 10. Implementation Priorities

Although BitSize Solutions plans on implementing all portions of the functional requirements inventory, the following have been decided upon as functions we need to establish first.

- Having Admin and member be able to view the map
- Ability for members to edit their profiles
- Ability for members to delete their profiles
- Ability for members to edit and create events
- Ability for the Admin to edit all member profiles.
- Ability for members to plan a trip and get directions.
- Ability for forum members to request an account on the site.

## 11. Foreseeable Modifications and Enhancements

Possible future modifications to oldGMCTrucks Mapper may include:

- Being able to add multiple cars to a forum members location
- Being able to see repair facilities around a forum members current location
- Being able to use a Smartphone with the oldGMCTrucks Mapper solution

## 12. Testing Requirements

The oldGMCTrucks Mapper system will be tested on various browsers and browser versions outlined in the functional requirements. The system will not be deemed complete until each requirement from the functional and non-functional requirements is met under each specified browser. The full test on the system will include many processes. Each of these processes will be further explained in the Preliminary Design and the Detailed Design documents. The extent to which all these processes were fulfilled will be documented in the Acceptance Test document.

## 13. Acceptance Criteria

The acceptance criteria for the oldGMCTrucks Mapper system is specified by the functional requirements outlined in section 7 and the non-functional requirements outlined in section 8. The functional requirements will be explicitly performed by the system. The non-functional requirements will have their completion judged based on certain operations of the system. After the demonstration of all the functional and non-functional requirements the client will determine the completeness of the system.

## 14. Design Hints and Guidelines

Due to oldGMCTrucks Mapper being in the early stages of development there are currently no Design hints. As oldGMCTrucks mapper progresses in its development hints and guidelines will be determined by both our client Dr. Lederman and BitSize Solutions.

## 15. Appendices

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## 15.1 Appendix A: Cross Reference Index

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oldGMCTrucks Mapper Login Level 1 Diagram 5.4.2  
oldGMCTrucks Mapper Modify Profile Level 1 Diagram 5.4.3  
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oldGMCTrucks Mapper Interact with Map Level 1 Diagram 5.4.5  
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oldGMCTrucks Mapper Manage Map Data Level 1 Diagram 5.4.7

## 15.2 Appendix B: Sources of Information

We derived the information in this document via various resources. Our largest source of information is Dr. Lederman. The structure of our document was built to the criteria our professor Dr. Lederman, specified in the grading scheme for the Requirements Specification. In addition, BitSize Solutions has consulted numerous Requirements Specification from previous years teams. Some other sources of information utilized in the creation of this document were the Google Maps API as well as various resources on the Internet pertaining to web development technologies.



### 15.3 Appendix C: Glossary of Terms

**API** – **A**pplication **P**rogramming **I**nterface specifies how some software components should interact with each other.

**Browser**- Software application for retrieving, presenting and traversing information resources on the World Wide Web.

**Extensible**- a system design principle where the implementation takes future growth into consideration.

**Gantt** – a chart in which a series of horizontal lines shows the amount of work done or production completed in certain periods of time in relation to the amount planned for those periods.

**HTML** – **H**yper**T**ext **M**arkup **L**anguage is the main markup language for creating web pages and other information that can be displayed in a web browser.

**Input**- Term denoting either an entrance or changes which are inserted into a system and which activate or modify a process.

**Javascript** – an interpreted computer programming language using client side web pages.

**MySQL** – the world's most widely used open-source relational database management system (RDBMS) that runs as a server providing multi-user access to a number of databases.

**Shout-Out**- Google Inc. has dubbed their onscreen pop up panels as “Shout-Outs”.

**Web Hosting Pad** – a web hosting site with support for server-side programming and front-facing web pages.

15.4 Appendix D: Timeline (Gantt Chart)



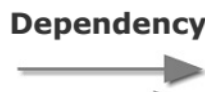
**Task**  
A task is represented by a rectangle with rounded edges. The edges of the rounded rectangle represents the start and end date of a specific task.



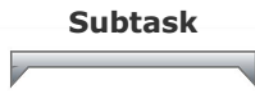
**Completeness Task**  
A completeness task is represented as a rounded rectangle with a portion that is filled in. This completeness task a visual representation of how much of a certain task has been completed. A fully shaded in task represents a completed task.



**Milestone**  
Milestones are represented by a circle and represent a certain checkpoint in the project. A milestone is fully shaded if the previous task led to the completion of a certain checkpoint.



**Dependency**  
Dependency is represented by an arrow from one task to another. A dependency arrow links two tasks, showing that the second task cannot be started without completing the first task fully.



**Subtask**  
Subtasks are represented by a rectangle with pointed edges. Subtasks group many tasks together that are similar to each other. This is used to section similar tasks together, organizing the project for ease of reading.

