

PROJECT REPORT

DATA REQUIREMENTS DOCUMENT FOR VEHICLE FLEET MANAGEMENT

Data Sources

- The client is currently using Excel data files to manage their vehicle information. These data files can be imported into the new database system as a source of data.

Data Entities

1. Vehicle
2. Drivers
3. Daily_Work
4. Vehicle_Maintenance
5. Relation_Details
6. Fuel

Data Attributes

- Vehicle: Vehicle_No, License_No, Vehicle_LVD, Vehicle_LSD, Current_location, Insurance_No, Vehicle_ISD, Vehicle_IVD.
- Drivers: Driver_name, Driver_NIC, Driver_IN, Driver_LSD, Driver_LVD, Driver_Contact_no, Age, DOB.
- Daily_work : Work_No, Capacity, Day_location, vehicle_type.
- Fuel : Cost , Quantity , Fuel type.
- Vehicle_maintenance : Engine_no , Maintenance_cost , Service_provider , SPContact_no, Maintenance_types, Maintenance_HD, SOD.
- Relation_details : Name, DOB, School_name.

Relationships

1. Vehicle And Daily_work: Many to Many.
2. Vehicle And Driver : One to One.
3. Driver And daily_work : Many to Many.
4. Vehicle And Fuel : one to One.
5. Vehicle And Vehicle_maintenance : one to Many.

Business Rules

1. Valid insurance and licence must be maintained for vehicles.
2. Valid insurance and licence must be maintained for Drivers.
3. Only authorised personnel can access or modify the database.

Data Volume

1. Number of records : The system will initially need to accommodate the registration of 22 vehicles.
2. Size of each record : Based on the search details, it is estimated that the size of each record would be around 2-3 kilobytes (KB).
3. Growth projections : System growth rate: 8-12% per year. Registered vehicles may increase by 2-6 annually based on historical trends.

Performance Requirements

1. Response time: The system should be designed to provide a fast and responsive user experience. All operations, such as searching for data, adding new data, and updating existing data, should complete within a reasonable amount of time, such as within 1-3 seconds.
2. Throughput: The database should be able to handle a certain number of transactions per second, depending on the expected usage patterns.
3. Data retrieval time: The database should be able to retrieve data quickly, even when the database contains a large amount of data.

Security Requirements

1. Access controls: The database should enforce access controls to ensure that only authorised users can access the data. where users are granted access only to the data they need to perform their job functions.
2. Authentication: password should be used to ensure that only legitimate users can access the data.

Reporting Requirements

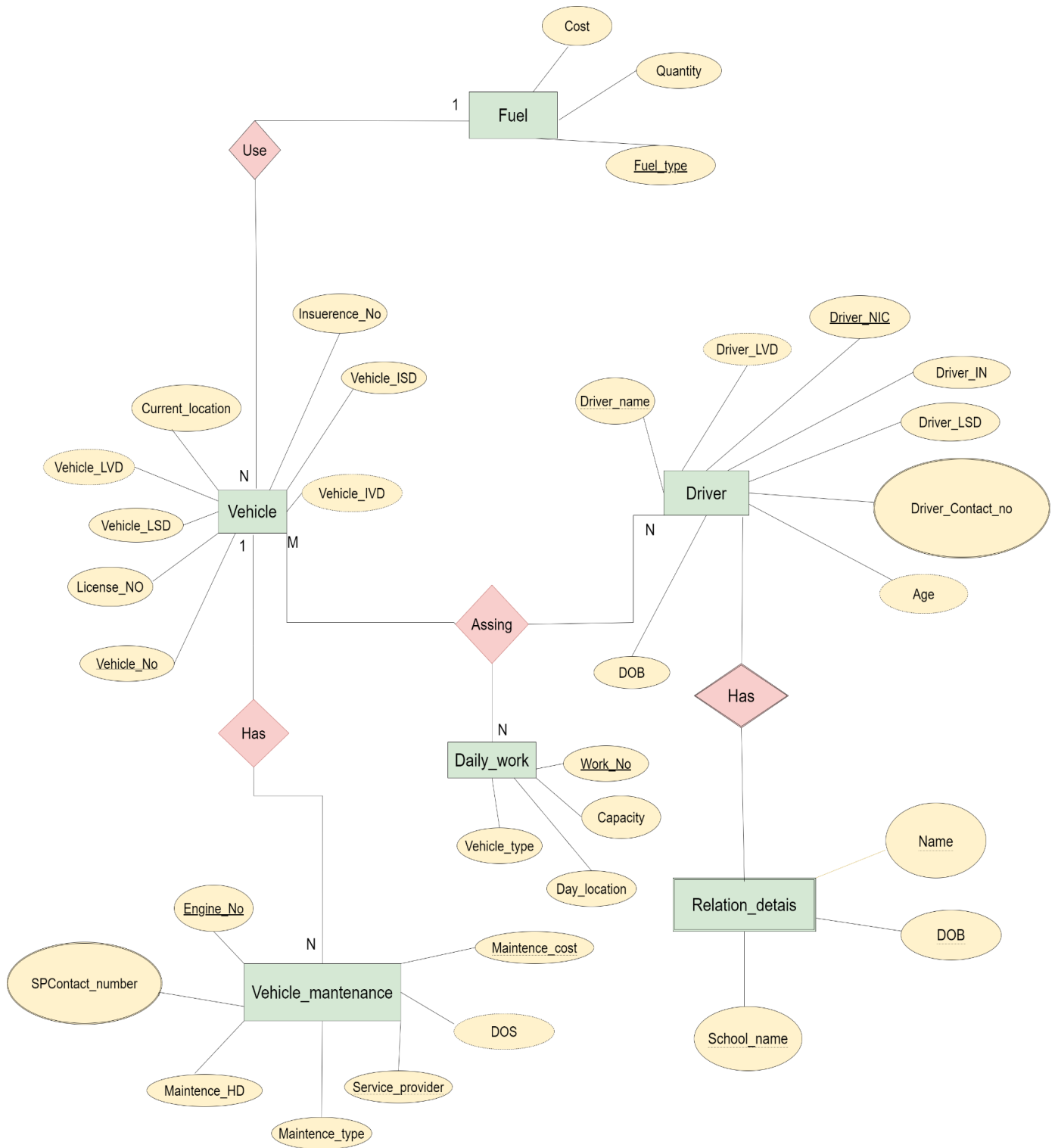
1. Type of report : Vehicle registration reports, vehicle allocation reports, fuel consumption reports, and maintenance reports. The reports should provide meaningful insights into the data and help stakeholders make informed decisions.
2. Customization: users can analyse the data in their own way and create reports that are tailored to their specific needs.

Conclusion

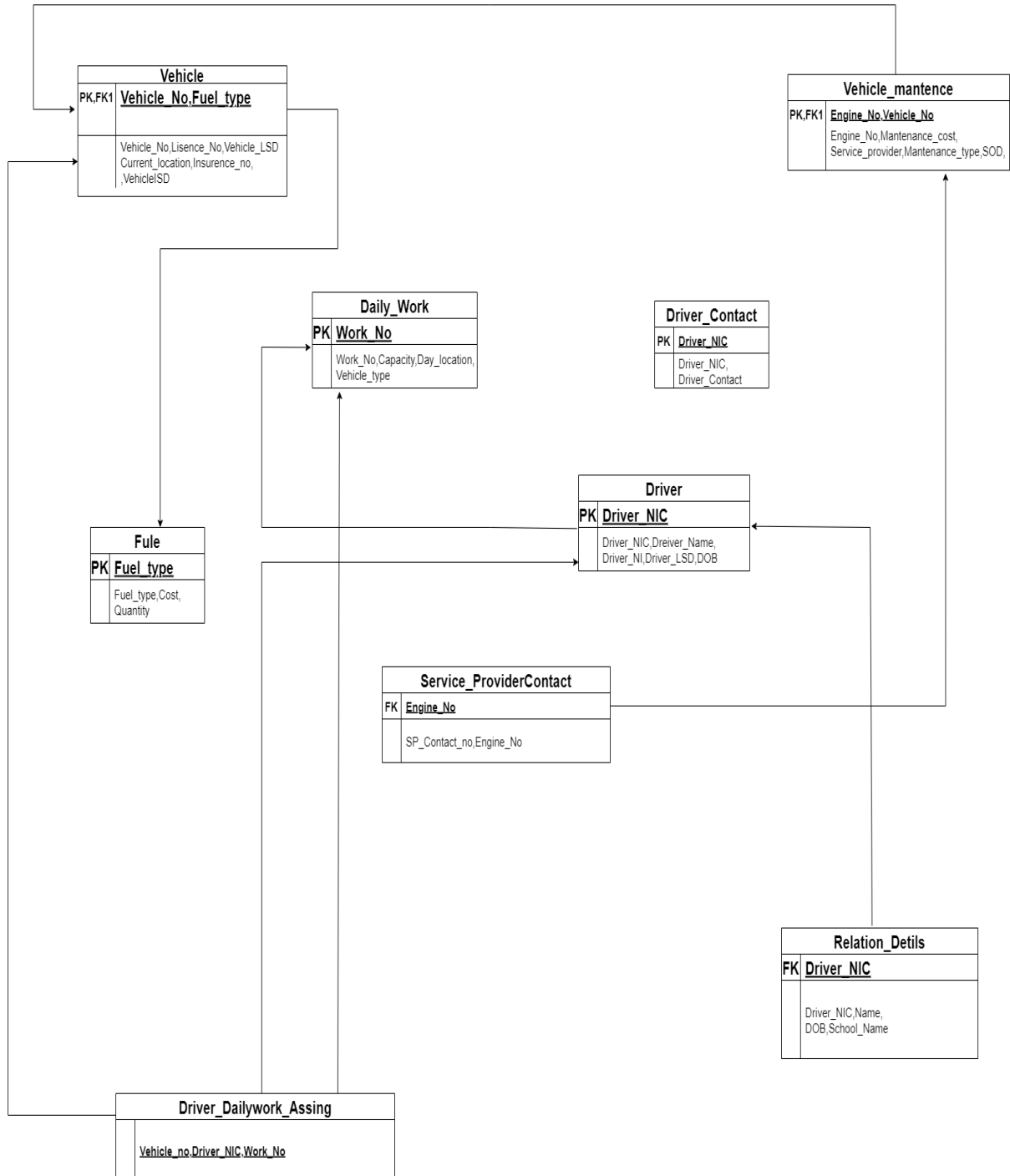
- The data requirements document is a crucial document that outlines the necessary elements for the database to meet business needs. It includes information such as data sources, entities, relationships, business rules, performance and security requirements, and reporting needs. By documenting these requirements, stakeholders can ensure the database aligns with the evolving needs of the business.

ER DIAGRAM

VEHICLE FLEET MANAGEMENT SYSTEM



MAPPING



RELATION SCHEME

1) Vehicle

Vehicle_No, Licence_No, Vehicle_LSD, Current_location, Insurance_no, Vehicle_ISD, Fuel_type

2) Daily_Work

Work_No, Capacity, Day_location, Vehicle_type

3) Vehicle_maintenance

Engine_No, Maintenance_cost, Service_provider, Maintenance_type, SOD, Vehicle_no

4) Driver

Driver_NIC, Driver_Name, Driver_NI, Driver_LSD, DOB

5) Relation_Details

Driver_NIC, Name, DOB, School_Name

6) Fuel

Fuel_type, Cost, Quantity

• ASSUMPTIONS

1. Vehicle_LSD - Vehicle_License_Start_Day
2. Vehicle_LVD - Vehicle_License_Valid_Days
3. Vehicle_ISD - Vehicle_Insurance_Start_Day
4. Driver_IN - Driver_Insurance_Number
5. Driver_LSD - Driver_License_Start_Day
6. Driver_LVD - Driver_License_Valid_Days

7. DOS - Date_Of_Service
8. Vehicle_IVD- Vehicle_Insurance_Valid_Days
9. SP_Contac_no - Service_provider_Contact_no
10. Maintence_HD - Maintence_Has_Days
11. SOD - Service Of Day

VEHICLE FLEET

DATABASE , TABLES AND QUERY

```
CREATE DATABASE VEHICLE_FLEET;
```

```
USE VEHICLE_FLEET;
```

```
CREATE TABLE VEHICLE (
-> VEHICLE_NO VARCHAR(10) PRIMARY KEY,
-> INSUERANCE_NO VARCHAR(20) NOT NULL,
-> VEHICLE_LSD VARCHAR(20) NOT NULL,
-> VEHICLE_ISD VARCHAR(20) NOT NULL,
-> LICENSE_NO VARCHAR(20) NOT NULL,
-> CURRENT_LOCATION VARCHAR(50),
-> VEHICLE_TYPE VARCHAR(20)
-> );
```

insert into

```
VEHICLE(VEHICLE_NO,INSUERANCE_NO,VEHICLE_LSD,VEHICLE_ISD,LICENSE_NO,
CURRENT_LOCATION,VEHICLE_TYPE) values
```

```
-> ('WP KK 4085','4596842','2023-01-12','2023-01-14','56578547','Ahangama','Car'),
-> ('WP KR 8562','4598562','2023-01-12','2023-01-14','56559845','Ahangama','Car'),
-> ('WP LG 5981','8956451','2023-01-14','2023-01-19','59856514','Ahangama','Lorry'),
-> ('WP BG 9862','9565421','2023-01-15','2023-01-18','78465621','Ahangama','Bus')
-> ;
```

```
CREATE TABLE FUEL(  
  -> FULE_TYPE VARCHAR(10) PRIMARY KEY,  
  -> QUANTITY INT(10) NOT NULL,  
  -> COST FLOAT(10) NOT NULL  
  -> );
```

insert into FUEL values

```
-> ('Petrol',1,'315.00'),  
-> ('Deisel',1,'350.00');
```

```
CREATE TABLE VEHICLE_FUEL(  
  -> VEHICLE_NO VARCHAR(10) ,  
  -> FULE_TYPE VARCHAR(10) ,  
  -> PRIMARY KEY ( FULE_TYPE,VEHICLE_NO)  
  -> );
```

insert into VEHICLE_FUEL values

```
-> ('WP KK 4085','Petrol'),  
-> ('WP KR 8562','Petrol'),  
-> ('WP LG 5981','Deisel'),  
-> ('WP BG 9862','Deisel');
```

```
CREATE TABLE DRIVER(  
  -> DRIVER_NIC VARCHAR(15) PRIMARY KEY,  
  -> DRIVER_NAME VARCHAR(50) NOT NULL,  
  -> DRIVER_IN VARCHAR(20),  
  -> DRIVER_LSD VARCHAR(20),  
  -> DOB DATE  
  -> );
```

insert into DRIVER values

```
-> ('784526542V','Kamal','85465415','2020-06-08','1978-08-21');  
-> ('694512485V','Nimal','98454133','2019-10-26','1969-04-16'),  
-> ('826548563V','Ruksh','86656231','2021-03-20','1982-09-30'),  
-> ('856564512V','Saman','51235412','2022-09-06','1985-03-26');
```

```
CREATE TABLE DRIVER_CONTACT(  

```



```
-> DRIVER_NIC VARCHAR(15) ,  
-> DRIVER_CONTACT VARCHAR(10),  
-> PRIMARY KEY(DRIVER_NIC,DRIVER_CONTACT)  
-> );
```

insert into DRIVER_CONTACT values

```
-> ('694512485V','0775626312'),  
-> ('784526542V','0715654849'),  
-> ('826548563V','0786532314'),  
-> ('856564512V','0743259842');
```

CREATE TABLE DAILY_WORK(

```
-> WORK_NO INT(10) PRIMARY KEY AUTO_INCREMENT,  
-> CAPACITY VARCHAR(10) NOT NULL,  
-> DAY_LOCATION VARCHAR(50) NOT NULL  
-> );
```

insert into DAILY_WORK values

```
-> ('1','20km','Galle'),  
-> ('2','29km','Galle'),  
-> ('3','90km','Matara');
```

CREATE TABLE WORK_VEHICLE_DRIVER(

```
-> TIME_NO INT(10) PRIMARY KEY AUTO_INCREMENT,  
-> ON_TIME TIME NOT NULL,  
-> OFF_TIME TIME NOT NULL,  
-> VEHICLE_NO VARCHAR(10),  
-> DRIVER_NIC VARCHAR(15),  
-> WORK_NO INT(10),  
-> FOREIGN KEY(VEHICLE_NO) REFERENCES VEHICLE(VEHICLE_NO),  
-> FOREIGN KEY(DRIVER_NIC) REFERENCES DRIVER(DRIVER_NIC),  
-> FOREIGN KEY(WORK_NO) REFERENCES DAILY_WORK(WORK_NO)  
-> );
```

insert into

WORK_VEHICLE_DRIVER(ON_TIME,OFF_TIME,VEHICLE_NO,DRIVER_NIC,WORK_NO)
values

```
-> ('08.00','16.00','WP KR 8562','784526542V',1),  
-> ('08.30','16.30','WP KK 4085','856564512V',3),  
-> ('08.00','16.00','WP LG 5981','826548563V',2);
```

```
CREATE TABLE VEHICLE_MAINTENANCE(  
  ->  ENGIN_NO VARCHAR(50) PRIMARY KEY,  
  ->  MAINTENANCE_HD DATE,  
  ->  MAINTENANCE_TYPE VARCHAR(10),  
  ->  SERVICE_PROVIDER VARCHAR(50) ,  
  ->  DOS DATE ,  
  ->  MAINTAIN_COST FLOAT(10) NOT NULL,  
  ->  VEHICLE_NO VARCHAR(10),  
  ->  FOREIGN KEY(VEHICLE_NO) REFERENCES VEHICLE(VEHICLE_NO)  
  -> );
```

insert into VEHICLE_MAINTENANCE values

```
-> ('9566532145','2024-05-03','Service','Auto Miraj','2023-06-07','50000.00','WP KK  
4085'),  
-> ('5655236548','2023-12-06','Engine','Jaq Enterprice','2023-05-09','35000.00','WP LG  
5981');
```

```
CREATE TABLE SP_CONTACT(  
  -> ENGIN_NO VARCHAR(50),  
  -> SP_CONTACTNO VARCHAR(10),  
  -> PRIMARY KEY(ENGIN_NO,SP_CONTACTNO)  
  -> );
```

insert into SP_CONTACT values

```
-> ('5655236548','0119862473'),  
-> ('9566532145','0113678524');
```

```
CREATE TABLE VEHICLE_TYPE(  
  -> VEHICLE_NO VARCHAR(10),  
  -> VEHICLE_TYPE VARCHAR(20),  
  -> PRIMARY KEY ( VEHICLE_NO, VEHICLE_TYPE)  
  -> );
```

insert into VEHICLE_TYPE values

```
-> ('WP BG 9862','Bus'),
```

```
-> ('WP KK 4085','Car'),  
-> ('WP KR 8562','Car'),  
-> ('WP LG 5981','Lorry');
```

```
CREATE TABLE RELATION_DETAILS(  
-> FIRST_NAME VARCHAR(50) NOT NULL,  
-> MIDDLE_NAME VARCHAR(50) NOT NULL,  
-> LAST_NAME VARCHAR(50) NOT NULL,  
-> DRIVER_NIC VARCHAR(15) NOT NULL,  
-> SCHOOL_NAME VARCHAR(100) NOT NULL,  
-> DOB DATE ,  
-> PRIMARY KEY( FIRST_NAME, MIDDLE_NAME, LAST_NAME),  
-> FOREIGN KEY (DRIVER_NIC) REFERENCES DRIVER (DRIVER_NIC)  
-> );
```

insert into RELATION_DETAILS values

```
-> ('Sadun','Sameera','Perera','694512485V','Galle College','2016-06=07'),  
-> ('Krishan','Janith','Guruge','856564512V','Galle College','2014-10=18');
```

Queries

```
mysql> CREATE DATABASE VEHICLE_FLEET;  
Query OK, 1 row affected (0.01 sec)
```

```
mysql> USE VEHICLE_FLEET;  
Database changed
```

```
mysql> CREATE TABLE VEHICLE (  
-> VEHICLE_NO VARCHAR(10) PRIMARY KEY,
```

```

-> INSUERANCE_NO VARCHAR(20) NOT NULL,
-> VEHICLE_LSD VARCHAR(20) NOT NULL,
-> VEHICLE_ISD VARCHAR(20) NOT NULL,
-> LICENSE_NO VARCHAR(20) NOT NULL,
-> CURRENT_LOCATION VARCHAR(50),
-> VEHICLE_TYPE VARCHAR(20)
-> );

```

Query OK, 0 rows affected (0.02 sec)

mysql> describe VEHICLE;

Field	Type	Null	Key	Default	Extra
VEHICLE_NO	varchar(10)	NO	PRI	NULL	
INSUERANCE_NO	varchar(20)	NO		NULL	
VEHICLE_LSD	varchar(20)	NO		NULL	
VEHICLE_ISD	varchar(20)	NO		NULL	
LICENSE_NO	varchar(20)	NO		NULL	
CURRENT_LOCATION	varchar(50)	YES		NULL	
VEHICLE_TYPE	varchar(20)	YES		NULL	

7 rows in set (0.00 sec)

mysql> CREATE TABLE FUEL(

```

-> FULE_TYPE VARCHAR(10) PRIMARY KEY,
-> QUANTITY INT(10) NOT NULL,
-> COST FLOAT(10) NOT NULL
-> );

```

Query OK, 0 rows affected, 1 warning (0.02 sec)

mysql> describe FUEL;

Field	Type	Null	Key	Default	Extra
FULE_TYPE	varchar(10)	NO	PRI	NULL	
QUANTITY	int	NO		NULL	
COST	float	NO		NULL	

3 rows in set (0.00 sec)

```
mysql> CREATE TABLE VEHICLE_FUEL(
  -> VEHICLE_NO VARCHAR(10) ,
  -> FULE_TYPE VARCHAR(10) ,
  -> PRIMARY KEY ( FULE_TYPE,VEHICLE_NO)
  -> );
```

Query OK, 0 rows affected (0.02 sec)

```
mysql> describe VEHICLE_FUEL;
```

Field	Type	Null	Key	Default	Extra
VEHICLE_NO	varchar(10)	NO	PRI	NULL	
FULE_TYPE	varchar(10)	NO	PRI	NULL	

2 rows in set (0.00 sec)

```
mysql> CREATE TABLE DRIVER(
  -> DRIVER_NIC VARCHAR(15) PRIMARY KEY,
  -> DRIVER_NAME VARCHAR(50) NOT NULL,
  -> DRIVER_IN VARCHAR(20),
  -> DRIVER_LSD VARCHAR(20),
  -> DOB DATE
  -> );
```

Query OK, 0 rows affected (0.02 sec)

```
mysql> describe DRIVER;
```

Field	Type	Null	Key	Default	Extra
DRIVER_NIC	varchar(15)	NO	PRI	NULL	
DRIVER_NAME	varchar(50)	NO		NULL	
DRIVER_IN	varchar(20)	YES		NULL	
DRIVER_LSD	varchar(20)	YES		NULL	
DOB	date	YES		NULL	

5 rows in set (0.00 sec)

```
mysql> CREATE TABLE DRIVER_CONTACT(
  -> DRIVER_NIC VARCHAR(15) ,
  -> DRIVER_CONTACT VARCHAR(10),
  -> PRIMARY KEY(DRIVER_NIC,DRIVER_CONTACT)
  -> );
```

Query OK, 0 rows affected (0.02 sec)

mysql> describe DRIVER_CONTACT;

Field	Type	Null	Key	Default	Extra
DRIVER_NIC	varchar(15)	NO	PRI	NULL	
DRIVER_CONTACT	varchar(10)	NO	PRI	NULL	

2 rows in set (0.00 sec)

mysql> CREATE TABLE DAILY_WORK(
-> WORK_NO INT(10) PRIMARY KEY AUTO_INCREMENT,
-> CAPACITY VARCHAR(10) NOT NULL,
-> DAY_LOCATION VARCHAR(50) NOT NULL
->);

Query OK, 0 rows affected, 1 warning (0.02 sec)

mysql> describe DAILY_WORK;

Field	Type	Null	Key	Default	Extra
WORK_NO	int	NO	PRI	NULL	auto_increment
CAPACITY	varchar(10)	NO		NULL	
DAY_LOCATION	varchar(50)	NO		NULL	

3 rows in set (0.00 sec)

mysql> CREATE TABLE WORK_VEHICLE_DRIVER(
-> TIME_NO INT(10) PRIMARY KEY AUTO_INCREMENT,
-> ON_TIME TIME NOT NULL,
-> OFF_TIME TIME NOT NULL,
-> VEHICLE_NO VARCHAR(10),
-> DRIVER_NIC VARCHAR(15),
-> WORK_NO INT(10),
-> FOREIGN KEY(VEHICLE_NO) REFERENCES VEHICLE(VEHICLE_NO),
-> FOREIGN KEY(DRIVER_NIC) REFERENCES DRIVER(DRIVER_NIC),
-> FOREIGN KEY(WORK_NO) REFERENCES DAILY_WORK(WORK_NO)
->);

Query OK, 0 rows affected, 2 warnings (0.03 sec)

```
mysql> describe WORK_VEHICLE_DRIVER;
```

Field	Type	Null	Key	Default	Extra
TIME_NO	int	NO	PRI	NULL	auto_increment
ON_TIME	time	NO		NULL	
OFF_TIME	time	NO		NULL	
VEHICLE_NO	varchar(10)	YES	MUL	NULL	
DRIVER_NIC	varchar(15)	YES	MUL	NULL	
WORK_NO	int	YES	MUL	NULL	

6 rows in set (0.00 sec)

```
mysql> CREATE TABLE VEHICLE_MAINTENANCE(
```

```
-> ENGIN_NO VARCHAR(50) PRIMARY KEY,  
-> MAINTENANCE_HD DATE,  
-> MAINTENANCE_TYPE VARCHAR(10),  
-> SERVICE_PROVIDER VARCHAR(50) ,  
-> DOS DATE ,  
-> MAINTAIN_COST FLOAT(10) NOT NULL,  
-> VEHICLE_NO VARCHAR(10),  
-> FOREIGN KEY(VEHICLE_NO) REFERENCES VEHICLE(VEHICLE_NO)  
-> );
```

Query OK, 0 rows affected (0.06 sec)

```
mysql> describe VEHICLE_MAINTENANCE;
```

Field	Type	Null	Key	Default	Extra
ENGIN_NO	varchar(50)	NO	PRI	NULL	
MAINTENANCE_HD	date	YES		NULL	
MAINTENANCE_TYPE	varchar(10)	YES		NULL	
SERVICE_PROVIDER	varchar(50)	YES		NULL	
DOS	date	YES		NULL	
MAINTAIN_COST	float	NO		NULL	
VEHICLE_NO	varchar(10)	YES	MUL	NULL	

7 rows in set (0.00 sec)

```
mysql> CREATE TABLE SP_CONTACT(
  -> ENGIN_NO VARCHAR(50),
  -> SP_CONTACTNO VARCHAR(10),
  -> PRIMARY KEY(ENGIN_NO,SP_CONTACTNO)
  -> );
```

Query OK, 0 rows affected (0.02 sec)

```
mysql> describe SP_CONTACT;
```

Field	Type	Null	Key	Default	Extra
ENGIN_NO	varchar(50)	NO	PRI	NULL	
SP_CONTACTNO	varchar(10)	NO	PRI	NULL	

2 rows in set (0.00 sec)

```
mysql> CREATE TABLE VEHICLE_TYPE(
  -> VEHICLE_NO VARCHAR(10),
  -> VEHICLE_TYPE VARCHAR(20),
  -> PRIMARY KEY ( VEHICLE_NO, VEHICLE_TYPE)
  -> );
```

Query OK, 0 rows affected (0.02 sec)

```
mysql> describe VEHICLE_TYPE;
```

Field	Type	Null	Key	Default	Extra
VEHICLE_NO	varchar(10)	NO	PRI	NULL	
VEHICLE_TYPE	varchar(20)	NO	PRI	NULL	

2 rows in set (0.00 sec)

```
mysql> CREATE TABLE RELATION_DETAILS(
  -> FIRST_NAME VARCHAR(50) NOT NULL,
  -> MIDLE_NAME VARCHAR(50) NOT NULL,
  -> LAST_NAME VARCHAR(50) NOT NULL,
  -> DRIVER_NIC VARCHAR(15) NOT NULL,
  -> SCHOOL_NAME VARCHAR(100) NOT NULL,
  -> DOB DATE ,
  -> PRIMARY KEY( FIRST_NAME, MIDLE_NAME, LAST_NAME),
```


-> FOREIGN KEY (DRIVER_NIC) REFERENCES DRIVER (DRIVER_NIC)

->);

Query OK, 0 rows affected (0.02 sec)

mysql> describe RELATION_DETAILS;

Field	Type	Null	Key	Default	Extra
FIRST_NAME	varchar(50)	NO	PRI	NULL	
MIDDLE_NAME	varchar(50)	NO	PRI	NULL	
LAST_NAME	varchar(50)	NO	PRI	NULL	
DRIVER_NIC	varchar(15)	NO	MUL	NULL	
SCHOOL_NAME	varchar(100)	NO		NULL	
DOB	date	YES		NULL	

6 rows in set (0.00 sec)

mysql> insert into

VEHICLE(VEHICLE_NO,INSUERANCE_NO,VEHICLE_LSD,VEHICLE_ISD,LICENSE_NO, CURRENT_LOCATION,VEHICLE_TYPE) values

-> ('WP KK 4085','4596842','2023-01-12','2023-01-14','56578547','Ahangama','Car'),
-> ('WP KR 8562','4598562','2023-01-12','2023-01-14','56559845','Ahangama','Car'),
-> ('WP LG 5981','8956451','2023-01-14','2023-01-19','59856514','Ahangama','Lorry'),
-> ('WP BG 9862','9565421','2023-01-15','2023-01-18','78465621','Ahangama','Bus')
-> ;

Query OK, 4 rows affected (0.04 sec)

Records: 4 Duplicates: 0 Warnings: 0

mysql> select * from VEHICLE;

VEHICLE_NO	INSUERANCE_NO	VEHICLE_LSD	VEHICLE_ISD	LICENSE_NO	CURRENT_LOCATION	VEHICLE_TYPE
WP BG 9862	9565421	2023-01-15	2023-01-18	78465621	Ahangama	Bus
WP KK 4085	4596842	2023-01-12	2023-01-14	56578547	Ahangama	Car
WP KR 8562	4598562	2023-01-12	2023-01-14	56559845	Ahangama	Car

WP LG 5981	8956451	2023-01-14	2023-01-19	59856514	Ahangama
------------	---------	------------	------------	----------	----------

4 rows in set (0.00 sec)

```
mysql> insert into FUEL values
-> ('Petrol',1,'315.00'),
-> ('Deisel',1,'350.00');
```

Query OK, 2 rows affected (0.01 sec)
Records: 2 Duplicates: 0 Warnings: 0

```
mysql> select * from FUEL;
```

FULE_TYPE	QUANTITY	COST
Deisel	1	350
Petrol	1	315

2 rows in set (0.00 sec)

```
mysql> insert into VEHICLE_FUEL values
-> ('WP KK 4085','Petrol'),
-> ('WP KR 8562','Petrol'),
-> ('WP LG 5981','Deisel'),
-> ('WP BG 9862','Deisel');
```

Query OK, 4 rows affected (0.01 sec)
Records: 4 Duplicates: 0 Warnings: 0

```
mysql> select * from VEHICLE_FUEL;
```

VEHICLE_NO	FULE_TYPE
WP BG 9862	Deisel
WP LG 5981	Deisel
WP KK 4085	Petrol
WP KR 8562	Petrol

4 rows in set (0.00 sec)

```
mysql> insert into DRIVER values
-> ('784526542V','Kamal','85465415','2020-06-08','1978-08-21');
Query OK, 1 row affected (0.01 sec)
```

```
mysql> insert into DRIVER values
-> ('694512485V','Nimal','98454133','2019-10-26','1969-04-16'),
-> ('826548563V','Ruksh','86656231','2021-03-20','1982-09-30'),
-> ('856564512V','Saman','51235412','2022-09-06','1985-03-26');
Query OK, 3 rows affected (0.01 sec)
Records: 3 Duplicates: 0 Warnings: 0
```

```
mysql> select * from DRIVER;
+-----+-----+-----+-----+-----+
| DRIVER_NIC | DRIVER_NAME | DRIVER_IN | DRIVER_LSD | DOB      |
+-----+-----+-----+-----+-----+
| 694512485V | Nimal       | 98454133  | 2019-10-26 | 1969-04-16 |
| 784526542V | Kamal       | 85465415  | 2020-06-08 | 1978-08-21 |
| 826548563V | Ruksh       | 86656231  | 2021-03-20 | 1982-09-30 |
| 856564512V | Saman       | 51235412  | 2022-09-06 | 1985-03-26 |
+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)
```

```
mysql> insert into DRIVER_CONTACT values
-> ('694512485V','0775626312'),
-> ('784526542V','0715654849'),
-> ('826548563V','0786532314'),
-> ('856564512V','0743259842');
Query OK, 4 rows affected (0.01 sec)
Records: 4 Duplicates: 0 Warnings: 0
```

```
mysql> select * from DRIVER_CONTACT;
+-----+-----+
| DRIVER_NIC | DRIVER_CONTACT |
+-----+-----+
| 694512485V | 0775626312     |
| 784526542V | 0715654849     |
| 826548563V | 0786532314     |
| 856564512V | 0743259842     |
+-----+-----+
```

```
+-----+-----+
4 rows in set (0.00 sec)
```

mysql> insert into DAILY_WORK values

```
-> ('1','20km','Galle'),
-> ('2','29km','Galle'),
-> ('3','90km','Matara');
```

Query OK, 3 rows affected (0.01 sec)

Records: 3 Duplicates: 0 Warnings: 0

mysql> select * from DAILY_WORK;

```
+-----+-----+-----+
| WORK_NO | CAPACITY | DAY_LOCATION |
+-----+-----+-----+
| 1 | 20km | Galle |
| 2 | 29km | Galle |
| 3 | 90km | Matara |
+-----+-----+-----+
3 rows in set (0.00 sec)
```

mysql> insert into

WORK_VEHICLE_DRIVER(ON_TIME,OFF_TIME,VEHICLE_NO,DRIVER_NIC,WORK_NO)
values

```
-> ('08.00','16.00','WP KR 8562','784526542V',1),
-> ('08.30','16.30','WP KK 4085','856564512V',3),
-> ('08.00','16.00','WP LG 5981','826548563V',2);
```

Query OK, 3 rows affected (0.01 sec)

Records: 3 Duplicates: 0 Warnings: 0

mysql> select * from WORK_VEHICLE_DRIVER;

```
+-----+-----+-----+-----+-----+
| TIME_NO | ON_TIME | OFF_TIME | VEHICLE_NO | DRIVER_NIC | WORK_NO |
+-----+-----+-----+-----+-----+
| 5 | 00:00:08 | 00:00:16 | WP KR 8562 | 784526542V | 1 |
| 6 | 00:00:08 | 00:00:16 | WP KK 4085 | 856564512V | 3 |
| 7 | 00:00:08 | 00:00:16 | WP LG 5981 | 826548563V | 2 |
+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

```
mysql> insert into VEHICLE_MAINTENANCE values
-> ('9566532145','2024-05-03','Service','Auto Miraj','2023-06-07','50000.00','WP KK
4085'),
-> ('5655236548','2023-12-06','Engine','Jaq Enterprice','2023-05-09','35000.00','WP LG
5981');
```

Query OK, 2 rows affected (0.01 sec)

Records: 2 Duplicates: 0 Warnings: 0

```
mysql> select * from VEHICLE_MAINTENANCE;
```

ENGIN_NO	MAINTENANCE_HD	MAINTENANCE_TYPE	SERVICE_PROVIDER	DOS	MAINTAIN_COST	VEHICLE_NO
5655236548	2023-12-06	Engine	Jaq Enterprice	2023-05-09	35000	WP LG 5981
9566532145	2024-05-03	Service	Auto Miraj	2023-06-07	50000	WP KK 4085

2 rows in set (0.00 sec)

```
mysql> insert into SP_CONTACT values
```

```
-> ('5655236548','0119862473'),
```

```
-> ('9566532145','0113678524');
```

Query OK, 2 rows affected (0.01 sec)

Records: 2 Duplicates: 0 Warnings: 0

```
mysql> select * from SP_CONTACT;
```

ENGIN_NO	SP_CONTACTNO
5655236548	0119862473
9566532145	0113678524

2 rows in set (0.00 sec)

mysql> insert into VEHICLE_TYPE values

-> ('WP BG 9862','Bus'),
-> ('WP KK 4085','Car'),
-> ('WP KR 8562','Car'),
-> ('WP LG 5981','Lorry');

Query OK, 4 rows affected (0.01 sec)

Records: 4 Duplicates: 0 Warnings: 0

mysql> select * from VEHICLE_TYPE;

VEHICLE_NO	VEHICLE_TYPE
WP BG 9862	Bus
WP KK 4085	Car
WP KR 8562	Car
WP LG 5981	Lorry

4 rows in set (0.00 sec)

mysql> insert into RELATION_DETAILS values

-> ('Sadun','Sameera','Perera','694512485V','Galle College','2016-06=07'),
-> ('Krishan','Janith','Guruge','856564512V','Galle College','2014-10=18');

Query OK, 2 rows affected, 2 warnings (0.01 sec)

Records: 2 Duplicates: 0 Warnings: 2

mysql> select * from RELATION_DETAILS;

FIRST_NAME	MIDDLE_NAME	LAST_NAME	DRIVER_NIC	SCHOOL_NAME	DOB
Krishan	Janith	Guruge	856564512V	Galle College	2014-10-18
Sadun	Sameera	Perera	694512485V	Galle College	2016-06-07

2 rows in set (0.00 sec)

MY SELF REPORT

We met Siddhartha Thero. After that, he shared his thoughts. Firstly, our group members wanted to gather the requirements document. They faced a problem as he did not have a vehicle registration system and a work balance system. We gathered the documents and met him again with the required documents. After that, he had an Excel sheet document containing vehicle data. We added attributes and an entity relationship schema. We thought it was very good.

After that, my group started working on the ER diagram because we realised that the document we created had incorrect attributes and attribute types, and some relation types were wrong. There was a major problem. We also added derived attributes incorrectly. We corrected those issues afterwards.

When drawing the ER diagram, we missed adding a weak entity initially. However, we corrected that problem later on.

We wrote the relation scheme, and it turned out to be good.

Next, we worked on mapping. It was a difficult task, but our group members managed it. After submission, we checked the mapping and found that we had not added foreign keys to some tables, and some tables were missing arrows. It was a bad mistake. We corrected those issues before normalisation.

We then proceeded with table normalisation, and we did it well. Sometimes, it was more challenging than other tasks.

I believe that working in the industry will provide us with valuable experience in handling projects like this. With this project, we were able to enhance both our known and unknown knowledge. Even if this project may not be very useful, the mistakes made here can be minimised in future projects.

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