Assignment 1

The purpose of this database is to model data for a breakdown company. Members must be registered with the company and each member can have multiple vehicles. When a vehicle breaks down and Engineer will attend the callout in the van that have been assigned. They are assigned a new van once the current one reaches 80000 miles.

Task 1:

Create the following tables:

Members

- MemberID(PK), varchar(10)
- MFName, varchar(20)
- MLName, varchar(20)
- MLoc, varchar(20)

Vehicle:

- VehReg(PK), varchar(10)
- VehMake varchar(10)
- VehModel, varchar(10)
- MemberID(FK), varchar(10)

Engineer:

- EngID(PK), int
- EFName, varchar(20)
- ELName, varchar(20)

EngVan:

- VanReg(PK), varchar(10)
- VanMake varchar(10)
- VanModel, varchar(10)
- EngID(FK), int
- VMileage, int

Breakdown:

- BDID(PK), int 10
- VehReg(FK), varchar(10)
- VanReg(FK), varchar(10)
- BDDATE, date
- BDTIME, time
- BDLoc, varchar(20)

Using the Alter command set the foreign keys

Task 2

Enter the following data

- Member table – 5 records
- Vehicle table – 8 records
- Engineer table – 3 records
- EngVan table – 5 records
- Breakdown table – 12 records
    - Have 2 breakdowns on the same day
    - Have 3 breakdowns in the same month
    - Have at least 3 vehicles that have broken down more than once

Task 3

Perform the following queries

1. The names of members who live in a location e.g. London.
2. All cars registered with the company e.g. all Nissan cars.
3. The number of engineers that work for the company.
4. The number of members registered.
5. All the breakdown after a particular date.
6. All the breakdown between 2 dates.
7. The number of times a particular vehicle has broken down.
8. The number of vehicles broken down more than once.

Task 4

Create the following table:

MshipType:

- MTID(PK), int
- Type, varchar(6)
- MPrice, decimal(4, 2)

Enter the following data

- 1, Gold, 99.99
- 2, Silver, 59.99
- 3, Bronze, 39.99

Task 5

Using the alter command add in the field “MTID” in the **members** table, set it to **FK** and allow null. Then using the **update** command assign a MTID to each **member**.

Task 6

Perform the following queries:

1. All the vehicles a member owns.
2. The number of vehicles for each member in descending order.
3. The number of vans driven by a particular engineer.
4. All vehicles that have broken down in a particular location along with member details.
5. A list of all vehicles that broke down along with the member details and the engineer who attended
6. A list of all breakdown along with member and engineer details between two dates.
7. A further 3 relational queries of your choice that are meaningful to the company.

Task 7

Using W3Schools or any other resource research the following functions – Avg, Max, Min, Sum. Explain with examples how each one is used. Create a separate database with sample data to illustrate your examples. However please do not copy from the websites.

Task 8

1) For all members say if greater than one vehicle owned then has multi-car policy
2) The number of times each car broken down
    a. If more than twice then next premium to be increased by 10%
    b. If twice then increase by 5%
    c. If once then no increase
    d. If not broken down then 10% discount