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Project Cars Review
CSCI 343
November 6, 2016

Project 1 Reflections

I choose to create the database for Friendly Cars as I figured I would be able to most easily fill a database with artificial but 'real' information. I did make the mistake of building a data dictionary without fully paying attention to the prompt and had created the groundwork for a better database but it included all kinds of things this bizarre "as-is" dealership didn't want, so I rebuilt it around their requests.

This project was very enjoyable, but nothing about it was hard- good examples in class helped craft interesting select operations, and build out effective design for the database. Mostly I found the model tool to best the easiest to deal with, as the SQL Developer didn't work as I wanted in removing unique foreign key requirements, and I had to drop and rebuild the database to get this change to click. Similarly, I noticed some oddities when generating the relational model that I didn't expect- things that I had removed in the logical would sometimes stick around for a while, I had to delete and generate the relational a second time occasionally to fix this.

Ultimately, I built the database in such a way that it would revolve around views for all non-DBA users more so than perhaps some people's database, in that it uses index variables to more easily track data and prevent duplicate entries. 'VEHICLE' for example, is built almost 50% of foreign keys that link to other values from eight different tables. This makes sense because for most vehicles most of the data is just recycled- V6, RWD, etc...

Thankfully, at the end of the project when I was inserting data and testing selects, everything turned out to work perfectly. I did have to drop my original idea of custom domaining most information- as the DDL was creating 'CLOBs'; that would be an example of something not working for me. Below you will find the data dictionary attached.

Overall, I'd say that the project helped a lot more in understanding how all the pieces of a database need to work together. It was especially helpful that the project had so many tables- though I did decrease my total tables by six to prevent over complication (I had some unusual ways of storing e-mail and phone numbers). I most preferred working directly with the database via SQL commands when not building a large number of tables, it was faster and easier to see what was being done. My first DDL create SQL file was 54 pages (admittedly in Word with formatting), which is a lot to read over, so whenever possible I just typed things in directly.

Data Dictionary

CREATED BY ASHLEY DODSON
FRIENDLY CAR DEALERSHIP DATABASE
SEPTEMBER 3, 2016

Vehicle Words

vehicleBody	Body style of Vehicle- Coupe/SUV/Sedan/Truck/Van
vehicleCheckedOut	Last salesperson ID that checked Vehicle out
vehicleColor	Color of Vehicle
vehicleDoors	Number of doors on vehicle
vehicleDelivered	Date vehicle was delivered to dealership
vehicleDrivetrain	Drivetrain of Vehicle- AWD/FWD/RWD/4WD
vehicleID	VIN of Vehicle, used as ID number
vehicleMake	Manufacturer of Vehicle, abbreviated, i.e. MITSU/HONDA/CHEVRO/FORD
vehicleMileageCurrent	Current mileage of Vehicle
vehicleMileageOrig	Original mileage when vehicle was delivered
vehicleModel	Model of Vehicle
vehicleMotor	Motor of Vehicle- 4CY/V6/V8/V8-DIESEL/V10/V12/ELEC
vehicleNew	Whether the vehicle is new or used
vehiclePrice	Normal price of Vehicle
vehicleListPrice	Current selling price of Vehicle
vehicleStatus	Status of Vehicle- REPAIR/SOLD/ARCHIVE/READY/TESTDRIVE
vehicleTransmission	Transmission style of Vehicle- CVT/AUTO/MANU/ELEC
vehicleWeight	Weight of the vehicle
vehicleYear	Year Vehicle was manufactured

Customer Words

customerAddress	Street address of Customer- i.e. 55 Some St
customerSalesperson	Salesperson ID of last sales person to work with Customer
customerEmail	E-mail address of Customer
customerID	ID number of Customer- Loyalty ID
customerLoan	Loan ID if Customer has a loan through dealership
customerFName	Customer first name
customerLName	Customer last name
customerPhone	Customer phone number
customerSpendLevel	Tier level based on purchase history
customerYears	Number of years since first purchase with dealership
customerZip	Customer zip code

Bill of Sale Words

saleCustomerID	Customer ID number for sale
saleSalesPerson	Sales person that made bill of sale
saleVehicleID	ID number of vehicle on bill of sale
saleCurrentMileage	Mileage of vehicle on bill of sale
saleCustomization	Any customization charges for vehicle
saleFinancing	Whether customer used financing for bill of sale
saleWarranty	Whether customer purchased warranty on vehicle
saleTaxesFees	Derived field from LTI- all taxes and fees
saleTotalPrice	Derived from all costs in bill of sale
saleCostofVehicle	Vehicle cost for bill of sale
saleNew	Whether customer purchased a new vehicle or not

Salesperson Words

salespersonAddress	Street address of salesperson- i.e 55 Another Rd
salespersonCR	Commission rate for salesperson
salespersonDiscount	Discount percentage approved for salesperson
salespersonEmail	E-mail address of salesperson
salespersonFName	Salesperson first name
salespersonID	Salesperson ID number
salespersonLName	Salesperson last name
salespersonManager	Manager of salesperson
salespersonPay	Salesperson pay rate
salespersonPerform	Last performance score for salesperson
salespersonPhone	Salesperson phone number
salespersonSales	Total sales numbers for the year in dollars
salespersonSickDays	Number of sick days available to salesperson
salespersonStatus	Status of salesperson- VACATION/ACTIVE/INACTIVE/SUSPENDED/OFFSITE
salespersonTitle	Title of salesperson
salespersonVacDays	Number of vacation days available to salesperson
salespersonYears	Number of years salesperson has been with dealership
salespersonZip	Salesperson zip code

License, Tax, Insurance

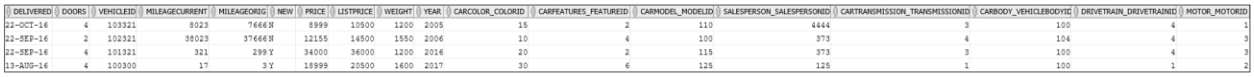
LTIStateTax	State tax required for sale
LTILicenseFee	Required license fee
LTIProofInsurance	Proof of Insurance acquired

Satisfaction Survey

satisfactionCar	Customer’s evaluation score of their new car
satisfactionDealership	Customer’s evaluation score of the dealership
satisfactionSalesperson	Customer’s evaluation score of their salesperson

SELECTS to demonstrate functional database

SELECT * FROM VEHICLE;



DELIVERED	DOORS	VEHICLEID	MILEAGECURRENT	MILEAGEORIG	NEW	PRICE	LISTPRICE	WEIGHT	YEAR	CARCOLOR_COLORID	CARFEATURES_FEATUREID	CARMODEL_MODELID	SALESPERSON_SALESPERSONID	CARTRANSMISSION_TRANSMISSIONID	CARBODY_VEHICLEBODYID	DRIVETRAIN_DRIVETRAINID	MOTOR_MOTORID
22-OCT-16	4	103321	8023	7666N		8999	10500	1200	2005	15	2	110	4444	3	100	4	1
22-SEP-16	2	102321	38023	37666N		12155	14500	1550	2006	10	4	100	373	4	104	4	3
22-SEP-16	4	101321	321	299Y		34000	36000	1200	2016	20	2	115	373	3	100	4	3
13-AUG-16	4	100300	17	3Y		18999	20500	1600	2017	30	6	125	125	1	100	1	2

SELECT V.VEHICLEID, V.PRICE, V.YEAR, C.MODEL, T.TRANSMISSIONTYPE, M.MOTOR

FROM VEHICLE V, CARMODEL C, CARTRANSMISSION T, MOTOR M

WHERE V.CARMODEL_MODELID=C.MODELID AND V.CARTRANSMISSION_TRANSMISSIONID=T.TRANSMISSIONID AND V.MOTOR_MOTORID=M.MOTORID;

	VEHICLEID	PRICE	YEAR	MODEL		TRANSMISSIONTYPE		MOTOR	
1	100300	18999	2017	Model X	...	Electric	...	Electric	...
2	103321	8999	2005	Accord	...	Auto	...	4 Cylinder	...
3	101321	34000	2016	Civic	...	Auto	...	V6	...
4	102321	12155	2006	Eclipse	...	Manual	...	V6	...

SELECT LNAME, FNAME, SALESPERSONID, SALES

FROM SALESPERSON

WHERE SALES=(SELECT MAX(SALES) FROM SALESPERSON);

	LNAME		FNAME		SALESPERSONID	SALES
1	Rikers	...	George	...	4241	341654

SELECT CUSTOMERID, LNAME, FNAME

FROM CUSTOMER

WHERE SPENDLEVEL > 3;

	CUSTOMERID	LNAME		FNAME	
1	1000	Mauney	...	Jessica	...
2	1076	Matters	...	Jim	...

SELECT * FROM DRIVETRAIN;

	DRIVETRAINID	DRIVETRAIN
1	1	AWD ...
2	2	RWD ...
3	3	4WD ...
4	4	FWD ...

SELECT * FROM SALE

WHERE SALEID=422;

	CURRENTMILEAGE	CUSTOMIZATION	FINANCING	WARRANTY	TAXESFEES	TOTALPRICE	COSTOFVEHICLE	SALEID	LICENSE_TAX_INSUR_ADDIFEEID	VEHICLE_VEHICLEID	SALESPERSON_SALESPERSONID	CUSTOMER_CUSTOMERID
1	321	1	8000	0	625	34625	34000	422	899	101321	125	1000

SELECT SALESPERSONID, LNAME, FNAME

FROM SALESPERSON

WHERE MANAGER=125;

	SALESPERSONID	LNAME	FNAME
1	4444	Tryhard ...	Steven ...
2	4241	Rikers ...	George ...
3	373	Smith ...	Sarah ...

SELECT * FROM SALE

WHERE CUSTOMER_CUSTOMERID=1076;

	CURRENTMILEAGE	CUSTOMIZATION	FINANCING	WARRANTY	TAXESFEES	TOTALPRICE	COSTOFVEHICLE	SALEID	LICENSE_TAX_INSUR_ADDIFEEID	VEHICLE_VEHICLEID	SALESPERSON_SALESPERSONID	CUSTOMER_CUSTOMERID
1	8025	0	4000	0	633	12788	12155	411	400	102321	373	1076
2	25	0	12000	1	350	19349	18999	433	50	100300	4444	1076

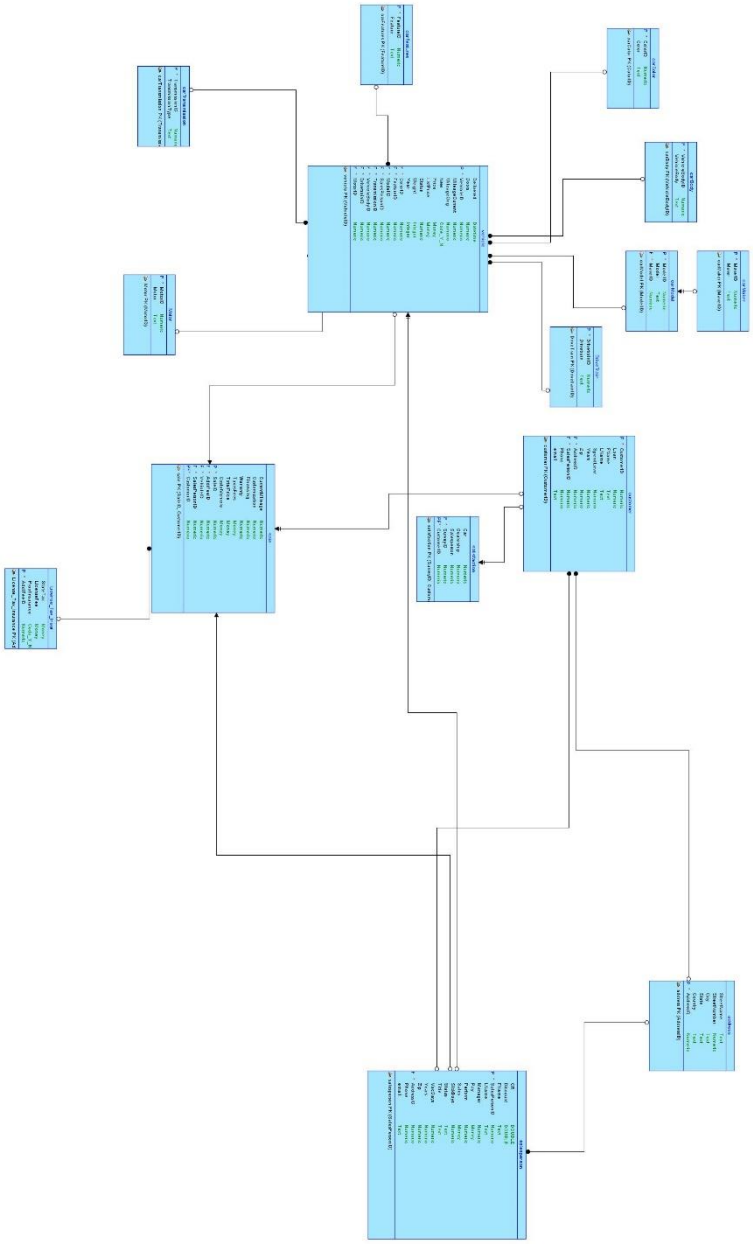
SELECT S.SALEID, S.TAXESFEES, S.TOTALPRICE, S.FINANCING, C.LNAME, C.FNAME, E.SALESPERSONID

FROM SALE S, CUSTOMER C, SALESPERSON E

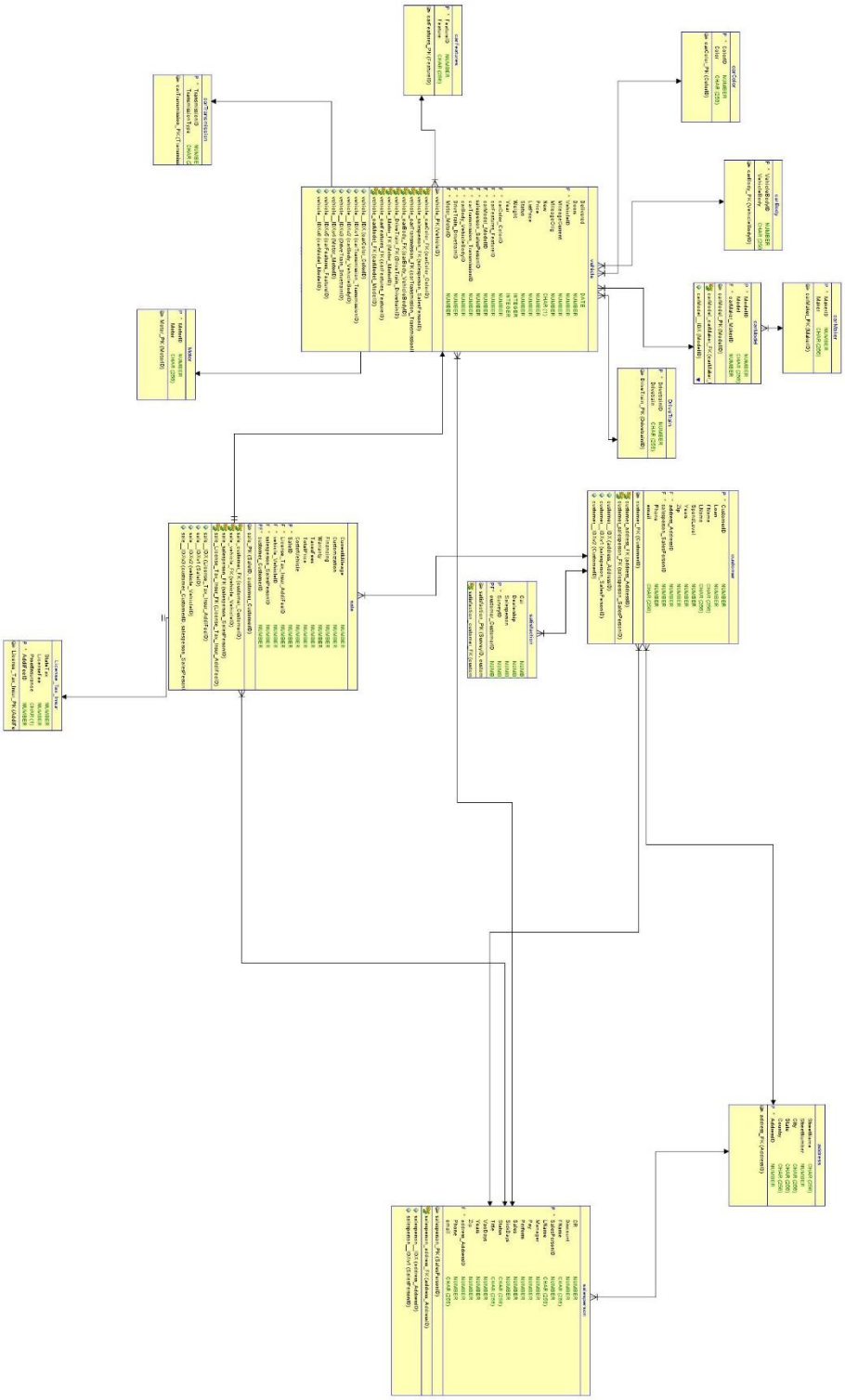
WHERE C.CUSTOMERID=1000 AND C.CUSTOMERID=S.CUSTOMER_CUSTOMERID AND S.SALESPERSON_SALESPERSONID=E.SALESPERSONID;

	SALEID	TAXESFEES	TOTALPRICE	FINANCING	LNAME	FNAME	SALESPERSONID
1	422	625	34625	8000	Mauney ...	Jessica ...	125

Logical Model



Relational Model



INSERTs used for filling Database

```
INSERT INTO CARBODY
VALUES(100, 'Sedan');

INSERT INTO CARBODY
VALUES(101, 'SUV');

INSERT INTO CARBODY
VALUES(103, 'Van');

INSERT INTO CARBODY
VALUES(104, 'Coupe');

INSERT INTO CARBODY
VALUES(105, 'Truck');

INSERT INTO CARCOLOR
VALUES(10, 'Sunburst Orange');

INSERT INTO CARCOLOR
VALUES(15, 'Imperial Blue');

INSERT INTO CARCOLOR
VALUES(20, 'Garnet Red');

INSERT INTO CARCOLOR
VALUES(30, 'Glacier White');

INSERT INTO CARFEATURES
VALUES(2, 'GPS');

INSERT INTO CARFEATURES
VALUES(4, 'Heated Seats');
```

```
INSERT INTO CARFEATURES
VALUES(6, 'Electric');

INSERT INTO CARMAKER
VALUES(10, 'Mitsubishi');

INSERT INTO CARMODEL
VALUES(100, 'Eclipse', 10);

INSERT INTO CARMAKER
VALUES(11, 'Honda');

INSERT INTO CARMAKER
VALUES(12, 'Ford');

INSERT INTO CARMAKER
VALUES(13, 'Tesla');

INSERT INTO CARMAKER
VALUES(14, 'Toyota');

INSERT INTO CARMODEL
VALUES(110, 'Accord', 11);

INSERT INTO CARMODEL
VALUES(115, 'Civic', 11);

INSERT INTO CARMODEL
VALUES(120, 'Focus', 12);

INSERT INTO CARMODEL
VALUES(125, 'Model X', 13);

INSERT INTO CARMODEL
VALUES(135, 'Tacoma', 14);
```

```
INSERT INTO CARTRANSMISSION
VALUES(1, 'Electric');

INSERT INTO CARTRANSMISSION
VALUES(2, 'CVT');

INSERT INTO CARTRANSMISSION
VALUES(3, 'Auto');

INSERT INTO CARTRANSMISSION
VALUES(4, 'Manual');

INSERT INTO DRIVETRAIN
VALUES(1, 'AWD');

INSERT INTO DRIVETRAIN
VALUES(2, 'RWD');

INSERT INTO DRIVETRAIN
VALUES(3, '4WD');

INSERT INTO DRIVETRAIN
VALUES(4, 'FWD');

INSERT INTO MOTOR
VALUES(1, '4 Cylinder');

INSERT INTO MOTOR
VALUES(2, 'Electric');

INSERT INTO MOTOR
VALUES(3, 'V6');

INSERT INTO MOTOR
VALUES(4, 'Diesel');
```

```
INSERT INTO MOTOR

VALUES(5, 'V8');


INSERT INTO ADDRESS

VALUES('Chester Dr', 44, 'Asheville', 'NC', 'USA', 1);


INSERT INTO ADDRESS

VALUES('Imperium Circle', 4234, 'Asheville', 'NC', 'USA', 2);


INSERT INTO ADDRESS

VALUES('Rogers Place', 144, 'Asheville', 'NC', 'USA', 3);


INSERT INTO ADDRESS

VALUES('Somewhere Rd', 774, 'Asheville', 'NC', 'USA', 4);


INSERT INTO SALESPERSON

VALUES(0.05, 0.05, 'Steven', 4444, 'Tryhard', 125, 15, 4, 56044, 4, 'ACTIVE', 'Junior Sales', 0, 1, 28806, 1, 8281234567,
'somewhere@nowhere.com');


INSERT INTO SALESPERSON

VALUES(0.09, 0.06, 'Shari', 125, 'Richards', 1, 27, 4, 123245, 12, 'ACTIVE', 'Co-Manager', 7, 7, 28804, 2, 8282345678,
'everywhere@theplace.net');


INSERT INTO SALESPERSON

VALUES(0.10, 0.05, 'George', 4241, 'Rikers', 125, 20, 3, 341654, 7, 'VACATION', 'Lead Sales', 4, 3, 28804, 4, 8287654321,
'there@backagain.com');


INSERT INTO SALESPERSON

VALUES(0.07, 0.05, 'Sarah', 373, 'Smith', 125, 17, 5, 112000, 6, 'ACTIVE', 'Junior Sales', 0, 3, 28805, 3, 8283334527, 'champions@marvel.com');


INSERT INTO VEHICLE

VALUES(TO_DATE('2016/10/22', 'yyyy/mm/dd'), 4, 103321, 8023, 7666, 'N', 8999, 10500, 1200, 2005, 15, 2, 110, 4444, 3, 100, 4, 1);


INSERT INTO VEHICLE

VALUES(TO_DATE('2016/09/22', 'yyyy/mm/dd'), 2, 102321, 38023, 37666, 'N', 12155, 14500, 1550, 2006, 10, 4, 100, 373, 4, 104, 4, 3);


INSERT INTO VEHICLE

VALUES(TO_DATE('2016/09/22', 'yyyy/mm/dd'), 4, 101321, 321, 299, 'Y', 34000, 36000, 1200, 2016, 20, 2, 115, 373, 3, 100, 4, 3);
```

```
INSERT INTO VEHICLE
VALUES(TO_DATE('2016/08/13', 'yyyy/mm/dd'), 4, 100300, 17, 3, 'Y', 18999, 20500, 1600, 2017, 30, 6, 125, 125, 1, 100, 1, 2);

INSERT INTO ADDRESS
VALUES('Villa Dr', 33, 'Asheville', 'NC', 'USA', 5);

INSERT INTO ADDRESS
VALUES('Warehouse Ave', 100, 'Asheville', 'NC', 'USA', 6);

INSERT INTO ADDRESS
VALUES('Terra Ln', 71512, 'Asheville', 'NC', 'USA', 7);

INSERT INTO CUSTOMER
VALUES(1000, 0, 'Jessica', 'Mauney', 4, 7, 28801, 5, 4241, 8289910011, 'test@lies.com');

INSERT INTO CUSTOMER
VALUES(1050, 8420, 'Adam', 'Rivers', 1, 1, 28803, 6, 373, 8281214516, 'test2@lies.com');

INSERT INTO CUSTOMER
VALUES(1076, 21432, 'Jim', 'Matters', 7, 26, 28804, 7, 4444, 8289210357, 'test3@lies.com');

INSERT INTO LICENSE_TAX_INSUR
VALUES(500, 125, 'Y', 899);

INSERT INTO LICENSE_TAX_INSUR
VALUES(500, 133, 'Y', 400);

INSERT INTO LICENSE_TAX_INSUR
VALUES(300, 50, 'Y', 50);

INSERT INTO SALE
VALUES(8025, 0, 4000, 0, 633, 12788, 12155, 411, 400, 102321, 373, 1076);

INSERT INTO SALE
VALUES(321, 1, 8000, 0, 625, 34625, 34000, 422, 899, 101321, 125, 1000);
```

```
INSERT INTO SALE
VALUES(25, 0, 12000, 1, 350, 19349, 18999, 433, 50, 100300, 4444, 1076);

INSERT INTO SATISFACTION
VALUES(100300, 1, 4444, 57, 1076);

INSERT INTO SATISFACTION
VALUES(101321, 1, 125, 66, 1000);
```

SQL Code for CREATE

```
SQL> SET ECHO ON
SQL> DROP TABLE ADDRESS
CASCADE CONSTRAINTS;

Table ADDRESS dropped.

SQL> DROP TABLE CARBODY
CASCADE CONSTRAINTS;

Table CARBODY dropped.

SQL> DROP TABLE CARCOLOR
CASCADE CONSTRAINTS;

Table CARCOLOR dropped.

SQL> DROP TABLE CARFEATURES
CASCADE CONSTRAINTS;

Table CARFEATURES dropped.

SQL> DROP TABLE CARMAKER
CASCADE CONSTRAINTS;

Table CARMAKER dropped.

SQL> DROP TABLE CARMODEL
CASCADE CONSTRAINTS;

Table CARMODEL dropped.

SQL> DROP TABLE CARTRANSMISSION
CASCADE CONSTRAINTS;
```

Error starting at line : 20 in command -

DROP TABLE CARTRANSMISSION

CASCADE CONSTRAINTS

Error report -

SQL Error: ORA-00942: table or view does not exist

00942. 00000 - "table or view does not exist"

*Cause:

*Action:

SQL> DROP TABLE CUSTOMER

CASCADE CONSTRAINTS;

Table CUSTOMER dropped.

SQL> DROP TABLE DRIVETRAIN

CASCADE CONSTRAINTS;

Table DRIVETRAIN dropped.

SQL> DROP TABLE LICENSE_TAX_INSUR

CASCADE CONSTRAINTS;

Table LICENSE_TAX_INSUR dropped.

SQL> DROP TABLE MOTOR

CASCADE CONSTRAINTS;

Table MOTOR dropped.

SQL> DROP TABLE SALE

CASCADE CONSTRAINTS;

Table SALE dropped.

SQL> DROP TABLE SALESPERSON

CASCADE CONSTRAINTS;

```
Table SALESPERSON dropped.

SQL> DROP TABLE SATISFACTION
CASCADE CONSTRAINTS;

Table SATISFACTION dropped.

SQL> DROP TABLE VEHICLE
CASCADE CONSTRAINTS;

Table VEHICLE dropped.

SQL> DROP TABLE TRANSMISSION
CASCADE CONSTRAINTS;

Table TRANSMISSION dropped.

SQL> SET ECHO ON
SQL> -- Generated by Oracle SQL Developer Data Modeler 4.1.3.901
SQL> --   at:       2016-11-06 11:00:30 EST
SQL> --   site:     Oracle Database 11g
SQL> --   type:     Oracle Database 11g
SQL> CREATE TABLE DriveTrain
 (
   DrivetrainID NUMBER NOT NULL ,
   Drivetrain   CHAR (256)
 ) ;

Table DRIVETRAIN created.

SQL> ALTER TABLE DriveTrain ADD CONSTRAINT DriveTrain_PK PRIMARY KEY ( DrivetrainID ) ;

Table DRIVETRAIN altered.

SQL> CREATE TABLE License_Tax_Insur
```

```
 (
   StateTax       NUMBER ,
   LicenseFee     NUMBER ,
   ProofInsurance CHAR (1) ,
   AddiFeeID      NUMBER NOT NULL
 ) ;

Table LICENSE_TAX_INSUR created.

SQL> ALTER TABLE License_Tax_Insur ADD CHECK ( ProofInsurance IN ('N', 'Y', 'n', 'y')) ;

Table LICENSE_TAX_INSUR altered.

SQL> ALTER TABLE License_Tax_Insur ADD CONSTRAINT License_Tax_Insur_PK PRIMARY KEY ( AddiFeeID ) ;

Table LICENSE_TAX_INSUR altered.

SQL> CREATE TABLE Motor
 ( MotorID NUMBER NOT NULL , Motor CHAR (256)
 ) ;

Table MOTOR created.

SQL> ALTER TABLE Motor ADD CONSTRAINT Motor_PK PRIMARY KEY ( MotorID ) ;

Table MOTOR altered.

SQL> CREATE TABLE address
 (
   StreetName   CHAR (256) ,
   StreetNumber NUMBER ,
   City         CHAR (256) ,
   State        CHAR (256) ,
   Country      CHAR (256) ,
   AddressID    NUMBER NOT NULL
 ) ;
```

Table ADDRESS created.

SQL> ALTER TABLE address ADD CONSTRAINT address_PK PRIMARY KEY (AddressID) ;

Table ADDRESS altered.

SQL> CREATE TABLE carBody
(
VehicleBodyID NUMBER NOT NULL ,
VehicleBody CHAR (256)
) ;

Table CARBODY created.

SQL> ALTER TABLE carBody ADD CONSTRAINT carBody_PK PRIMARY KEY (VehicleBodyID) ;

Table CARBODY altered.

SQL> CREATE TABLE carColor
(ColorID NUMBER NOT NULL , Color CHAR (256)
) ;

Table CARCOLOR created.

SQL> ALTER TABLE carColor ADD CONSTRAINT carColor_PK PRIMARY KEY (ColorID) ;

Table CARCOLOR altered.

SQL> CREATE TABLE carFeatures
(FeatureID NUMBER NOT NULL , Feature CHAR (256)
) ;

Table CARFEATURES created.

SQL> ALTER TABLE carFeatures ADD CONSTRAINT carFeatures_PK PRIMARY KEY (FeatureID) ;

```
Table CARFEATURES altered.

SQL> CREATE TABLE carMaker
 ( MakerID NUMBER NOT NULL , Maker CHAR (256)
 ) ;

Table CARMAKER created.

SQL> ALTER TABLE carMaker ADD CONSTRAINT carMaker_PK PRIMARY KEY ( MakerID ) ;

Table CARMAKER altered.

SQL> CREATE TABLE carModel
 (
   ModelID         NUMBER NOT NULL ,
   Model           CHAR (256) ,
   carMaker_MakerID NUMBER NOT NULL
 ) ;

Table CARMODEL created.

SQL> CREATE UNIQUE INDEX carModel__IDX ON carModel
 (
   ModelID ASC
 )
 ;

Unique index CARMODEL__IDX created.

SQL> CREATE INDEX carModel__IDXv1 ON carModel
   ( carMaker_MakerID ASC
   ) ;

Index CARMODEL__IDXV1 created.
```

```
SQL> ALTER TABLE carModel ADD CONSTRAINT carModel_PK PRIMARY KEY ( ModelID, carMaker_MakerID ) ;

Table CARMODEL altered.

SQL> CREATE TABLE carTransmission
 (
   TransmissionID   NUMBER NOT NULL ,
   TransmissionType CHAR (256)
 ) ;

Table CARTRANSMISSION created.

SQL> ALTER TABLE carTransmission ADD CONSTRAINT carTransmission_PK PRIMARY KEY ( TransmissionID ) ;

Table CARTRANSMISSION altered.

SQL> CREATE TABLE customer
 (
   CustomerID             NUMBER NOT NULL ,
   Loan                   NUMBER ,
   FName                  CHAR (256) ,
   LName                  CHAR (256) ,
   SpendLevel             NUMBER ,
   Years                  NUMBER ,
   Zip                    NUMBER ,
   address_AddressID      NUMBER NOT NULL ,
   salesperson_SalesPersonID NUMBER NOT NULL ,
   Phone                  NUMBER ,
   email                  CHAR (256)
 ) ;

Table CUSTOMER created.

SQL> CREATE INDEX customer__IDX ON customer
 ( address_AddressID ASC
 ) ;
```

```
Index CUSTOMER__IDX created.

SQL> CREATE INDEX customer__IDXv1 ON customer
 ( salesperson_SalesPersonID ASC
 ) ;

Index CUSTOMER__IDXV1 created.

SQL> CREATE UNIQUE INDEX customer__IDXv2 ON customer
 (
   CustomerID ASC
 )
 ;

Unique index CUSTOMER__IDXV2 created.

SQL> ALTER TABLE customer ADD CONSTRAINT customer_PK PRIMARY KEY ( CustomerID ) ;

Table CUSTOMER altered.

SQL> CREATE TABLE sale
 (
   CurrentMileage            NUMBER ,
   Customization             NUMBER ,
   Financing                 NUMBER ,
   Warranty                  NUMBER ,
   TaxesFees                 NUMBER ,
   TotalPrice                NUMBER ,
   CostofVehicle             NUMBER ,
   SaleID                    NUMBER NOT NULL ,
   License_Tax_Insur_AddiFeeID NUMBER NOT NULL ,
   vehicle_VehicleID         NUMBER NOT NULL ,
   salesperson_SalesPersonID   NUMBER NOT NULL ,
   customer_CustomerID       NUMBER NOT NULL
 ) ;
```

```
Table SALE created.

SQL> CREATE UNIQUE INDEX sale__IDX ON sale
 (
   License_Tax_Insur_AddiFeeID ASC
 )
 ;

Unique index SALE__IDX created.

SQL> CREATE INDEX sale__IDXv1 ON sale
   ( salesperson_SalesPersonID ASC
   ) ;

Index SALE__IDXV1 created.

SQL> CREATE UNIQUE INDEX sale__IDXv2 ON sale
 (
   SaleID ASC
 )
 ;

Unique index SALE__IDXV2 created.

SQL> CREATE INDEX sale__IDXv3 ON sale
   ( customer_CustomerID ASC
   ) ;

Index SALE__IDXV3 created.

SQL> ALTER TABLE sale ADD CONSTRAINT sale_PK PRIMARY KEY ( SaleID, customer_CustomerID ) ;

Table SALE altered.

SQL> CREATE TABLE salesperson
```

```
 (
  CR              NUMBER ,
  Discount        NUMBER ,
  FName           CHAR (256) ,
  SalesPersonID   NUMBER NOT NULL ,
  LName           CHAR (256) ,
  Manager         NUMBER ,
  Pay             NUMBER ,
  Perform         NUMBER ,
  Sales           NUMBER ,
  SickDays        NUMBER ,
  Status          CHAR (256) ,
  Title           CHAR (256) ,
  VacDays         NUMBER ,
  Years           NUMBER ,
  Zip             NUMBER ,
  address_AddressID NUMBER NOT NULL ,
  Phone           NUMBER ,
  email           CHAR (256)
 ) ;

Table SALESPERSON created.

SQL> ALTER TABLE salesperson ADD CHECK ( CR BETWEEN 0.00 AND 100.00) ;

Table SALESPERSON altered.

SQL> ALTER TABLE salesperson ADD CHECK ( Discount BETWEEN 0.00 AND 100.00) ;

Table SALESPERSON altered.

SQL> CREATE INDEX salesperson__IDX ON salesperson
 ( address_AddressID ASC
 ) ;

Index SALESPERSON__IDX created.
```

```
SQL> CREATE UNIQUE INDEX salesperson__IDXv1 ON salesperson
 (
   SalesPersonID ASC
 )
 ;

Unique index SALESPERSON__IDXV1 created.

SQL> ALTER TABLE salesperson ADD CONSTRAINT salesperson_PK PRIMARY KEY ( SalesPersonID ) ;

Table SALESPERSON altered.

SQL> CREATE TABLE satisfaction
 (
   Car               NUMBER ,
   Dealership        NUMBER ,
   Salesperson       NUMBER ,
   SurveyID          NUMBER NOT NULL ,
   customer_CustomerID NUMBER NOT NULL
 ) ;

Table SATISFACTION created.

SQL> CREATE UNIQUE INDEX satisfaction__IDX ON satisfaction
 (
   SurveyID ASC
 )
 ;

Unique index SATISFACTION__IDX created.

SQL> CREATE INDEX satisfaction__IDXv1 ON satisfaction
   ( customer_CustomerID ASC
   ) ;
```

Index SATISFACTION__IDXV1 created.

```
SQL> ALTER TABLE satisfaction ADD CONSTRAINT satisfaction_PK PRIMARY KEY ( SurveyID, customer_CustomerID ) ;
```

Table SATISFACTION altered.

```
SQL> CREATE TABLE vehicle
 (
   Delivered                 DATE ,
   Doors                     NUMBER ,
   VehicleID                 NUMBER NOT NULL ,
   MileageCurrent            NUMBER ,
   MileageOrig               NUMBER ,
   NEW                       CHAR (1) ,
   Price                     NUMBER ,
   ListPrice                 NUMBER ,
   Status                    NUMBER ,
   Weight                    INTEGER ,
   YEAR                      INTEGER ,
   carColor_ColorID          NUMBER NOT NULL ,
   carFeatures_FeatureID     NUMBER NOT NULL ,
   carModel_ModelID          NUMBER NOT NULL ,
   salesperson_SalesPersonID NUMBER NOT NULL ,
   carTransmission_TransmissionID NUMBER NOT NULL ,
   carBody_VehicleBodyID     NUMBER NOT NULL ,
   DriveTrain_DrivetrainID   NUMBER NOT NULL ,
   Motor_MotorID             NUMBER NOT NULL ,
   carModel_carMaker_MakerID NUMBER NOT NULL
 ) ;
```

Table VEHICLE created.

```
SQL> ALTER TABLE vehicle ADD CHECK ( NEW IN ('N', 'Y', 'n', 'y')) ;
```

Table VEHICLE altered.

```
SQL> CREATE INDEX vehicle__IDX ON vehicle
 ( carColor_ColorID ASC
 ) ;

Index VEHICLE__IDX created.

SQL> CREATE INDEX vehicle__IDXv1 ON vehicle
 (
   carTransmission_TransmissionID ASC
 ) ;

Index VEHICLE__IDXV1 created.

SQL> CREATE INDEX vehicle__IDXv2 ON vehicle
 ( carBody_VehicleBodyID ASC
 ) ;

Index VEHICLE__IDXV2 created.

SQL> CREATE INDEX vehicle__IDXv3 ON vehicle
 ( DriveTrain_DrivetrainID ASC
 ) ;

Index VEHICLE__IDXV3 created.

SQL> CREATE INDEX vehicle__IDXv4 ON vehicle
 ( Motor_MotorID ASC
 ) ;

Index VEHICLE__IDXV4 created.

SQL> CREATE INDEX vehicle__IDXv5 ON vehicle
 ( carFeatures_FeatureID ASC
 ) ;

Index VEHICLE__IDXV5 created.
```

```
SQL> CREATE INDEX vehicle__IDXv6 ON vehicle
 ( carModel_ModelID ASC
 ) ;

Index VEHICLE__IDXV6 created.

SQL> CREATE UNIQUE INDEX vehicle__IDXv7 ON vehicle
 (
   VehicleID ASC
 )
 ;

Unique index VEHICLE__IDXV7 created.

SQL> CREATE INDEX vehicle__IDXv8 ON vehicle
   (
     carModel_ModelID ASC ,
     carModel_carMaker_MakerID ASC
   ) ;

Index VEHICLE__IDXV8 created.

SQL> ALTER TABLE vehicle ADD CONSTRAINT vehicle_PK PRIMARY KEY ( VehicleID ) ;

Table VEHICLE altered.

SQL> ALTER TABLE carModel ADD CONSTRAINT carModel_carMaker_FK FOREIGN KEY ( carMaker_MakerID ) REFERENCES carMaker ( MakerID )
;

Table CARMODEL altered.

SQL> ALTER TABLE customer ADD CONSTRAINT customer_address_FK FOREIGN KEY ( address_AddressID ) REFERENCES address ( AddressID ) ;

Table CUSTOMER altered.
```

```
SQL> ALTER TABLE customer ADD CONSTRAINT customer_salesperson_FK FOREIGN KEY ( salesperson_SalesPersonID ) REFERENCES salesperson
( SalesPersonID ) ;

Table CUSTOMER altered.

SQL> ALTER TABLE sale ADD CONSTRAINT sale_License_Tax_Insur_FK FOREIGN KEY ( License_Tax_Insur_AddiFeeID ) REFERENCES
License_Tax_Insur ( AddiFeeID ) ;

Table SALE altered.

SQL> ALTER TABLE sale ADD CONSTRAINT sale_customer_FK FOREIGN KEY ( customer_CustomerID ) REFERENCES customer ( CustomerID ) ;

Table SALE altered.

SQL> ALTER TABLE sale ADD CONSTRAINT sale_salesperson_FK FOREIGN KEY ( salesperson_SalesPersonID ) REFERENCES salesperson (
SalesPersonID ) ;

Table SALE altered.

SQL> ALTER TABLE sale ADD CONSTRAINT sale_vehicle_FK FOREIGN KEY ( vehicle_VehicleID ) REFERENCES vehicle ( VehicleID ) ;

Table SALE altered.

SQL> ALTER TABLE salesperson ADD CONSTRAINT salesperson_address_FK FOREIGN KEY ( address_AddressID ) REFERENCES address (
AddressID ) ;

Table SALESPERSON altered.

SQL> ALTER TABLE satisfaction ADD CONSTRAINT satisfaction_customer_FK FOREIGN KEY ( customer_CustomerID ) REFERENCES customer (
CustomerID ) ;

Table SATISFACTION altered.

SQL> ALTER TABLE vehicle ADD CONSTRAINT vehicle_DriveTrain_FK FOREIGN KEY ( DriveTrain_DrivetrainID ) REFERENCES DriveTrain (
DrivetrainID ) ;

Table VEHICLE altered.

SQL> ALTER TABLE vehicle ADD CONSTRAINT vehicle_Motor_FK FOREIGN KEY ( Motor_MotorID ) REFERENCES Motor ( MotorID ) ;
```

Table VEHICLE altered.

SQL> ALTER TABLE vehicle ADD CONSTRAINT vehicle_carBody_FK FOREIGN KEY (carBody_VehicleBodyID) REFERENCES carBody (VehicleBodyID) ;

Table VEHICLE altered.

SQL> ALTER TABLE vehicle ADD CONSTRAINT vehicle_carColor_FK FOREIGN KEY (carColor_ColorID) REFERENCES carColor (ColorID) ;

Table VEHICLE altered.

SQL> ALTER TABLE vehicle ADD CONSTRAINT vehicle_carFeatures_FK FOREIGN KEY (carFeatures_FeatureID) REFERENCES carFeatures (FeatureID) ;

Table VEHICLE altered.

SQL> ALTER TABLE vehicle ADD CONSTRAINT vehicle_carModel_FK FOREIGN KEY (carModel_ModelID, carModel_carMaker_MakerID) REFERENCES carModel (ModelID, carMaker_MakerID) ;

Table VEHICLE altered.

SQL> ALTER TABLE vehicle ADD CONSTRAINT vehicle_carTransmission_FK FOREIGN KEY (carTransmission_TransmissionID) REFERENCES carTransmission (TransmissionID) ;

Table VEHICLE altered.

SQL> ALTER TABLE vehicle ADD CONSTRAINT vehicle_salesperson_FK FOREIGN KEY (salesperson_SalesPersonID) REFERENCES salesperson (SalesPersonID) ;

Table VEHICLE altered.

SQL> -- Oracle SQL Developer Data Modeler Summary Report:

SQL> --

SQL> -- CREATE TABLE 15

SQL> -- CREATE INDEX 22

SQL> -- ALTER TABLE 36

SQL> -- CREATE VIEW 0

SQL> -- ALTER VIEW 0

```
SQL> -- CREATE PACKAGE                      0
SQL> -- CREATE PACKAGE BODY                 0
SQL> -- CREATE PROCEDURE                    0
SQL> -- CREATE FUNCTION                     0
SQL> -- CREATE TRIGGER                      0
SQL> -- ALTER TRIGGER                       0
SQL> -- CREATE COLLECTION TYPE              0
SQL> -- CREATE STRUCTURED TYPE              0
SQL> -- CREATE STRUCTURED TYPE BODY         0
SQL> -- CREATE CLUSTER                      0
SQL> -- CREATE CONTEXT                      0
SQL> -- CREATE DATABASE                     0
SQL> -- CREATE DIMENSION                    0
SQL> -- CREATE DIRECTORY                    0
SQL> -- CREATE DISK GROUP                   0
SQL> -- CREATE ROLE                         0
SQL> -- CREATE ROLLBACK SEGMENT             0
SQL> -- CREATE SEQUENCE                     0
SQL> -- CREATE MATERIALIZED VIEW            0
SQL> -- CREATE SYNONYM                      0
SQL> -- CREATE TABLESPACE                   0
SQL> -- CREATE USER                         0
SQL> --
SQL> -- DROP TABLESPACE                     0
SQL> -- DROP DATABASE                       0
SQL> --
SQL> -- REDACTION POLICY                    0
SQL> --
SQL> -- ORDS DROP SCHEMA                    0
SQL> -- ORDS ENABLE SCHEMA                  0
SQL> -- ORDS ENABLE OBJECT                  0
SQL> --
SQL> -- ERRORS                             0
SQL> -- WARNINGS                           0
```