

**Sri Lanka Institute of Advanced Technological Education Higher National  
Diploma in Information Technology**

**Higher National Diploma in Information Technology**



**Database Document**

**“LS Transport”**

(Desktop Application for Cab Service)

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## **1. Introduction**

The database document is submitted to meet software development requirements of the individual project module conduct by the Sri Lanka Institute of Advanced Technological Education (SLIATE).

The purpose of the Database Design Document that maps the logical data model to the target database management system with consideration to the system's performance requirement. The database design converts logical or conceptual data construct to physical storage construct of the target database management system. This document describes the database of our project.

It is described under the following headings,

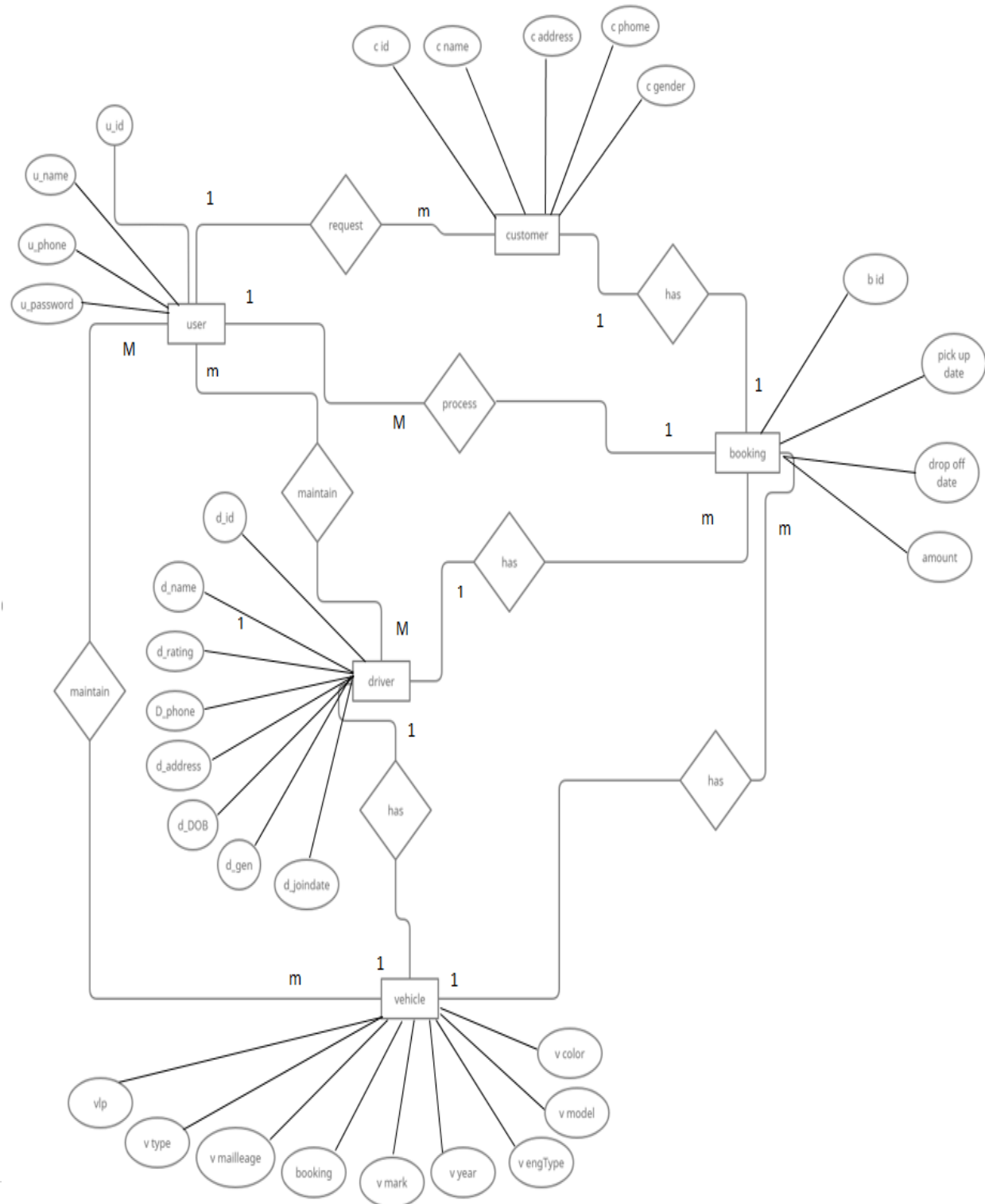
- ER diagram

- ER to relational mapping

- Normalization

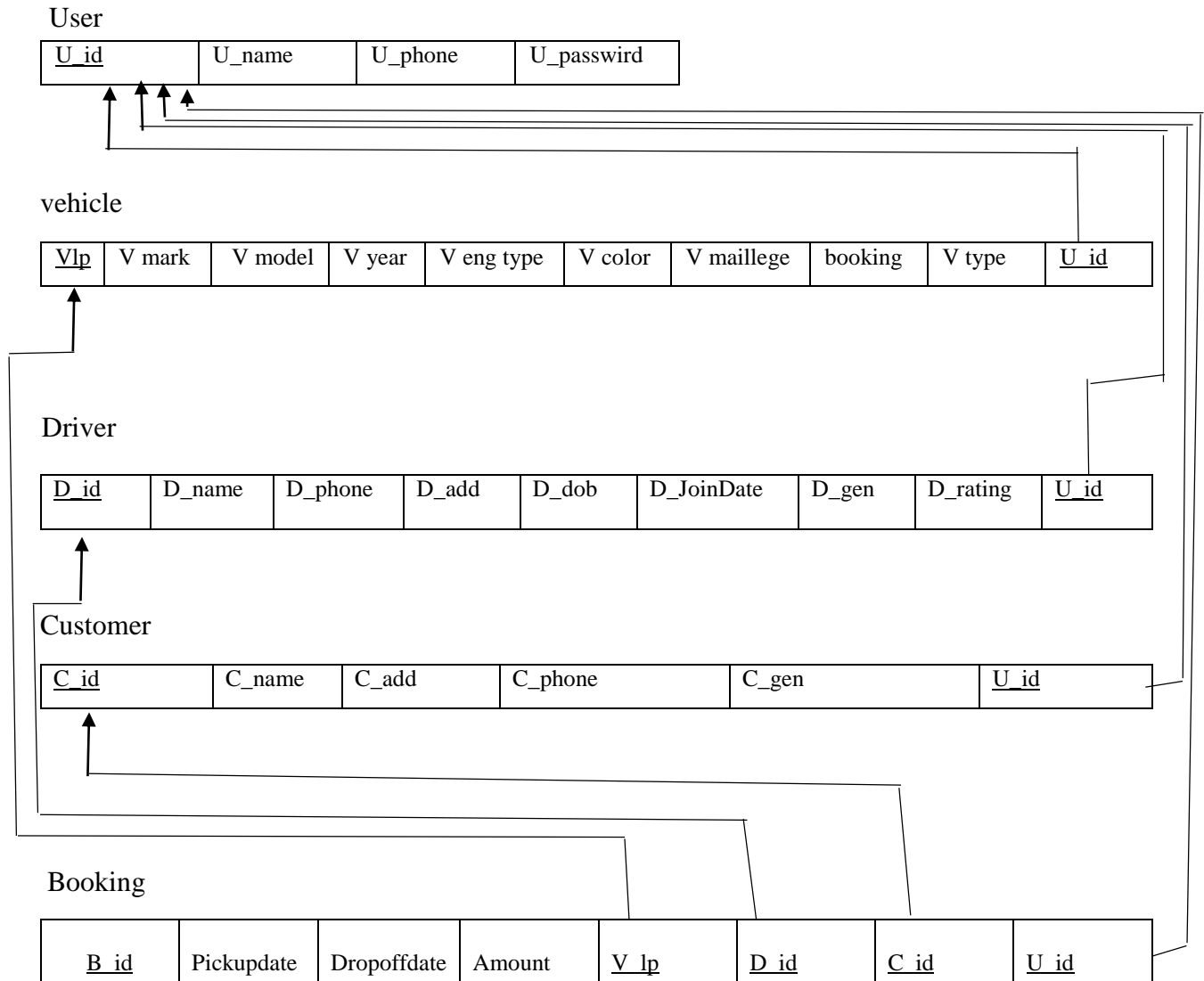
ER diagram used to analyze existing database to find and resolve problems in logic or deployment. And show the relationship among tables and their attributes. ER diagram shows the complete logical structure of database.as well as relation mapping, we can clearly display the relationship between its members. Normalization can reduce data redundancy & eliminates undesirable characteristics like insertion. normalization can divide larger tables into smaller tables and links them using relationships.

## 2. ER diagram



## ER to relational mapping

### Relational mapping



### 3. Normalization

#### 3.1. UN formation

User

<u>U_id</u>	U_name	U_phone	U_password
-------------	--------	---------	------------

vehicle

<u>Vlp</u>	V mark	V model	V year	V eng type	V color	booking	V maillege	V type
------------	--------	---------	--------	------------	---------	---------	------------	--------

Driver

<u>D_id</u>	D_name	D_phone	D_add	D_dob	D_JoinDate	D_gen	D_rating
-------------	--------	---------	-------	-------	------------	-------	----------

Customer

<u>C_id</u>	C_name	C_add	C_phone	C_gen
-------------	--------	-------	---------	-------

booking

<u>B_id</u>	Pickupdate	Dropoffdate	Amount
-------------	------------	-------------	--------

### 3.1 1<sup>st</sup> normalization

User

<u>U_id</u>	U_name	U_password
-------------	--------	------------

User phone

<u>U_id</u>	U_phone
-------------	---------

Vehicle

<u>Vlp</u>	V mark	V model	V year	V eng type	V maillege	V type	booking	<u>U_id</u>
------------	--------	---------	--------	------------	------------	--------	---------	-------------

Vehicle color

<u>Vlp</u>	Vcolor
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Driver

<u>D_id</u>	D_name	D_add	D_dob	D_JoinDate	D_gen	D_rating	<u>U_id</u>
-------------	--------	-------	-------	------------	-------	----------	-------------

Driver phone

<u>D_id</u>	D_phone
-------------	---------

Customer

<u>C_id</u>	C_name	C_add	C_gen	<u>U_id</u>
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Customer phone

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<u>C_id</u>	C_phone
-------------	---------

Booking

<u>B_id</u>	Pickupdate	Dropoffdate	Amount	<u>V_lp</u>	<u>D_id</u>	<u>C_id</u>	<u>U_id</u>
-------------	------------	-------------	--------	-------------	-------------	-------------	-------------

### 3.2 2<sup>nd</sup> normalization

User

<u>U_id</u>	U_name	U_password
-------------	--------	------------

User phone

<u>U_id</u>	U_phone
-------------	---------

Vehicle

<u>Vlp</u>	V mark	V model	V year	V eng type	V maillege	V type	booking	<u>U_id</u>
------------	--------	---------	--------	------------	------------	--------	---------	-------------

Vehicle color

<u>Vlp</u>	Vcolor
------------	--------

Driver

<u>D_id</u>	D_name	D_add	D_dob	D_JoinDate	D_gen	D_rating	<u>U_id</u>
-------------	--------	-------	-------	------------	-------	----------	-------------

Driver phone

<u>D_id</u>	D_phone
-------------	---------



#### Customer

<u>C_id</u>	C_name	C_add	C_gen	<u>U_id</u>
-------------	--------	-------	-------	-------------

#### Customer phone

<u>C_id</u>	C_phone
-------------	---------

#### Booking

<u>B_id</u>	Pickupdate	Dropoffdate	Amount	<u>U_id</u>
-------------	------------	-------------	--------	-------------

#### Booking vehicle

<u>B_id</u>	Pickupdate	Dropoffdate	Amount	<u>V_lp</u>
-------------	------------	-------------	--------	-------------

#### Booking driver

<u>B_id</u>	Pickupdate	Dropoffdate	Amount	<u>D_id</u>
-------------	------------	-------------	--------	-------------

#### Booking customer

<u>B_id</u>	Pickupdate	Dropoffdate	Amount	<u>C_id</u>
-------------	------------	-------------	--------	-------------

### 3.3 3<sup>rd</sup> normalization

#### User

<u>U_id</u>	U_name	U_password
-------------	--------	------------

#### User phone

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<u>U_id</u>	U_phone
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## Vehicle

<u>Vlp</u>	V mark	V model	V year	V eng type	V maillege	V type	booking	<u>U_id</u>
------------	--------	---------	--------	------------	------------	--------	---------	-------------

## Vehicle color

<u>Vlp</u>	Vcolor
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## Driver

<u>D_id</u>	D_name	D_add	D_dob	D_JoinDate	D_gen	D_rating	<u>U_id</u>
-------------	--------	-------	-------	------------	-------	----------	-------------

## Driver phone

<u>D_id</u>	D_phone
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## Customer

<u>C_id</u>	C_name	C_add	C_gen	<u>U_id</u>
-------------	--------	-------	-------	-------------

## Customer phone

<u>C_id</u>	C_phone
-------------	---------

## Booking

<u>B_id</u>	Pickupdate	Dropoffdate	Amount	<u>U_id</u>
-------------	------------	-------------	--------	-------------

## Booking vehicle

<u>B_id</u>	Pickupdate	Dropoffdate	Amount	<u>V_lp</u>
-------------	------------	-------------	--------	-------------

## Booking driver

<u>B_id</u>	Pickupdate	Dropoffdate	Amount	<u>D_id</u>
-------------	------------	-------------	--------	-------------

Booking customer

<u>B_id</u>	Pickupdate	Dropoffdate	Amount	<u>C_id</u>
-------------	------------	-------------	--------	-------------