EPL342 – Team 34 - Phase 1

ERD:

A black and white image of a network

AI-generated content may be incorrect.

Relational Schema:

A diagram of a network

AI-generated content may be incorrect.

SQL code generated (ANSI notation for variable types):

CREATE TABLE User

(

User\_ID INT NOT NULL,

Username VARCHAR(30) NOT NULL,

Password VARCHAR(40) NOT NULL,

Email VARCHAR(60) NOT NULL,

F\_Name VARCHAR(30) NOT NULL,

L\_Name VARCHAR(30) NOT NULL,

Phone VARCHAR(25) NOT NULL,

Gender VARCHAR(40) NOT NULL,

B\_Date DATE NOT NULL,

Address VARCHAR(40) NOT NULL,

Rating NUMERIC(2 1) NOT NULL,

PFP VARCHAR(255) NOT NULL,

PRIMARY KEY (User\_ID, Username, Email)

);

CREATE TABLE Admin

(

User\_ID INT NOT NULL,

Username VARCHAR(30) NOT NULL,

Email VARCHAR(60) NOT NULL,

PRIMARY KEY (User\_ID, Username, Email),

FOREIGN KEY (User\_ID, Username, Email) REFERENCES User(User\_ID, Username, Email)

);

CREATE TABLE Operator

(

OP\_ID INT NOT NULL,

User\_ID INT NOT NULL,

Username VARCHAR(30) NOT NULL,

Email VARCHAR(60) NOT NULL,

PRIMARY KEY (OP\_ID, User\_ID, Username, Email),

FOREIGN KEY (User\_ID, Username, Email) REFERENCES User(User\_ID, Username, Email)

);

CREATE TABLE Driver

(

Driver\_ID INT NOT NULL,

User\_ID INT NOT NULL,

Username VARCHAR(30) NOT NULL,

Email VARCHAR(60) NOT NULL,

PRIMARY KEY (Driver\_ID, User\_ID, Username, Email),

FOREIGN KEY (User\_ID, Username, Email) REFERENCES User(User\_ID, Username, Email)

);

CREATE TABLE Passenger

(

User\_ID INT NOT NULL,

Username VARCHAR(30) NOT NULL,

Email VARCHAR(60) NOT NULL,

PRIMARY KEY (User\_ID, Username, Email),

FOREIGN KEY (User\_ID, Username, Email) REFERENCES User(User\_ID, Username, Email)

);

CREATE TABLE GDPR\_Request\_Log

(

Request\_ID INT NOT NULL,

Requested\_By VARCHAR(25) NOT NULL,

Managed\_By VARCHAR(25) NOT NULL,

Issue\_Date DATE NOT NULL,

Pending CHAR(1) NOT NULL,

User\_ID INT NOT NULL,

Username VARCHAR(30) NOT NULL,

Email VARCHAR(60) NOT NULL,

PRIMARY KEY (Request\_ID),

FOREIGN KEY (User\_ID, Username, Email) REFERENCES User(User\_ID, Username, Email)

);

CREATE TABLE Preferences

(

Dark\_Mode\_On CHAR(1) NOT NULL,

Language VARCHAR(30) NOT NULL,

Font\_Size INT NOT NULL,

Notifications CHAR(1) NOT NULL,

Cookies CHAR(1) NOT NULL,

Location VARCHAR(30) NOT NULL,

Preference\_ID INT NOT NULL,

User\_ID INT NOT NULL,

Username VARCHAR(30) NOT NULL,

Email VARCHAR(60) NOT NULL,

PRIMARY KEY (Preference\_ID),

FOREIGN KEY (User\_ID, Username, Email) REFERENCES User(User\_ID, Username, Email)

);

CREATE TABLE Company

(

Company\_ID INT NOT NULL,

Comp\_Name VARCHAR(30) NOT NULL,

Address VARCHAR(30) NOT NULL,

Phone VARCHAR(25) NOT NULL,

PRIMARY KEY (Company\_ID)

);

CREATE TABLE Trip

(

Trip\_ID INT NOT NULL,

Distance FLOAT NOT NULL,

Drv\_ID INT NOT NULL,

Psg\_ID INT NOT NULL,

From VARCHAR(30) NOT NULL,

To VARCHAR(30) NOT NULL,

Departure\_Time DATE NOT NULL,

Arrival\_Time DATE NOT NULL,

User\_ID INT NOT NULL,

Username VARCHAR(30) NOT NULL,

Email VARCHAR(60) NOT NULL,

Driver\_ID INT NOT NULL,

User\_ID INT NOT NULL,

Username VARCHAR(30) NOT NULL,

Email VARCHAR(60) NOT NULL,

PRIMARY KEY (Trip\_ID),

FOREIGN KEY (User\_ID, Username, Email, Driver\_ID) REFERENCES Driver(User\_ID, Username, Email, Driver\_ID),

FOREIGN KEY (User\_ID, Username, Email) REFERENCES Passenger(User\_ID, Username, Email)

);

CREATE TABLE Document

(

Doc\_ID INT NOT NULL,

Issue\_Date DATE NOT NULL,

PRIMARY KEY (Doc\_ID)

);

CREATE TABLE Driver\_Doc

(

Driver\_ID INT NOT NULL,

Doc\_Type VARCHAR(30) NOT NULL,

Doc\_ID INT NOT NULL,

User\_ID INT NOT NULL,

Username VARCHAR(30) NOT NULL,

Email VARCHAR(60) NOT NULL,

Driver\_ID INT NOT NULL,

PRIMARY KEY (Doc\_ID),

FOREIGN KEY (Doc\_ID) REFERENCES Document(Doc\_ID),

FOREIGN KEY (User\_ID, Username, Email, Driver\_ID) REFERENCES Driver(User\_ID, Username, Email, Driver\_ID)

);

CREATE TABLE Bridge

(

Bridge\_ID INT NOT NULL,

Name VARCHAR(25) NOT NULL,

Coordinate\_X NUMERIC(9 6) NOT NULL,

Coordinate\_Y NUMERIC(9 6) NOT NULL,

PRIMARY KEY (Bridge\_ID)

);

CREATE TABLE Geofence

(

C1\_X NUMERIC(9 6 ) NOT NULL,

C2\_X NUMERIC(9 6) NOT NULL,

C3\_Y NUMERIC(9 6) NOT NULL,

C4\_X NUMERIC(9 6) NOT NULL,

Geofence\_ID INT NOT NULL,

C1\_Y NUMERIC(9 6) NOT NULL,

C2\_Y NUMERIC(9 6) NOT NULL,

C3\_X NUMERIC(9 6) NOT NULL,

C4\_Y NUMERIC(9 6) NOT NULL,

PRIMARY KEY (Geofence\_ID)

);

CREATE TABLE Feedback

(

Feedback\_ID INT NOT NULL,

Comments VARCHAR(250),

Issue\_Date DATE NOT NULL,

Rating NUMERIC(2 1) NOT NULL,

Trip\_ID INT NOT NULL,

User\_ID INT NOT NULL,

Username VARCHAR(30) NOT NULL,

Email VARCHAR(60) NOT NULL,

PRIMARY KEY (Feedback\_ID, Trip\_ID),

FOREIGN KEY (Trip\_ID) REFERENCES Trip(Trip\_ID),

FOREIGN KEY (User\_ID, Username, Email) REFERENCES User(User\_ID, Username, Email)

);

CREATE TABLE Trip\_Log

(

TL\_ID INT NOT NULL,

Trip\_ID INT NOT NULL,

PRIMARY KEY (TL\_ID, Trip\_ID),

FOREIGN KEY (Trip\_ID) REFERENCES Trip(Trip\_ID)

);

CREATE TABLE In\_App\_Message

(

Session\_ID INT NOT NULL,

Chat\_Log VARCHAR(1000) NOT NULL,

Trip\_ID INT NOT NULL,

PRIMARY KEY (Session\_ID, Trip\_ID),

FOREIGN KEY (Trip\_ID) REFERENCES Trip(Trip\_ID)

);

CREATE TABLE Multistop\_Trip

(

MT\_ID INT NOT NULL,

Trip\_ID INT NOT NULL,

PRIMARY KEY (MT\_ID, Trip\_ID),

FOREIGN KEY (Trip\_ID) REFERENCES Trip(Trip\_ID)

);

CREATE TABLE Service\_Type

(

ST\_ID INT NOT NULL,

Type VARCHAR(30) NOT NULL,

Tariff FLOAT NOT NULL,

User\_ID INT NOT NULL,

Username VARCHAR(30) NOT NULL,

Email VARCHAR(60) NOT NULL,

Driver\_ID INT NOT NULL,

Company\_ID INT NOT NULL,

PRIMARY KEY (ST\_ID, User\_ID, Username, Email, Driver\_ID, Company\_ID),

FOREIGN KEY (User\_ID, Username, Email, Driver\_ID) REFERENCES Driver(User\_ID, Username, Email, Driver\_ID),

FOREIGN KEY (Company\_ID) REFERENCES Company(Company\_ID)

);

CREATE TABLE GDPR\_Request\_Log-Admin

(

User\_ID INT NOT NULL,

Username VARCHAR(30) NOT NULL,

Email VARCHAR(60) NOT NULL,

Request\_ID INT NOT NULL,

PRIMARY KEY (User\_ID, Username, Email, Request\_ID),

FOREIGN KEY (User\_ID, Username, Email) REFERENCES Admin(User\_ID, Username, Email),

FOREIGN KEY (Request\_ID) REFERENCES GDPR\_Request\_Log(Request\_ID)

);

CREATE TABLE GDPR\_Request\_Log-Operator

(

Request\_ID INT NOT NULL,

User\_ID INT NOT NULL,

Username VARCHAR(30) NOT NULL,

Email VARCHAR(60) NOT NULL,

OP\_ID INT NOT NULL,

PRIMARY KEY (Request\_ID, User\_ID, Username, Email, OP\_ID),

FOREIGN KEY (Request\_ID) REFERENCES GDPR\_Request\_Log(Request\_ID),

FOREIGN KEY (User\_ID, Username, Email, OP\_ID) REFERENCES Operator(User\_ID, Username, Email, OP\_ID)

);

CREATE TABLE Operator-Documents

(

User\_ID INT NOT NULL,

Username VARCHAR(30) NOT NULL,

Email VARCHAR(60) NOT NULL,

OP\_ID INT NOT NULL,

Doc\_ID INT NOT NULL,

PRIMARY KEY (User\_ID, Username, Email, OP\_ID, Doc\_ID),

FOREIGN KEY (User\_ID, Username, Email, OP\_ID) REFERENCES Operator(User\_ID, Username, Email, OP\_ID),

FOREIGN KEY (Doc\_ID) REFERENCES Document(Doc\_ID)

);

CREATE TABLE Multistop-Bridge

(

MT\_ID INT NOT NULL,

Trip\_ID INT NOT NULL,

Bridge\_ID INT NOT NULL,

PRIMARY KEY (MT\_ID, Trip\_ID, Bridge\_ID),

FOREIGN KEY (MT\_ID, Trip\_ID) REFERENCES Multistop\_Trip(MT\_ID, Trip\_ID),

FOREIGN KEY (Bridge\_ID) REFERENCES Bridge(Bridge\_ID)

);

CREATE TABLE Bridge-Geofence

(

Bridge\_ID INT NOT NULL,

Geofence\_ID INT NOT NULL,

FOREIGN KEY (Bridge\_ID) REFERENCES Bridge(Bridge\_ID),

FOREIGN KEY (Geofence\_ID) REFERENCES Geofence(Geofence\_ID)

);

CREATE TABLE Company\_Representative

(

CR\_ID INT NOT NULL,

Comp\_ID INT NOT NULL,

User\_ID INT NOT NULL,

Username VARCHAR(30) NOT NULL,

Email VARCHAR(60) NOT NULL,

Company\_ID INT NOT NULL,

PRIMARY KEY (CR\_ID, User\_ID, Username, Email),

FOREIGN KEY (User\_ID, Username, Email) REFERENCES User(User\_ID, Username, Email),

FOREIGN KEY (Company\_ID) REFERENCES Company(Company\_ID)

);

CREATE TABLE Vehicle

(

Load\_Space FLOAT NOT NULL,

Car\_Type VARCHAR(20) NOT NULL,

Number\_Of\_Seats INT NOT NULL,

Engine\_Number INT NOT NULL,

Frame\_Number INT NOT NULL,

License\_Plate VARCHAR(10) NOT NULL,

User\_ID INT NOT NULL,

Username VARCHAR(30) NOT NULL,

Email VARCHAR(60) NOT NULL,

OP\_ID INT NOT NULL,

User\_ID INT NOT NULL,

Username VARCHAR(30) NOT NULL,

Email VARCHAR(60) NOT NULL,

Driver\_ID INT NOT NULL,

Company\_ID INT NOT NULL,

Geofence\_ID INT NOT NULL,

PRIMARY KEY (Engine\_Number, Frame\_Number, License\_Plate),

FOREIGN KEY (User\_ID, Username, Email, OP\_ID) REFERENCES Operator(User\_ID, Username, Email, OP\_ID),

FOREIGN KEY (User\_ID, Username, Email, Driver\_ID) REFERENCES Driver(User\_ID, Username, Email, Driver\_ID),

FOREIGN KEY (Company\_ID) REFERENCES Company(Company\_ID),

FOREIGN KEY (Geofence\_ID) REFERENCES Geofence(Geofence\_ID),

UNIQUE ()

);

CREATE TABLE Vehicle\_Inspection

(

Insp\_ID INT NOT NULL,

OP\_ID INT NOT NULL,

Result CHAR(4) NOT NULL,

Vehicle\_ID INT NOT NULL,

Insp\_Date DATE NOT NULL,

Description VARCHAR(255),

User\_ID INT NOT NULL,

Username VARCHAR(30) NOT NULL,

Email VARCHAR(60) NOT NULL,

OP\_ID INT NOT NULL,

Engine\_Number INT NOT NULL,

Frame\_Number INT NOT NULL,

License\_Plate VARCHAR(10) NOT NULL,

PRIMARY KEY (Insp\_ID),

FOREIGN KEY (User\_ID, Username, Email, OP\_ID) REFERENCES Operator(User\_ID, Username, Email, OP\_ID),

FOREIGN KEY (Engine\_Number, Frame\_Number, License\_Plate) REFERENCES Vehicle(Engine\_Number, Frame\_Number, License\_Plate)

);

CREATE TABLE Vehicle\_Doc

(

Vehicle\_ID INT NOT NULL,

Doc\_Type VARCHAR(50) NOT NULL,

Doc\_ID INT NOT NULL,

Engine\_Number INT NOT NULL,

Frame\_Number INT NOT NULL,

License\_Plate VARCHAR(10) NOT NULL,

PRIMARY KEY (Doc\_ID),

FOREIGN KEY (Doc\_ID) REFERENCES Document(Doc\_ID),

FOREIGN KEY (Engine\_Number, Frame\_Number, License\_Plate) REFERENCES Vehicle(Engine\_Number, Frame\_Number, License\_Plate)

);

CREATE TABLE Payment

(

Payment\_ID INT NOT NULL,

Time DATE NOT NULL,

Method CHAR(1) NOT NULL,

Price FLOAT NOT NULL,

Trip\_ID INT NOT NULL,

Engine\_Number INT NOT NULL,

Frame\_Number INT NOT NULL,

License\_Plate VARCHAR(10) NOT NULL,

ST\_ID INT NOT NULL,

User\_ID INT NOT NULL,

Username VARCHAR(30) NOT NULL,

Email VARCHAR(60) NOT NULL,

Driver\_ID INT NOT NULL,

Company\_ID INT NOT NULL,

PRIMARY KEY (Payment\_ID, Trip\_ID),

FOREIGN KEY (Trip\_ID) REFERENCES Trip(Trip\_ID),

FOREIGN KEY (Engine\_Number, Frame\_Number, License\_Plate) REFERENCES Vehicle(Engine\_Number, Frame\_Number, License\_Plate),

FOREIGN KEY (ST\_ID, User\_ID, Username, Email, Driver\_ID, Company\_ID) REFERENCES Service\_Type(ST\_ID, User\_ID, Username, Email, Driver\_ID, Company\_ID)

);

CREATE TABLE Company\_Rep-Vehicle

(

User\_ID INT NOT NULL,

Username VARCHAR(30) NOT NULL,

Email VARCHAR(60) NOT NULL,

CR\_ID INT NOT NULL,

Engine\_Number INT NOT NULL,

Frame\_Number INT NOT NULL,

License\_Plate VARCHAR(10) NOT NULL,

PRIMARY KEY (User\_ID, Username, Email, CR\_ID, Engine\_Number, Frame\_Number, License\_Plate),

FOREIGN KEY (User\_ID, Username, Email, CR\_ID) REFERENCES Company\_Representative(User\_ID, Username, Email, CR\_ID),

FOREIGN KEY (Engine\_Number, Frame\_Number, License\_Plate) REFERENCES Vehicle(Engine\_Number, Frame\_Number, License\_Plate)

);

Assumption description:

* Since both passengers and drivers can leave a review, feedback is connected to users directly
* Multistop\_trip is composed of multiple trips. Since each bridge will require a new car, and therefore different tariffs, the trips from bridge to bridge will be treated as if they are individual trips. Payment will only happen once per Multistop\_trip.
* GDPR Request Log attribute: Pending, will be a Y/N field type
* Account Preferences attributes will all be Y/N field type
* User attribute: Gender is varchar(30) allows for inclusive custom field