

PROJECT

Used Vehicle Dealership System

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INTRODUCTION

1.1 ABOUT THE PROJECT

NAME : Used Vehicle Dealership Management System

TYPE : Windows Desktop Application

PLATFORMS USED : Visual Studio 2017,
MySQL Workbench 6.3CE

Languages Used : C#,
MySQL

1.2 OBJECTIVE

The goal of this project is to make a Desktop Application for Vehicle Retailers, incorporating concepts learnt in Database Systems Lab that has real world applications.

1.3 OVERVIEW

The whole project is packed into an executable application using Visual Studio, which renders the UI defined in our code and performs all the queries as required by use during the application's use.

The app's functioning and creation can be divided into two parts:

- 1. Front End:** The entire front-end for the app has been made using C# which is sufficient for expressing the basic functionality of our application. It was used to create a simple and easy-to-use User Interface modelled similar to real world desktop applications.
- 2. Back End:** The back-end for the application has been made using both C# and MySQL. The aforementioned database was made using MySQL and was a solid application of knowledge gained during DBMS lab sessions as a part of our academic curriculum. The databases are managed using a software called MySQL Workbench which is accessed on a local MySQL server.

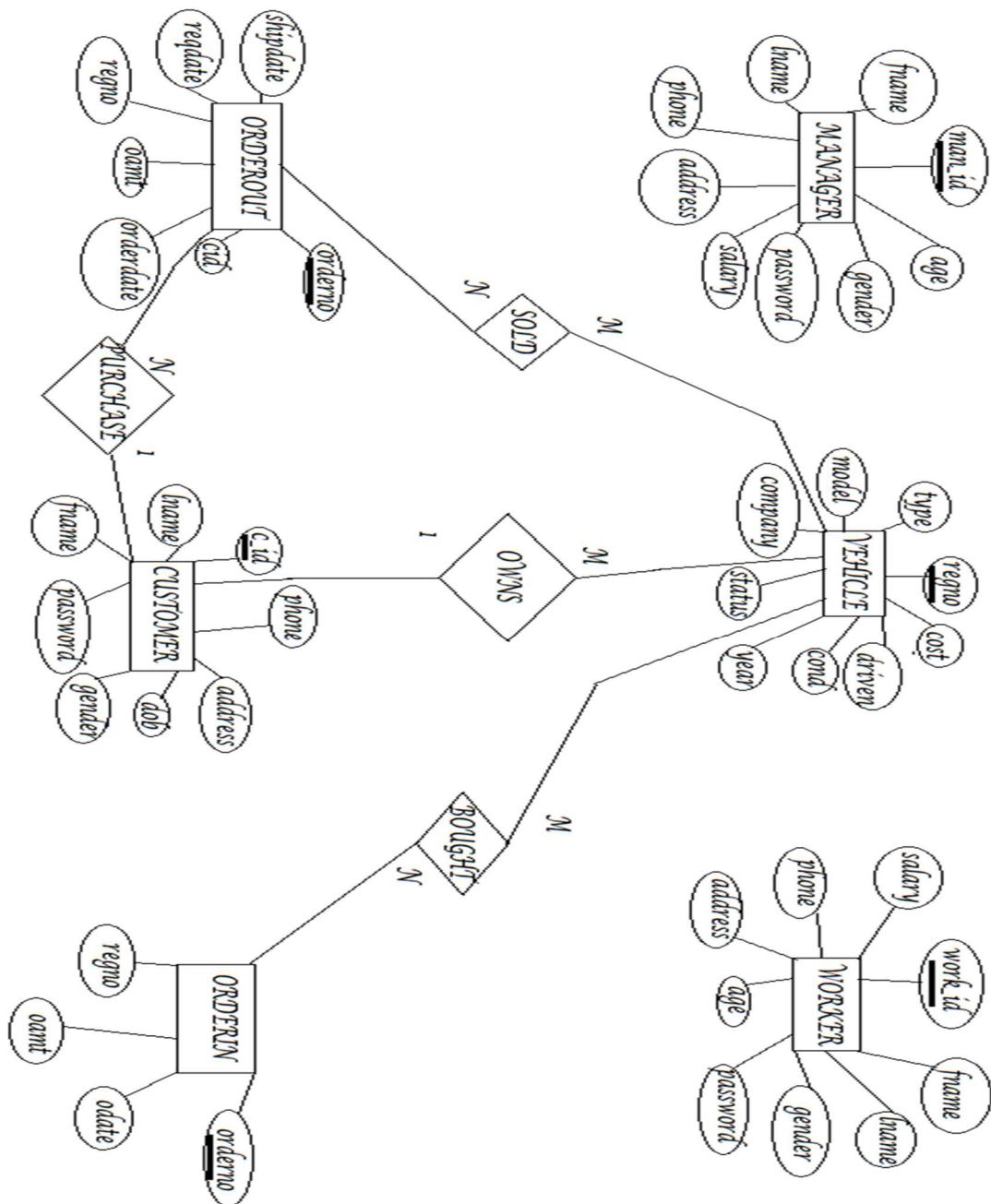
1.4 DETAILED SPECIFICATIONS

The application has all the features that are required in a vehicle retailer application namely, cataloguing available vehicles, signing up of new managers, workers & customers, signing in of existing managers and workers, customer login and support, adding the data of vehicles bought and payment transactions. All in all, the primary focus was on setting up a database, retrieving the data from the database or altering the data in the database as and when a user/admin requires. A total of 17 queries were utilized (9 **Select** statements for retrieval of data, 7 **Insert** statements for inserting data into the database and 1 **Update** statement for updating the existing database).

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DATABASE

2.1 EXTENDED ENTITY-RELATIONSHIP DIAGRAM



2.2 SCHEMA AND RELATIONSHIPS

DDL Commands are given below:

```
1 CREATE DATABASE `uvds_schemas` /*!40100 DEFAULT CHARACTER SET utf8 */;
2
3 CREATE TABLE `customer` (
4     `C_ID` varchar(10) NOT NULL,
5     `F_NAME` varchar(15) DEFAULT NULL,
6     `L_NAME` varchar(15) DEFAULT NULL,
7     `PHONE` varchar(10) DEFAULT NULL,
8     `ADDRESS` varchar(50) DEFAULT NULL,
9     `DOB` date DEFAULT NULL,
10    `GENDER` varchar(1) DEFAULT NULL,
11    `PASSWORD` varchar(15) DEFAULT NULL,
12    PRIMARY KEY (`C_ID`)
13 ) ENGINE=InnoDB DEFAULT CHARSET=utf8
14
15 CREATE TABLE `manager` (
16     `MAN_ID` varchar(10) NOT NULL,
17     `F_NAME` varchar(15) DEFAULT NULL,
18     `L_NAME` varchar(15) DEFAULT NULL,
19     `PHONE` char(10) DEFAULT NULL,
20     `ADDRESS` varchar(40) DEFAULT NULL,
21     `SALARY` decimal(7,2) DEFAULT NULL,
22     `AGE` date DEFAULT NULL,
23     `GENDER` varchar(1) DEFAULT NULL,
24     `PASSWORD` varchar(15) DEFAULT NULL,
25     PRIMARY KEY (`MAN_ID`)
26 ) ENGINE=InnoDB DEFAULT CHARSET=utf8
27
28 CREATE TABLE `order_in` (
29     `ORDER_NO` varchar(10) DEFAULT NULL,
30     `O_DATE` date DEFAULT NULL,
31     `O_AMT` decimal(8,2) DEFAULT NULL,
32     `REG_NO` varchar(10) DEFAULT NULL,
33     PRIMARY KEY (`ORDER_NO`),
34     KEY `REG_NO` (`REG_NO`),
35     CONSTRAINT `order_in_ibfk_1` FOREIGN KEY (`REG_NO`) REFERENCES `vehicle` (`REG_NO`)
36 ) ENGINE=InnoDB DEFAULT CHARSET=utf8
37
```

```
39 CREATE TABLE `order_out` (
40     `REG_NO` varchar(10) DEFAULT NULL,
41     `ORDER_NO` varchar(10) DEFAULT NULL,
42     `O_DATE` date DEFAULT NULL,
43     `C_ID` varchar(10) DEFAULT NULL,
44     `O_AMT` decimal(8,2) DEFAULT NULL,
45     `REQ_DATE` date DEFAULT NULL,
46     `SHIP_DATE` date DEFAULT NULL,
47     PRIMARY KEY (`ORDER_NO`),
48     KEY `REG_NO` (`REG_NO`),
49     KEY `C_ID` (`C_ID`),
50     CONSTRAINT `order_out_ibfk_1` FOREIGN KEY (`REG_NO`) REFERENCES `vehicle` (`REG_NO`),
51     CONSTRAINT `order_out_ibfk_2` FOREIGN KEY (`C_ID`) REFERENCES `customer` (`C_ID`)
52 ) ENGINE=InnoDB DEFAULT CHARSET=utf8
53
54 CREATE TABLE `worker` (
55     `WORK_ID` varchar(10) NOT NULL,
56     `F_NAME` varchar(15) DEFAULT NULL,
57     `L_NAME` varchar(15) DEFAULT NULL,
58     `PHONE` varchar(15) DEFAULT NULL,
59     `ADDRESS` varchar(50) DEFAULT NULL,
60     `SALARY` decimal(8,2) DEFAULT NULL,
61     `AGE` date DEFAULT NULL,
62     `GENDER` varchar(1) DEFAULT NULL,
63     `PASSWORD` varchar(15) DEFAULT NULL,
64     PRIMARY KEY (`WORK_ID`)
65 ) ENGINE=InnoDB DEFAULT CHARSET=utf8
66
67 CREATE TABLE `owns` (
68     `C_ID` varchar(10) NOT NULL,
69     `REG_NO` varchar(10) NOT NULL,
70     PRIMARY KEY (`C_ID`, `REG_NO`),
71     KEY `REG_NO` (`REG_NO`),
72     CONSTRAINT `owns_ibfk_1` FOREIGN KEY (`C_ID`) REFERENCES `customer` (`C_ID`),
73     CONSTRAINT `owns_ibfk_2` FOREIGN KEY (`REG_NO`) REFERENCES `vehicle` (`REG_NO`)
74 ) ENGINE=InnoDB DEFAULT CHARSET=utf8
75
```

```
76 CREATE TABLE `vehicle` (
77     `REG_NO` varchar(10) NOT NULL,
78     `COST` decimal(8,2) DEFAULT NULL,
79     `COND` varchar(20) DEFAULT NULL,
80     `MODEL` varchar(20) DEFAULT NULL,
81     `COMPANY` varchar(20) DEFAULT NULL,
82     `DRIVEN_KM` int(11) DEFAULT NULL,
83     `YEAR` int(11) DEFAULT NULL,
84     `TYPE` varchar(20) DEFAULT NULL,
85     `STATUS` varchar(10) DEFAULT 'Unsold',
86     PRIMARY KEY (`REG_NO`)
87 ) ENGINE=InnoDB DEFAULT CHARSET=utf8
88
89 CREATE TABLE `schematable` (
90     `schemaname` varchar(20) NOT NULL,
91     PRIMARY KEY (`schemaname`)
92 ) ENGINE=InnoDB DEFAULT CHARSET=utf8
93
```

2.3 LIST OF QUERIES

- 1) Select * from owns where c_id = '...';
- 2) Select password from manager where man_id = '...';
- 3) Select password from worker where work_id = '...';
- 4) Select password from cutomer where c_id = '...';
- 5) Select count(schemaname) from schematable;
- 6) Select model as Model,company as Company, year as Model_Year,cond as Vehicle_Condition,driven_km as Driven_KMs,cost as Price,type as Vehicle_Type from vehicle where status = 'Unsold';
- 7) Select order_no as Order_Number, reg_no as Reg_Number, o_date as Order_Date, c_id as Customer_ID, req_date as Reqirement_Date, ship_date as Shipment_Date, o_amt as Order_Amount from order_out;
- 8) Select c_id from customer;
- 9) Select order_no as Order_Number, reg_no as Reg_Number, o_date as Order_Date, c_id as Customer_ID, req_date as Reqirement_Date, ship_date as Shipment_Date from order_out;

- 10) Insert into customer values(...);
- 11) Insert into manager values(...);
- 12) Insert into order_out values (...);
- 13) Insert into owns values(...);
- 14) Insert into vehicle values(...);
- 15) Insert into order_in values(...);
- 16) Insert into WORKER values(...);

- 17) Update vehicle set status = 'Sold' where reg_no = "" + regno + "";

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GUI DESIGN

ROLES & THEIR FUNCTIONALITIES

3.1 MAIN FORM AND LOGIN FORM

The screenshot shows a Windows application window titled "Used Vehicle Dealership System". The main title bar has a blue background. Below it, a toolbar with a dropdown menu labeled "Select Store" set to "uvds_schemas" and a "Refresh" button. The main area contains a table with the following data:

	Model	Company	Model_Year	Vehicle_Condition	Driven_KMs
▶	Duro	Mahindra	2014	Average	55000
	Vitara Brezza	Maruti	2017	Very Good	50000
	Activa	Honda	2015	Good	54000
	Dio	Honda	2016	Average	30000
	Splendor	Hero Honda	2005	Average	75800

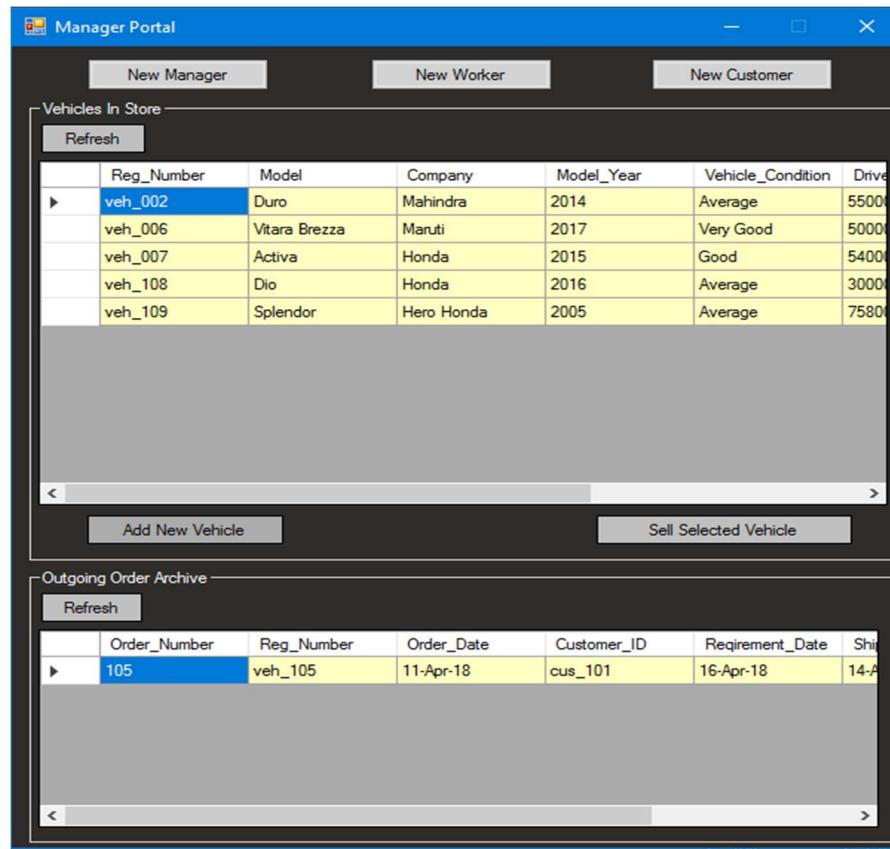
At the bottom of the main window is a "Login" button.

The screenshot shows a "Login" dialog box with a blue header bar. It contains the following fields:

- "Select Store": A dropdown menu currently set to "uvds_schemas".
- "Role": Three radio buttons labeled "Manager", "Worker", and "Customer".
- "ID": An input field containing "man_101".
- "Password": An input field containing "****".
- "OK": A large grey button at the bottom right.

3.2 MANAGER

A manager, on logging in, will have the following functionalities



1) Add another manager

This is a 'New Manager' dialog box with the following fields:

- First Name: [Input field]
- Last Name: [Input field]
- Date Of Birth: Monday, January 16, 1995 [Calendar icon]
- Gender: Male (radio button selected)
- Phone Number: [Input field]
- Address: [Input field]
- Manager ID: [Input field]
- Password: [Input field]
- Confirm Password: [Input field]

At the bottom is an 'OK' button.

2) Add worker

New Worker

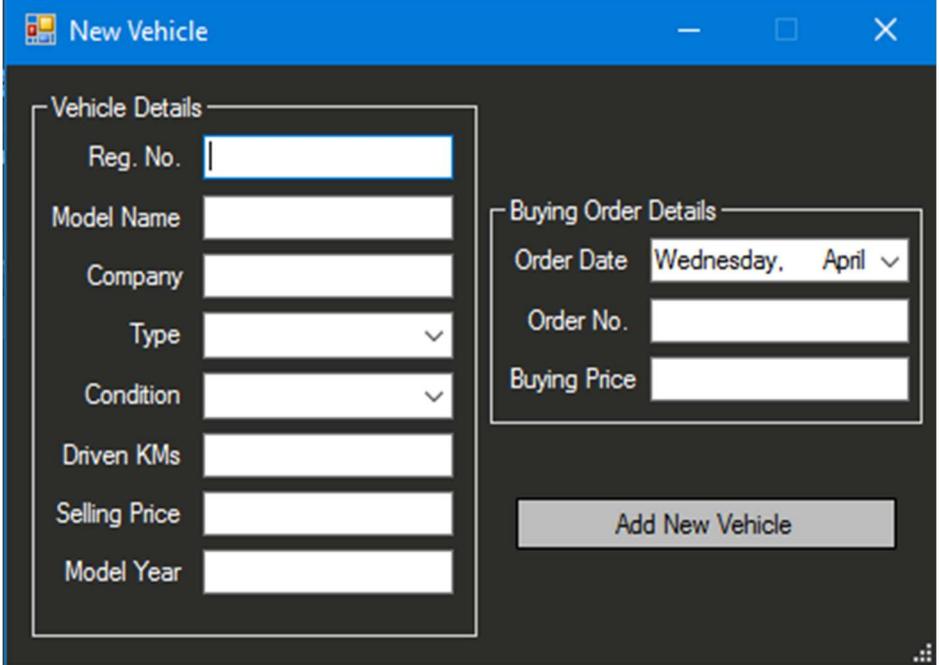
First Name	<input type="text"/>
Last Name	<input type="text"/>
Date Of Birth	Monday , January 16, 1995 <input type="button" value="..."/>
Gender	<input checked="" type="radio"/> Male <input type="radio"/> Female
Phone Number	<input type="text"/>
Address	<input type="text"/>
Salary	<input type="text"/>
Worker ID	<input type="text"/>
Password	<input type="text"/>
Confirm Password	<input type="text"/>
<input type="button" value="OK"/>	

3) Add customers

New Customer

First Name	<input type="text"/>
Last Name	<input type="text"/>
Date Of Birth	Monday , January 16, 1995 <input type="button" value="..."/>
Gender	<input checked="" type="radio"/> Male <input type="radio"/> Female
Phone Number	<input type="text"/>
Address	<input type="text"/>
Customer ID	<input type="text"/>
Password	<input type="text"/>
Confirm Password	<input type="text"/>
<input type="button" value="OK"/>	

4) Buy vehicles



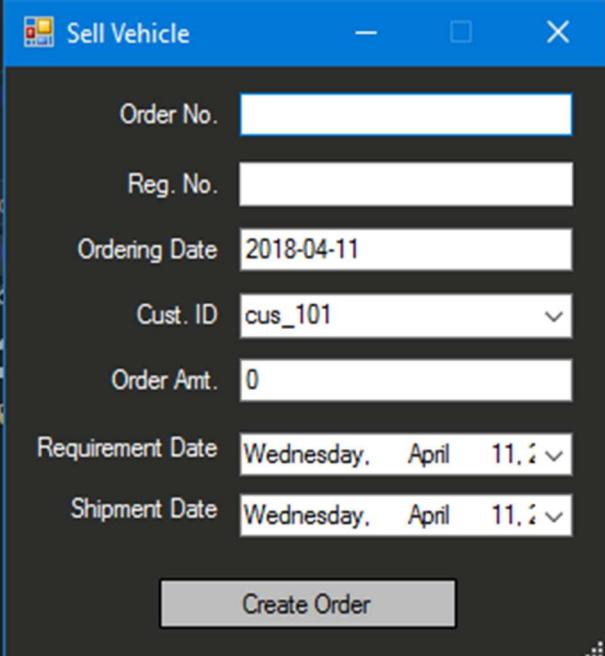
The 'New Vehicle' dialog box is a Windows-style application window titled 'New Vehicle'. It features a dark gray background with light gray input fields. On the left, a vertical box labeled 'Vehicle Details' contains fields for Reg. No., Model Name, Company, Type, Condition, Driven KMs, Selling Price, and Model Year. On the right, a vertical box labeled 'Buying Order Details' contains fields for Order Date (set to Wednesday, April), Order No., and Buying Price. A large 'Add New Vehicle' button is located at the bottom center.

Vehicle Details	
Reg. No.	<input type="text"/>
Model Name	<input type="text"/>
Company	<input type="text"/>
Type	<input type="text"/>
Condition	<input type="text"/>
Driven KMs	<input type="text"/>
Selling Price	<input type="text"/>
Model Year	<input type="text"/>

Buying Order Details	
Order Date	Wednesday, April
Order No.	<input type="text"/>
Buying Price	<input type="text"/>

Add New Vehicle

5) Sell vehicles



The 'Sell Vehicle' dialog box is a Windows-style application window titled 'Sell Vehicle'. It has a dark gray background with light gray input fields. On the left, it lists Order No., Reg. No., Ordering Date (set to 2018-04-11), Cust. ID (set to cus_101), and Order Amt. (set to 0). On the right, it lists Requirement Date (set to Wednesday, April 11, 2018) and Shipment Date (set to Wednesday, April 11, 2018). A 'Create Order' button is located at the bottom center.

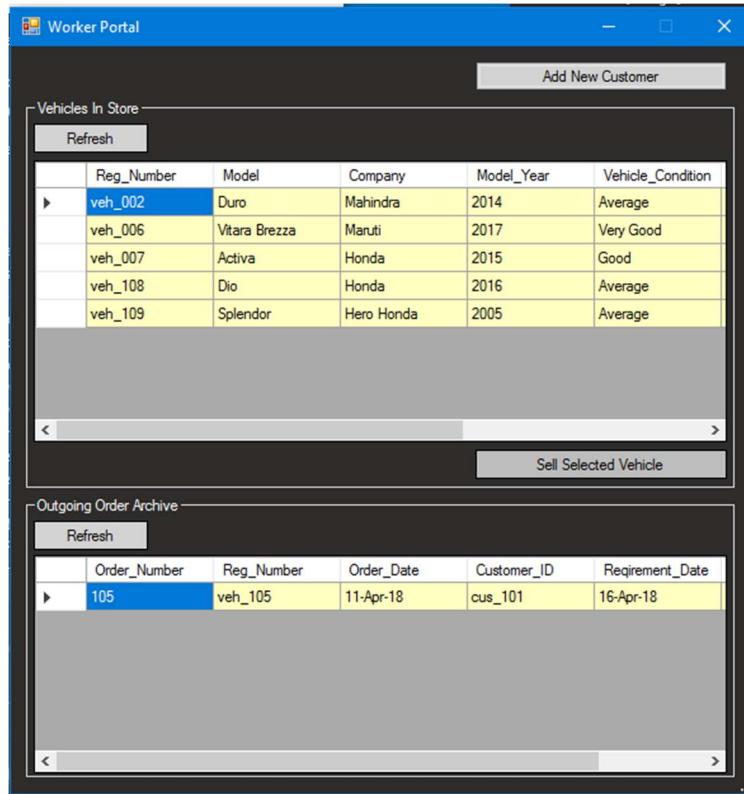
Order No.	<input type="text"/>
Reg. No.	<input type="text"/>
Ordering Date	2018-04-11
Cust. ID	cus_101
Order Amt.	0

Requirement Date	Wednesday, April 11, 2018
Shipment Date	Wednesday, April 11, 2018

Create Order

3.3 WORKER

A worker will have following functionalities:



1) Add new customers

Refer 3.2 3)

2) Sell Vehicles

Refer 3.2 5)

3.4 CUSTOMER

A customer can view the list of vehicles he has bought from the store.

