**Pseudocode of System design for freight truck return-trip assignment**

Startup procedure

{

- Start the web-server on the central server machine

- invoke "ENVIRONMENT SUBSYSTEM"

- invoke "MANAGEMENT SUBSYSTEM"

- invoke "DETECTION SUBSYSTEM"

- invoke "RESPONSE SUBSYSTEM"

}

The **Environment Subsystem** uses MySQL as the data store. It defines the tables required to store user login subscriber’s data, trip plan and other relevant parameters. It defines sub-modules to query and insert records into the database tables.

Pseudo code- Environment Subsystem

{

- Invoke "Create Database" function

Driver DATABASE function

{

- Utilizes "Create driver Registration table” function

- Utilizes “Create Table for driver trip” function

- Utilizes “Driver ID submission” function

}

Customer DATABASE function

{

-Utilizes “Create customer Registration table “function

-Utilizes “Create Table for customer trip” function

}

}

The **Management subsystem** module defines sub-modules to create GUI. It provides an HTML page for user subscription and login to enter the system.

Pseudo code- MANAGEMENT SUBSYSTEM

{

- define "Registration GUI"

- define “Login Page GUI”

If (new user = driver)

{

- Invoke “Driver Registration GUI”

- Update "Create driver Registration table"

- Add “Driver ID submission”

}

If (new user = customer)

{

- Invoke “Customer Registration GUI”

- Update “Create customer Registration table”

}

If (old driver)

{

- Invoke “login Page GUI”  
 - Update Entry “Create Table for driver trip”

- Delete Entry “Create Table for driver trip”

}

If (old customer)

{  
 - Invoke “login Page GUI”

- Update entry “Create Table for customer trip”

- Delete entry “Create Table for customer trip”

}

}

The **Detection subsystem** receives the encapsulated information packet from the Management Subsystem. This module creates a pool of database connections according to location vicinity as set by the user. Knowledge base data of different station codes with unique IDs are imported. Searching and matching for resource allocation, takes place in this module in accordance to whether the freight truck capacity requirement is within the customer need and other parameters like time duration (e.g. 6 am to 7 am) needed for pickup, pickup point and destination point. After analysis, this module will trigger the Response subsystem to send warning SMS to the mobile numbers.

Pseudo code- Detection Subsystem

{

- Use “Knowledgebase location data” function

- Create "Connection Pool in accordance with location" function

- Use "Process Information Packet" sub-module

- Use "Searching and Matching" sub-module

If (driver)

{- Invoke "Trigger Alert according to driver" sub-module}

If (customer)

{- Invoke "Trigger Alert according to the customer" sub-module}

}

The **Response Subsystem** receives the information packets from the Detection subsystem and performs the actual delivery of the Notification messages to subscriber mobile numbers. The delivery of messages is logged and shown to the user on the GUI, also. Based on the condition set by different users, it incorporates the control of frequency on SMS.

Pseudo code- Response Subsystem

{

Case: Customer

{

- Parse “Trigger Alert according to the customer”

                 - update UI “match driver list to the customer”

              - send SMS

}

Case: Driver

{

- Parse “Trigger Alert according to the driver”

- update UI “match customer list Driver”

- send SMS

}

}

Most of the time the resource available will be notified as soon as the data is being registered for the services. This process will go on iteratively and as soon as the match for different resources will be available then they get informed later by checking set rules for notification. After requirement of the user gets fulfilled, an entity can delete trip plan by login to their user profile to stop service for themselves. For which the system advances by eliminating the database of those resources using management subsystem. For SMS notification, there is 2 way, either server must be connected to SMS modem via AT communication protocol or the SMS protocol program can be called for each number with a different message to send SMS. The SMS protocol program is connected to SMS gateway via internet which further send the traffic message to the mobile numbers. Gateway messaging is scalable and don’t use hardware hence it is used within the system.