INTERIM PROJECT REPORT

TYRE RETREADING MANAGEMENT SYSTEM

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<u>INTERIM REPORT (SRS & SDD)</u>

1. PREAMBLE

1.1 Introduction of the Project

The "**Eastern Treads Management System**" software covers almost all processes in a retreading of tyres. The main aim of the project is to manage the tyre company. The project is being developed using Visual Studio as its Front End and SQLServer 2012 as its Back End.

The "**Eastern Treads Management System**" is ideal for all tyre companies. This software makes all the functions easier. At present most of the data manipulation is done manually and this has many limitations like lot of manpower and paperwork required and many resources too. Manual manipulation is time consuming.

1.2 Objective of the Project

The "**Eastern Treads Management System**" mainly deals with two retreading methods one is PRECURED and the other is the CONVENTIONAL.PRECURED method means the company itself makes th tyre perfect with the common patterns what they have and customers donot have to do anything on the tyres further.whereas the CONVENTIONAL method means the company retreads a plain tyre on the damages tyres and the customers can make patterns on the tyre upon their choice.

This software mainly deals with 3 users one is the **administrator** of the company, **staff and customer.**

The "**Eastern Treads Management System**" process reduces human errors and increases the efficiency. The main focus of this project is to lessen human efforts. With all these capabilities this project is feasible and can satisfy any requests of the customers.

2. SOFTWARE REQUIREMENT SPECIFICATION

2.1 System Study

2.1.1 Existing System

The existing system uses manual method for the whole process such manual entry of details such as staffs, tread types, tyre types, etc. This requires a lot of hard work and time consumption to complete the task. This may include human errors. In the existing system, it is difficult to retrieve some particular information. Also, all the records are stored manually and it is a tedious task. As a result the security of these records is always a challenging task. In spite of all the efforts undertaken, the destruction of data may happen often. Hence, the computerization of the system of record maintenance is the only solution to reduce the shortcomings of the existing system

. There are many disadvantages in manual system:

- **Inaccuracies:**

  Since all the data entry is done manually, inaccuracies can occur. Cause of error is more in manual system.

- **Modification:**

  The transactions are executed in off-line mode, hence on-line data capture and modification is not possible.

- **Expensive:**

  The maintenance of this project can be expensive.

  Large number of personal hours is required for each and every part of the manual system. We have to buy lot of books, paper for keeping the information. So the existing system is very expensive.

- **Inefficiency:**

  The existing system only provides text-based interface, which is not as user-friendly as Graphical user Interface. Inefficiency in the existing system is also caused by the lack of proper communication between the people of the organization.

- **Time and effort:**

  Large amount of time and efforts may require. For searching a particular data, we have to search all the paper documents, its corresponding book and find the data.

- **All the searching are done manually:**

  In the existing system, all the work like entering the staff details, customer details, payment details etc. is done manually. This is really time consuming.

2.1.2 Proposed System

The proposed system is interactive, highly user friendly and designed exclusively for the "**Eastern Treads Management System**". The system covers almost all the functional areas of the "**Eastern Treads Management System**" such as details of staffs, salaries, tyre types, customers, retreading sales etc. All the operations and activities related to the "**Eastern Treads Management System**" can be carried out efficiently. The project maintains well organized database for storing the resources that they are provided by the client. This helps us to eliminate the entering of invalid data. Most problems of manual system can be solved by this system.

The computerization of the system allows the easy maintenance of the details. Large amount of data can be stored easily. Addition and updating other changes can be done easily. The information can be retrieved with high speed and accuracy. The use of GUI oriented software makes the system user friendly. Since all work is computerized, the calculations are effortless and less time consuming. Speed, accuracy, storage capacity, versatility, automation etc. are the advantages of using a computerized system.

The main purpose behind the proposed system is to provide a comprehensive computerized system, which can capture, collate and analyze the data from these wards and evaluate the impact of the program.

The main advantages of the new system are:

- **Security:**

  The software used for this "Eastern Threads Management System" includes the password, so the security is provided. When anyone opens the software it has the provision for entering password. We have to enter the correct password; otherwise we cannot enter into the system. Password is saved in system registry for more security.

- **User Friendly:**

  This package is very user friendly because it is easy to maintain and operate. All data entry operations are simple, administrator needs only to enter data and all other operations are performed by the computer.

- **Speed and Accuracy:**

  Computerization process increases the speed of all the operations. The manpower is reduced. Instead of doing all operation manually, computer will do it automatically. It also increases the accuracy of all the operations performed.

- **Efficiency and flexibility:**

  The flexibility and the efficiency of all the operation in the company is increased because of the computerization. No errors are occurred compared to the manual system

- **Automation:**

  The proposed system automates each and every activity of the manual system and increases its throughput. Thus the response time of the system is very less and it works very fast, and more user friendly. It will reduce the man power and execution time.

2.2 Functional Specifications

The system has 4 modules:

Module 1: Retreading

The company mainly deals with two retreading methods one is PRECURED and the other is the CONVENTIONAL.PRECURED method means the company itself makes th tyre perfect with the common patterns what they have and customers donot have to do anything on the tyres further.whereas the CONVENTIONAL method means the company retreads a plain tyre on the damages tyres and the customers can make patterns on the tyre upon their choice.

Module 2: Registration

Each user need to register to the system by entering user name and password. If the username and password are correct , then the system will login or it will show error message to the administrator.

Module 3: Booking

The customer can book the order and the staff can record the booking and confirm the bookings. The customer can select the retreading method and continue the booking. The customer can view the rate of the patches and select the pattern type or he/she can do the conventional method.

Module 4: Payment

The payment by the customer is made in two steps first as when the customer comes with the tyre for retreading they are allowed to pay the advance amount and the bill is generated as a report and as when the customer comes for the final sale he pays the remaining amount and for this the final bill is generated as report.

2.3 User Characteristics

This software mainly deals with 3 users.

- **Admin**

  The administrator of this company can access every process of this company .The administrator of this company can add the details of staffs, tread type, tyre type etc. The staffs can add the details of customer, sub patterns, retread sales etc. The admin is the allrounder of the company. He can add the staffs to company and also can add their salary details.

  The admin assign the staffs and the staffs uses their username and password to enter the project and they are restricted to access only few process in the company.

- **Staff**

  The Staff can record the details of repair patches, patterns, customer details etc to the system . He/she also can add there details and enquires. Currently the customer, staffs, patches and other details are recorded manually, which is being ectified in the proposed system. Staff can also view customers, update the billing status etc.

- **Customer**

  The customer can select one of the retreading method and can book the order. The payment by the customer is made in two steps first as when the customer comes with the tyre for retreading they are allowed to pay the advance amount and the bill is generated as a report and as when the customer comes for the final sale he pays the remaining amount and for this the final bill is generated as report.

2.4 System Specification
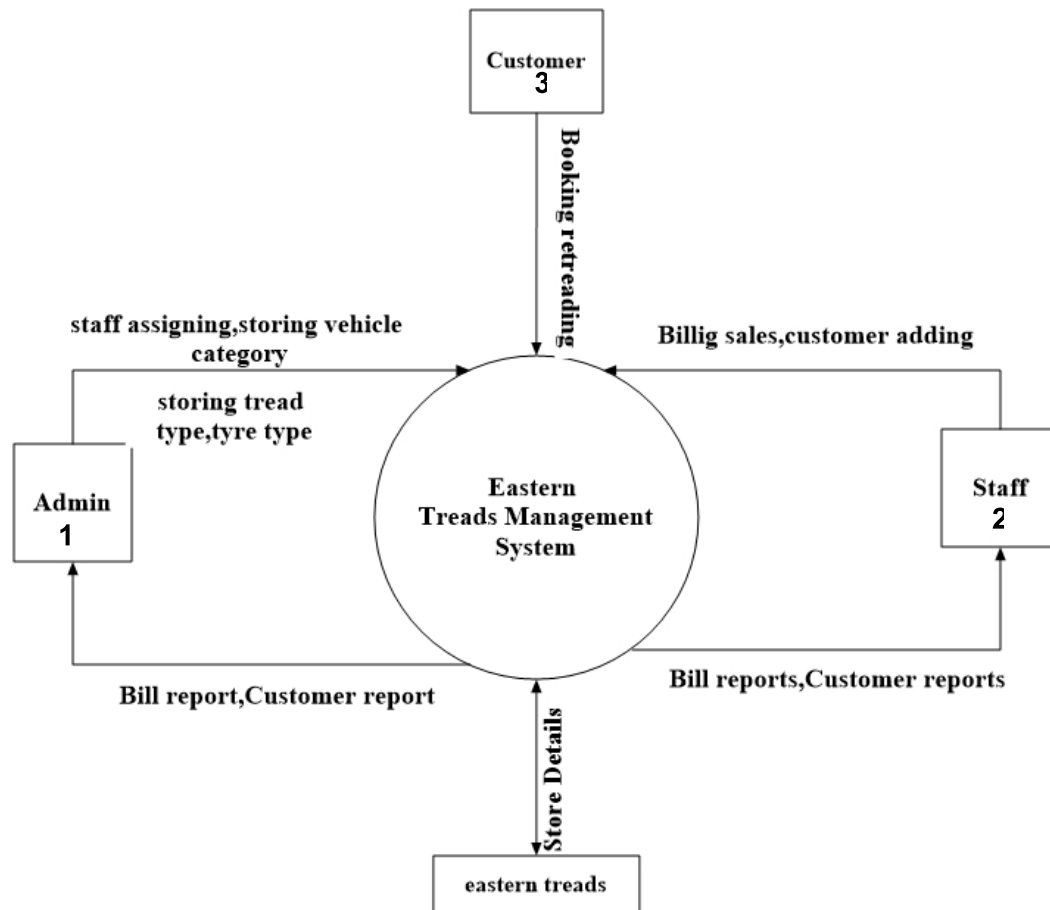
2.4.1 Software specification

- Development Configuration

    - Machine– Windows 10 or above /Linux distros, SQL server management studio.

- Implementation Configuration

    - Client machine- Windows 10 or above /Linux distros

    - Server Machine- Windows 10 or above/Linux distros, and SQL server management studio.

2.4.2 Hardware specification

- Development Configuration

    - Machine (*Minimum Requirement*)

        - Processor –Intel i3, AMD and above version.
        - RAM – 512MB and above.
        - Hardware Device- A monitor with key board and mouse.
        - Hard disk- 100 GB

- Implementation Configuration

    - Client Machine (*Minimum Requirement*)

        - Hardware Device – A computer with a web browser.
        - RAM – 512 MB and above (Recommended 1GB).
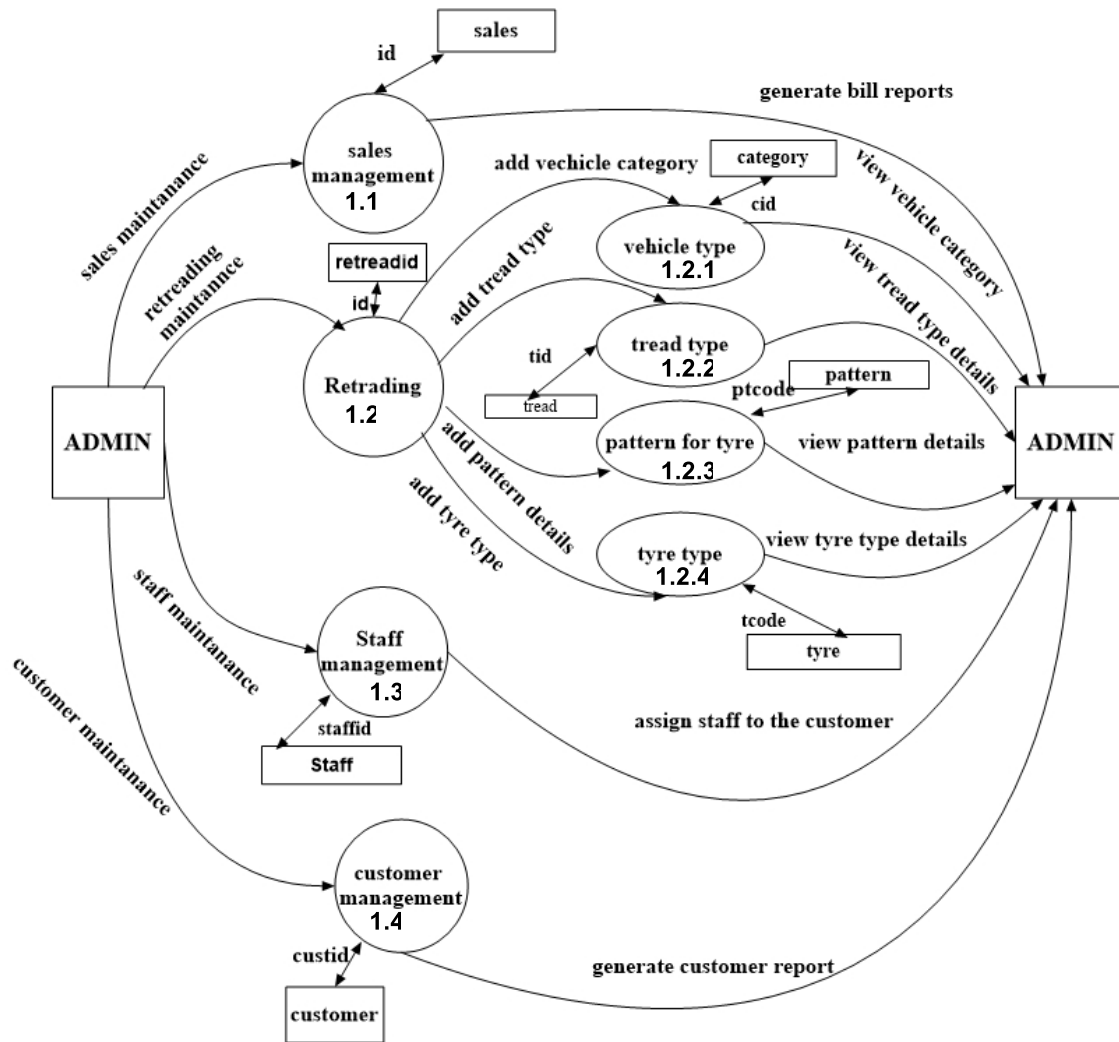   - Hard Disk – Min 100 GB

3. Software Modeling

3.1 Context Level Data flow Diagram

3.2First Level Data Flow Diagram

Admin

Staff

Add sale details

provide bill report

STAFF

Sales
management
2.1

Data store

bill id

STAFF

Customer
Management
2.2

Data store

id

provide customer information

Add customers into the system

Customer

customer

add booking for retread

booking
3.1

confirm booking

customer

paying the bill

payment
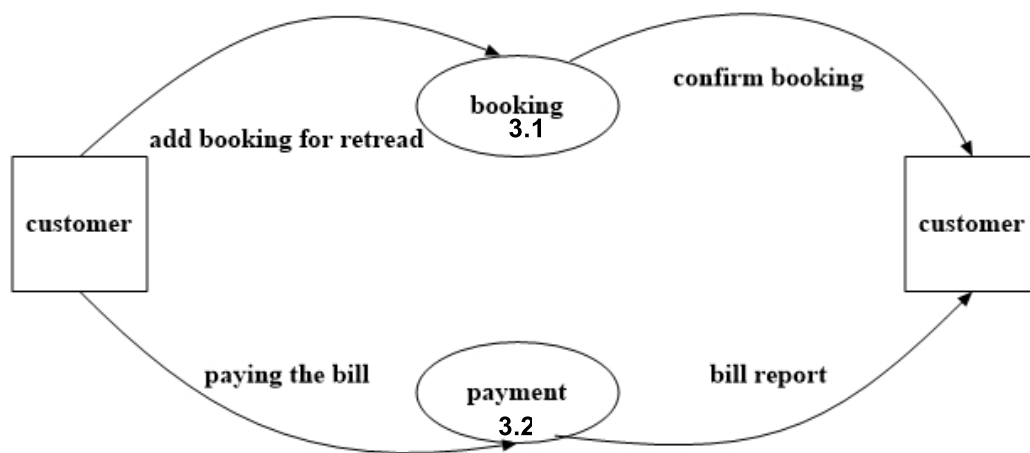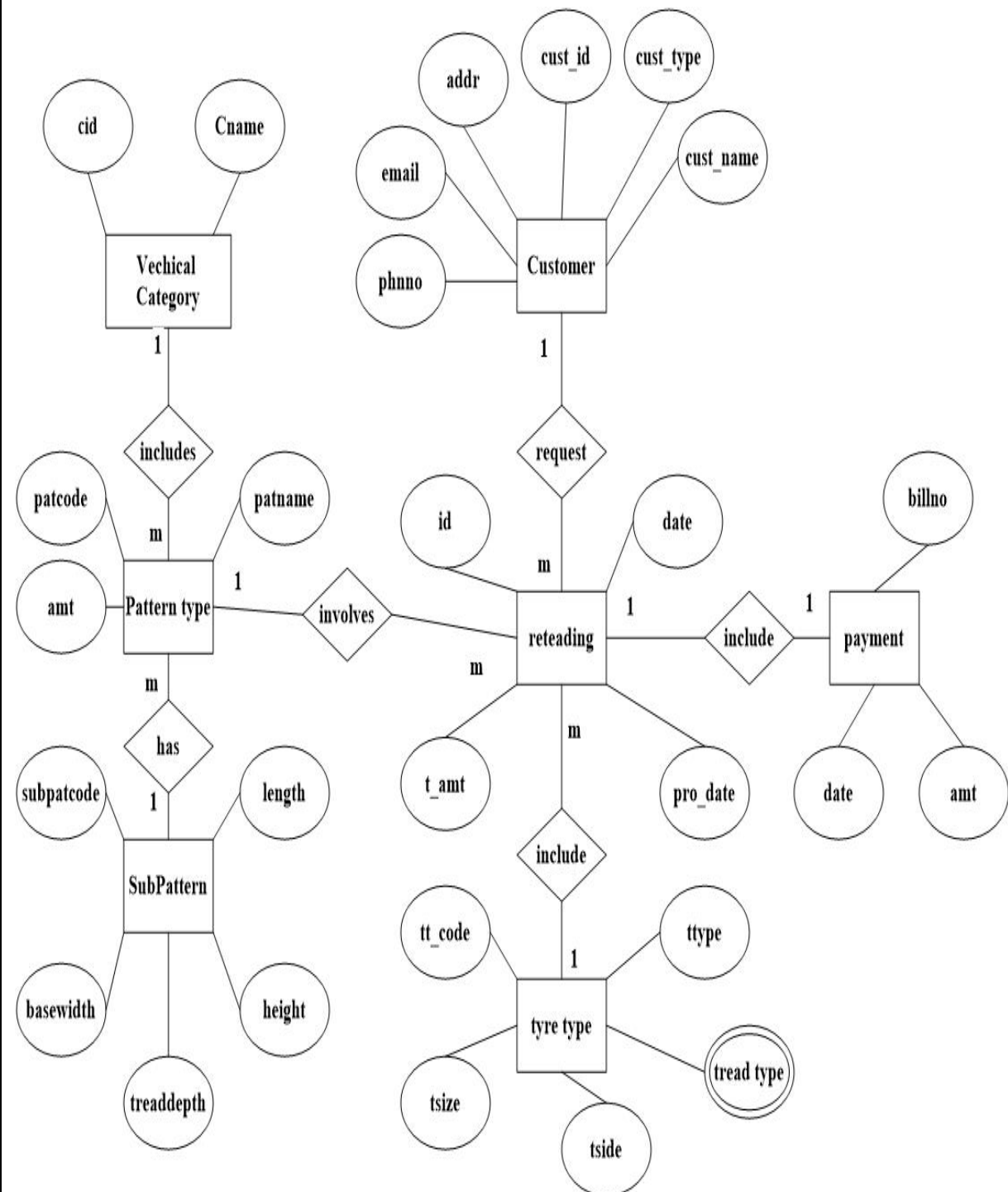3.2

bill report
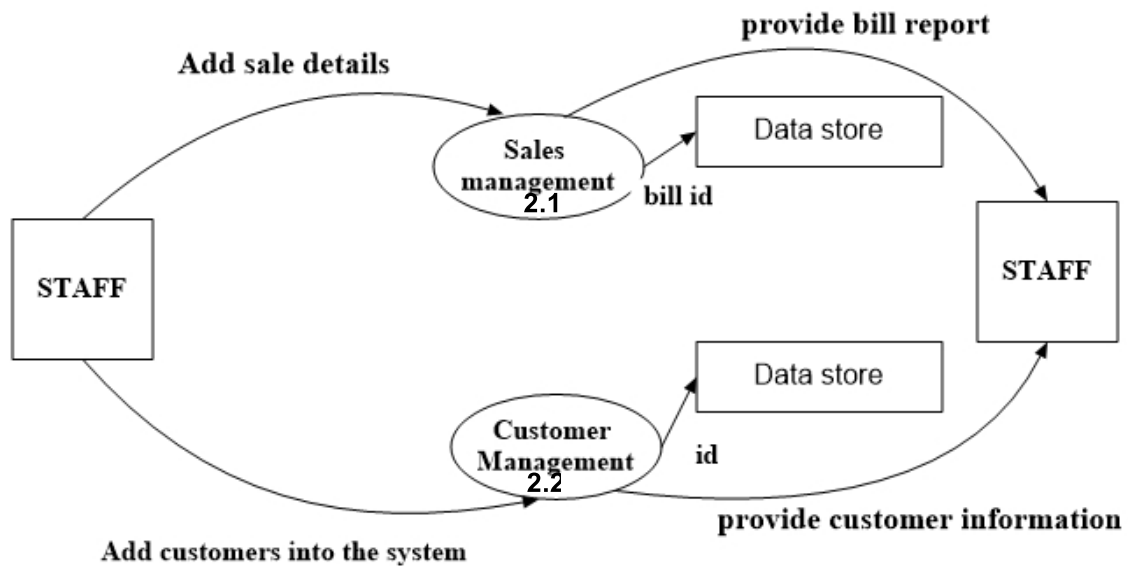
3.3 ER Diagram

3.4 Table Description

Table no:1

category: The table contains data about the vehicle category such as categoryid, category name.

Primary key: cid

Field	Datatype	Description
cid	Varchar(50)	Vehicle category id
Cname	Varchar(50)	Vehicle category name

Table no:2

Login: The table contains data about the login information   such as username, password, usertype,

Primary Key: l_id

Field	Datatype	Description
l_id	int	Login id
Username	Varchar(50)	Username
Password	Varchar(50)	Password
Usertype	Varchar(50)	Usertype

Table no:3

Patchproduct: The table contains data about the patch product such as patchcode, productcode, unitbox, inches,mm,tyresize.

Primary key: procode

Foreign Key: patchcode

Field	Datatype	Description
Patchcode	Varchar(50)	Patchcode
Procode	Varchar(50)	Productcode
Unitbox	Varchar(50)	Unitbox
Inches	Varchar(50)	Inches

Mm	Varchar(50)	Mm

Table no:4

Pattern: The table contains data about the pattern such as patterncode,patternname, vehicletype, tyretype, treadtype and amount

Primary key: ptcode

Field	Datatype	Description
Ptcode	Varchar(50)	Connection id
Contype	Varchar(15)	Connection type
Consno	Varchar(15)	Consumer id
Location	Varchar(15)	Location of consumer
Conpower	Varchar(15)	Power type
Condate	Varchar(15)	Connection date
Charge	Int	Charge of connection

Table no:5

Customer: The table contains data about the customer such as name, customerid, address, mail id, contact number and customertype.

Primary key: custid

Field	Datatype	Description
Custid	Varchar(15)	Consumer id
Custname	Varchar(15)	Consumer name
Addr	Varchar(15)	Consumer address line 1
City	Varchar(15)	City
Pin	Int	Pin code of customer
Email	Varchar(15)	Mail id
Custtype	Varchar(15)	Category of consumer

Table no:6

payment: The table contains data about the bill such as billno,date,sales id and amount

Primary key: billno

Field	Datatype	Description
Billno	varchar(50)	Bill no
Date	varchar(50)	Date of the bill produced
Sid	varchar(50)	Sales id
Amt	Int	Amount to be paid

Table7:

Repair : The table contain the details of repair patches such as

patchcode,patchname,tyretype.

Primary key:patchcode

Field	Datatype	Description
Patchcode	varchar(50)	Patchcode
Patchname	varchar(50)	Patchname
Tyrtyp	varchar(50)	Tyretype

Table8:

Retsale: the table contains the details of the retreadind sales such as id,date,customer

id,product deliverydate,totalamout.

Primary key:id

Foreign key:custid

Field	Datatype	Description
Id	varchar(50)	Sales id
Dte	varchar(50)	Sales date
Custid	varchar(50)	Customer id
Prodate	varchar(50)	Product delivery date
Tamt	Int	Total amount

Table9:

Subpattern :the table contains the values of subpattern such as subpattern code
,patterncode, basewidth, treaddepth,basethickness,length,weight.

Primarykey: supatcode

Forign key:patcode

Field	Datatype	Description
Patcode	varchar(50)	Pattern code
Supatcode	varchar(50)	Subpattern code
Basewidth	varchar(50)	Basewidth
Treaddepth	varchar(50)	Tread depth
Basethick	varchar(50)	Base thickness
Length	varchar(50)	Length
Weight	varchar(50)	Weight

Table10:

Tread:the table contain the details of the retreading type such as treadtype and tread name.

Primary key:tid

Field	Datatype	Description
Tid	varchar(50)	Tread id
Tname	varchar(50)	Tread name

Table 11:

Tyre:the table contain the details of tyres such as tyrecode,tyretype,tyreside, treadtype,tyresize.

Primary key:tcode

Field	Datatype	Description
Tcode	varchar(50)	Tyre code
Ttype	varchar(50)	Tyre type
Tside	varchar(50)	Tyre side
Treadtype	varchar(50)	Tread type
Tsize	varchar(50)	Tyre size

Table 12:

staff: the table contain the details of staff

primary key:staffid

Field	Datatype	Description
Staffid	varchar(50)	Staff id
Staffname	varchar(50)	Staff name
Desig	varchar(50)	Designation
Gender	varchar(50)	Gender
Email	varchar(50)	Email
Dob	Date	Date of birth
Addre	varchar(50)	Address
Phone	varchar(50)	Phone number
Quali	varchar(50)	Qualification
Joiningdate	Date	Joiningdate

4.0 TESTING

4.1 Introduction

Software Testing is the process of executing a program or system with the intent of finding errors. Testing involves any activity aimed at evaluating an attribute or capability of a program or system and determining that it meets its required results. The scope of software testing includes examination of code as well as execution of that code in various environments and conditions as well as examining the quality aspects of code: does it do what it is supposed to do and do what it needs to do. Testing helps not only to uncover errors introduced during coding, but also locates errors committed during the previous phases. Thus the aim of testing is to uncover requirements, design or coding errors in the program.

Unit Testing

A unit is the smallest testable part of an application. Unit testing is a method of testing that verifies the individual units of source code are working properly. Rather than initially testing a program as a whole, testing is first focused on the smaller building blocks of the program. Unit testing eases the task of debugging and provide parallelism to program testing process by giving the opportunity to test multiple modules simultaneously. In this system the validity of fields in which data entered in each form and web form are checked. If the entered data are valid, then only further processing will take place.

Integration Testing

Data can be lost across an interface; one module can have an adverse effect on the other sub functions, when combined may not produce the desired functions. Integrated testing is the systematic testing to uncover the errors within the interface. This testing is done with simple data and the developed system has run successfully with this simple data.

The need for integrated testing is to find the overall system performance. While developing the system, each module is developed individually and integrated with

present system. Modules are integrated by adding the module as a reference in other modules.