PROJECT

Used Vehicle Dealership System

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DATABASE SYSTEMS LAB

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1 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
LNAGUAGES USED	:	C#,
		MySQL

1.2 OBJECTIVE

The goal of this project is to make a Desktop Application for Vehicle Retails, 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.

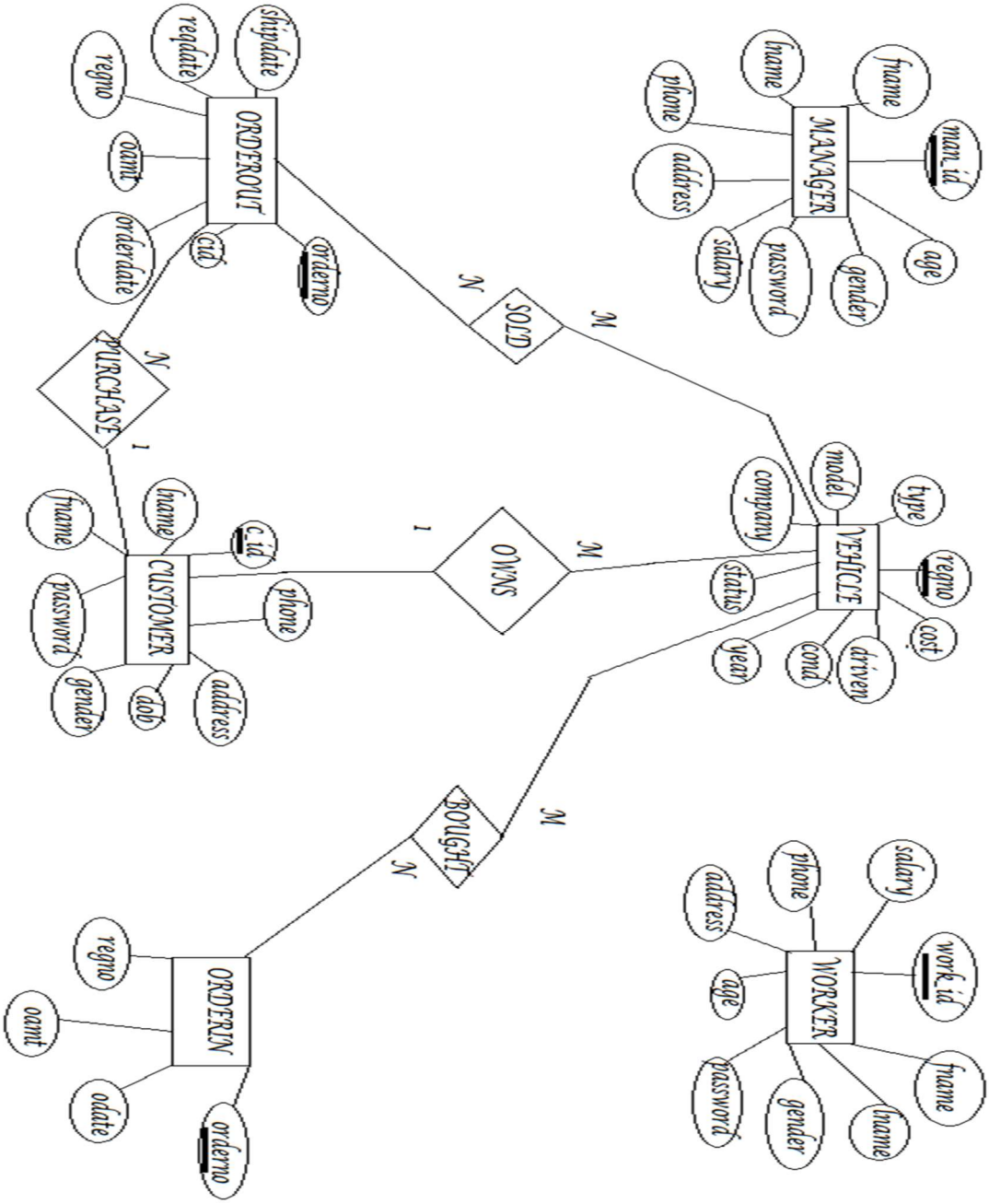
2. **Back End:** The back-end for the application has been made using both C# and MySQL. The aforementioned database was made using MySQL and was a solid application of knowledge gained during DBMS lab sessions as a part of our academic curriculum. The databases are managed using a software called MySQL 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).

2 DATABASE

2.1 EXTENDED ENTITY-RELATIONSHIP DIAGRAM



2.2 SCHEMA AND RELATIONSHIPS

DDL Commands are given below:

```sql
CREATE DATABASE `uvds_schemas` /*!40100 DEFAULT CHARACTER SET utf8 */;

CREATE TABLE `customer` (
  `C_ID` varchar(10) NOT NULL,
  `F_NAME` varchar(15) DEFAULT NULL,
  `L_NAME` varchar(15) DEFAULT NULL,
  `PHONE` varchar(10) DEFAULT NULL,
  `ADDRESS` varchar(50) DEFAULT NULL,
  `DOB` date DEFAULT NULL,
  `GENDER` varchar(1) DEFAULT NULL,
  `PASSWORD` varchar(15) DEFAULT NULL,
  PRIMARY KEY (`C_ID`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8

CREATE TABLE `manager` (
  `MAN_ID` varchar(10) NOT NULL,
  `F_NAME` varchar(15) DEFAULT NULL,
  `L_NAME` varchar(15) DEFAULT NULL,
  `PHONE` char(10) DEFAULT NULL,
  `ADDRESS` varchar(40) DEFAULT NULL,
  `SALARY` decimal(7,2) DEFAULT NULL,
  `AGE` date DEFAULT NULL,
  `GENDER` varchar(1) DEFAULT NULL,
  `PASSWORD` varchar(15) DEFAULT NULL,
  PRIMARY KEY (`MAN_ID`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8

CREATE TABLE `order_in` (
  `ORDER_NO` varchar(10) DEFAULT NULL,
  `O_DATE` date DEFAULT NULL,
  `O_AMNT` decimal(8,2) DEFAULT NULL,
  `REG_NO` varchar(10) DEFAULT NULL,
  PRIMARY KEY (`ORDER_NO`),
  KEY `REG_NO` (`REG_NO`),
  CONSTRAINT `order_in_ibfk_1` FOREIGN KEY (`REG_NO`) REFERENCES `vehicle` (`REG_NO`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8
```

```sql
CREATE TABLE `order_out` (
  `REG_NO` varchar(10) DEFAULT NULL,
  `ORDER_NO` varchar(10) DEFAULT NULL,
  `O_DATE` date DEFAULT NULL,
  `C_ID` varchar(10) DEFAULT NULL,
  `O_AMT` decimal(8,2) DEFAULT NULL,
  `REQ_DATE` date DEFAULT NULL,
  `SHIP_DATE` date DEFAULT NULL,
  PRIMARY KEY (`ORDER_NO`),
  KEY `REG_NO` (`REG_NO`),
  KEY `C_ID` (`C_ID`),
  CONSTRAINT `order_out_ibfk_1` FOREIGN KEY (`REG_NO`) REFERENCES `vehicle` (`REG_NO`),
  CONSTRAINT `order_out_ibfk_2` FOREIGN KEY (`C_ID`) REFERENCES `customer` (`C_ID`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8

CREATE TABLE `worker` (
  `WORK_ID` varchar(10) NOT NULL,
  `F_NAME` varchar(15) DEFAULT NULL,
  `L_NAME` varchar(15) DEFAULT NULL,
  `PHONE` varchar(15) DEFAULT NULL,
  `ADDRESS` varchar(50) DEFAULT NULL,
  `SALARY` decimal(8,2) DEFAULT NULL,
  `AGE` date DEFAULT NULL,
  `GENDER` varchar(1) DEFAULT NULL,
  `PASSWORD` varchar(15) DEFAULT NULL,
  PRIMARY KEY (`WORK_ID`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8

CREATE TABLE `owns` (
  `C_ID` varchar(10) NOT NULL,
  `REG_NO` varchar(10) NOT NULL,
  PRIMARY KEY (`C_ID`,`REG_NO`),
  KEY `REG_NO` (`REG_NO`),
  CONSTRAINT `owns_ibfk_1` FOREIGN KEY (`C_ID`) REFERENCES `customer` (`C_ID`),
  CONSTRAINT `owns_ibfk_2` FOREIGN KEY (`REG_NO`) REFERENCES `vehicle` (`REG_NO`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8
```

```sql
CREATE TABLE `vehicle` (
  `REG_NO` varchar(10) NOT NULL,
  `COST` decimal(8,2) DEFAULT NULL,
  `COND` varchar(20) DEFAULT NULL,
  `MODEL` varchar(20) DEFAULT NULL,
  `COMPANY` varchar(20) DEFAULT NULL,
  `DRIVEN_KM` int(11) DEFAULT NULL,
  `YEAR` int(11) DEFAULT NULL,
  `TYPE` varchar(20) DEFAULT NULL,
  `STATUS` varchar(10) DEFAULT 'Unsold',
  PRIMARY KEY (`REG_NO`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8

CREATE TABLE `schematable` (
  `schemaname` varchar(20) NOT NULL,
  PRIMARY KEY (`schemaname`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8
```

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;

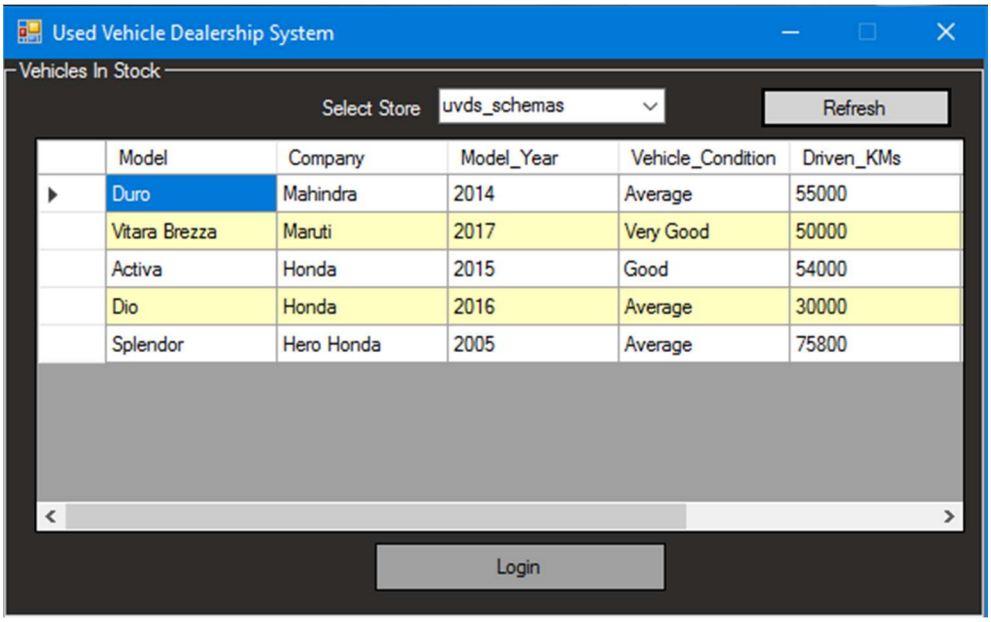
10) Insert into customer values(…);
11) Insert into manager values(…);
12) Insert into order_out values (…);
13) Insert into owns values(…);
14) Insert into vehicle values(…);
15) Insert into order_in values(…);
16) Insert into WORKER values(…);

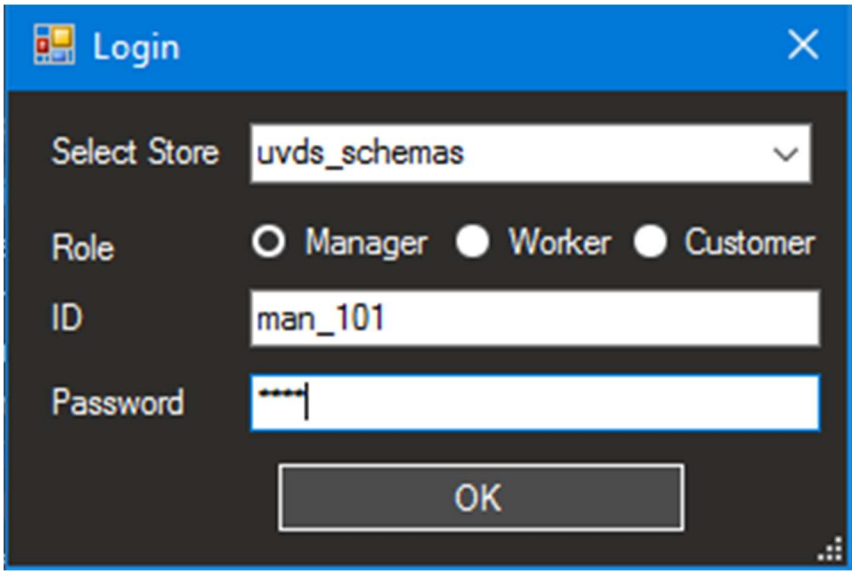
17) Update vehicle set status = 'Sold' where reg_no = '" + regno + "';

3 GUI DESIGN

ROLES & THEIR FUNCTIONALITIES

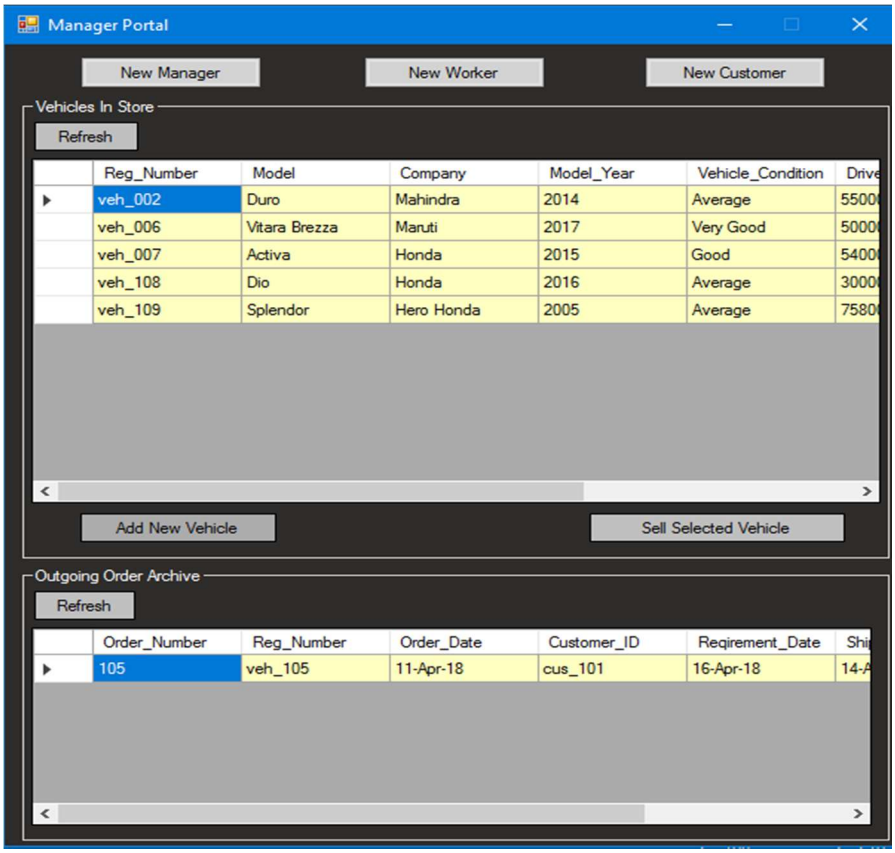
3.1 MAIN FORM AND LOGIN FORM



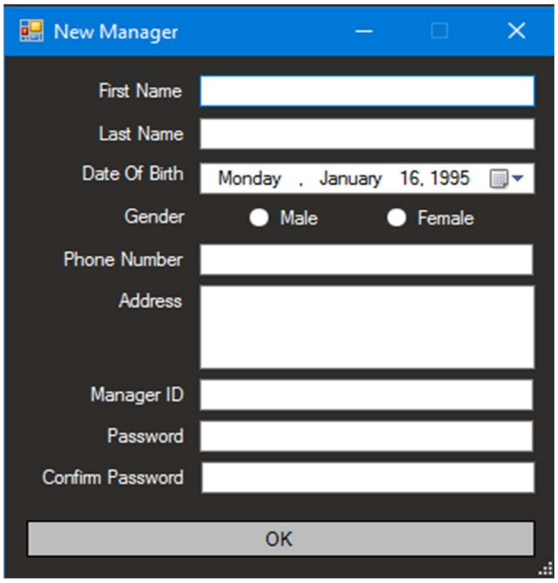


3.2 MANAGER

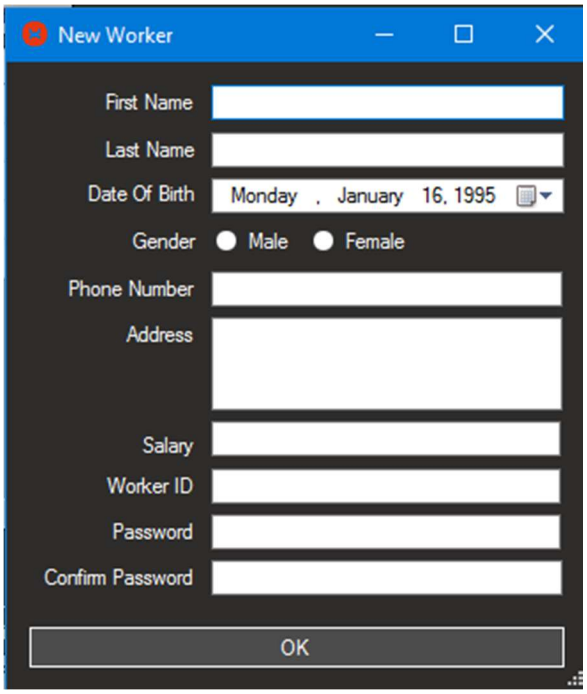
A manager, on logging in, will have the following functionalities



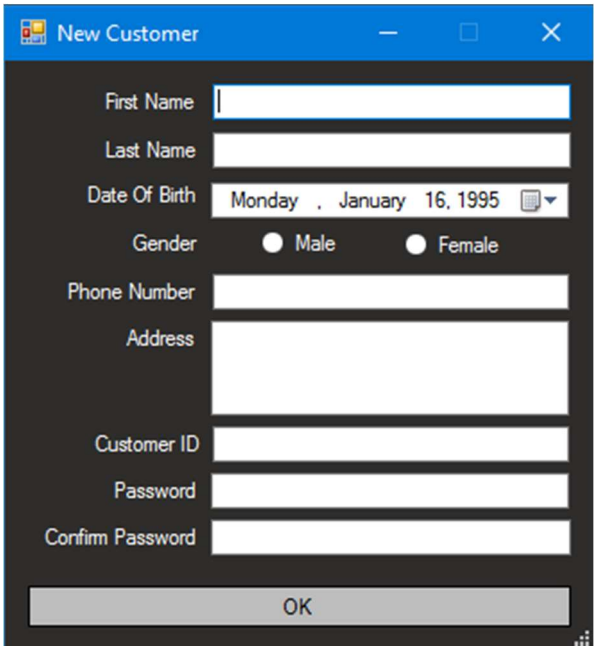
1) Add another manager



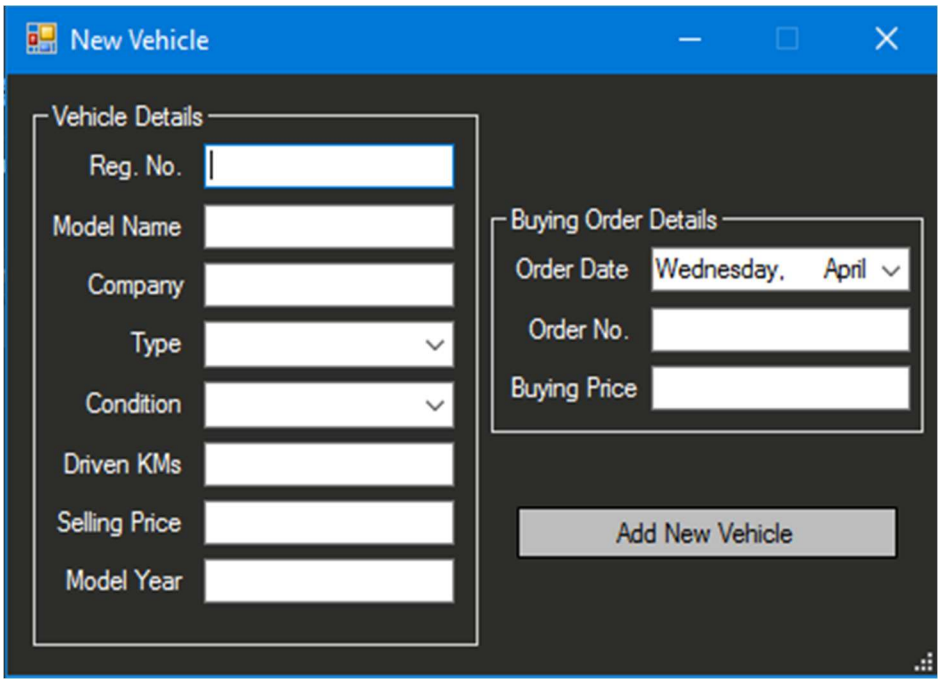
2) Add worker



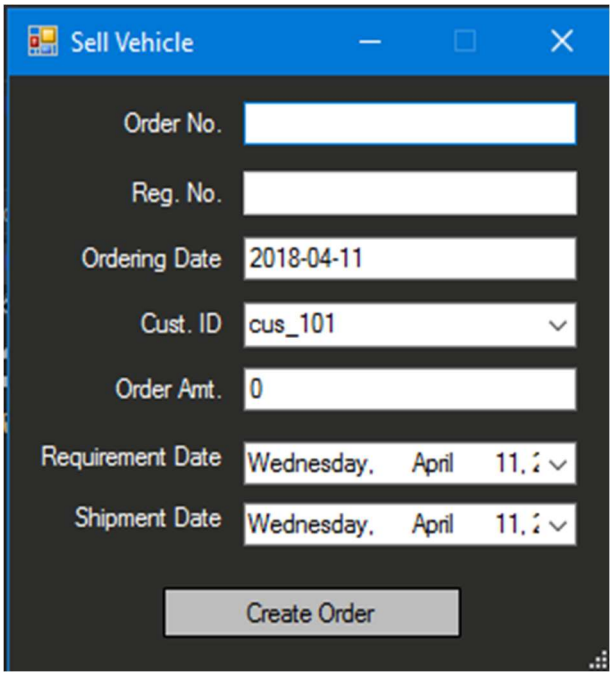
3) Add customers



4) Buy vehicles

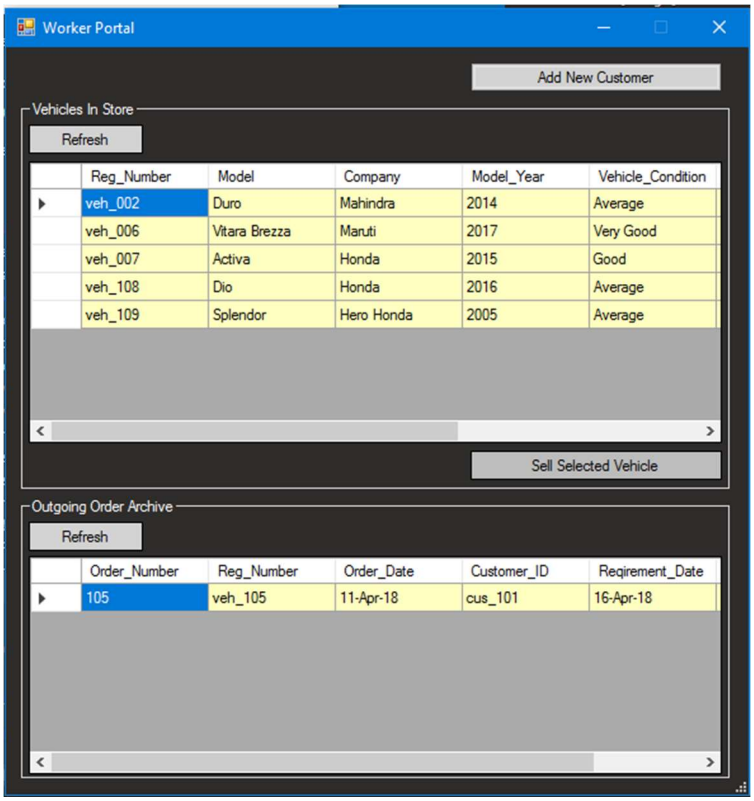


5) Sell vehicles



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.