# ELLIE'S ELECTRIC CARS

## Assignment 1 Project

**Introduction**

Ellie's Electric car (EEC) is rental company up until now they have been using spreadsheets in order to keep record of its vehicle rentals, as the company has been growing over the years with new branches and with a lot more vehicles than initially had, it is becoming a lot more difficult to keep record of what cars are on rent and what cars are available to rent. This problem is causing customers to complain an and even loss of business, therefore we have been tasked to develop a database that allows online bookings and avoid multiple booking of the same car. we are using MS SQL Server in developing of this project by designing and building a relational database, designing data warehouse and discuss any data security issues that might arise building this database.
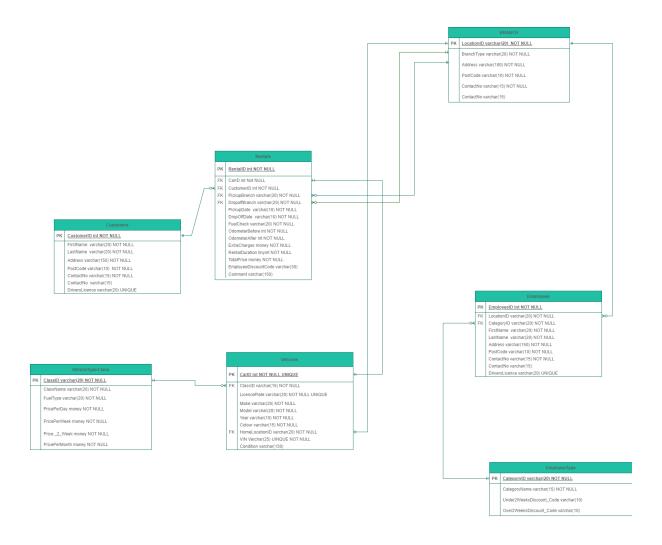
**Task 1**

**Entities**

  a. Customer
  b. Vehicle
  c. Vehicle Category
  d. Rental
  e. Location
  f. Employee
  g. Employee Category

**Relationships:** I have outlined below the relationship between tables which can be visually noticed on the ERD.
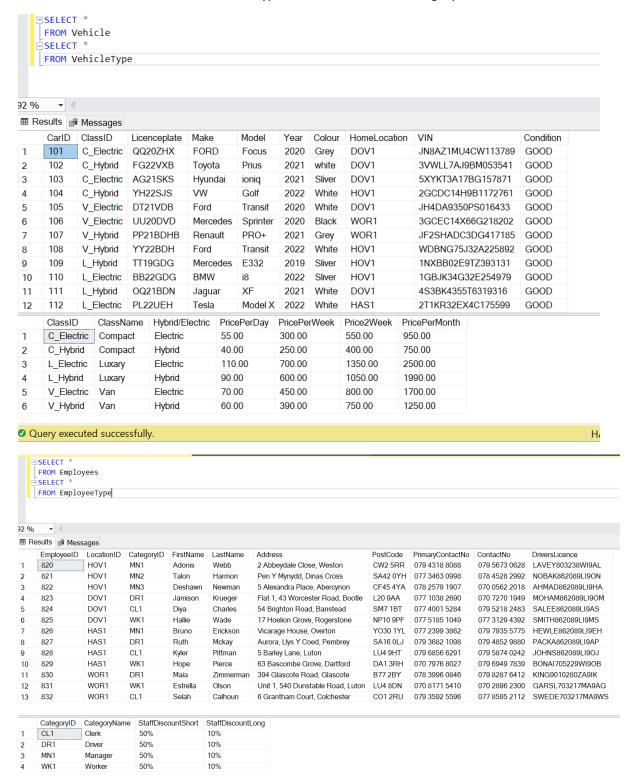
  a. Car - belongs to one - Car Category
  b. Car-has one-Home Location
  c. Location- has one or more- Car Category
  d. Customer -has one or more - Booking
  e. Booking- has one- Location
  f. Staff-belongs to one-Location
  g. Staff-belongs to one-Staff Category
  h. Location- has one to many- staff

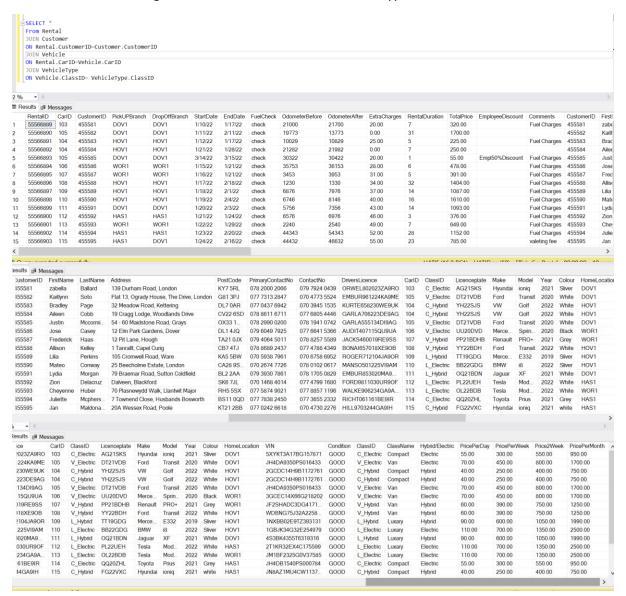I have created Entity relation diagram (ERD) based on the needs of the ECC.

**BRANCH**

| | |
|---|---|
| PK | LocationID varchar(20)  NOT NULL |
| | BranchType varchar(20) NOT NULL |
| | Address varchar(100) NOT NULL |
| | PostCode varchar(10) NOT NULL |
| | ContactNo varchar(15) NOT NULL |
| | ContactNo varchar(15) |

**Rentals**

| | |
|---|---|
| PK | RentalID int NOT NULL |
| FK | CarID int Not NULL |
| FK | CustomerID int NOT NULL |
| FK | PickupBranch varchar(20) NOT NULL |
| FK | DropoffBranch varchar(20) NOT NULL |
| | PickupDate  varchar(10) NOT NULL |
| | DropOffDate  varchar(10) NOT NULL |
| | FuelCheck varchar(20) NOT NULL |
| | OdometerBefore int NOT NULL |
| | OdometerAfter int NOT NULL |
| | ExtraCharges money NOT NULL |
| | RentalDuration tinyint NOT NULL |
| | TotalPrice money NOT NULL |
| | EmployeeDiscountCode varchar(30) |
| | Comment varchar(150) |

**Customers**

| | |
|---|---|
| PK | CustomerID int NOT NULL |
| | FirstName  varchar(20) NOT NULL |
| | LastName  varchar(20) NOT NULL |
| | Address varchar(150) NOT NULL |
| | PostCode varchar(10)  NOT NULL |
| | ContactNo varchar(15) NOT NULL |
| | ContactNo  varchar(15) |
| | DriversLicence varchar(20) UNIQUE |

**Employees**

| | |
|---|---|
| PK | EmployeeID int NOT NULL |
| FK | LocationID varchar(20) NOT NULL |
| FK | CategoryID varchar(20) NOT NULL |
| | FirstName  varchar(20) NOT NULL |
| | LastName  varchar(20) NOT NULL |
| | Address varchar(150) NOT NULL |
| | PostCode varchar(10) NOT NULL |
| | ContactNo varchar(15) NOT NULL |
| | ContactNo varchar(15) |
| | DriversLicence varchar(20) UNIQUE |

**VehicleType/Class**

| | |
|---|---|
| PK | ClassID varchar(20) NOT NULL |
| | ClassName varchar(20) NOT NULL |
| | FuelType varchar(20) NOT NULL |
| | PricePerDay money NOT NULL |
| | PricePerWeek money NOT NULL |
| | Price _2_Week money NOT NULL |
| | PricePerMonth money NOT NULL |

**Vehicles**

| | |
|---|---|
| PK | CarID int NOT NULL UNIQUE |
| FK | ClassID varchar(15) NOT NULL |
| | LicencePlate varchar(20) NOT NULL UNIQUE |
| | Make varchar(20) NOT NULL |
| | Model varchar(20) NOT NULL |
| | Year varchar(10) NOT NULL |
| | Colour varchar(15) NOT NULL |
| FK | HomeLocationID varchar(20) NOT NULL |
| | VIN Varchar(25) UINQUE NOT NULL |
| | Condition varchar(150) |

**EmployeeType**

| | |
|---|---|
| PK | CategoryID varchar(20) NOT NULL |
| | CategoryName varchar(15) NOT NULL |
| | Under2WeeksDiscount_Code varchar(10) |
| | Over2WeeksDiscount_Code varchar(10) |

**Task 2:** MS SQL Server was used in developing a prototype for the ERD designed for task 1, please refer to Appendix 1 for complete MS SQL Server Statements with data input and Database Diagram.

1. Information For vehicle/vehicle type, and staff with staff category.

```sql
SELECT *
FROM Vehicle
SELECT *
FROM VehicleType
```

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▦ Results  📄 Messages

| | CarID | ClassID | Licenceplate | Make | Model | Year | Colour | HomeLocation | VIN | Condition |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 101 | C_Electric | QQ20ZHX | FORD | Focus | 2020 | Grey | DOV1 | JN8AZ1MU4CW113789 | GOOD |
| 2 | 102 | C_Hybrid | FG22VXB | Toyota | Prius | 2021 | white | DOV1 | 3VWLL7AJ9BM053541 | GOOD |
| 3 | 103 | C_Electric | AG21SKS | Hyundai | ioniq | 2021 | Sliver | DOV1 | 5XYKT3A17BG157871 | GOOD |
| 4 | 104 | C_Hybrid | YH22SJS | VW | Golf | 2022 | White | HOV1 | 2GCDC14H9B1172761 | GOOD |
| 5 | 105 | V_Electric | DT21VDB | Ford | Transit | 2020 | White | DOV1 | JH4DA9350PS016433 | GOOD |
| 6 | 106 | V_Electric | UU20DVD | Mercedes | Sprinter | 2020 | Black | WOR1 | 3GCEC14X66G218202 | GOOD |
| 7 | 107 | V_Hybrid | PP21BDHB | Renault | PRO+ | 2021 | Grey | WOR1 | JF2SHADC3DG417185 | GOOD |
| 8 | 108 | V_Hybrid | YY22BDH | Ford | Transit | 2022 | White | HOV1 | WDBNG75J32A225892 | GOOD |
| 9 | 109 | L_Hybrid | TT19GDG | Mercedes | E332 | 2019 | Sliver | HOV1 | 1NXBB02E9TZ393131 | GOOD |
| 10 | 110 | L_Electric | BB22GDG | BMW | i8 | 2022 | Sliver | HOV1 | 1GBJK34G32E254979 | GOOD |
| 11 | 111 | L_Hybrid | OQ21BDN | Jaguar | XF | 2021 | White | DOV1 | 4S3BK4355T6319316 | GOOD |
| 12 | 112 | L_Electric | PL22UEH | Tesla | Model X | 2022 | White | HAS1 | 2T1KR32EX4C175599 | GOOD |

| | ClassID | ClassName | Hybrid/Electric | PricePerDay | PricePerWeek | Price2Week | PricePerMonth |
|---|---|---|---|---|---|---|---|
| 1 | C_Electric | Compact | Electric | 55.00 | 300.00 | 550.00 | 950.00 |
| 2 | C_Hybrid | Compact | Hybrid | 40.00 | 250.00 | 400.00 | 750.00 |
| 3 | L_Electric | Luxary | Electric | 110.00 | 700.00 | 1350.00 | 2500.00 |
| 4 | L_Hybrid | Luxary | Hybrid | 90.00 | 600.00 | 1050.00 | 1990.00 |
| 5 | V_Electric | Van | Electric | 70.00 | 450.00 | 800.00 | 1700.00 |
| 6 | V_Hybrid | Van | Hybrid | 60.00 | 390.00 | 750.00 | 1250.00 |

✅ Query executed successfully.

```sql
SELECT *
FROM Employees
SELECT *
FROM EmployeeType
```

92 %

▦ Results  📄 Messages

| | EmployeeID | LocationID | CategoryID | FirstName | LastName | Address | PostCode | PrimaryContactNo | ContactNo | DriversLicence |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 820 | HOV1 | MN1 | Adonis | Webb | 2 Abbeydale Close, Weston | CW2 5RR | 079 4318 8088 | 079 5673 0628 | LAVEY803238WI9AL |
| 2 | 821 | HOV1 | MN2 | Talon | Harmon | Pen Y Mynydd, Dinas Cross | SA42 0YH | 077 3463 0998 | 078 4528 2992 | NOBAK862089LI9ON |
| 3 | 822 | HOV1 | MN3 | Deshawn | Newman | 5 Alexandra Place, Abercynon | CF45 4YA | 078 2579 1907 | 070 0562 2018 | AHMAD862089LI9HA |
| 4 | 823 | DOV1 | DR1 | Jamison | Krueger | Flat 1, 43 Worcester Road, Bootle | L20 9AA | 077 1038 2690 | 070 7270 1949 | MOHAM862089LI9OM |
| 5 | 824 | DOV1 | CL1 | Diya | Charles | 54 Brighton Road, Banstead | SM7 1BT | 077 4001 5284 | 079 5218 2483 | SALEE862089LI9AS |
| 6 | 825 | DOV1 | WK1 | Hallie | Wade | 17 Hoelion Grove, Rogerstone | NP10 9PF | 077 5185 1049 | 077 3129 4392 | SMITH862089LI9MS |
| 7 | 826 | HAS1 | MN1 | Bruno | Erickson | Vicarage House, Overton | YO30 1YL | 077 2399 3862 | 079 7935 5775 | HEWLE862089LI9EH |
| 8 | 827 | HAS1 | DR1 | Ruth | Mckay | Aurora, Llys Y Coed, Pembrey | SA16 0LJ | 079 3682 1098 | 079 4852 9880 | PACKA862089LI9AP |
| 9 | 828 | HAS1 | CL1 | Kyler | Pittman | 5 Barley Lane, Luton | LU4 9HT | 079 6856 6291 | 079 5874 0242 | JOHNS862089LI9OJ |
| 10 | 829 | HAS1 | WK1 | Hope | Pierce | 63 Bascombe Grove, Dartford | DA1 3RH | 070 7976 8027 | 079 6949 7839 | BONAI705229WI9OB |
| 11 | 830 | WOR1 | DR1 | Maia | Zimmerman | 394 Glascote Road, Glascote | B77 2BY | 078 3996 0846 | 079 8287 6412 | KING9010280ZA9IK |
| 12 | 831 | WOR1 | WK1 | Estrella | Olson | Unit 1, 540 Dunstable Road, Luton | LU4 8DN | 070 8171 5410 | 070 2896 2300 | GARSL703217MA9AG |
| 13 | 832 | WOR1 | CL1 | Selah | Calhoun | 6 Grantham Court, Colchester | CO1 2RU | 079 3592 5596 | 077 8595 2112 | SWEDE703217MA9WS |

| | CategoryID | CategoryName | StaffDiscountShort | StaffDiscountLong |
|---|---|---|---|---|
| 1 | CL1 | Clerk | 50% | 10% |
| 2 | DR1 | Driver | 50% | 10% |
| 3 | MN1 | Manager | 50% | 10% |
| 4 | WK1 | Worker | 50% | 10% |

## 2. Find below all bookings, with customer, vehicle and vehicle type information.

```sql
SELECT *
From Rental
JOIN Customer
ON Rental.CustomerID=Customer.CustomerID
JOIN Vehicle
ON Rental.CarID=Vehicle.CarID
JOIN VehicleType
ON Vehicle.ClassID= VehicleType.ClassID
```

2 %

### Results / Messages

| | RentalID | CarID | CustomerID | PickUPBranch | DropOffBranch | StartDate | EndDate | FuelCheck | OdometerBefore | OdometerAfter | ExtraCharges | RentalDuration | TotalPrice | EmployeeDiscount | Comments | CustomerID | Firstl |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 55566889 | 103 | 455581 | DOV1 | DOV1 | 1/10/22 | 1/17/22 | check | 21000 | 21700 | 20.00 | 7 | 320.00 | | Fuel Charges | 455581 | zabe |
| 2 | 55566890 | 105 | 455582 | DOV1 | DOV1 | 1/11/22 | 2/11/22 | check | 19773 | 13773 | 0.00 | 31 | 1700.00 | | | 455582 | Kaitl |
| 3 | 55566891 | 104 | 455583 | HOV1 | HOV1 | 1/12/22 | 1/17/22 | check | 10029 | 10829 | 25.00 | 5 | 225.00 | | Fuel Charges | 455583 | Brac |
| 4 | 55566892 | 104 | 455584 | HOV1 | HOV1 | 1/21/22 | 1/28/22 | check | 21282 | 21982 | 0.00 | 7 | 250.00 | | | 455584 | Ailee |
| 5 | 55566893 | 105 | 455585 | DOV1 | DOV1 | 3/14/22 | 3/15/22 | check | 30322 | 30422 | 20.00 | 1 | 55.00 | Empl50%Discount | Fuel Charges | 455585 | Just |
| 6 | 55566894 | 106 | 455586 | WOR1 | WOR1 | 1/15/22 | 1/21/22 | check | 35753 | 36153 | 28.00 | 6 | 478.00 | | Fuel Charges | 455586 | Jose |
| 7 | 55566895 | 107 | 455587 | WOR1 | WOR1 | 1/16/22 | 1/21/22 | check | 3453 | 3953 | 31.00 | 5 | 391.00 | | Fuel Charges | 455587 | Fred |
| 8 | 55566896 | 108 | 455588 | HOV1 | HOV1 | 1/17/22 | 2/18/22 | check | 1230 | 1330 | 34.00 | 32 | 1404.00 | | Fuel Charges | 455588 | Allis |
| 9 | 55566897 | 109 | 455589 | HOV1 | HOV1 | 1/18/22 | 2/1/22 | check | 6876 | 7976 | 37.00 | 14 | 1087.00 | | Fuel Charges | 455589 | Lilia |
| 10 | 55566898 | 110 | 455590 | HOV1 | HOV1 | 1/19/22 | 2/4/22 | check | 6746 | 8146 | 40.00 | 16 | 1610.00 | | Fuel Charges | 455590 | Mate |
| 11 | 55566899 | 111 | 455591 | DOV1 | DOV1 | 1/20/22 | 2/3/22 | check | 5756 | 7356 | 43.00 | 14 | 1093.00 | | Fuel Charges | 455591 | Lydi |
| 12 | 55566900 | 112 | 455592 | HAS1 | HAS1 | 1/21/22 | 1/24/22 | check | 6576 | 6976 | 46.00 | 3 | 376.00 | | Fuel Charges | 455592 | Zion |
| 13 | 55566901 | 113 | 455593 | WOR1 | WOR1 | 1/22/22 | 1/29/22 | check | 2240 | 2540 | 49.00 | 7 | 649.00 | | Fuel Charges | 455593 | Che |
| 14 | 55566902 | 114 | 455594 | HAS1 | HAS1 | 1/23/22 | 2/20/22 | check | 44343 | 54343 | 52.00 | 28 | 1152.00 | | Fuel Charges | 455594 | Julie |
| 15 | 55566903 | 115 | 455595 | HAS1 | DOV1 | 1/24/22 | 2/16/22 | check | 44432 | 46632 | 55.00 | 23 | 785.00 | | valeting fee | 455595 | Jan |

### Results / Messages

| CustomerID | FirstName | LastName | Address | PostCode | PrimaryContactNo | ContactNo | DriversLicence | CarID | ClassID | Licenceplate | Make | Model | Year | Colour | HomeLocation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 155581 | zabella | Ballard | 139 Durham Road, London | KY7 5RL | 078 2000 2066 | 079 7924 0439 | ORWEL802023ZA9RO | 103 | C_Electric | AG21SKS | Hyundai | ioniq | 2021 | Silver | DOV1 |
| 155582 | Kaitlynn | Soto | Flat 13, Ogrady House, The Drive, London | G81 3PJ | 077 7313 2847 | 070 4773 5524 | EMBUR961224KA9ME | 105 | V_Electric | DT21VDB | Ford | Transit | 2020 | White | DOV1 |
| 155583 | Bradley | Page | 32 Meadow Road, Kettering | DL7 0AR | 077 0437 6942 | 070 3945 1535 | KURTE658230WE9UK | 104 | C_Hybrid | YH22SJS | VW | Golf | 2022 | White | HOV1 |
| 155584 | Aileen | Cobb | 19 Cragg Lodge, Woodlands Drive | CV22 6SD | 078 8611 6711 | 077 6805 4446 | GARLA706223DE9AG | 104 | C_Hybrid | YH22SJS | VW | Golf | 2022 | White | HOV1 |
| 155585 | Justin | Mccormi... | 54 - 60 Maidstone Road, Grays | OX33 1... | 078 2990 0200 | 078 1941 0742 | GARLA555134DI9AG | 105 | V_Electric | DT21VDB | Ford | Transit | 2020 | White | DOV1 |
| 155586 | Jose | Casey | 12 Elm Park Gardens, Dover | DL1 4JQ | 079 6049 7925 | 077 6641 5366 | AUDIT407115QU9UA | 106 | V_Electric | UU20DVD | Merce... | Sprin... | 2020 | Black | WOR1 |
| 155587 | Frederick | Haas | 12 Pit Lane, Hough | TA21 0JX | 079 4064 5011 | 078 8257 5589 | JACKS460019RE9SS | 107 | V_Hybrid | PP21BDHB | Renault | PRO+ | 2021 | Grey | WOR1 |
| 155588 | Allison | Kelley | 1 Tanralt, Capel Curig | CB7 4TJ | 078 8689 2437 | 077 4788 4349 | BONAI657018XE9OB | 108 | V_Hybrid | YY22BDH | Ford | Transit | 2022 | White | HOV1 |
| 155589 | Lilia | Perkins | 105 Cromwell Road, Ware | KA5 5BW | 070 5938 7961 | 070 6758 6952 | ROGER712104JA9OR | 109 | L_Hybrid | TT19GDG | Merce... | E332 | 2019 | Silver | HOV1 |
| 155590 | Mateo | Conway | 25 Beecholme Estate, London | CA28 9S... | 070 2674 7726 | 078 0102 0617 | MANSO501225VI9AM | 110 | L_Electric | BB22GDG | BMW | i8 | 2022 | Silver | HOV1 |
| 155591 | Lydia | Morgan | 79 Braemar Road, Sutton Coldfield | BL2 2AA | 079 3930 7861 | 078 1705 0829 | EMBUR853020MA9... | 111 | L_Hybrid | OQ21BDN | Jaguar | XF | 2021 | White | DOV1 |
| 155592 | Zion | Delacruz | Dalveen, Blackford | SK6 7JL | 070 1468 4014 | 077 4799 1680 | FORD9811030UR9OF | 112 | L_Electric | PL22UEH | Tesla | Mod... | 2022 | White | HAS1 |
| 155593 | Cheyenne | Huber | 70 Plasnewydd Walk, Llantwit Major | RH5 5SX | 077 5874 9021 | 077 8857 1196 | WALKE906234GA9A... | 113 | L_Electric | OL22BDB | Tesla | Mod... | 2022 | White | WOR1 |
| 155594 | Juliette | Mcphers... | 7 Townend Close, Husbands Bosworth | BS11 0QD | 077 7838 2450 | 077 3655 2332 | RICHT061161BE9IR | 114 | C_Electric | QQ20ZHL | Toyota | Prius | 2021 | Grey | HAS1 |
| 155595 | Jan | Maldona... | 20A Wessex Road, Poole | KT21 2BB | 077 0242 6618 | 070 4730 2276 | HILL9703244GA9IH | 115 | C_Hybrid | FG22VXC | Hyundai | ioniq | 2021 | white | HAS1 |

### Results / Messages

| nce | CarID | ClassID | Licenceplate | Make | Model | Year | Colour | HomeLocation | VIN | Condition | ClassID | ClassName | Hybrid/Electric | PricePerDay | PricePerWeek | Price2Week | PricePerMonth |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| !023ZA9RO | 103 | C_Electric | AG21SKS | Hyundai | ioniq | 2021 | Silver | DOV1 | 5XYKT3A17BG157871 | GOOD | C_Electric | Compact | Electric | 55.00 | 300.00 | 550.00 | 950.00 |
| 224KA9ME | 105 | V_Electric | DT21VDB | Ford | Transit | 2020 | White | DOV1 | JH4DA9350PS016433 | GOOD | V_Electric | Van | Electric | 70.00 | 450.00 | 800.00 | 1700.00 |
| 230WE9UK | 104 | C_Hybrid | YH22SJS | VW | Golf | 2022 | White | HOV1 | 2GCDC14H9B1172761 | GOOD | C_Hybrid | Compact | Hybrid | 40.00 | 250.00 | 400.00 | 750.00 |
| 223DE9AG | 104 | C_Hybrid | YH22SJS | VW | Golf | 2022 | White | HOV1 | 2GCDC14H9B1172761 | GOOD | C_Hybrid | Compact | Hybrid | 40.00 | 250.00 | 400.00 | 750.00 |
| 134DI9AG | 105 | V_Electric | DT21VDB | Ford | Transit | 2020 | White | DOV1 | JH4DA9350PS016433 | GOOD | V_Electric | Van | Electric | 70.00 | 450.00 | 800.00 | 1700.00 |
| 15QU9UA | 106 | V_Electric | UU20DVD | Merce... | Sprin... | 2020 | Black | WOR1 | 3GCEC14X66G218202 | GOOD | V_Electric | Van | Electric | 70.00 | 450.00 | 800.00 | 1700.00 |
| )19RE9SS | 107 | V_Hybrid | PP21BDHB | Renault | PRO+ | 2021 | Grey | WOR1 | JF2SHADC3DG4171... | GOOD | V_Hybrid | Van | Hybrid | 60.00 | 390.00 | 750.00 | 1250.00 |
| !18XE9OB | 108 | V_Hybrid | YY22BDH | Ford | Transit | 2022 | White | HOV1 | WDBNG75J32A2258... | GOOD | V_Hybrid | Van | Hybrid | 60.00 | 390.00 | 750.00 | 1250.00 |
| 2104JA9OR | 109 | L_Hybrid | TT19GDG | Merce... | E332 | 2019 | Silver | HOV1 | 1NXBB02E9TZ393131 | GOOD | L_Hybrid | Luxary | Hybrid | 90.00 | 600.00 | 1050.00 | 1990.00 |
| 225VI9AM | 110 | L_Electric | BB22GDG | BMW | i8 | 2022 | Silver | HOV1 | 1GBJK34G32E254979 | GOOD | L_Electric | Luxary | Electric | 110.00 | 700.00 | 1350.00 | 2500.00 |
| 1020MA9... | 111 | L_Hybrid | OQ21BDN | Jaguar | XF | 2021 | White | DOV1 | 4S3BK4355T6319316 | GOOD | L_Hybrid | Luxary | Hybrid | 90.00 | 600.00 | 1050.00 | 1990.00 |
| 030UR9OF | 112 | L_Electric | PL22UEH | Tesla | Mod... | 2022 | White | HAS1 | 2T1KR32EX4C175599 | GOOD | L_Electric | Luxary | Electric | 110.00 | 700.00 | 1350.00 | 2500.00 |
| 234GA9A... | 113 | L_Electric | OL22BDB | Tesla | Mod... | 2022 | White | WOR1 | JM1BF2325G0V37585 | GOOD | L_Electric | Luxary | Electric | 110.00 | 700.00 | 1350.00 | 2500.00 |
| 61BE9IR | 114 | C_Electric | QQ20ZHL | Toyota | Prius | 2021 | Grey | HAS1 | JH4DB1540PS000784 | GOOD | C_Electric | Compact | Electric | 55.00 | 300.00 | 550.00 | 950.00 |
| !4GA9IH | 115 | C_Hybrid | FG22VXC | Hyundai | ioniq | 2021 | white | HAS1 | JN8AZ1MU4CW1137... | GOOD | C_Hybrid | Compact | Hybrid | 40.00 | 250.00 | 400.00 | 750.00 |

## 3. Top 10 percent of customers who have spent with ECC

```sql
SELECT TOP (10) PERCENT TotalPrice, RentalID, FirstName, LastName, DriversLicence, LicencePlate, RentalDuration
    FROM Rental
    INNER Join Vehicle ON Vehicle.CarID = Rental.CarID
    INNER Join Customer ON Customer.CustomerID = Rental.CustomerID
    INNER Join VehicleType ON VehicleType.ClassID = Vehicle.ClassID
    ORDER BY TotalPrice ASC;
```

%

### Results / Messages

| TotalPrice | RentalID | FirstName | LastName | DriversLicence | LicencePlate | RentalDuration |
|---|---|---|---|---|---|---|
| 55.00 | 55566893 | Justin | Mccormick | GARLA555134DI9AG | DT21VDB | 1 |
| 190.00 | 55566906 | Luis | Travis | STEER508259RO9TS | DT21VDB | 2 |

4. For each vehicle, show the percentage of time it has been rented for (a key performance indicator – KPI – for companies of this type)

```sql
SELECT FORMAT(RentalDuration*100/60 * 0.01, 'P') AS PercentageUsed, Make, Model, Colour, ClassName, [Hybrid/Electric], RentalDuration
    From Rental
    INNER Join Vehicle ON Vehicle.CarID = Rental.CarID
    INNER Join VehicleType ON VehicleType.ClassID = Vehicle.ClassID
    ORDER BY RentalDuration DESC;
```

92 %

Results | Messages

| | PercentageUsed | Make | Model | Colour | ClassName | Hybrid/Electric | RentalDuration |
|---|---|---|---|---|---|---|---|
| 1 | 53.00% | Ford | Transit | White | Van | Hybrid | 32 |
| 2 | 51.00% | Ford | Transit | White | Van | Electric | 31 |
| 3 | 51.00% | Hyundai | ioniq | Sliver | Compact | Electric | 31 |
| 4 | 46.00% | Toyota | Prius | Grey | Compact | Electric | 28 |
| 5 | 38.00% | Hyundai | ioniq | white | Compact | Hybrid | 23 |
| 6 | 33.00% | Hyundai | ioniq | Sliver | Compact | Electric | 20 |
| 7 | 26.00% | BMW | i8 | Sliver | Luxary | Electric | 16 |
| 8 | 23.00% | Jaguar | XF | White | Luxary | Hybrid | 14 |
| 9 | 23.00% | Mercedes | E332 | Sliver | Luxary | Hybrid | 14 |
| 10 | 16.00% | Hyundai | ioniq | Sliver | Compact | Electric | 10 |
| 11 | 11.00% | Hyundai | ioniq | Sliver | Compact | Electric | 7 |
| 12 | 11.00% | Tesla | Model X | White | Luxary | Electric | 7 |
| 13 | 11.00% | VW | Golf | White | Compact | Hybrid | 7 |
| 14 | 10.00% | Mercedes | Sprinter | Black | Van | Electric | 6 |
| 15 | 8.00% | Renault | PRO+ | Grey | Van | Hybrid | 5 |
| 16 | 8.00% | VW | Golf | White | Compact | Hybrid | 5 |
| 17 | 5.00% | Tesla | Model X | White | Luxary | Electric | 3 |
| 18 | 3.00% | Ford | Transit | White | Van | Electric | 2 |
| 19 | 1.00% | Ford | Transit | White | Van | Electric | 1 |

*5.* For a given date I have identified  vehicle that need to be moved back to home location.

```sql
SELECT [Hybrid/Electric], Licenceplate, [Year], Make, Model, ClassName, PickUPBranch, DropOffBranch
from Rental
INNER Join Vehicle ON Vehicle.CarID = Rental.CarID
INNER Join VehicleType ON VehicleType.ClassID = Vehicle.ClassID
Where HomeLocation <> DropOffBranch;
```

%

Results | Messages

| Hybrid/Electric | Licenceplate | Year | Make | Model | ClassName | PickUPBranch | DropOffBranch |
|---|---|---|---|---|---|---|---|
| Hybrid | FG22VXC | 2021 | Hyundai | ioniq | Compact | HAS1 | DOV1 |

**Task 3**

Based on the ERD in task 1 I have designed a star schema where car category performance is measured using attributes from multi dimensions (Blue coloured) tables. this could be applied to any functional part of the business.

We have



**Describe how the data will be transformed as it is moved into the data warehouse.**

During migration of data from database to data warehouse data goes through a process known as extract transform and load (ETL). These are vital processes where data is transformed into a better organised format, transformation allows standardisation of different data types to be used by different applications and systems. I have demonstrated below how data transformation happens as its moved into data warehouse using employee table.

| Data in database | Source | Transformation |
|---|---|---|
| EmployeeID | internal | joined to employee |
| LocationID | internal | Joined to employee, branch location<br>->Hove<br>Hasting<br>Worthing<br>Dover |
| CategoryID | internal | joined to employee, employee category, location |
| first name | Internal | Joined to employee |

| last name | Internal | joined to employee, |
|---|---|---|
| Address | Internal | joined to employee |
| post code | Internal | joined to employee |
| Primary contact number | Internal | joined to employee |
| contact number | Internal | joined to employee, |
| driverlicence | internal | joined to employee |

**Explain how the facts / measures could be used to improve the business**

"Data warehouse is subject oriented, integrated, time variant and non-volatile collection of data" (Bill Inmon 1990) which is mainly used by business for decision making. Data warehouse is usually designed using Star schema, which consists of fact tables and dimension tables as it can be seen in the star schema provided, with the information from the dimension tables, fact tables provide us a quantitative information about a particular event in the business using historical data. An example I have provided it can be seen car category performance in specific timeframe, it can be applied to any specific event in the business. This can support summarisation of data which a non-technical team such as management of EEC could understand without the need of expert analyst. Important business decision can be made using data warehouse, for example which branches of the company are doing better, and what branches are suffering from business stagnation, with identifying busy branches we can increase number of vehicles available in those branches by transferring vehicle for less busy branch.

**Task 4:**

Data collection has increased exponentially in recent years due cheaper storage and financial gains from lucrative targeted marketing. Due to this high demand regulators have developed a wholistic approach to protect consumers from data misuse. Companies must adhere to strict data processing regulations set by the general data protection regulation (GDPR). GDPR has set out 7 key principles on which a company like EEC can manage data relating to customers. Data collected must be in lawful ways and limited to the purpose it was acquired for. Customer data must be accurate and relevant to the business, with data securely stored in servers and for a period not longer than necessary and someone must be assigned to enforce the policy within the company. Breaches of data protections laws can land a company a hefty fine.

**Why and how ECC collect data?**

EEC needs to collect customer personal information for identifying customers, marketing, detection, and prevention fraud etc, therefore data collection is vital for the business functionality. Data are given to the company by customer at the time of reservation with consent that EEC will have to share sensitive information with third parties such as insurance companies and store these customer data for future business purposes. Data can be saved on either internal or external servers, it is a lot more secure for small companies like EEC to use commercial external servers. Data breaches happens more in smaller companies as it is a lot easier for hackers to hack into their systems because of poor cybersecurity infrastructure or lack of cybersecurity awareness by employees.

**Prevention of breaches and possible security strategies:**

EEC data security strategy encompasses personnel, processes, and technologies. Prevention of cyber-attack on a company can be minimised but not completely eliminated, Firstly in order to protect and safeguard customer data, all computers and devices through which data can be accessed must be password protected and physically kept out of reach of unauthorised personnel, another main data breach that may occur are from internal sources i.e. employees, in order to minimise this, it is important to have controlled access to data in place for employees with the use of commercial software programs which limits access to data and allow just enough access to perform their duty at the company, another layer of security is logging every data access that occurs, which can help us identify who and when data access happened which is also known as data access management.

The use of up-to-date software and firewalls is a good method of preventing hackers form infiltrating and recommended. With the help of regularly tested backups ECC will ensure the integrity of data for the functionality of the business in cases where data loss occurs. To prevent cyberattacks on the company its best practice and in the benefit of EEC rental services is to implement a cyber threat management system to prevent, detect and respond to cyber security instances.

Developing a cybersecurity policy for the business should ideally be done with the help of professionals specially if it has never done before. As part of the GDPR someone must be appointed as data security enforcement officer to oversee the implementation of the data security policy drawn out for the company. This will help the company not only minimise cyberattacks, theft of sensitive data and intellectual property but in cases of unfortunate cyberattacks, EEC can avoid penalty for data breach from regulators, therefore preventing cyberattacks by implementation of recommended GDPR will cost a lot less in long run.


To conclude consumers are aware the implications of data breaches, so there ECC should make it transparent the use and purpose of data collected, in turn this will increase the confidence of customers in the company and may increase business. another way for EEC can gain confidence of customers is to have processes in place to be able to provide the data to the customers on demand and delete them from systems on demand.

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**Appendix 1**

**SQL Statements:**

CREATE TABLE Customer

(

   CustomerID   int NOT NULL PRIMARY KEY,

   FirstName     varchar(20) NOT NULL,

   LastName     varchar(20) NOT NULL,

   Address       varchar(150)  NOT NULL,

   PostCode     varchar(10)  NOT NULL,

   PrimaryContactNo    varchar(15)  NOT NULL,

   ContactNo    varchar(15),

   DriversLicence      varchar(20) UNIQUE NOT NULL,

);


INSERT INTO Customer (CustomerID, FirstName, LastName, Address, PostCode, PrimaryContactNo, ContactNo, DriversLicence) VALUES

('455581', 'zabella', 'Ballard', '139 Durham Road, London', 'KY7 5RL', '078 2000 2066 ', '079 7924 0439 ', 'ORWEL802023ZA9RO'),

('455582', 'Kaitlynn', 'Soto', 'Flat 13, Ogrady House, The Drive, London', 'G81 3PJ', '077 7313 2847 ', '070 4773 5524 ', 'EMBUR961224KA9ME'),

('455583', 'Bradley', 'Page', '32 Meadow Road, Kettering', 'DL7 0AR', '077 0437 6942 ', '070 3945 1535 ', 'KURTE658230WE9UK'),

('455584', 'Aileen', 'Cobb', '19 Cragg Lodge, Woodlands Drive', 'CV22 6SD', '078 8611 6711 ', '077 6805 4446 ', 'GARLA706223DE9AG'),

('455585', 'Justin', 'Mccormick', '54 - 60 Maidstone Road, Grays', 'OX33 1DG', '078 2990 0200 ', '078 1941 0742 ', 'GARLA555134DI9AG'),

('455586', 'Jose', 'Casey', '12 Elm Park Gardens, Dover', 'DL1 4JQ', '079 6049 7925 ', '077 6641 5366 ', 'AUDIT407115QU9UA'),

('455587', 'Frederick', 'Haas', '12 Pit Lane, Hough', 'TA21 0JX', '079 4064 5011 ', '078 8257 5589 ', 'JACKS460019RE9SS'),

('455588', 'Allison', 'Kelley', '1 Tanrallt, Capel Curig', 'CB7 4TJ', '078 8689 2437 ', '077 4788 4349 ', 'BONAI657018XE9OB'),

('455589', 'Lilia', 'Perkins', '105 Cromwell Road, Ware', 'KA5 5BW', '070 5938 7961 ', '070 6758 6952 ', 'ROGER712104JA9OR'),

('455590', 'Mateo', 'Conway', '25 Beecholme Estate, London', 'CA28 9SW', '070 2674 7726 ', '078 0102 0617 ', 'MANSO501225VI9AM'),

('455591', 'Lydia', 'Morgan', '79 Braemar Road, Sutton Coldfield', 'BL2 2AA', '079 3930 7861 ', '078 1705 0829 ', 'EMBUR853020MA9ME'),

('455592', 'Zion', 'Delacruz', 'Dalveen, Blackford', 'SK6 7JL', '070 1468 4014 ', '077 4799 1680 ', 'FORD9811030UR9OF'),

('455593', 'Cheyenne', 'Huber', '70 Plasnewydd Walk, Llantwit Major', 'RH5 5SX', '077 5874 9021 ', '077 8857 1196 ', 'WALKE906234GA9AW'),

('455594', 'Juliette', 'Mcpherson', '7 Townend Close, Husbands Bosworth', 'BS11 0QD', '077 7838 2450 ', '077 3655 2332 ', 'RICHT061161BE9IR'),

('455595', 'Jan', 'Maldonado', '20A Wessex Road, Poole', 'KT21 2BB', '077 0242 6618 ', '070 4730 2276 ', 'HILL9703244GA9IH'),

('455596', 'Selina', 'Li', '44 Henry Taylor Street, Flint', 'OL13 3DA', '077 5887 8004 ', '079 0240 0646 ', 'KING9805276IA9IK'),

('455597', 'Emilio', 'Bender', '7 Magna Carta Close, Odiham', 'SG8 9ET', '079 0154 5350 ', '079 0442 2864 ', 'JONES804089RO9OJ'),

('455598', 'Luis', 'Travis', '20 Highfield Road, Ramsgate', 'LL13 8DU', '077 0295 0556 ', '077 5646 2582 ', 'STEER508259RO9TS'),

('455599', 'Dallas', 'Hodges', '2 Cross Street South, Wolverhampton', 'CA11 9FA', '070 6159 8850 ', '077 0940 7026 ', 'POTTE708027LU9OP'),

('455600', 'Weston', 'Mora', 'Flat 12, 17 Berkeley Street, London', 'RH9 8JH', '079 2914 7439 ', '078 0386 3529 ', 'CROFT560264DI9RC'),

('455601', 'Lilianna', 'Eaton', '49 Station Road, Long Sutton', 'NG24 3LH', '077 4042 6346 ', '077 0915 4295 ', 'BALLA862283XE9AB'),

('455602', 'Keon', 'Landry', '1 The Grove, Hartley Wintney', 'ME13 0JE', '078 4717 3175 ', '070 6243 9714 ', 'KHALI906286HA9HK'),

('455603', 'Mason', 'Wright', '7 Townsend Lane, Donington Le Heath', 'DL4 1AG', '079 6182 4264 ', '077 5963 0280 ', 'CHETW401287BE9HC'),

('455604', 'Bryanna', 'Galloway', '3 Holme Road, Ringstead', 'AB11 8DS', '078 6240 9465 ', '078 0111 3194 ', 'LAVEY803238WI9AL'),

('455605', 'Gabriel', 'Frank', '1 Archery Road, Meriden', 'MK10 7DT', '078 3370 5042 ', '079 6576 5611 ', 'NOBAK862089LI9ON');


CREATE TABLE [Vehicle]

(

   [CarID]       int NOT NULL PRIMARY KEY,

   [ClassID]     varchar(15) NOT NULL,

```sql
    [Licenceplate]         varchar(20) NOT NULL,

    [Make]        varchar(20) NOT NULL,

    [Model]        varchar(20) NOT NULL,

    [Year]        varchar(10) NOT NULL,

    [Colour]       varchar(15) NOT NULL,

    [HomeLocation] varchar(20) NOT NULL FOREIGN KEY REFERENCES BranchLocation(LocationID),

    [VIN] varchar(25) UNIQUE NOT NULL,

    [Condition]    varchar(150),


);


INSERT INTO [Vehicle] ([CarID], [ClassID], [Licenceplate], [Make], [Model], [Year], [Colour],
[HomeLocation], [VIN], [Condition]) VALUES
        ('101', 'C_Electric', 'QQ20ZHX', 'FORD', 'Focus', '2020', 'Grey', 'DOV1',
'JN8AZ1MU4CW113789', 'GOOD'),

        ('102', 'C_Hybrid', 'FG22VXB', 'Toyota', 'Prius', '2021', 'white', 'DOV1',
'3VWLL7AJ9BM053541', 'GOOD'),

        ('103', 'C_Electric', 'AG21SKS', 'Hyundai', 'ioniq', '2021', 'Sliver', 'DOV1',
'5XYKT3A17BG157871', 'GOOD'),

        ('104', 'C_Hybrid', 'YH22SJS', 'VW', 'Golf', '2022', 'White', 'HOV1', '2GCDC14H9B1172761',
'GOOD'),

        ('105', 'V_Electric', 'DT21VDB', 'Ford', 'Transit', '2020', 'White', 'DOV1',
'JH4DA9350PS016433', 'GOOD'),

        ('106', 'V_Electric', 'UU20DVD', 'Mercedes', 'Sprinter', '2020', 'Black', 'WOR1',
'3GCEC14X66G218202', 'GOOD'),

        ('107', 'V_Hybrid', 'PP21BDHB', 'Renault', 'PRO+', '2021', 'Grey', 'WOR1',
'JF2SHADC3DG417185', 'GOOD'),

        ('108', 'V_Hybrid', 'YY22BDH', 'Ford', 'Transit', '2022', 'White', 'HOV1',
'WDBNG75J32A225892', 'GOOD'),

        ('109', 'L_Hybrid', 'TT19GDG', 'Mercedes', 'E332', '2019', 'Sliver', 'HOV1',
'1NXBB02E9TZ393131', 'GOOD'),

        ('110', 'L_Electric', 'BB22GDG', 'BMW', 'i8', '2022', 'Sliver', 'HOV1', '1GBJK34G32E254979',
'GOOD'),

        ('111', 'L_Hybrid', 'OQ21BDN', 'Jaguar', 'XF', '2021', 'White', 'DOV1', '4S3BK4355T6319316',
'GOOD'),
```

('112', 'L_Electric', 'PL22UEH', 'Tesla', 'Model X', '2022', 'White', 'HAS1', '2T1KR32EX4C175599', 'GOOD'),

        ('113', 'L_Electric', 'OL22BDB', 'Tesla', 'Model X', '2022', 'White', 'WOR1', 'JM1BF2325G0V37585', 'GOOD'),

        ('114', 'C_Electric', 'QQ20ZHL', 'Toyota', 'Prius', '2021', 'Grey', 'HAS1', 'JH4DB1540PS000784', 'GOOD'),

        ('115', 'C_Hybrid', 'FG22VXC', 'Hyundai', 'ioniq', '2021', 'white', 'HAS1', 'JN8AZ1MU4CW113790', 'GOOD');

CREATE TABLE [Rental]

(

    [RentalID]      int NOT NULL PRIMARY KEY,

    [CarID]         int NOT NULL FOREIGN KEY REFERENCES Vehicle(CarID),

    [CustomerID] int NOT NULL FOREIGN KEY REFERENCES Customer(CustomerID),

    [PickUPBranch]         varchar(20)NOT NULL FOREIGN KEY REFERENCES BranchLocation(LocationID),

    [DropOffBranch]         varchar(20)NOT NULL FOREIGN KEY REFERENCES BranchLocation(LocationID),

    [StartDate]    varchar(10)NOT NULL,

    [EndDate]      varchar(10)NOT NULL,

    [FuelCheck]    varchar(20)NOT NULL,

    [OdometerBefore] int NOT NULL,

    [OdometerAfter]      int NOT NULL,

    [ExtraCharges]         money,

    [RentalDuration]       tinyint NOT NULL,

    [TotalPrice]    money NOT NULL,

    [EmployeeDiscount]   varchar(30),

    [Comments]   varchar(150)

);

INSERT INTO [Rental] ([RentalID], [CarID], [CustomerID], [PickUPBranch], [DropOffBranch], [StartDate], [EndDate], [FuelCheck], [OdometerBefore], [OdometerAfter], [ExtraCharges], [RentalDuration], [TotalPrice], [EmployeeDiscount], [Comments]) VALUES

('55566889', '103', '455581', 'DOV1', 'DOV1', '1/10/22', '1/17/22', 'check', '21000', '21700', '20', '7', '320', '', 'Fuel Charges'),

('55566890', '105', '455582', 'DOV1', 'DOV1', '1/11/22', '2/11/22', 'check', '19773', '13773', '0', '31', '1700', '', ''),

('55566891', '104', '455583', 'HOV1', 'HOV1', '1/12/22', '1/17/22', 'check', '10029', '10829', '25', '5', '225', '', 'Fuel Charges'),

('55566892', '104', '455584', 'HOV1', 'HOV1', '1/21/22', '1/28/22', 'check', '21282', '21982', '0', '7', '250', '', ''),

('55566893', '105', '455585', 'DOV1', 'DOV1', '3/14/22', '3/15/22', 'check', '30322', '30422', '20', '1', '55', 'Empl50%Discount', 'Fuel Charges'),

('55566894', '106', '455586', 'WOR1', 'WOR1', '1/15/22', '1/21/22', 'check', '35753', '36153', '28', '6', '478', '', 'Fuel Charges'),

('55566895', '107', '455587', 'WOR1', 'WOR1', '1/16/22', '1/21/22', 'check', '3453', '3953', '31', '5', '391', '', 'Fuel Charges'),

('55566896', '108', '455588', 'HOV1', 'HOV1', '1/17/22', '2/18/22', 'check', '1230', '1330', '34', '32', '1404', '', 'Fuel Charges'),

('55566897', '109', '455589', 'HOV1', 'HOV1', '1/18/22', '2/1/22', 'check', '6876', '7976', '37', '14', '1087', '', 'Fuel Charges'),

('55566898', '110', '455590', 'HOV1', 'HOV1', '1/19/22', '2/4/22', 'check', '6746', '8146', '40', '16', '1610', '', 'Fuel Charges'),

('55566899', '111', '455591', 'DOV1', 'DOV1', '1/20/22', '2/3/22', 'check', '5756', '7356', '43', '14', '1093', '', 'Fuel Charges'),

('55566900', '112', '455592', 'HAS1', 'HAS1', '1/21/22', '1/24/22', 'check', '6576', '6976', '46', '3', '376', '', 'Fuel Charges'),

('55566901', '113', '455593', 'WOR1', 'WOR1', '1/22/22', '1/29/22', 'check', '2240', '2540', '49', '7', '649', '', 'Fuel Charges'),

('55566902', '114', '455594', 'HAS1', 'HAS1', '1/23/22', '2/20/22', 'check', '44343', '54343', '52', '28', '1152', '', 'Fuel Charges'),

('55566903', '115', '455595', 'HAS1', 'DOV1', '1/24/22', '2/16/22', 'check', '44432', '46632', '55', '23', '785', '', 'valeting fee'),

('55566904', '103', '455596', 'DOV1', 'DOV1', '1/25/22', '2/25/22', 'check', '22233', '25233', '58', '31', '1013', 'Empl10%Discount', 'Fuel Charges'),

('55566905', '103', '455597', 'DOV1', 'DOV1', '2/28/22', '3/10/22', 'check', '33445', '34545', '61', '10', '520', '', 'Fuel Charges'),

('55566906', '105', '455598', 'DOV1', 'DOV1', '4/27/22', '4/29/22', 'check', '5666', '5866', '40', '2', '190', '', 'Fuel Charges'),

('55566907', '103', '455599', 'DOV1', 'DOV1', '4/1/22', '4/21/22', 'check', '88889', '93889', '30', '20', '910', '', 'Fuel Charges');

```sql
CREATE TABLE [VehicleType]
(
    [ClassID]        varchar(20) NOT NULL PRIMARY KEY,
    [ClassName]   varchar(20) NOT NULL,
    [Hybrid/Electric]        varchar(20) NOT NULL,
    [PricePerDay] money NOT NULL ,
    [PricePerWeek]        money NOT NULL,
    [Price2Week] money NOT NULL,
    [PricePerMonth]        money NOT NULL
);

INSERT INTO [VehicleType] ([ClassID], [ClassName], [Hybrid/Electric], [PricePerDay], [PricePerWeek],
[Price2Week], [PricePerMonth]) VALUES
        ('C_Electric', 'Compact', 'Electric', '55', '300', '550', '950'),
        ('C_Hybrid', 'Compact', 'Hybrid', '40', '250', '400', '750'),
        ('V_Electric', 'Van', 'Electric', '70', '450', '800', '1700'),
        ('V_Hybrid', 'Van', 'Hybrid', '60', '390', '750', '1250'),
        ('L_Electric', 'Luxary', 'Electric', '110', '700', '1350', '2500'),
        ('L_Hybrid', 'Luxary', 'Hybrid', '90', '600', '1050', '1990');

CREATE TABLE [Employees]
(
    [EmployeeID] int NOT NULL PRIMARY KEY,
    [LocationID] varchar(20) NOT NULL FOREIGN KEY REFERENCES BranchLocation(LocationID),
    [CategoryName] varchar(20) NOT NULL,
    [FirstName]    varchar(20) NOT NULL,
    [LastName]    varchar(20) NOT NULL,
    [Address]       varchar(150) NOT NULL,
```

```
    [PostCode]     varchar(10) NOT NULL,

    [PrimaryContactNo]    varchar(15) NOT NULL,

    [ContactNo]    varchar(15),

    [DriversLicence]        varchar(150) UNIQUE


);


INSERT INTO [Employees] ([EmployeeID], [LocationID], [CategoryID], [FirstName], [LastName],
[Address], [PostCode], [PrimaryContactNo], [ContactNo], [DriversLicence]) VALUES

        ('820', 'HOV1', 'MN1', 'Adonis', 'Webb', '2 Abbeydale Close, Weston', 'CW2 5RR', '079 4318
8088 ', '079 5673 0628 ', 'LAVEY803238WI9AL'),

        ('821', 'HOV1', 'MN2', 'Talon', 'Harmon', 'Pen Y Mynydd, Dinas Cross', 'SA42 0YH', '077 3463
0998 ', '078 4528 2992 ', 'NOBAK862089LI9ON'),

        ('822', 'HOV1', 'MN3', 'Deshawn', 'Newman', '5 Alexandra Place, Abercynon', 'CF45 4YA', '078
2579 1907 ', '070 0562 2018 ', 'AHMAD862089LI9HA'),

        ('823', 'DOV1', 'DR1', 'Jamison', 'Krueger', 'Flat 1, 43 Worcester Road, Bootle', 'L20 9AA', '077
1038 2690 ', '070 7270 1949 ', 'MOHAM862089LI9OM'),

        ('824', 'DOV1', 'CL1', 'Diya', 'Charles', '54 Brighton Road, Banstead', 'SM7 1BT', '077 4001
5284 ', '079 5218 2483 ', 'SALEE862089LI9AS'),

        ('825', 'DOV1', 'WK1', 'Hallie', 'Wade', '17 Hoelion Grove, Rogerstone', 'NP10 9PF', '077 5185
1049 ', '077 3129 4392 ', 'SMITH862089LI9MS'),

        ('826', 'HAS1', 'MN1', 'Bruno', 'Erickson', 'Vicarage House, Overton', 'YO30 1YL', '077 2399
3862 ', '079 7935 5775 ', 'HEWLE862089LI9EH'),

        ('827', 'HAS1', 'DR1', 'Ruth', 'Mckay', 'Aurora, Llys Y Coed, Pembrey', 'SA16 0LJ', '079 3682
1098 ', '079 4852 9880 ', 'PACKA862089LI9AP'),

        ('828', 'HAS1', 'CL1', 'Kyler', 'Pittman', '5 Barley Lane, Luton', 'LU4 9HT', '079 6856 6291 ', '079
5874 0242 ', 'JOHNS862089LI9OJ'),

        ('829', 'HAS1', 'WK1', 'Hope', 'Pierce', '63 Bascombe Grove, Dartford', 'DA1 3RH', '070 7976
8027 ', '079 6949 7839 ', 'BONAI705229WI9OB'),

        ('830', 'WOR1', 'DR1', 'Maia', 'Zimmerman', '394 Glascote Road, Glascote', 'B77 2BY', '078
3996 0846 ', '079 8287 6412 ', 'KING9010280ZA9IK'),

        ('831', 'WOR1', 'WK1', 'Estrella', 'Olson', 'Unit 1, 540 Dunstable Road, Luton', 'LU4 8DN', '070
8171 5410 ', '070 2896 2300 ', 'GARSL703217MA9AG'),

        ('832', 'WOR1', 'CL1', 'Selah', 'Calhoun', '6 Grantham Court, Colchester', 'CO1 2RU', '079 3592
5596 ', '077 8595 2112 ', 'SWEDE703217MA9WS');
```

```sql
CREATE TABLE [EmployeeType]
(
    [CategoryID]   varchar(20) NOT NULL PRIMARY KEY,
    [CategoryName]       varchar(15) NOT NULL,
    [StaffDiscountShort]   varchar(10) NOT NULL,
    [StaffDiscountLong]    varchar(10) NOT NULL
);


INSERT INTO [EmployeeType] ([CategoryID], [CategoryName], [StaffDiscountShort],
[StaffDiscountLong]) VALUES
        ('MN1', 'Manager', '50%', '10%'),
        ('DR1', 'Driver', '50%', '10%'),
        ('CL1', 'Clerk', '50%', '10%'),
        ('WK1', 'Worker', '50%', '10%');



CREATE TABLE [BranchLocation]
(
    [LocationID]   varchar(20) NOT NULL PRIMARY KEY,
    [BranchType] varchar(20) NOT NULL,
    [Address]       varchar(100) NOT NULL,
    [PostCode]     varchar(10)NOT NULL,
    [PrimaryContactNo]   varchar(15) NOT NULL,
    [ContactNo]   varchar(15)
);


INSERT INTO [BranchLocation] ([LocationID], [BranchType], [Address], [PostCode],
[PrimaryContactNo], [ContactNo]) VALUES
        ('HOV1', 'HeadQuarters', '122 Blatchington Rd Hove', 'BN3 3YN', '0757 963 9166', '0936 383
3808'),
```

('DOV1', 'Branch', '62 Biggin St, Dover ', 'CT16 1DD', '0931 206 1878', '08276 085 0799'),

('HAS1', 'Branch', '21-22 George St, Hastings ', 'TN34 3EG', '0119 867 7738', '0255 924 7483'),

('WOR1', 'Branch', '189 High Street Worthing', 'BN11 1LL', '02347 986 7859', '02504 231 3007');