

Assignment-01

- (1) Design an ER diagram for a traffic flow management system used in a city to optimize the traffic rules, manage intersection and control traffic signals.

AIM

Design an ER diagram for a traffic flow management system.

MATERIALS REQUIRED

Data modular software and SQL

PROCEDURE

- * Determine the purpose of the database.
- * Collect detailed requirement from stakeholders. This includes data to be stored, report needs, performance required and security concerns.

CONCEPTUAL DESIGN

- * Identify entities
Eg: Vehicles, traffic signals, incidents, traffic flow.
- * Define attributes for each entity
Eg: Vehicle - 11, Signal - 10, Incident - 10.
- * Establish relationships between entities
Eg: Vehicles, traffic flow.

LOGICAL DESIGN

- * Define tables, column, primary key and foreign key.
- * Normalize the database to reduce redundancy.

PHYSICAL DESIGN

- * choose appropriate data type for each column
- * Design indexes to improve query performance

SQL COMMANDS

Create Database Traffic;

use Traffic;

Create TABLE Vehicles {

Vehicle-ID int(20);

License Varchar(40);

Type Varchar(10);

Year int(20)

};

Create TABLE Traffic signals {

Signal-ID int(20);

Location Varchar(40);

Status Varchar(40);

Vehicle-ID int(20);

};

Create TABLE Accidents {

Accident-ID int(20);

Signal-ID int(20);

Accident-type Varchar(40);

};

Create TABLE Traffic flow {

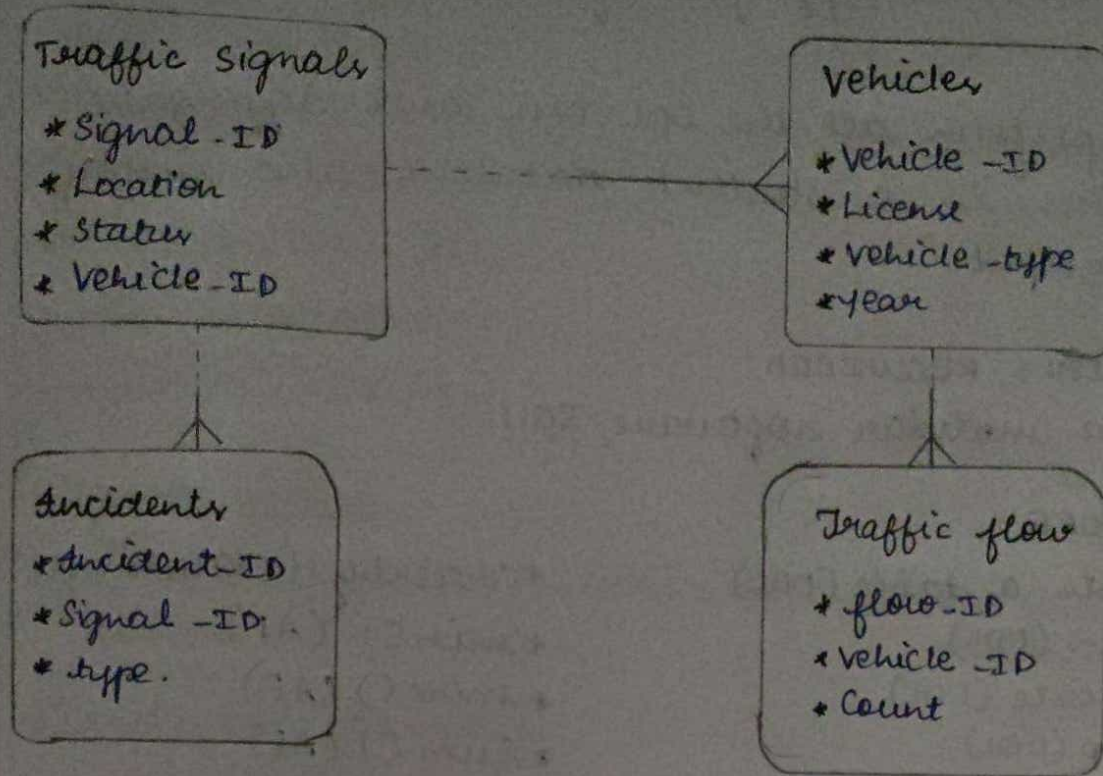
flow-ID int(20);

Vehicle-ID int(20);

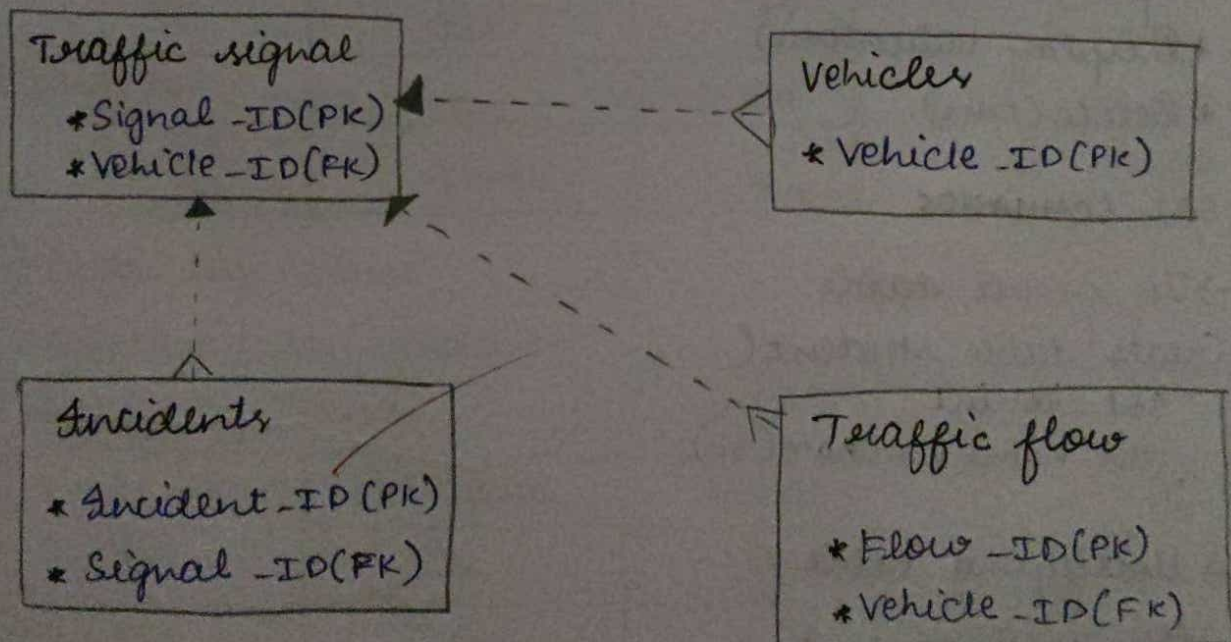
Count int(20)

};

LOGICAL MODEL



RELATIONAL MODEL



RESULT

The ER diagram for the traffic flow management system shows four main entities, traffic signals, vehicles, incidents, traffic flow. This setup allows traffic-flow to indirectly handle traffic signals and vehicles flow through incident they control, ensuring efficient traffic management system and enhances the traffic rules.