Report #1

For

“Better Automobile Inventory Management”

CSCI441\_VA

Software Engineering

Fall 2019

<https://github.com/gculver/SoftwareEngineering_FinalProject>

Team:

Paul Whitely

James Cox

Grant Culver

September 9, 2019

Revision History:

|  |  |
| --- | --- |
| Version No. | Date of Revision |
| v.1 | 9/7/2019 |
| v.2 | 9/23/2019 |

**Contents**

Contents

1 Customer Statement of Requirements

1.1 Problem Statement…………………………………………………………………. 4

1.2 Glossary of Terms…………………………………………………………………... 7

2 System Requirements

2.1 Enumerated Functional Requirements…………………………………………... 8

2.2 Enumerated Non-Functional Requirements……………………………………… 9

2.3 On-Screen Appearance Requirements………………………………………….. 9

5.2 System Operation Contracts…………………………………………………………….22

6.0 Interaction Diagrams……………………………………………………………………..24

1. **Class Diagram and Design Patterns**

7.1 Class Diagram



7.2 Data Types and Operation Signature

1. User

(a) Attributes

\* int user\_id: identification number of the user

\* string username: username for the user to login and access the system.

\* char password: password user uses to authenticate login.

\* boolean active: to indicate whether the user is active or inactive.

\* char email\_address: email address of the user to identify user.

(b) Operations

\* setUserID(): set the user id

\* getUserID(): get the user id

\* setActive(): sets the user as active(true) or inactive(false)

\* getActive(): gets the activation status of user

\* setEmailAddress(): sets the users email address

\* getEmailAddress(): retrieves the users email address

2. FetchData

(a) Attributes

\*

(b) Operations

\* getData(): fetch settings from the database that were set up when system was configured.

\*

3. InvSettings

(a) Attributes

\* int monthSupply: sets the desired month supply of inventory for dealership.

\* int cars: sets the inventory level for cars.

\* int trucks: inventory level for trucks.

(b) Operations

\* setMonthSupply(): sets the desired month supply of total inventory for dealership.

\* setCarSupply(): sets the desired month supply for cars.

\* setTruckSupply(): sets the desired month supply for trucks.

4. CalcSettings

(a) Attributes

(b) Operations

7.3 Design Patterns

The primary design pattern for this project will be the Model-View-Controller. The data model will be stored in a mySQL database and constraints and any necessary interface will be developed here. The Controller portion of the system will be written using PHP to interface with the database and external APIs. The system will present views of the information using HTML, Javascript and PHP.

1. **System Architecture**

The automotive inventory system will use a component-based design. Each non-trivial piece of the system will be based upon components that each have a well-defined purpose. These components will come from frameworks (e.g. PHP), external APIs or be custom-coded to support the application.

The system will be based on a LAMP stack. The operating system will be Linux supported by and Apache web server. Database storage will be MySQL and the primary programming language will be PHP. Javascript libraries will be utilized primarily to support the user interface and external libraries might be written in other languages (such as C++) that will be called from PHP code.

The system will be developed on local machines with updates published to GitHub. Testing and the final versions will be hosted on a cloud service to verify proper operation and to support potential usage by commercial customers.