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Case Study for *Scheduling System*

For

Verve Systems Pvt. Ltd.

Ver 1.0

Table of Contents

1. Revision History

Ver	Date	Description	Author(s)	Approved by /Date (dd.mm.yyyy)
1.0	25/05/2010	Case study document	Ravi Ranjan	Chirendu Gupta 03/06/2010

2. Scheduling System

2.1. Overview

2.1.1. Client Introduction

Our client is the leading provider of the "Ski and Snowboard Equipments" on rentals to the customers at their doorsteps. They are a decade old company having presence in various cities of United States of America.

2.1.2. Project Introduction

Scheduling System is a Web-Application developed using RoR for our client to help manage scheduling the reservations made by the customers for their "Ski and Snowboard Equipments" on rentals. This application provides our client the tools to manage the resources available for the delivery, Pickups and switch outs of the equipments to the customers who have made the reservation on their website.
The interface of this application is like a calendar showing Vehicles, Drivers and Reservation scheduled for the Delivery, Pickups and/or Switchouts. It supports drag and drop functionalities also to provide user the flexibility to reschedule the same with ease.
The unscheduled reservation data comes from the database of the Reservation website and the admin of this scheduling system uses those data to schedule the Delivery, Pickups and/or Switchous by assigning the Vehichle and Drivers to a particular Reservation on any vacant time slots.

One of the unique features of this system is its integrated Route Maps using Google MAP API which makes the reservation scheduling task much easier and better organized.
The system has the flexibility to add any numbers of Vehicles, Drivers and Timeslots to make scheduling an interactive and interesting system.

2.2. Requirement/ Need

Our client needed a secured, robust and scalable system for its internal operations scheduling and the ability to provide efficient and timely information tool to help manage their resources for the scheduling of the Delivery, Pickups and/or Switchouts of the "Ski and Snowboard Equipments" on rentals.

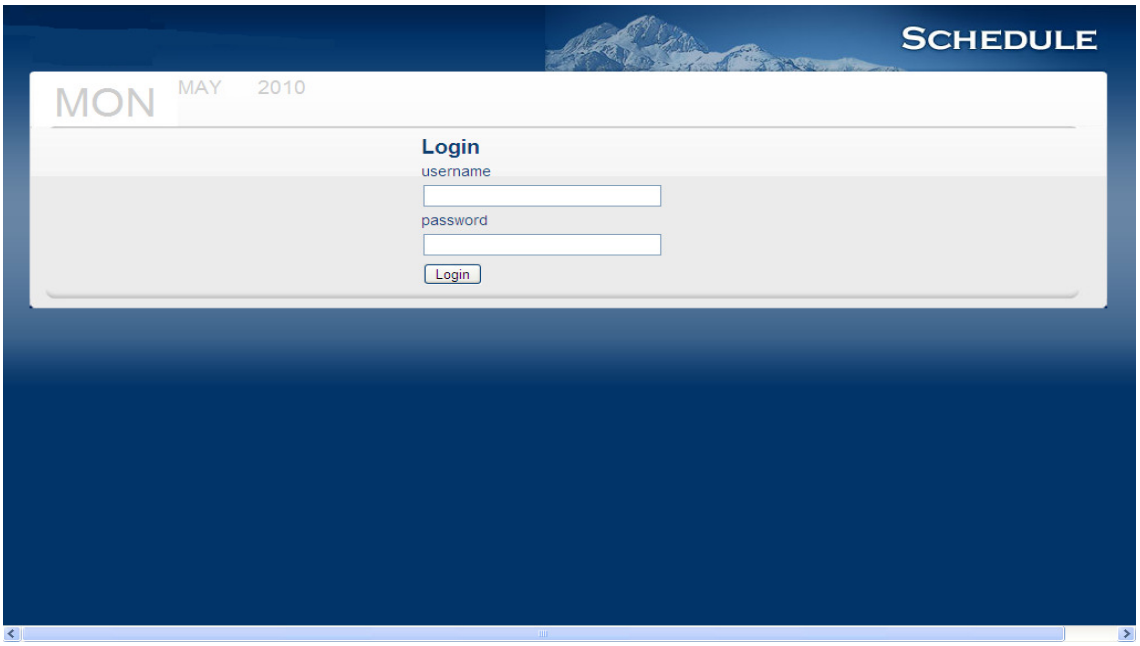
They have a limited numbers of resources in terms of Vehicles and Drivers, but being the leading service provider in this category they are having a lot of reservations made for the Delivery, Pickups and/or Switchouts of the "Ski and Snowboard Equipments" on rentals. They needed a system which could help them manage these resources effectively and efficiently by applying them to the reservations on Calendar scheduling basis.

There was the requirement to include the functionlaity which could show the "Route Maps" for the Reservations' addresses as soon as they are scheduled and assigned to a Vehicle and Driver. They could be able to differentiate between various routes of Delivery, Pickups and/or Switchouts location for the "Ski and Snowboard Equipments" on rentals by using different colors to show these Routes.

They needed this system to be flexible enough to accommodate any number of Reservations, Vehichles and Drivers for the scheduling purpose.

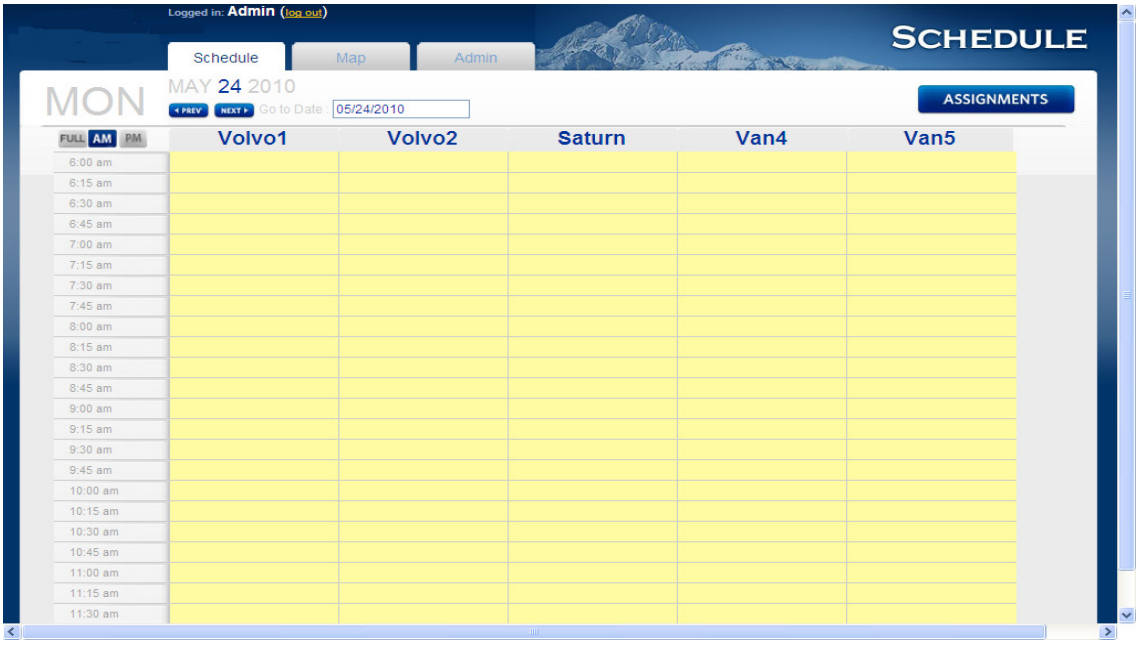
2.3. Solution

2.3.1. Screenshots: *Login Screen*



This is the login screen of the application which allows the multiple types of user such as Admin & General users to log-in to the system and access the various modules based on the "Rights" assigned to the that particular User-Type.

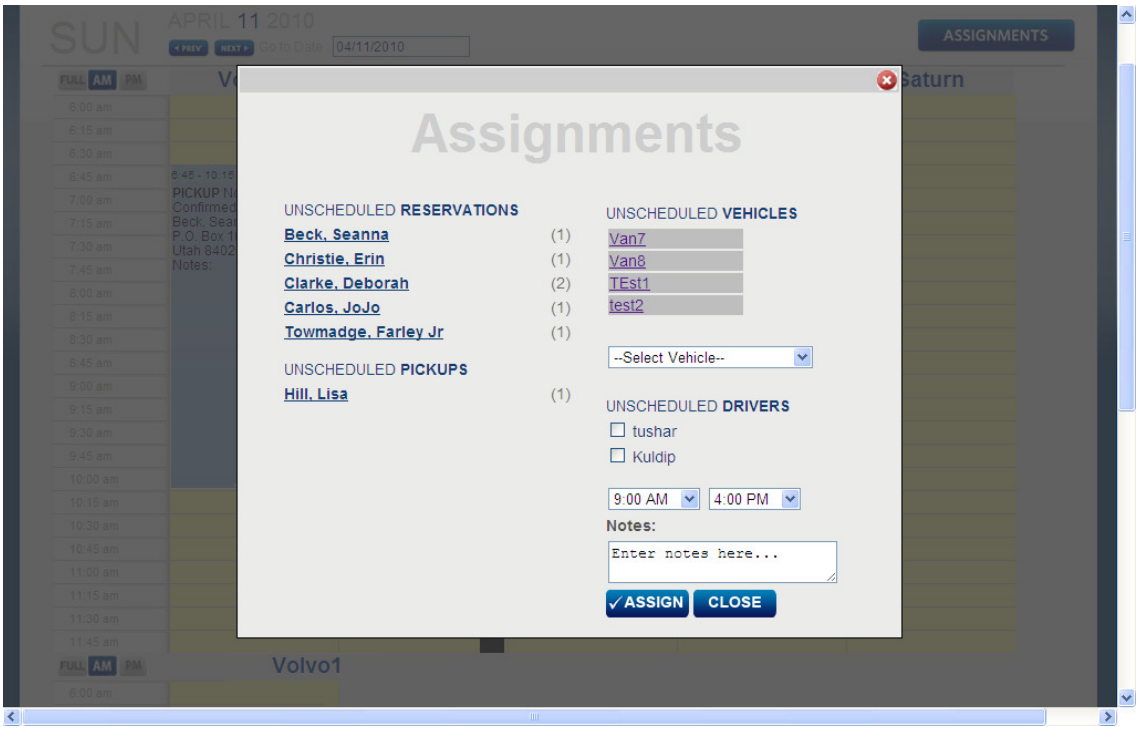
2.3.2. Screenshots: *Calendar grid*



After logging into the system with provided credential the Admin is presented with this screen and the general user screen is also very same with only difference being the Admin tab at the top. The general users don't get the rights to access the "Admin" tab.

This calendar like main content grid consists of Vehicles across the top and the Time-slots at the left hand side with the option to view time slots in 12 hrs modes (i.e AM, PM). Just above the Calendar grid there is the option to Change the Date. By Default system shows the current date and loads the all related data; however User can navigate through Dates by clicking on "Next" & "Previous" and can go to any specific date as well by clicking on the Text area which displays the selected date.

2.3.3. *Screenshots*: *Assignment*



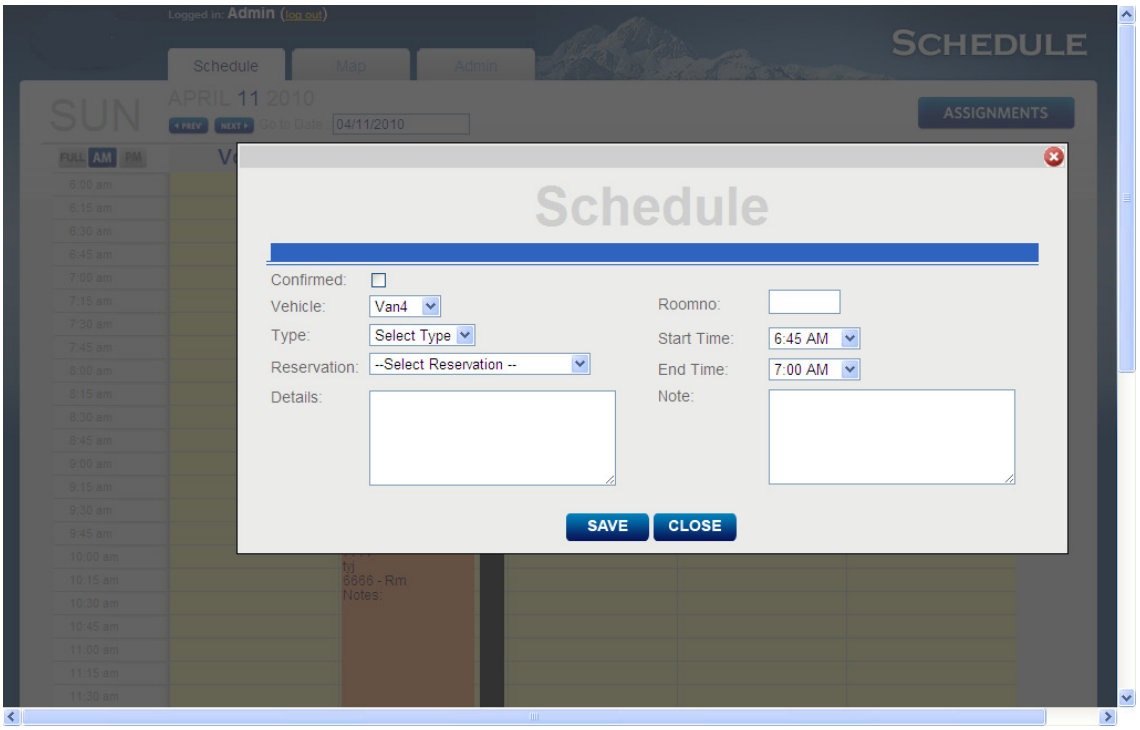
At the Top of the Right side in the home page of the application there is a buttoin named “Assignment”, clicking on it will display the screen mentioned above.

This screen displays all the Unscheduled Deliveries/Switchouts and Pickups at the left hand side of this pop up screen while the List of unscheduled & Scheduled Vehicles as well as the unscheduled drivers with the available time slots on the other side.

This screen allows the Users to assign any unscheduled vehicle to the calendar where it is added as a column and the drivers who are not assigned to the calendar yet can be added with the specified time by selecting the time duration from this screen. There is also an option to add comments in the Text area available.

Here in this screen All the Unscheduled entities such as Reservation, Pickups, Drivers are available as a link on which user can directly click to schedule the same e.g. if user wants to add the Vehichle “Van7”, He/She needs to simply click on it and the “Van7” will get added to the Calendar.

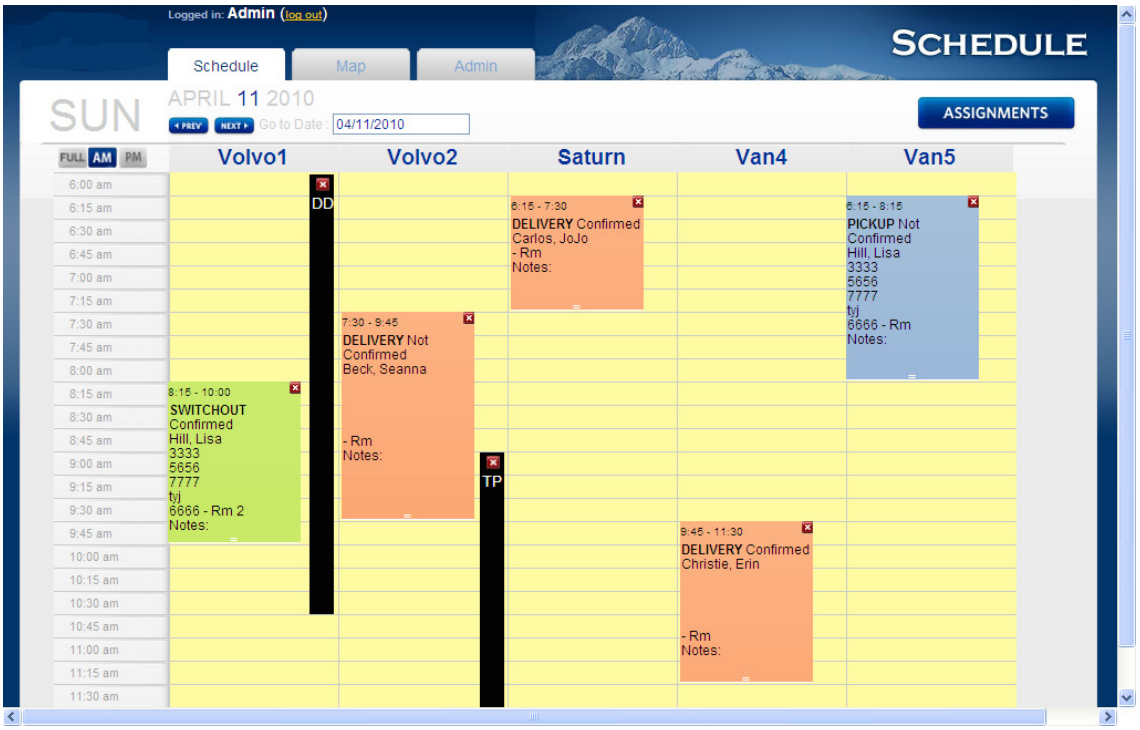
2.3.4. Screenshot: schedule



Apart from clicking on the "Assignment" button user can click on any grid inside the calendar layout which will show the above mentioned screen. User just need to define the various component to schedule a Delivery/Pickups/Switchouts against a particular reservation by selecting the Vehicle, appropriate type (Delivery/Pickup/Switchout) and the duration of the performance of selected type.

A note can also ne attached for reference in case the user originaly doing this gets changed. All these schedules appointments gets reflected in the calendar grid as an "Appointment Bolck" which can either be resized or rescheduled by the user as per the requirement.

2.3.5. Screenshot: *Scheduled Reservations*

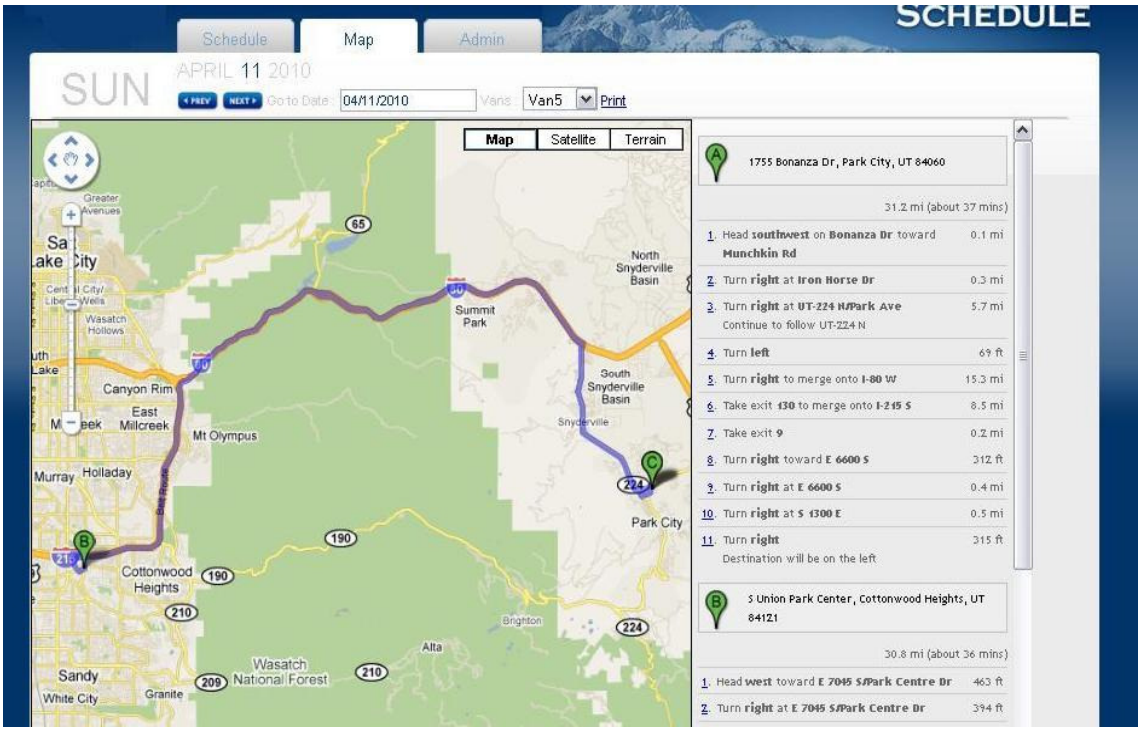


This is how the screen looks like once the few reservations are scheduled for Delivery/Pickups/Switchouts. One of the best features of this application is its "Drag & Drop" functionality which allows the users to simply drag & drop the scheduled reservation to any vacant slot available inside the calendar to reschedule it. Moreover these scheduled reservation blocks can be resized to redefine the timeslots.

The Black oblonged blockes display the "Driver(s)" assigned within a specified timeslots and clicking on it will allow the user to assigning an additional driver or removing the existing one.

All three types (Delivery/Pickups/Switchouts) are displayed in three different colors which gives user a rich look & feel while using this system. These Reservation blocks can be re-edited by simply clicking on it which prompts to the pop-up screen "Schedule" mentioned in earlier screenshots.

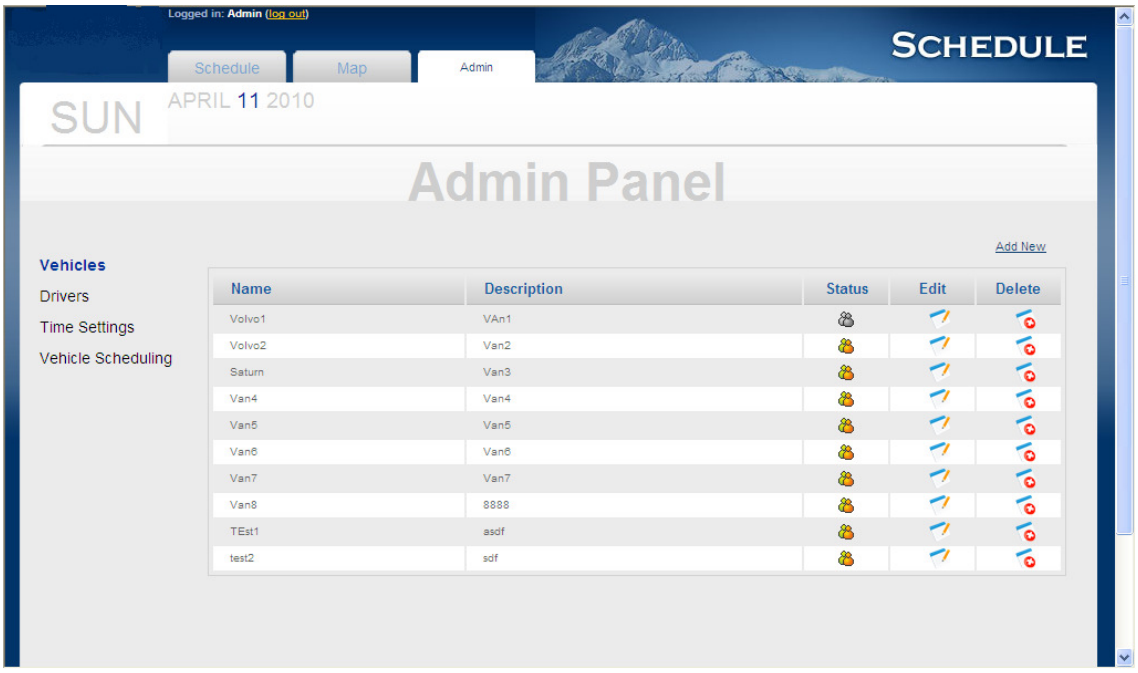
2.3.6. Screenshot: *Map Module*



The Map Module of this application is very critical to find the operational efficiency during the scheduling of the reservations. All the scheduled reservations which are being displayed on the calendar grid are used to display this route map.

This customized Map displays all the routes for a particular Vehicle which are being used for the Delivery/Pickups/Switchout on any particular day. At the top of the screen there is an option to select the vehicles from the drop down list (displaying the entire assigned vehicle on that particular day) which allows viewing the scheduled routes for that vehicle on that entire day. This functionality is provided using Google Maps API.

2.3.7. Screenshot: *Administrative Section*



This is the Administrative control panel for the system. This screen is accessible by the authorized users only i.e. the Administrator of the system only. All other users don't get the "Admin" tab available in their interface.

This section provides the flexibility and scalability to the system as here the Admin can Add/Edit/Delete the Vehicles, Drivers, Timeslots and scheduled vehicles. All these entities can either be deleted or de-activated apart from other modifications.

2.4. Features

- Supports Multitype users login functionality
- Rich User Interface (Calendar Scheduling)
- Multitype Appointment Scheduling
- Drag & Drop functionality
- Personalized Route Maps (Using Google Map API)
- Customizable User Interface View (Full, AM & PM)
- Tools for operational Effeciency
- Multiple Route Tracking
- Ease of Use
- Seamless integration with External database
- Flexible & Scalable

2.5. Technology Statistics

Development Tools: RoR (Ruby on Rails), Java Script, JQuery

Database : MySQL

2.6. Project Duration

3 Months