

**ATILIM UNIVERSITY**

**FACULTY OF ENGINEERING**

**COMPE 341 PUBLIC TRANSPORTATION SYSTEM’S DATABASE REPORT**

### Prepared By

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TABLE 1

1. ***INTRODUCTION***

Public transportation system database is created for control . We intend to create this for relevant institution to control the elements of the public transportation . Every information can be accessed with the database . We wanted to resolve a important problem . Public trasportation is a very important thing for today’s world and it should be controlled by government because of that we decided to create this Project. For creating this we had a lots of resarch with the topic , we searched it on the internet , we study relavant journal etc.It was a very good experience for us , we learned lots of information while doing the Project . As a result , we create a usefull database system for checking the elements of the public transportation .

***2. REQUIREMENT ANALYSIS***

First we create this , we need to determine the requirements of the Project . We follow these keywords to detect requirement analysis . needed things , information finding , ease of use , content .We started our research in public transformation’s formal website. Later, we research the key factors of the public transportation.After that we thought about the necessary factors in the Project.We thought and create the necessary entities ; employee should have a table in the table name of this entity as EMPLOYEE. It has salary , account no , SSN, name , age , surname , sex . For counting the dependents , DEPENDENT entity has sex,dep\_name , dep\_surname , relationship . For represent the route ROUTE entity has route\_price , route\_id , route\_name . PASSANGER entity is show the passangers informations and the fee and it has fee , passanger\_id . In PASSANGER\_TYPE we have typename and type\_id . MEMBERCARD has card\_id to show people’s card id numbers . SELLING\_POINT entity has sellpoint\_id , sellpoinlocation.Another one is GARAGE , it has garage’s elements like garage\_id , garage\_name , garage\_location , mec\_id . DRIVER entity has driver\_id . VEHICLE entity has vehicle\_id and model for represent the vehicle informations .STATION entity has station\_location , st\_name , st\_id .MOVING TIME has move\_id , dep\_time , ar\_time . In PLATE table we have plate\_id for showing vehicle’s plate numbers .We need DEPARTMENT entity to show departments and it has dep\_name and dep\_id .FOOD table has cooker\_id . MENU entity has many attributes to show the menu completely and they are main\_food , hepler\_food , ddate , menu\_id , soap , salat/desert . ACCOUNTING table has accountant\_id . We have a weak entity which name is OUTGOING and it has salary , maintenance\_expense , fuel , tax . Other weak entity is REVENUE which has voyage\_income , bid\_income , payment to show where the money is come from . These are key factors for our project .

***3. CONCEPTUAL DESIGN***

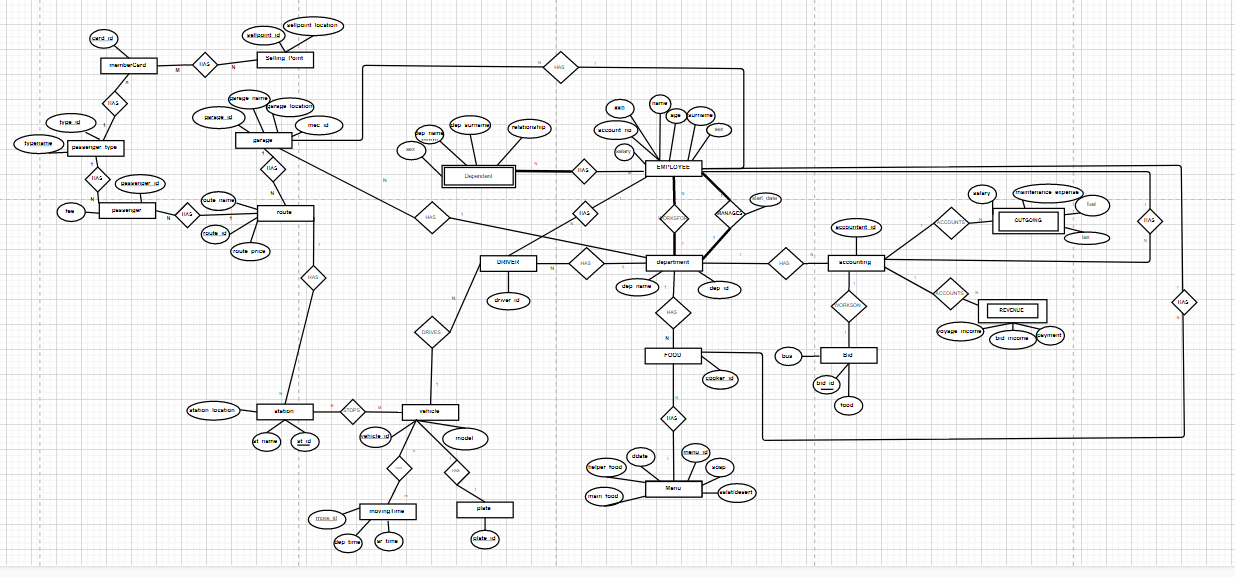
In our system, users enter the system with anemail and password . The authorized person can enter the system and check the database . Database store and show the public transportation system’s informations .

Table 1 – Entity relationship diagram

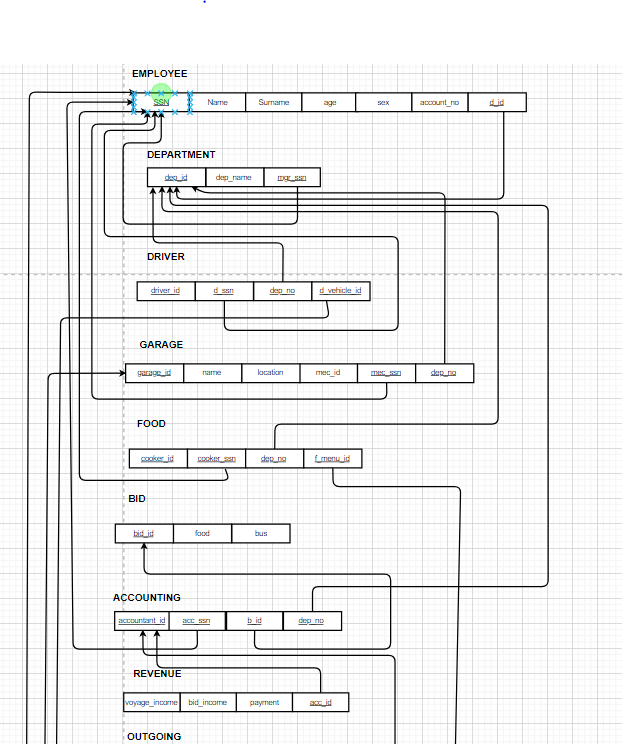
In employee entity ssn is the primary key , it has many to many relation with dependent entity and relation name is “has” . The relation is many to many because one employee can be relavent with many dependent person . It has one to many relationship ( has ) with food entity and garage entity . Another relationship is also one to many with department entity which name is worksfor . One department can have lots of employee .Last relationship is necessary for both entity . It is one to one relationship with department again , the relationship’ name is manages . Every department should manage employee .Dependent entity has one relation that we mention about employee entity part , it has many to many relation with employee , relationship name is “has” dependent person can be relavent with many employee . Dependent entity also has a weak attribute which name is dep\_name.In route entity we have route\_id as a primary key . It has three relationship . First one is one to many with station and relationship name is “has” . One route can has lots of station . Route’s other relationships are one to many relationship with passanger entity and garage entity and relationship named as “has” also . One route can has many passanger and garage.Passanger entity has two relationship , first one is many to many and the other one is one to many .

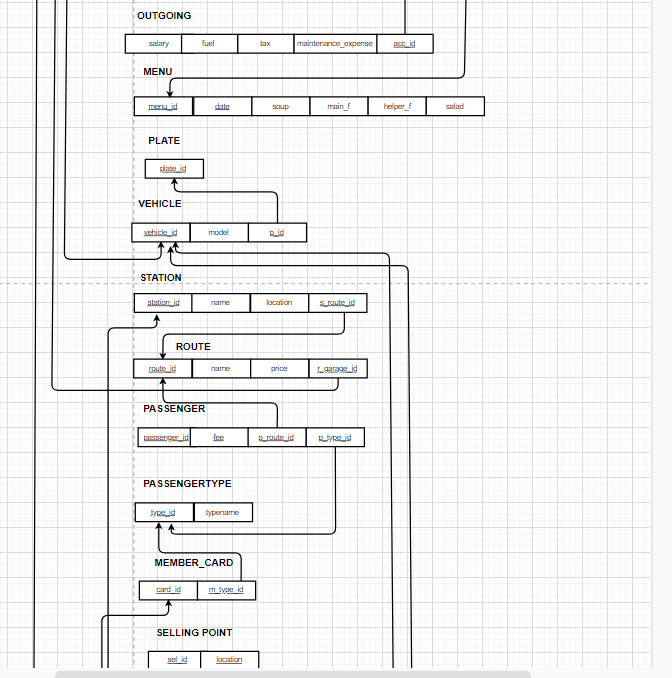
Both relation is named as has . The first relationship is between passanger and route entities . Many passanger can use one route . In other relationship we have one to many relationship and it is between passanger and passanger\_type entities . One passanger can have one passanger\_type . In Passanger\_type entity primary key is typename . It has one to many relationship with passanger like we mention in passanger entity part . It has another one to many relationship with memberCard .MemberCard entity has a primary key that name is card\_id.It’ first relationship is with passanger\_Type entity and the other is with SellingPoint entitiy . The relation with SellingPoint entity is many to many .Many SellingPoints can sell many membercards . SellingPoint entity’s primary key is sellpoint\_id attribute . It has only one relationship and it is with memberCard . In garage entity we have garage\_id attribute as a primary key . Garage entity has three relationship . All of them are one to many and the relationships name is “has” . First one is with route entity , other one is between garage and department entities and the last one is with employee entity .

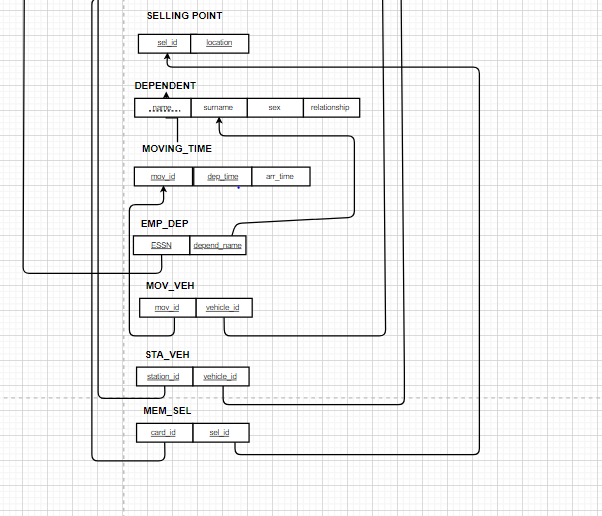
In station entity , we have a primary key which name is st\_id attribute . We have two type of relationship and they are one to many and many to many relationships . One to many relationship is with route entity , a route can has many sitations as we mentioned before . Many to many relation is with vehicle entity and the relationship name is stops . Many vehicles can stops in many stations.Vehicle entity vehicle\_id attribute as a primary key . This entity has four relationship . Two of them many to many and one to one relationship and one to many relationship. First many to many relationship is with station entity and the relationship name is stops . Many vehicles can stop in many station so it is suitable . Other many to many relationship is with movingTime entity . More than one vehicle can have more than one moving time . Vehicle entity has one to one relationship with plate entity . Each vehicle can has one plate . And the last relationship is with driver entity and it is one to many relation . The relation name is drives .One vehicle can be used by many drivers .In movingTime entity move\_id attribute is our primary key . It has only one relationship with vehicle and the type is many to many .Many vehicle can have many movingTime so it is proper.When we came the Plate entity we see that plate\_id attribute is the primary key .

It has one to one relationship with vehicle. Each plate can be owned by one vehicle .Driver entity has three one to many relationship between vehicle , department and employee entitites .Department can have lots of driver also the employee part.Department entity has three one to many relationship too . The relationships are between driver , accounting , employee entites. The relationship between employee is necessary . In food entity cooker\_id attribute is the primary key . Food entity has three one to many relationship between menu , department and employee entites . One Menu , department and employee can have many food .Menu entity has menu\_id attribute as a primary key . It also has one to many relationship with food entity . In Bid entity bid\_id is a primary key and it has a one to one relationship with accounting and the relationship’s name is works on . In one bid there is only one accounting . Accounting entity has primary key as named as accountant\_id ,and it has four relation ship . First one is one to many relationship with department entity .Another is one to one relationship between bid as we mentioned before . The third relationship is one to many relationship with outgoing . The last one is one to many with revenue entity . Outgoing and revenue are weak entities of the diagram .

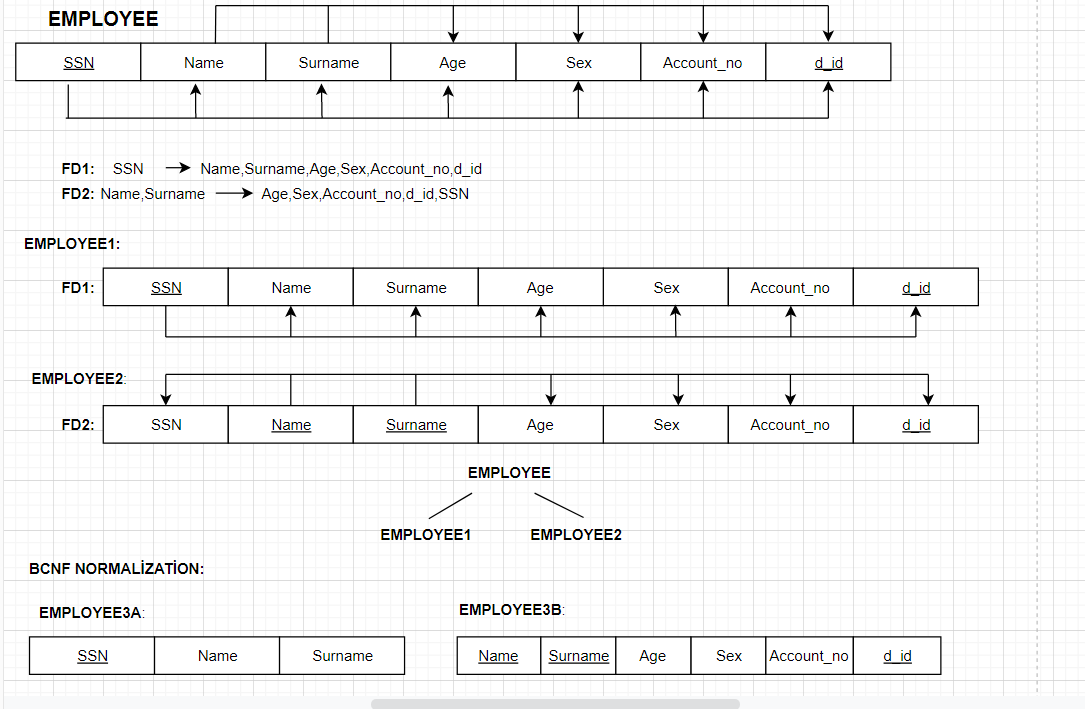
4. LOGICAL DATA MODEL

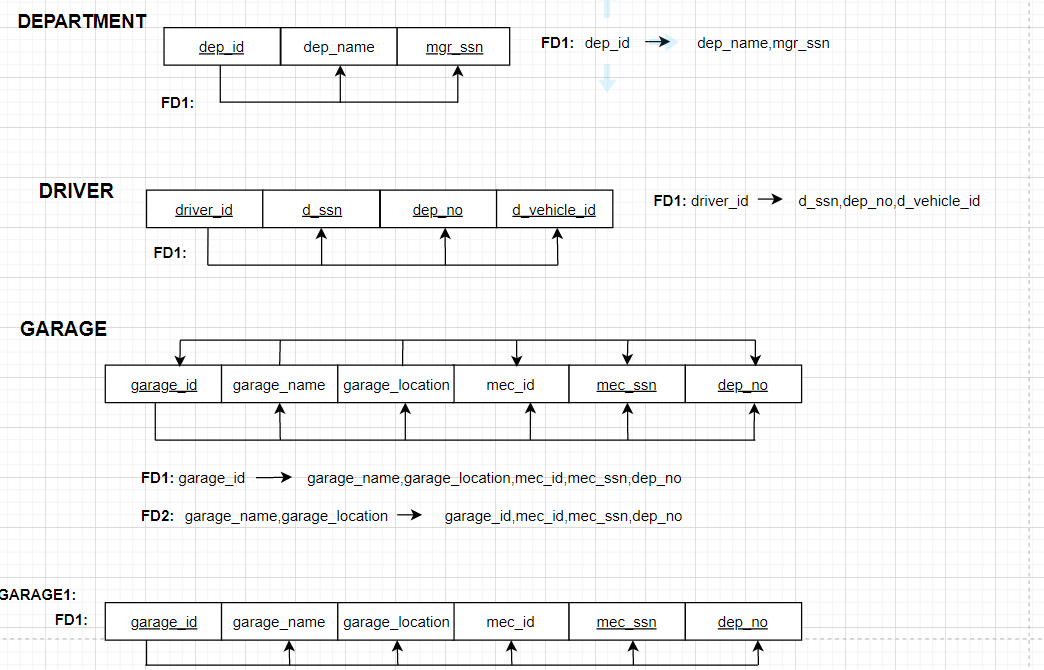
**4.1. Mapping**

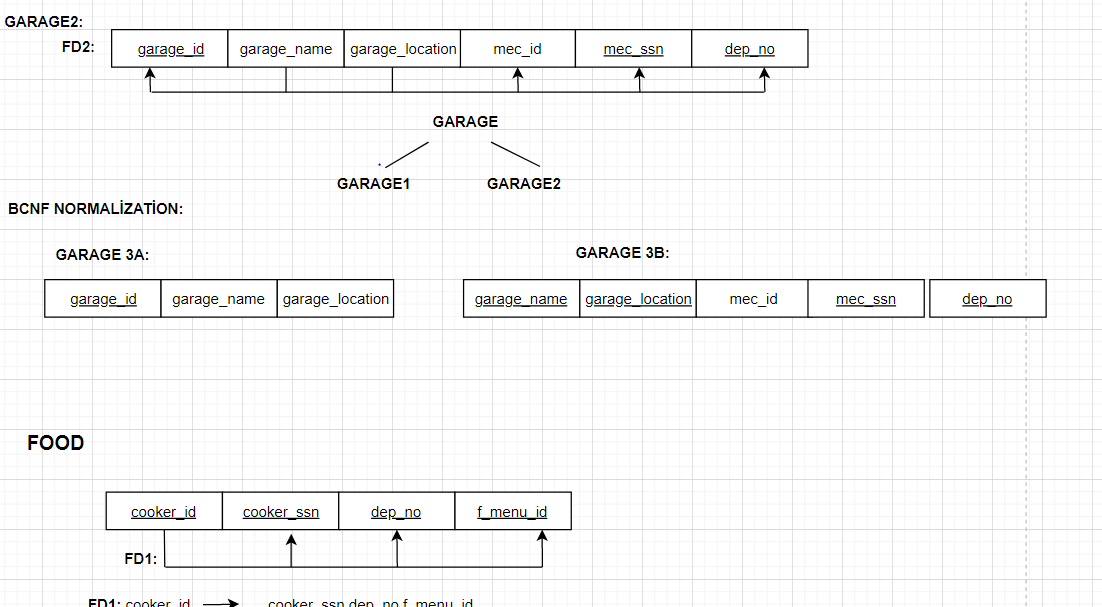


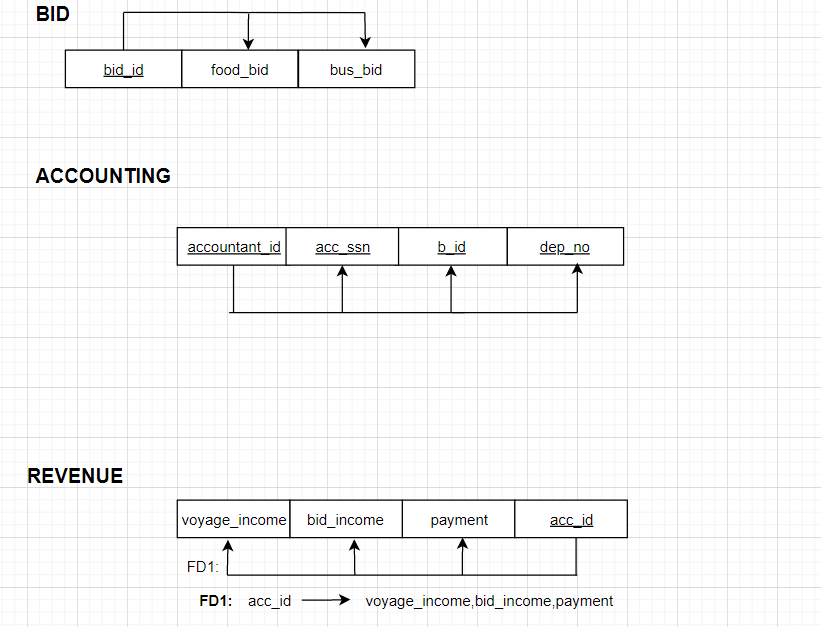


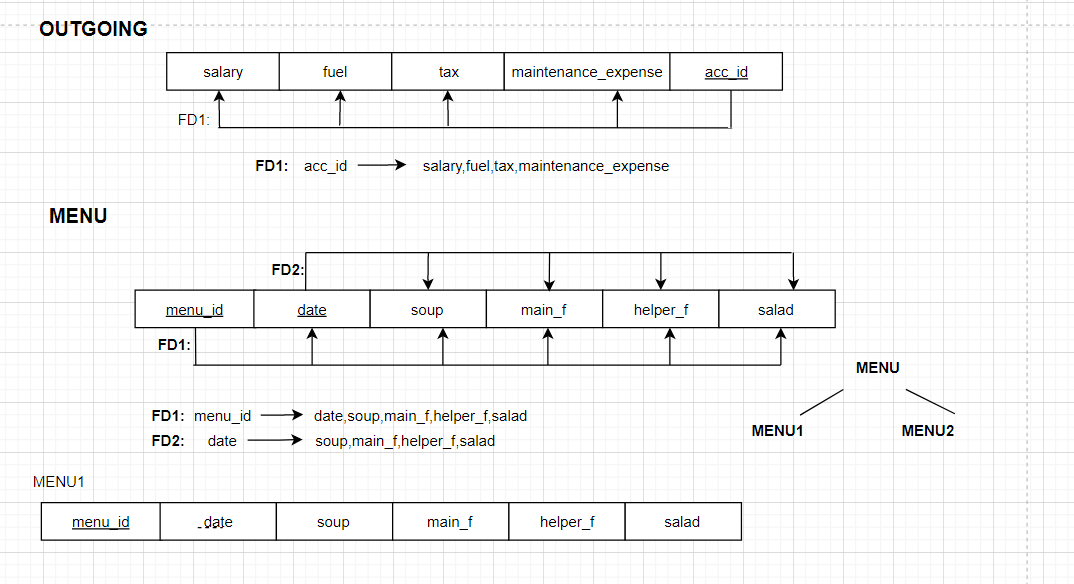
**4.2. Normalization**

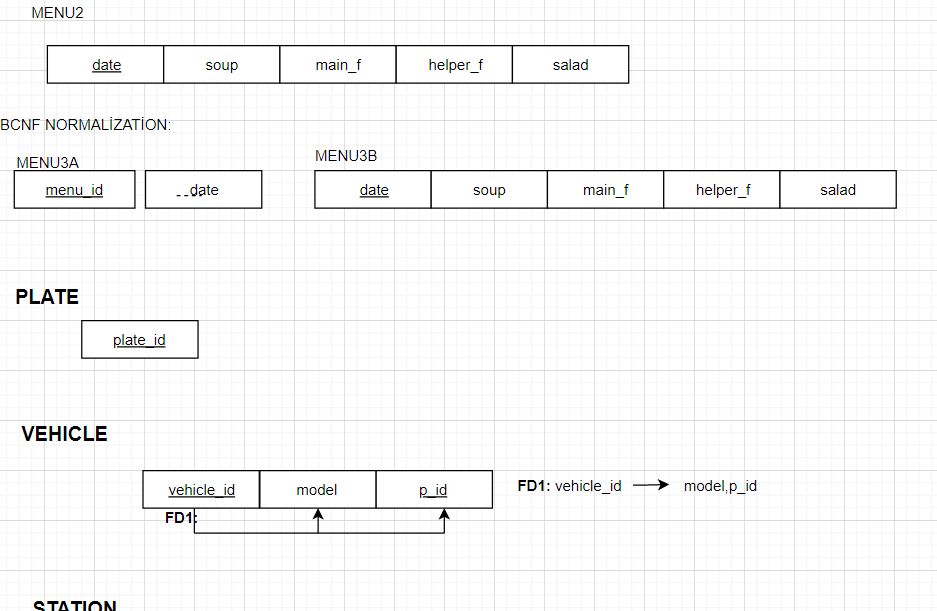


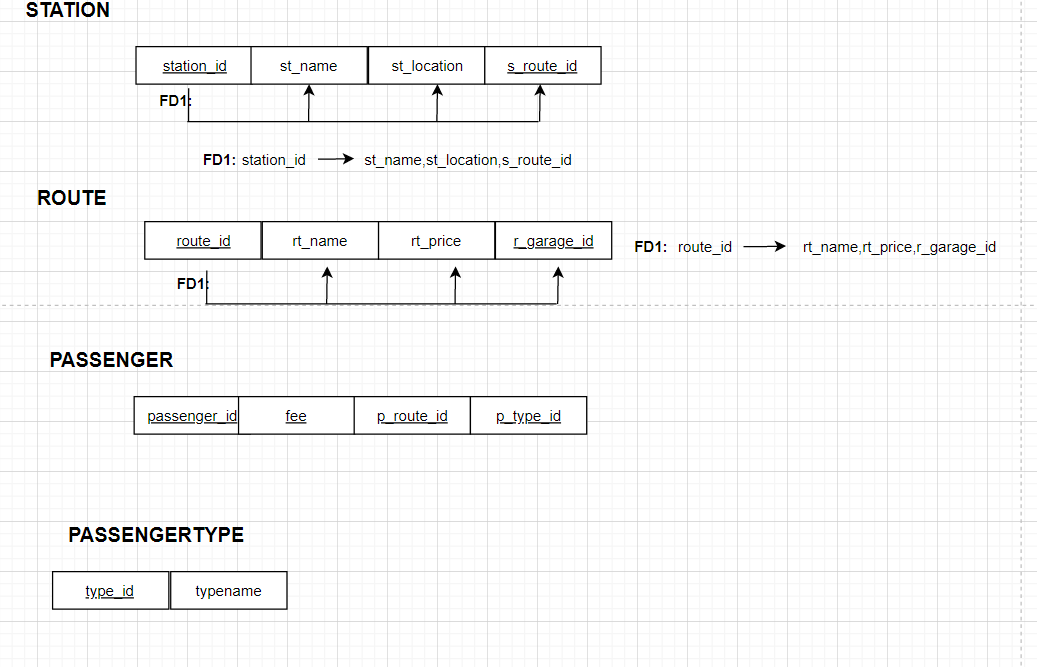


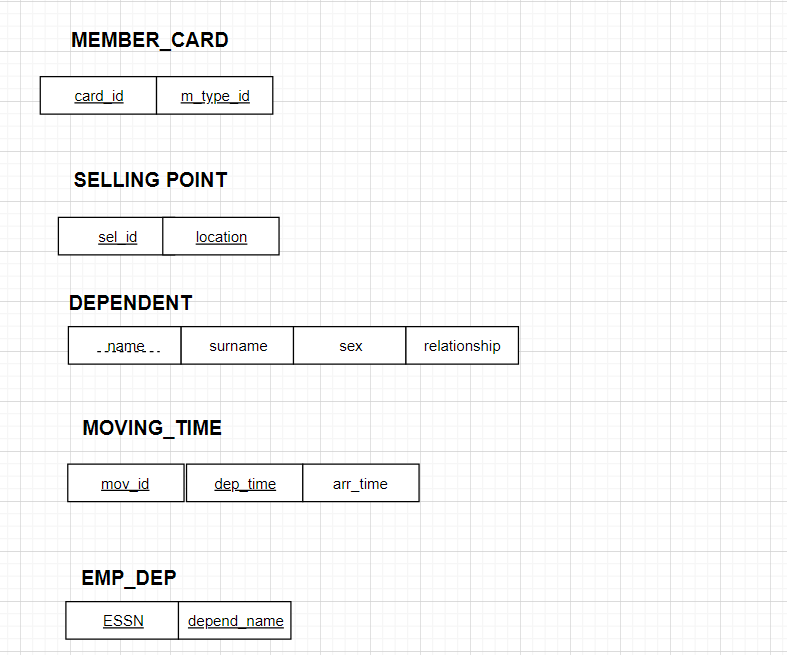


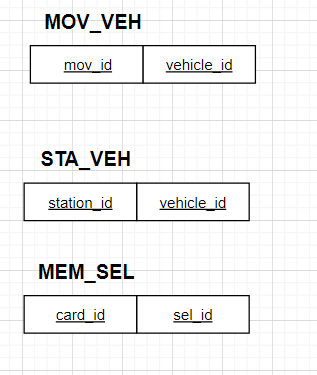












5. DATABASE CHOICE and IMPLEMENTATION

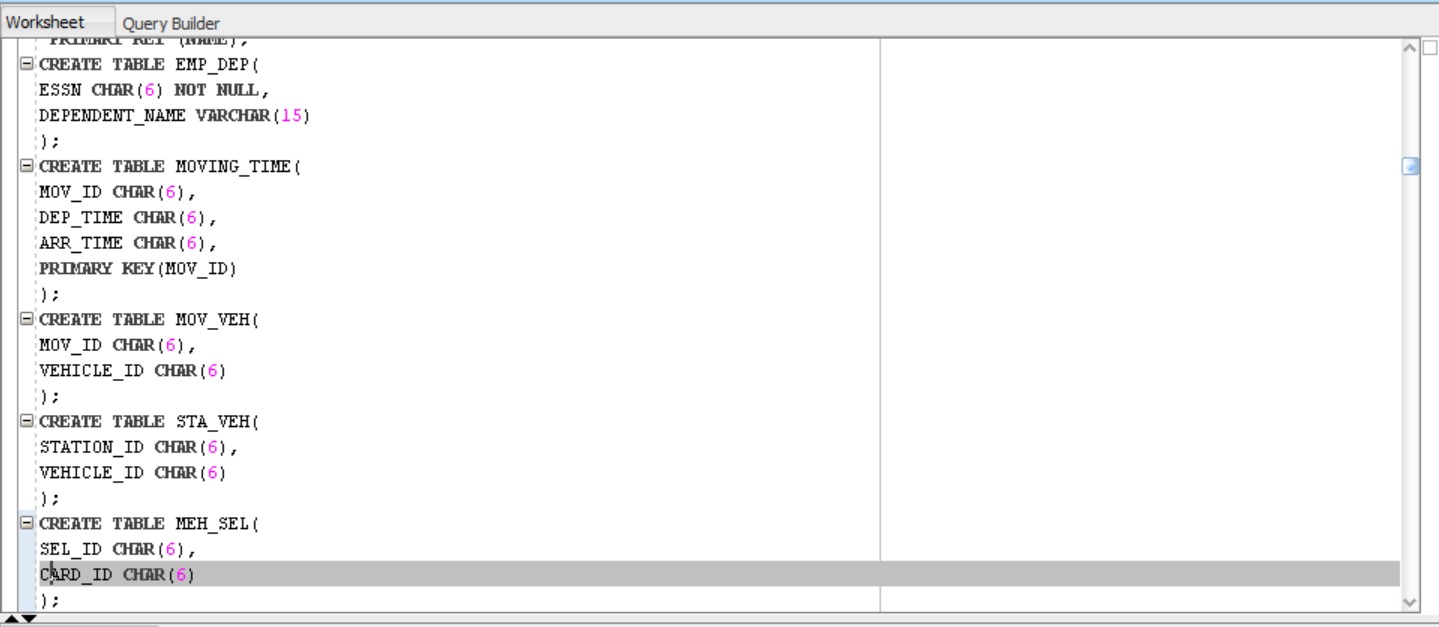
**5.1. Data Inserting**

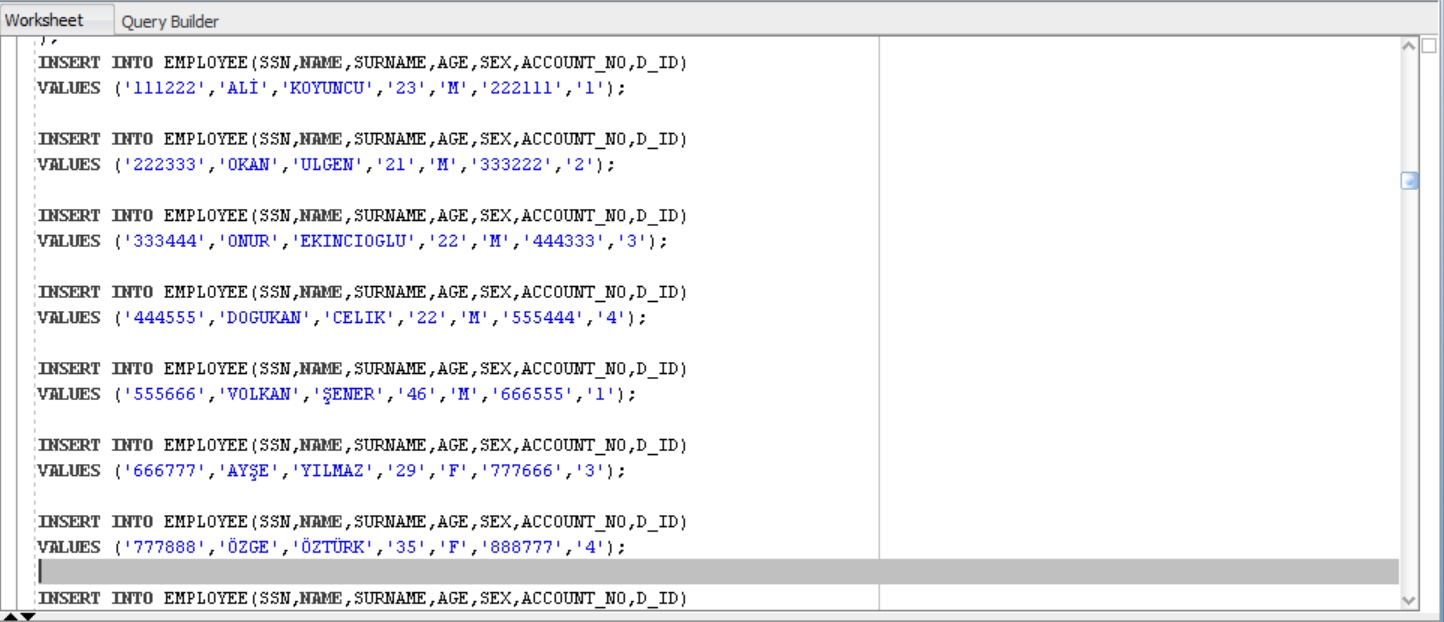
**5.2. Created Tables**

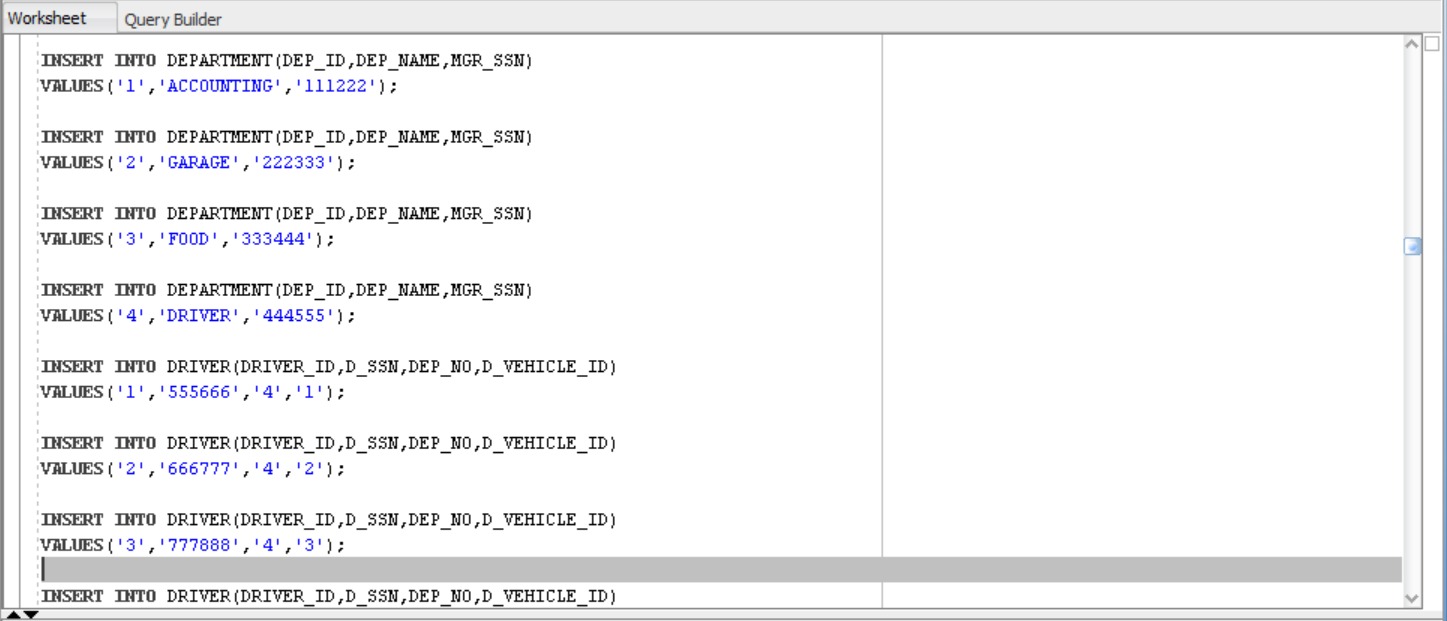


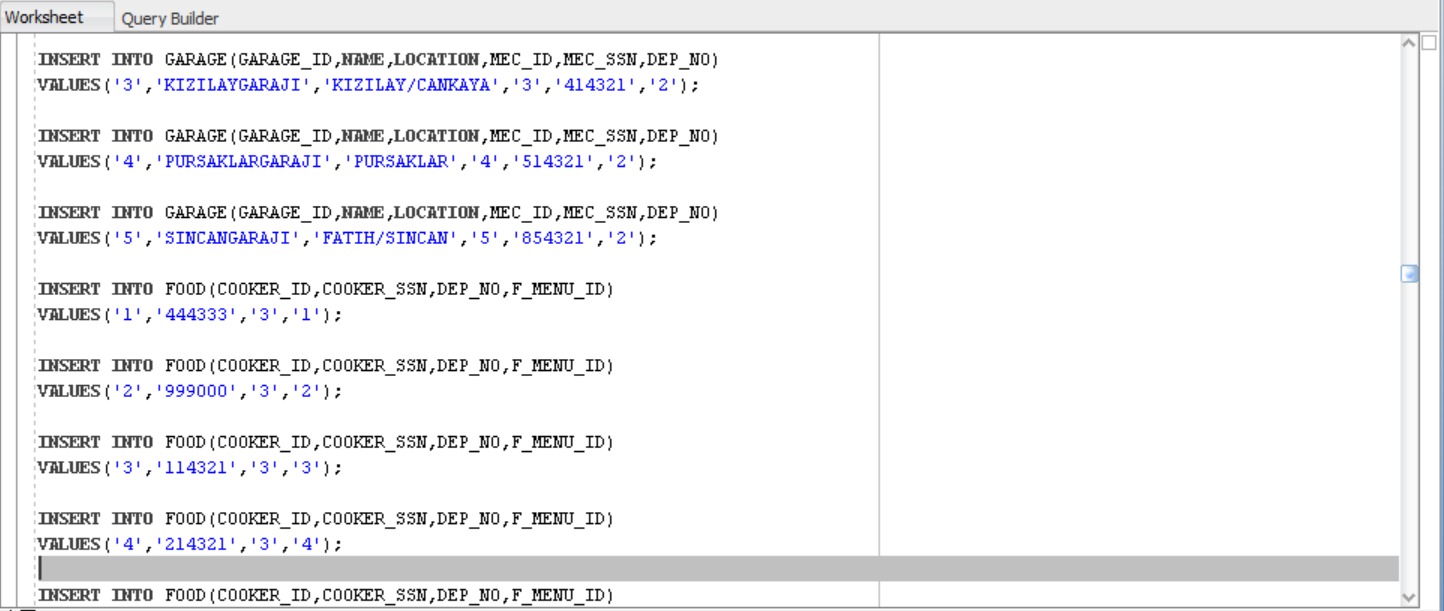


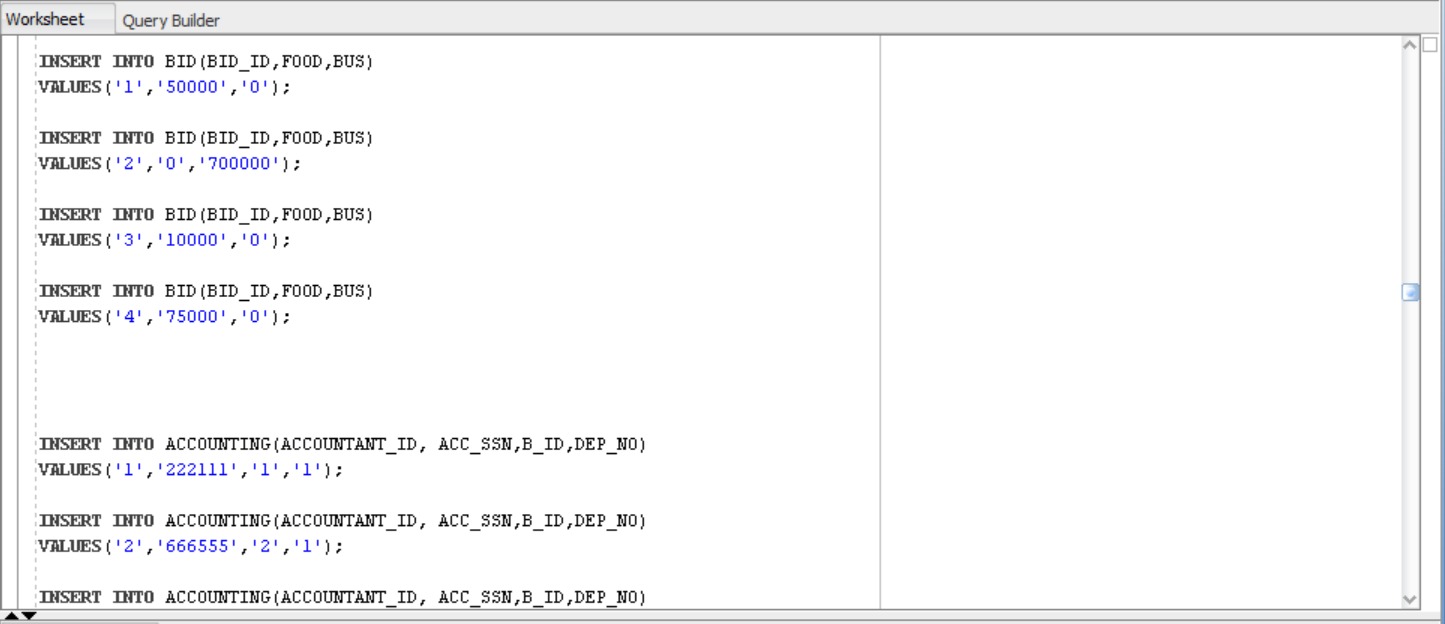


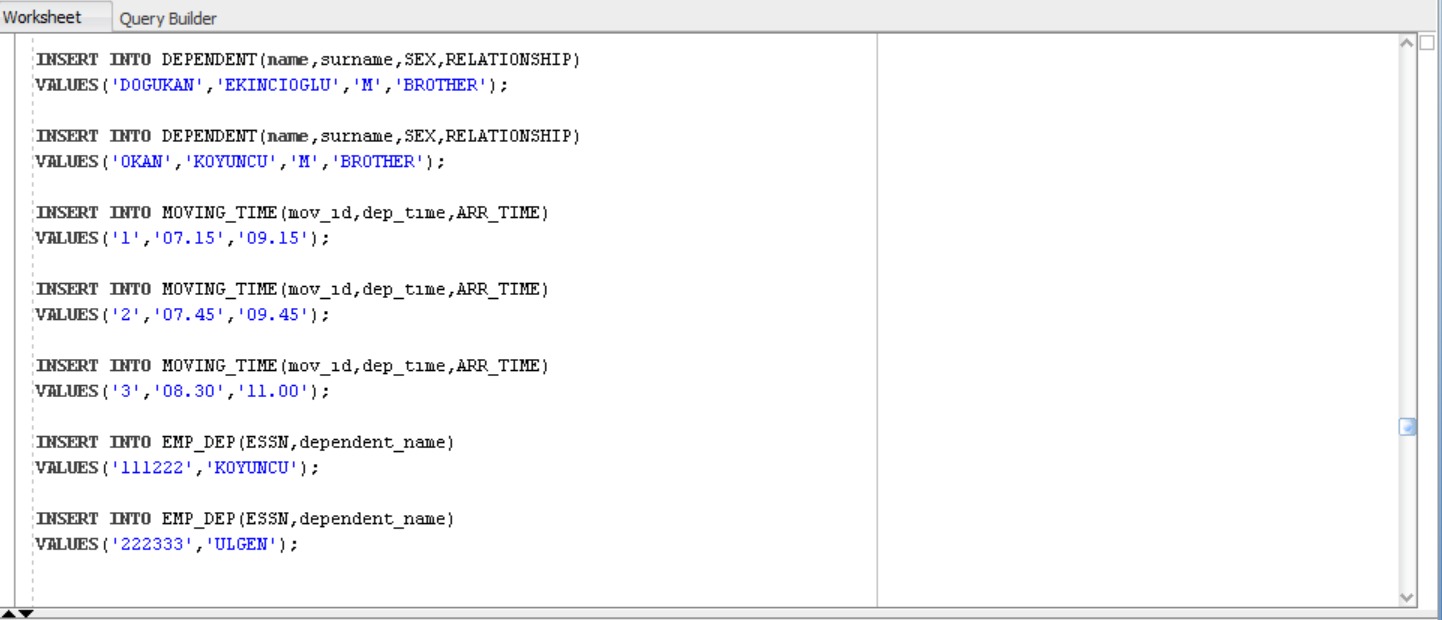


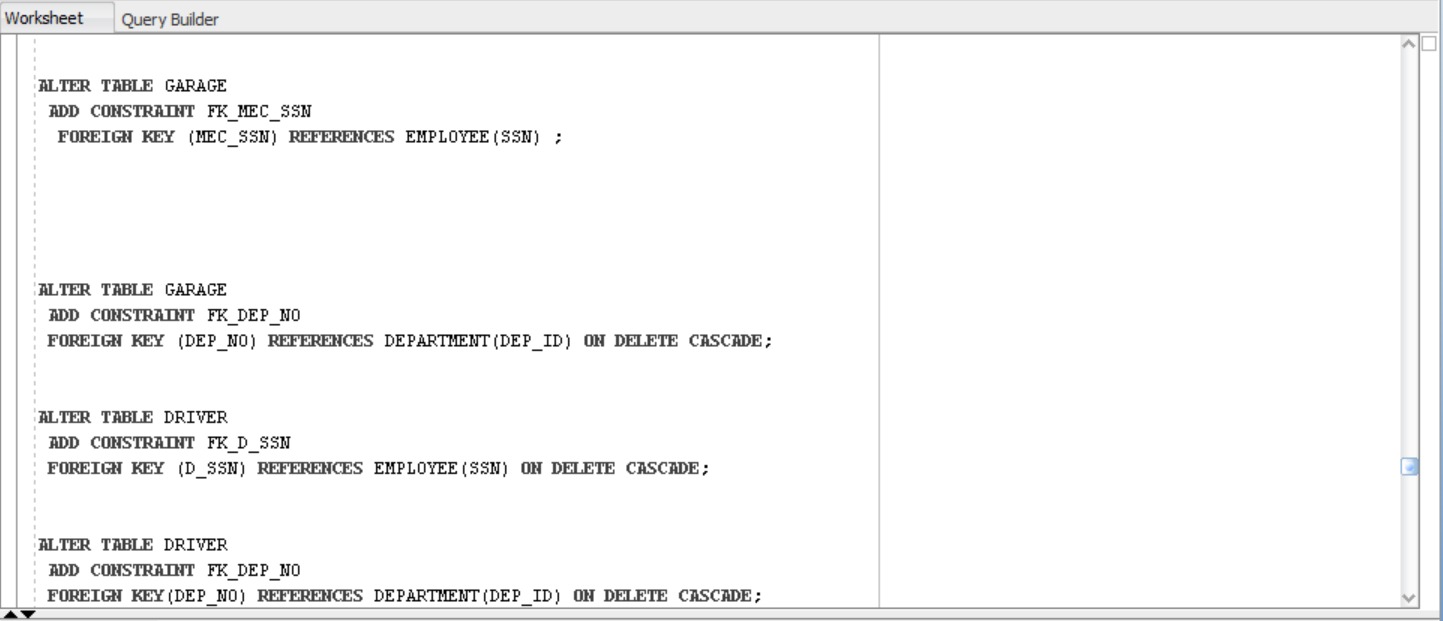


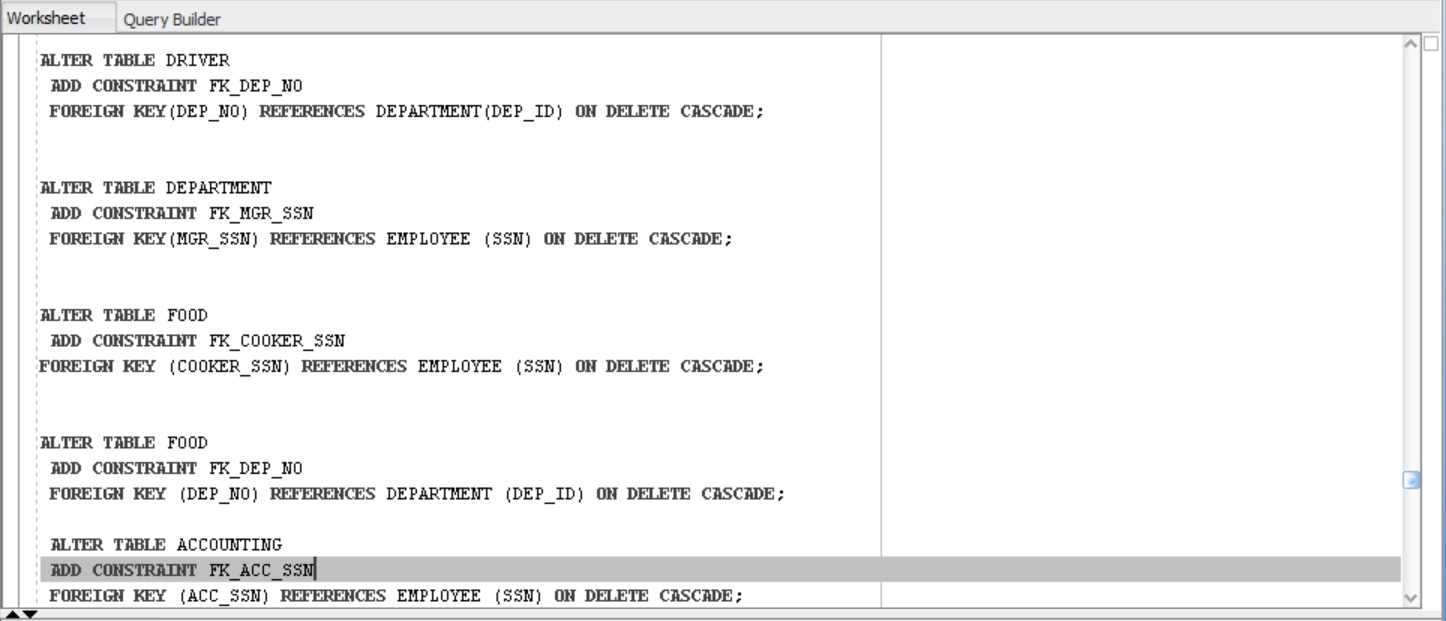


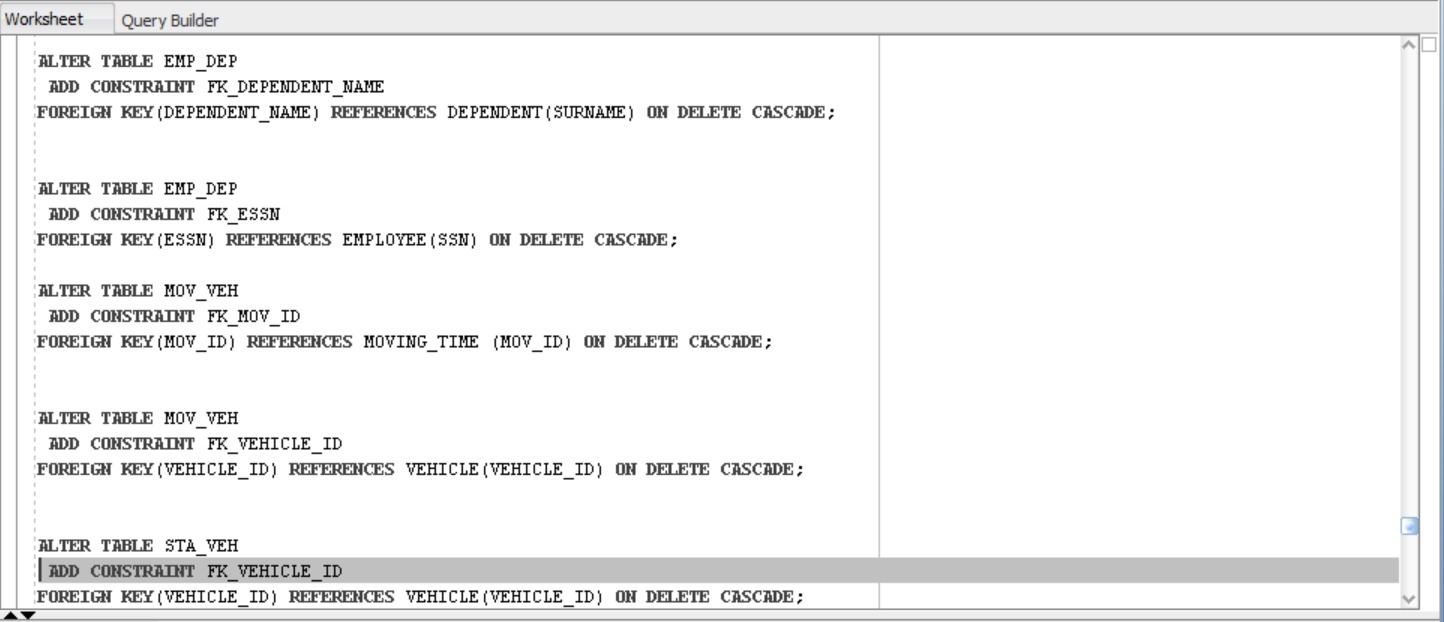


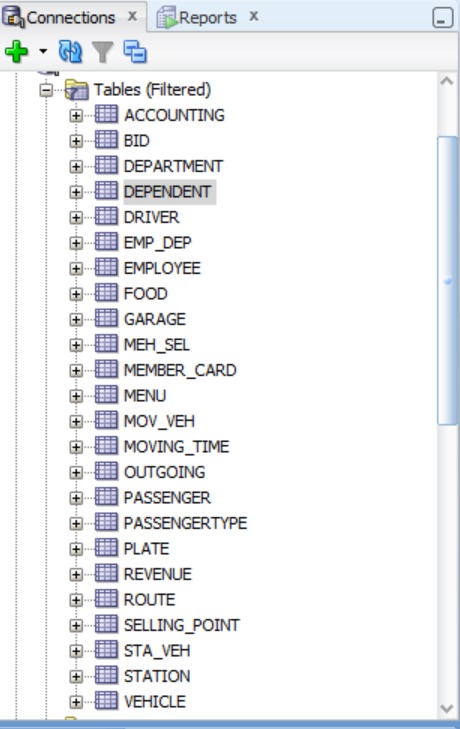


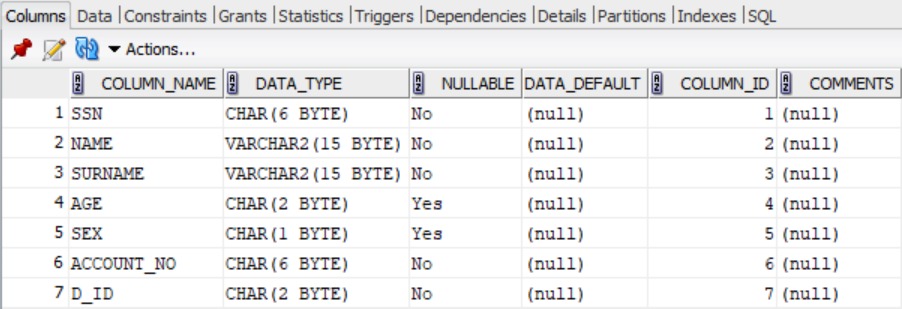


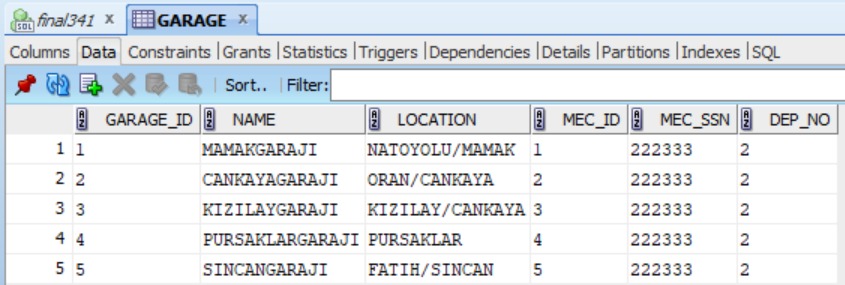


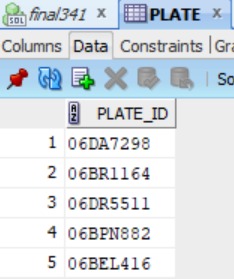


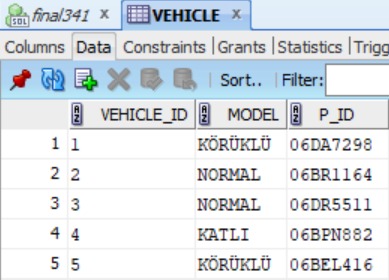


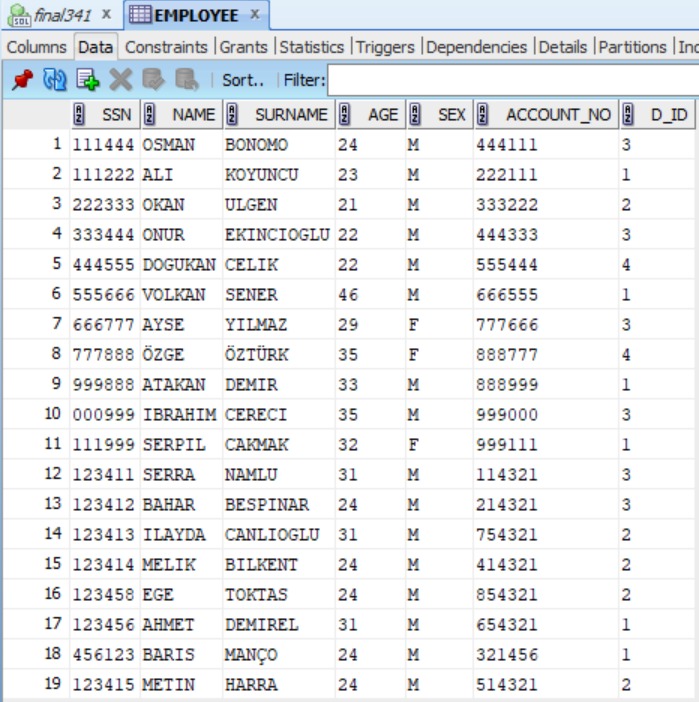




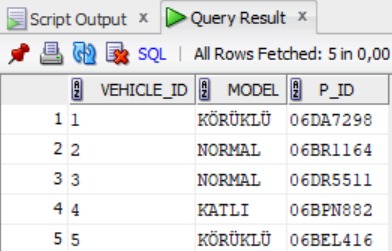




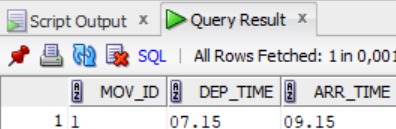


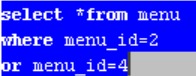


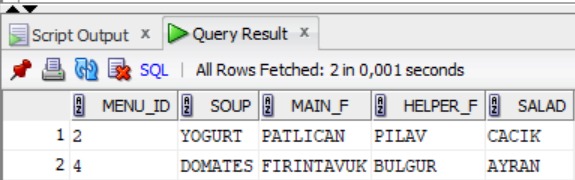
**5.3. Query Design**

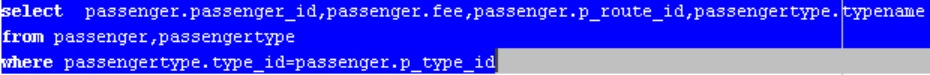


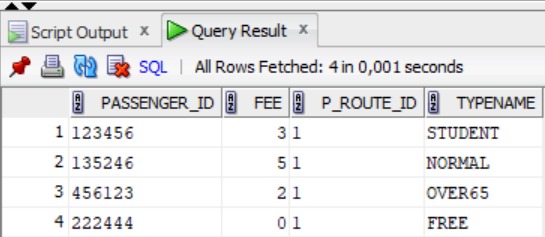
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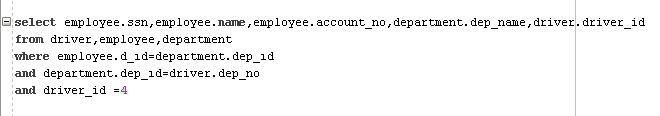


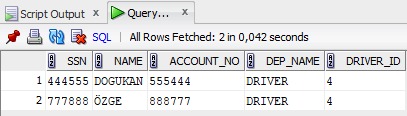


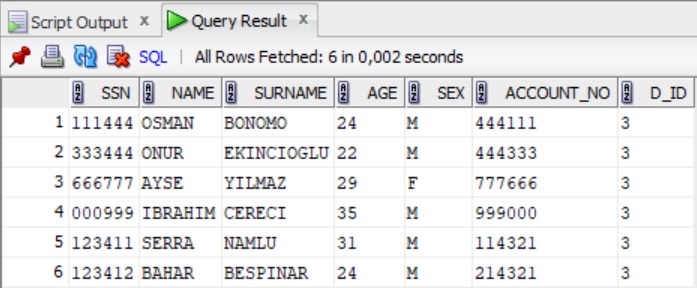


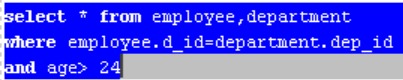


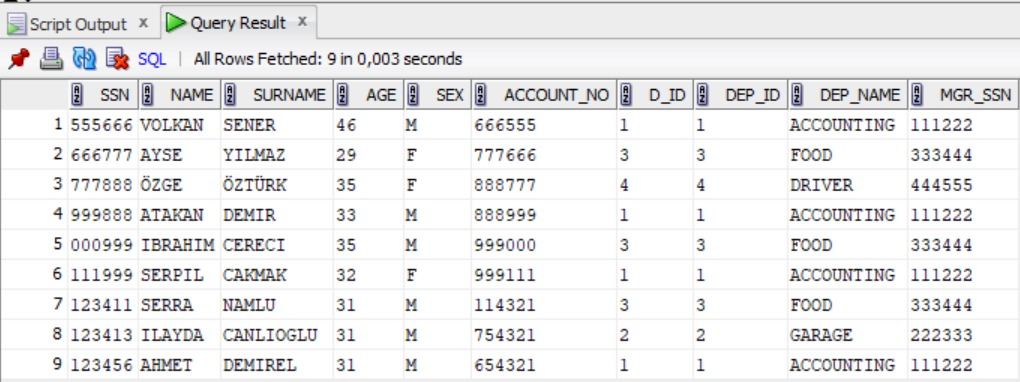












C:\Users\OKAN\Music\Desktop\68aaf242-0901-457f-bcdd-0201e99767f5.jpg

CREATE TABLE EMPLOYEE

(

SSN CHAR(6) NOT null,

NAME VARCHAR(15) NOT null,

SURNAME VARCHAR(15) NOT null,

AGE CHAR(2),

SEX CHAR,

ACCOUNT\_NO CHAR(6)NOT null,

UNIQUE (ACCOUNT\_NO),

D\_ID CHAR(2) NOT NULL,

prımary key (SSN)

);

CREATE TABLE DEPARTMENT

(

DEP\_ID CHAR(2) NOT NULL,

DEP\_NAME VARCHAR(15) NOT NULL,

MGR\_SSN CHAR(6) NOT NULL,

PRIMARY KEY (DEP\_ID),

UNIQUE (DEP\_NAME)

);

CREATE TABLE DRIVER

(

DRIVER\_ID CHAR(6) NOT NULL,

D\_SSN CHAR(6) NOT NULL,

DEP\_NO CHAR(2) NOT NULL,

D\_VEHICLE\_ID CHAR(9) NOT NULL,

PRIMARY KEY (DRIVER\_ID)

);

CREATE TABLE GARAGE(

GARAGE\_ID CHAR(6) NOT NULL,

NAME VARCHAR(15) NOT NULL,

LOCATION VARCHAR(50),

MEC\_ID CHAR(2) NOT NULL,

MEC\_SSN CHAR(6) NOT NULL,

DEP\_NO CHAR(2) NOT NULL,

PRIMARY KEY(GARAGE\_ID)

);

CREATE TABLE FOOD(

COOKER\_ID CHAR(6) NOT NULL,

COOKER\_SSN CHAR(6) NOT NULL,

DEP\_NO CHAR(2) NOT NULL,

F\_MENU\_ID CHAR(6) NOT NULL,

PRIMARY KEY(COOKER\_ID)

);

CREATE TABLE BID

(

BID\_ID CHAR(6) NOT NULL,

FOOD DECIMAL(10,2),

BUS DECIMAL(10,2),

PRIMARY KEY(BID\_ID)

);

CREATE TABLE ACCOUNTING(

ACCOUNTANT\_ID CHAR(6) NOT NULL,

ACC\_SSN CHAR(6) NOT NULL,

B\_ID CHAR(6) NOT NULL,

DEP\_NO CHAR(2) NOT NULL,

PRIMARY KEY (ACCOUNTANT\_ID)

);

CREATE TABLE REVENUE(

VOYAGE\_INCOME VARCHAR(15),

BID\_INCOME DECIMAL(10,2),

PAYMENT DECIMAL(10,2),

ACC\_ID CHAR(6)

);

CREATE TABLE OUTGOING(

SALARY DECIMAL(10,2) NOT NULL,

FUEL DECIMAL(10,2),

TAX DECIMAL(10,2) NOT NULL,

MEINTENANCE\_EXPENSE DECIMAL(10,2),

ACC\_ID CHAR(6)

);

CREATE TABLE MENU(

MENU\_ID CHAR(6) NOT NULL,

DDATE DATE,

SOUP VARCHAR(15),

MAIN\_F VARCHAR(15),

HELPER\_F VARCHAR(15),

SALAD VARCHAR(15),

PRIMARY KEY(MENU\_ID)

);

CREATE TABLE PLATE(

PLATE\_ID CHAR(9),

PRIMARY KEY (PLATE\_ID)

);

CREATE TABLE VEHICLE(

VEHICLE\_ID CHAR(6) NOT NULL,

MODEL VARCHAR(15),

P\_ID CHAR(9) NOT NULL,

PRIMARY KEY(VEHICLE\_ID)

);

CREATE TABLE STATION(

STATION\_ID CHAR(6) NOT NULL,

NAME VARCHAR(15),

LOCATION VARCHAR(50),

S\_ROUTE\_ID CHAR(6),

PRIMARY KEY (STATION\_ID)

);

CREATE TABLE ROUTE(

ROUTE\_ID CHAR(6) NOT NULL,

NAME VARCHAR(15),

PRICE DECIMAL(10,2),

F\_GARAGE\_ID CHAR(6) NOT NULL,

PRIMARY KEY (ROUTE\_ID)

);

CREATE TABLE PASSENGER(

PASSENGER\_ID CHAR(6),

FEE DECIMAL(10,2),

P\_ROUTE\_ID CHAR(6),

P\_TYPE\_ID CHAR(2),

PRIMARY KEY(PASSENGER\_ID)

);

CREATE TABLE PASSENGERTYPE(

TYPE\_ID CHAR(6) NOT NULL,

TYPENAME VARCHAR(15) NOT NULL,

PRIMARY KEY(TYPE\_ID)

);

CREATE TABLE MEMBER\_CARD(

CARD\_ID CHAR(6) NOT NULL,

M\_TYPE\_ID CHAR(6) NOT NULL,

PRIMARY KEY(CARD\_ID)

);

CREATE TABLE SELLING\_POINT(

SEL\_ID CHAR(6) NOT NULL,

LOCATION VARCHAR(50) NOT NULL,

PRIMARY KEY(SEL\_ID)

);

CREATE TABLE DEPENDENT(

NAME VARCHAR(15) NOT NULL,

SURNAME VARCHAR(15),

SEX CHAR,

RELATIONSHIP VARCHAR(15) NOT NULL

);

ALTER TABLE DEPENDENT

ADD CONSTRAINT PK\_NAME

PRIMARY KEY (NAME);

CREATE TABLE EMP\_DEP(

ESSN CHAR(6) NOT NULL,

DEPENDENT\_NAME VARCHAR(15)

);

CREATE TABLE MOVING\_TIME(

MOV\_ID CHAR(6),

DEP\_TIME CHAR(6),

ARR\_TIME CHAR(6),

PRIMARY KEY(MOV\_ID)

);

CREATE TABLE MOV\_VEH(

MOV\_ID CHAR(6),

VEHICLE\_ID CHAR(6)

);

CREATE TABLE STA\_VEH(

STATION\_ID CHAR(6),

VEHICLE\_ID CHAR(6)

);

CREATE TABLE MEH\_SEL(

SEL\_ID CHAR(6),

CARD\_ID CHAR(6)

);

INSERT INTO EMPLOYEE(SSN,NAME,SURNAME,AGE,SEX,ACCOUNT\_NO,D\_ID)

VALUES ('111222','ALİ','KOYUNCU','23','M','222111','1');

INSERT INTO EMPLOYEE(SSN,NAME,SURNAME,AGE,SEX,ACCOUNT\_NO,D\_ID)

VALUES ('222333','OKAN','ULGEN','21','M','333222','2');

INSERT INTO EMPLOYEE(SSN,NAME,SURNAME,AGE,SEX,ACCOUNT\_NO,D\_ID)

VALUES ('333444','ONUR','EKINCIOGLU','22','M','444333','3');

INSERT INTO EMPLOYEE(SSN,NAME,SURNAME,AGE,SEX,ACCOUNT\_NO,D\_ID)

VALUES ('444555','DOGUKAN','CELIK','22','M','555444','4');

INSERT INTO EMPLOYEE(SSN,NAME,SURNAME,AGE,SEX,ACCOUNT\_NO,D\_ID)

VALUES ('555666','VOLKAN','ŞENER','46','M','666555','1');

INSERT INTO EMPLOYEE(SSN,NAME,SURNAME,AGE,SEX,ACCOUNT\_NO,D\_ID)

VALUES ('666777','AYŞE','YILMAZ','29','F','777666','3');

INSERT INTO EMPLOYEE(SSN,NAME,SURNAME,AGE,SEX,ACCOUNT\_NO,D\_ID)

VALUES ('777888','ÖZGE','ÖZTÜRK','35','F','888777','4');

INSERT INTO EMPLOYEE(SSN,NAME,SURNAME,AGE,SEX,ACCOUNT\_NO,D\_ID)

VALUES ('999888','ATAKAN','DEMIR','33','M','888999','1');

INSERT INTO EMPLOYEE(SSN,NAME,SURNAME,AGE,SEX,ACCOUNT\_NO,D\_ID)

VALUES ('000999','IBRAHIM','CERECI','35','M','999000','3');

INSERT INTO EMPLOYEE(SSN,NAME,SURNAME,AGE,SEX,ACCOUNT\_NO,D\_ID)

VALUES ('111222','ALİ','KOYUNCU','23','M','222111','1');

INSERT INTO EMPLOYEE(SSN,NAME,SURNAME,AGE,SEX,ACCOUNT\_NO,D\_ID)

VALUES ('222333','OKAN','ULGEN','21','M','333222','2');

INSERT INTO EMPLOYEE(SSN,NAME,SURNAME,AGE,SEX,ACCOUNT\_NO,D\_ID)

VALUES ('333444','ONUR','EKINCIOGLU','22','M','444333','3');

INSERT INTO EMPLOYEE(SSN,NAME,SURNAME,AGE,SEX,ACCOUNT\_NO,D\_ID)

VALUES ('444555','DOGUKAN','CELIK','22','M','555444','4');

INSERT INTO EMPLOYEE(SSN,NAME,SURNAME,AGE,SEX,ACCOUNT\_NO,D\_ID)

VALUES ('555666','VOLKAN','ŞENER','46','M','666555','1');

INSERT INTO EMPLOYEE(SSN,NAME,SURNAME,AGE,SEX,ACCOUNT\_NO,D\_ID)

VALUES ('666777','AYŞE','YILMAZ','29','F','777666','3');

INSERT INTO EMPLOYEE(SSN,NAME,SURNAME,AGE,SEX,ACCOUNT\_NO,D\_ID)

VALUES ('777888','ÖZGE','ÖZTÜRK','35','F','888777','4');

INSERT INTO EMPLOYEE(SSN,NAME,SURNAME,AGE,SEX,ACCOUNT\_NO,D\_ID)

VALUES ('999888','ATAKAN','DEMIR','33','M','888999','1');

INSERT INTO EMPLOYEE(SSN,NAME,SURNAME,AGE,SEX,ACCOUNT\_NO,D\_ID)

VALUES ('111999','SERPIL','CAKMAK','32','F','999111','1');

INSERT INTO EMPLOYEE(SSN,NAME,SURNAME,AGE,SEX,ACCOUNT\_NO,D\_ID)

VALUES ('123411','SERRA','NAMLU','31','M','114321','3');

INSERT INTO EMPLOYEE(SSN,NAME,SURNAME,AGE,SEX,ACCOUNT\_NO,D\_ID)

VALUES ('123412','BAHAR','BEŞPINAR','24','M','214321','3');

INSERT INTO EMPLOYEE(SSN,NAME,SURNAME,AGE,SEX,ACCOUNT\_NO,D\_ID)

VALUES ('123413','İLAYDA','CANLIOĞLU','31','M','754321','2');

INSERT INTO EMPLOYEE(SSN,NAME,SURNAME,AGE,SEX,ACCOUNT\_NO,D\_ID)

VALUES ('123414','MELİK','BİLKENT','24','M','414321','2');

INSERT INTO EMPLOYEE(SSN,NAME,SURNAME,AGE,SEX,ACCOUNT\_NO,D\_ID)

VALUES ('123457','DORUK','DOĞAN','31','M','754321','2');

INSERT INTO EMPLOYEE(SSN,NAME,SURNAME,AGE,SEX,ACCOUNT\_NO,D\_ID)

VALUES ('123458','EGE','TOKTAŞ','24','M','854321','2');

INSERT INTO EMPLOYEE(SSN,NAME,SURNAME,AGE,SEX,ACCOUNT\_NO,D\_ID)

VALUES ('123456','AHMET','DEMİREL','31','M','654321','1');

INSERT INTO EMPLOYEE(SSN,NAME,SURNAME,AGE,SEX,ACCOUNT\_NO,D\_ID)

VALUES ('456123','BARIŞ','MANÇO','24','M','321456','1');

INSERT INTO EMPLOYEE(SSN,NAME,SURNAME,AGE,SEX,ACCOUNT\_NO,D\_ID)

VALUES ('123457','DORUK','DOĞAN','31','M','754321','1');

INSERT INTO EMPLOYEE(SSN,NAME,SURNAME,AGE,SEX,ACCOUNT\_NO,D\_ID)

VALUES ('123415','METİN','HARRA','24','M','514321','2');

INSERT INTO EMPLOYEE(SSN,NAME,SURNAME,AGE,SEX,ACCOUNT\_NO,D\_ID)

VALUES ('123415','METİN','HARRA','24','M','514321','2');

INSERT INTO DEPARTMENT(DEP\_ID,DEP\_NAME,MGR\_SSN)

VALUES('1','ACCOUNTING','111222');

INSERT INTO DEPARTMENT(DEP\_ID,DEP\_NAME,MGR\_SSN)

VALUES('2','GARAGE','222333');

INSERT INTO DEPARTMENT(DEP\_ID,DEP\_NAME,MGR\_SSN)

VALUES('3','FOOD','333444');

INSERT INTO DEPARTMENT(DEP\_ID,DEP\_NAME,MGR\_SSN)

VALUES('4','DRIVER','444555');

INSERT INTO DRIVER(DRIVER\_ID,D\_SSN,DEP\_NO,D\_VEHICLE\_ID)

VALUES('1','555666','4','1');

INSERT INTO DRIVER(DRIVER\_ID,D\_SSN,DEP\_NO,D\_VEHICLE\_ID)

VALUES('2','666777','4','2');

INSERT INTO DRIVER(DRIVER\_ID,D\_SSN,DEP\_NO,D\_VEHICLE\_ID)

VALUES('3','777888','4','3');

INSERT INTO DRIVER(DRIVER\_ID,D\_SSN,DEP\_NO,D\_VEHICLE\_ID)

VALUES('4','888999','4','4');

INSERT INTO DRIVER(DRIVER\_ID,D\_SSN,DEP\_NO,D\_VEHICLE\_ID)

VALUES('5','444555','4','5');

INSERT INTO GARAGE(GARAGE\_ID,NAME,LOCATION,MEC\_ID,MEC\_SSN,DEP\_NO)

VALUES('1','MAMAKGARAJI','NATOYOLU/MAMAK','1','333222','2');

UPDATE GARAGE

SET MEC\_SSN='123413'

WHERE 'GARAGE\_ID'='KIZILAYGARAJI';

INSERT INTO GARAGE(GARAGE\_ID,NAME,LOCATION,MEC\_ID,MEC\_SSN,DEP\_NO)

VALUES('2','CANKAYAGARAJI','ORAN/CANKAYA','2','754321','2');

INSERT INTO GARAGE(GARAGE\_ID,NAME,LOCATION,MEC\_ID,MEC\_SSN,DEP\_NO)

VALUES('3','KIZILAYGARAJI','KIZILAY/CANKAYA','3','414321','2');

INSERT INTO GARAGE(GARAGE\_ID,NAME,LOCATION,MEC\_ID,MEC\_SSN,DEP\_NO)

VALUES('4','PURSAKLARGARAJI','PURSAKLAR','4','514321','2');

INSERT INTO GARAGE(GARAGE\_ID,NAME,LOCATION,MEC\_ID,MEC\_SSN,DEP\_NO)

VALUES('5','SINCANGARAJI','FATIH/SINCAN','5','854321','2');

INSERT INTO FOOD(COOKER\_ID,COOKER\_SSN,DEP\_NO,F\_MENU\_ID)

VALUES('1','444333','3','1');

INSERT INTO FOOD(COOKER\_ID,COOKER\_SSN,DEP\_NO,F\_MENU\_ID)

VALUES('2','999000','3','2');

INSERT INTO FOOD(COOKER\_ID,COOKER\_SSN,DEP\_NO,F\_MENU\_ID)

VALUES('3','114321','3','3');

INSERT INTO FOOD(COOKER\_ID,COOKER\_SSN,DEP\_NO,F\_MENU\_ID)

VALUES('4','214321','3','4');

INSERT INTO FOOD(COOKER\_ID,COOKER\_SSN,DEP\_NO,F\_MENU\_ID)

VALUES('5','111444','3','5');

INSERT INTO BID(BID\_ID,FOOD,BUS)

VALUES('1','50000','0');

INSERT INTO BID(BID\_ID,FOOD,BUS)

VALUES('2','0','700000');

INSERT INTO BID(BID\_ID,FOOD,BUS)

VALUES('3','10000','0');

INSERT INTO BID(BID\_ID,FOOD,BUS)

VALUES('4','75000','0');

INSERT INTO ACCOUNTING(ACCOUNTANT\_ID, ACC\_SSN,B\_ID,DEP\_NO)

VALUES('1','222111','1','1');

INSERT INTO ACCOUNTING(ACCOUNTANT\_ID, ACC\_SSN,B\_ID,DEP\_NO)

VALUES('2','666555','2','1');

INSERT INTO ACCOUNTING(ACCOUNTANT\_ID, ACC\_SSN,B\_ID,DEP\_NO)

VALUES('3','888999','3','1');

INSERT INTO ACCOUNTING(ACCOUNTANT\_ID, ACC\_SSN,B\_ID,DEP\_NO)

VALUES('4','999111','4','1');

INSERT INTO ACCOUNTING(ACCOUNTANT\_ID, ACC\_SSN,B\_ID,DEP\_NO)

VALUES('5','654321','5','1');

INSERT INTO REVENUE(VOYAGE\_INCOME,BID\_INCOME,PAYMENT,ACC\_ID)

VALUES('500','7500','20000','1');

INSERT INTO REVENUE(VOYAGE\_INCOME,BID\_INCOME,PAYMENT,ACC\_ID)

VALUES('2500','1000','15000','2');

INSERT INTO REVENUE(VOYAGE\_INCOME,BID\_INCOME,PAYMENT,ACC\_ID)

VALUES('70000','25000','15000','3');

INSERT INTO REVENUE(VOYAGE\_INCOME,BID\_INCOME,PAYMENT,ACC\_ID)

VALUES('25000','23000','700000','4');

INSERT INTO REVENUE(VOYAGE\_INCOME,BID\_INCOME,PAYMENT,ACC\_ID)

VALUES('33000','255000','2000','5');

INSERT INTO OUTGOING(SALARY,FUEL,TAX,MEINTENANCE\_EXPENSE,ACC\_ID)

VALUES('60000','10000','2500','1000','1');

INSERT INTO OUTGOING(SALARY,FUEL,TAX,MEINTENANCE\_EXPENSE,ACC\_ID)

VALUES('60000','10000','2500','1000','2');

INSERT INTO OUTGOING(SALARY,FUEL,TAX,MEINTENANCE\_EXPENSE,ACC\_ID)

VALUES('60000','10000','2500','1000','3');

INSERT INTO OUTGOING(SALARY,FUEL,TAX,MEINTENANCE\_EXPENSE,ACC\_ID)

VALUES('60000','10000','2500','1000','4');

INSERT INTO OUTGOING(SALARY,FUEL,TAX,MEINTENANCE\_EXPENSE,ACC\_ID)

VALUES('60000','10000','2500','1000','5');

INSERT INTO MENU(MENU\_ID,DDATE,SOUP,MAIN\_F,HELPER\_F,SALAD)

VALUES('1','SALI','MERCIMEK','KABAKDOLMASI','MAKARNA','COBAN');

INSERT INTO MENU(MENU\_ID,DDATE,SOUP,MAIN\_F,HELPER\_F,SALAD)

VALUES('2','PAZARTESI','YOGURT','PATLICAN','PILAV','CACIK');

INSERT INTO MENU(MENU\_ID,DDATE,SOUP,MAIN\_F,HELPER\_F,SALAD)

VALUES('3','CARSAMBA','EZOGELIN','ISPANAK','YOGURT','MEVSIM');

INSERT INTO MENU(MENU\_ID,DDATE,SOUP,MAIN\_F,HELPER\_F,SALAD)

VALUES('4','PERSEMBE','DOMATES','FIRINTAVUK','BULGUR','AYRAN');

INSERT INTO MENU(MENU\_ID,DDATE,SOUP,MAIN\_F,HELPER\_F,SALAD)

VALUES('5','CUMA','MERCIMEK','KAVURMA','PILAV','TATLI');

INSERT INTO PLATE(PLATE\_ID)

VALUES('06DA7298');

INSERT INTO PLATE(PLATE\_ID)

VALUES('06BR1164');

INSERT INTO PLATE(PLATE\_ID)

VALUES('06DR5511');

INSERT INTO PLATE(PLATE\_ID)

VALUES('06BPN882');

INSERT INTO PLATE(PLATE\_ID)

VALUES('06BEL416');

INSERT INTO VEHICLE(VEHICLE\_ID,MODEL,P\_ID)

VALUES('1','KÖRÜKLÜ','06DA7298');

INSERT INTO VEHICLE(VEHICLE\_ID,MODEL,P\_ID)

VALUES('2','NORMAL','06BR1164');

INSERT INTO VEHICLE(VEHICLE\_ID,MODEL,P\_ID)

VALUES('3','NORMAL','06DR5511');

INSERT INTO VEHICLE(VEHICLE\_ID,MODEL,P\_ID)

VALUES('4','KATLI','06BPN882');

INSERT INTO VEHICLE(VEHICLE\_ID,MODEL,P\_ID)

VALUES('5','KÖRÜKLÜ','06BEL416');

INSERT INTO STATION(STATION\_ID,NAME,LOCATION,S\_ROUTE\_ID)

VALUES('11550','NATAVEGA','MAMAK','1');

INSERT INTO STATION(STATION\_ID,NAME,LOCATION,S\_ROUTE\_ID)

VALUES('11551','NATOYOLU','MAMAK','1');

INSERT INTO STATION(STATION\_ID,NAME,LOCATION,S\_ROUTE\_ID)

VALUES('11552','ABIDINPASA','MAMAK','1');

INSERT INTO STATION(STATION\_ID,NAME,LOCATION,S\_ROUTE\_ID)

VALUES('11553','DIKIMEVI','CANKAYA','1');

INSERT INTO STATION(STATION\_ID,NAME,LOCATION,S\_ROUTE\_ID)

VALUES('11554','KOLEJ','CANKAYA','1');

INSERT INTO STATION(STATION\_ID,NAME,LOCATION,S\_ROUTE\_ID)

VALUES('11555','KIZILAY','CANKAYA','1');

INSERT INTO ROUTE(ROUTE\_ID,NAME,PRICE,F\_GARAGE\_ID)

VALUES('1','MAMAK1',3,'1');

INSERT INTO PASSENGER(passenger\_ıd,fee,P\_ROUTE\_ID,P\_TYPE\_ID)

VALUES('123456','3','1','1');

INSERT INTO PASSENGER(passenger\_ıd,fee,P\_ROUTE\_ID,P\_TYPE\_ID)

VALUES('135246','5','1','2');

INSERT INTO PASSENGER(passenger\_ıd,fee,P\_ROUTE\_ID,P\_TYPE\_ID)

VALUES('456123','2','1','3');

INSERT INTO PASSENGER(passenger\_ıd,fee,P\_ROUTE\_ID,P\_TYPE\_ID)

VALUES('222444','0','1','4');

INSERT INTO PASSENGERTYPE(type\_ıd,typename)

VALUES('1','STUDENT');

INSERT INTO PASSENGERTYPE(type\_ıd,typename)

VALUES('2','NORMAL');

INSERT INTO PASSENGERTYPE(type\_ıd,typename)

VALUES('3','OVER65');

INSERT INTO PASSENGERTYPE(type\_ıd,typename)

VALUES('4','FREE');

INSERT INTO MEMBER\_CARD(card\_ıd,m\_type\_ıd)

VALUES('123456','1');

INSERT INTO MEMBER\_CARD(card\_ıd,m\_type\_ıd)

VALUES('135246','2');

INSERT INTO MEMBER\_CARD(card\_ıd,m\_type\_ıd)

VALUES('456123','3');

INSERT INTO MEMBER\_CARD(card\_ıd,m\_type\_ıd)

VALUES('222444','4');

INSERT INTO SELLING\_POINT(sel\_ıd,locatıon)

VALUES('1','MAMAK');

INSERT INTO SELLING\_POINT(sel\_ıd,locatıon)

VALUES('2','BATIKENT');

INSERT INTO SELLING\_POINT(sel\_ıd,locatıon)

VALUES('3','KECIOREN');

INSERT INTO SELLING\_POINT(sel\_ıd,locatıon)

VALUES('4','SINCAN');

INSERT INTO SELLING\_POINT(sel\_ıd,locatıon)

VALUES('5','GOLBASI');

INSERT INTO DEPENDENT(name,surname,SEX,RELATIONSHIP)

VALUES('ALI','CELIK','M','BROTHER');

INSERT INTO DEPENDENT(name,surname,SEX,RELATIONSHIP)

VALUES('ONUR','ULGEN','M','BROTHER');

INSERT INTO DEPENDENT(name,surname,SEX,RELATIONSHIP)

VALUES('DOGUKAN','EKINCIOGLU','M','BROTHER');

INSERT INTO DEPENDENT(name,surname,SEX,RELATIONSHIP)

VALUES('OKAN','KOYUNCU','M','BROTHER');

INSERT INTO MOVING\_TIME(mov\_ıd,dep\_tıme,ARR\_TIME)

VALUES('1','07.15','09.15');

INSERT INTO MOVING\_TIME(mov\_ıd,dep\_tıme,ARR\_TIME)

VALUES('2','07.45','09.45');

INSERT INTO MOVING\_TIME(mov\_ıd,dep\_tıme,ARR\_TIME)

VALUES('3','08.30','11.00');

INSERT INTO EMP\_DEP(ESSN,dependent\_name)

VALUES('111222','KOYUNCU');

INSERT INTO EMP\_DEP(ESSN,dependent\_name)

VALUES('222333','ULGEN');

INSERT INTO EMP\_DEP(ESSN,dependent\_name)

VALUES('333444','EKINCIOGLU');

INSERT INTO EMP\_DEP(ESSN,dependent\_name)

VALUES('444555','CELIK');

INSERT INTO MOV\_VEH(MOV\_ID,VEHICLE\_ID)

VALUES('1','1');

INSERT INTO MOV\_VEH(MOV\_ID,VEHICLE\_ID)

VALUES('2','2');

INSERT INTO MOV\_VEH(MOV\_ID,VEHICLE\_ID)

VALUES('3','3');

INSERT INTO STA\_VEH(STATION\_ID,VEHICLE\_ID)

VALUES('11550','1');

INSERT INTO STA\_VEH(STATION\_ID,VEHICLE\_ID)

VALUES('11553','3');

INSERT INTO STA\_VEH(STATION\_ID,VEHICLE\_ID)

VALUES('11555','5');

INSERT INTO MEH\_SEL(card\_ıd,sel\_ıd)

VALUES('123456','1');

INSERT INTO MEH\_SEL(card\_ıd,sel\_ıd)

VALUES('135246','2');

INSERT INTO MEH\_SEL(card\_ıd,sel\_ıd)

VALUES('456123','3');

ALTER TABLE GARAGE

ADD CONSTRAINT FK\_MEC\_SSN

FOREIGN KEY (MEC\_SSN) REFERENCES EMPLOYEE(SSN) ;

ALTER TABLE GARAGE

ADD CONSTRAINT FK\_DEP\_NO

FOREIGN KEY (DEP\_NO) REFERENCES DEPARTMENT(DEP\_ID) ON DELETE CASCADE;

ALTER TABLE DRIVER

ADD CONSTRAINT FK\_D\_SSN

FOREIGN KEY (D\_SSN) REFERENCES EMPLOYEE(SSN) ON DELETE CASCADE;

ALTER TABLE DRIVER

ADD CONSTRAINT FK\_DEP\_NO

FOREIGN KEY(DEP\_NO) REFERENCES DEPARTMENT(DEP\_ID) ON DELETE CASCADE;

ALTER TABLE DEPARTMENT

ADD CONSTRAINT FK\_MGR\_SSN

FOREIGN KEY(MGR\_SSN) REFERENCES EMPLOYEE (SSN) ON DELETE CASCADE;

ALTER TABLE FOOD

ADD CONSTRAINT FK\_COOKER\_SSN

FOREIGN KEY (COOKER\_SSN) REFERENCES EMPLOYEE (SSN) ON DELETE CASCADE;

ALTER TABLE FOOD

ADD CONSTRAINT FK\_DEP\_NO

FOREIGN KEY (DEP\_NO) REFERENCES DEPARTMENT (DEP\_ID) ON DELETE CASCADE;

ALTER TABLE ACCOUNTING

ADD CONSTRAINT FK\_ACC\_SSN

FOREIGN KEY (ACC\_SSN) REFERENCES EMPLOYEE (SSN) ON DELETE CASCADE;

ALTER TABLE ACCOUNTING

ADD CONSTRAINT FK\_B\_ID

FOREIGN KEY (B\_ID) REFERENCES BID(BID\_ID) ON DELETE CASCADE;

ALTER TABLE ACCOUNTING

ADD CONSTRAINT FK\_DEP\_NO

FOREIGN KEY (DEP\_NO) REFERENCES DEPARTMENT (DEP\_ID) ON DELETE CASCADE;

ALTER TABLE REVENUE

ADD CONSTRAINT FK\_ACC\_ID

FOREIGN KEY(ACC\_ID) REFERENCES ACCOUNTING (ACCOUNTANT\_ID) ON DELETE CASCADE;

ALTER TABLE OUTGOING

ADD CONSTRAINT FK\_ACC\_ID

FOREIGN KEY(ACC\_ID) REFERENCES ACCOUNTING (ACCOUNTANT\_ID) ON DELETE CASCADE;

ALTER TABLE VEHICLE

ADD CONSTRAINT FK\_P\_ID

FOREIGN KEY(P\_ID) REFERENCES PLATE(PLATE\_ID) ON DELETE CASCADE;

ALTER TABLE ROUTE

ADD CONSTRAINT FK\_F\_GARAGE\_ID

FOREIGN KEY (F\_GARAGE\_ID) REFERENCES GARAGE(GARAGE\_ID) ON DELETE CASCADE;

ALTER TABLE PASSENGER

ADD CONSTRAINT FK\_P\_ROUTE\_ID

FOREIGN KEY (P\_ROUTE\_ID) REFERENCES ROUTE(ROUTE\_ID) ON DELETE CASCADE;

ALTER TABLE MEMBER\_CARD

ADD CONSTRAINT FK\_M\_TYPE\_ID

FOREIGN KEY (M\_TYPE\_ID) REFERENCES PASSENGERTYPE(TYPE\_ID) ON DELETE CASCADE;

ALTER TABLE EMP\_DEP

ADD CONSTRAINT FK\_DEPENDENT\_NAME

FOREIGN KEY(DEPENDENT\_NAME) REFERENCES DEPENDENT(SURNAME) ON DELETE CASCADE;

ALTER TABLE EMP\_DEP

ADD CONSTRAINT FK\_ESSN

FOREIGN KEY(ESSN) REFERENCES EMPLOYEE(SSN) ON DELETE CASCADE;

ALTER TABLE MOV\_VEH

ADD CONSTRAINT FK\_MOV\_ID

FOREIGN KEY(MOV\_ID) REFERENCES MOVING\_TIME (MOV\_ID) ON DELETE CASCADE;

ALTER TABLE MOV\_VEH

ADD CONSTRAINT FK\_VEHICLE\_ID

FOREIGN KEY(VEHICLE\_ID) REFERENCES VEHICLE(VEHICLE\_ID) ON DELETE CASCADE;

ALTER TABLE STA\_VEH

ADD CONSTRAINT FK\_VEHICLE\_ID

FOREIGN KEY(VEHICLE\_ID) REFERENCES VEHICLE(VEHICLE\_ID) ON DELETE CASCADE;

ALTER TABLE STA\_VEH

ADD CONSTRAINT FK\_STATION\_ID

FOREIGN KEY(STATION\_ID) REFERENCES STATION(STATION\_ID) ON DELETE CASCADE;

ALTER TABLE MEH\_SEL

ADD CONSTRAINT FK\_SEL\_ID

FOREIGN KEY(SEL\_ID) REFERENCES SELLING\_POINT(SEL\_ID) ON DELETE CASCADE;

ALTER TABLE MEH\_SEL

ADD CONSTRAINT FK\_CARD\_ID

FOREIGN KEY(CARD\_ID) REFERENCES MEMBER\_CARD(CARD\_ID) ON DELETE CASCADE;

ALTER TABLE EMPLOYEE

ADD CONSTRAINT FK\_D\_ID

FOREIGN KEY (D\_ID) REFERENCES DEPARTMENT (DEP\_ID) ON DELETE CASCADE;

ALTER TABLE DRIVER

ADD CONSTRAINT FK\_D\_VEHICLE\_ID

FOREIGN KEY (D\_VEHICLE\_ID) REFERENCES VEHICLE (VEHICLE\_ID) ON DELETE CASCADE;

ALTER TABLE FOOD

ADD CONSTRAINT FK\_F\_MENU\_ID

FOREIGN KEY (F\_MENU\_ID) REFERENCES MENU (MENU\_ID) ON DELETE CASCADE;

ALTER TABLE STATION

ADD CONSTRAINT FK\_S\_ROUTE\_ID

FOREIGN KEY (S\_ROUTE\_ID) REFERENCES ROUTE (ROUTE\_ID) ON DELETE CASCADE;

ALTER TABLE PASSENGER

ADD CONSTRAINT FK\_P\_TYPE\_ID

FOREIGN KEY (P\_TYPE\_ID) REFERENCES PASSENGERTYPE (TYPE\_ID) ON DELETE CASCADE;

ALTER TABLE MENU

DROP COLUMN DDATE;

ALTER TABLE MENU

ADD DDATE VARCHAR(15);

UPDATE EMPLOYEE

SET D\_ID='4'

WHERE SSN='555666';

UPDATE EMPLOYEE

SET D\_ID='4'

WHERE SSN='999888';

ALTER TABLE GARAGE

ADD CONSTRAINT FK\_DEP\_NO4

FOREIGN KEY (DEP\_NO) REFERENCES DEPARTMENT(DEP\_ID) ON DELETE CASCADE;

ALTER TABLE ACCOUNTING

ADD CONSTRAINT FK\_DEP\_NO1

FOREIGN KEY (DEP\_NO) REFERENCES DEPARTMENT (DEP\_ID) ENABLE;

ALTER TABLE FOOD

ADD CONSTRAINT FK\_DEP\_NO5

FOREIGN KEY (DEP\_NO) REFERENCES DEPARTMENT (DEP\_ID) ON DELETE CASCADE;

ALTER TABLE OUTGOING

ADD CONSTRAINT FK\_ACC\_ID3

FOREIGN KEY(ACC\_ID) REFERENCES ACCOUNTING (ACCOUNTANT\_ID) ON DELETE CASCADE;

ALTER TABLE DRIVER

ADD CONSTRAINT FK\_D\_SSN

FOREIGN KEY (D\_SSN) REFERENCES EMPLOYEE(SSN) ON DELETE CASCADE;

select passenger.passenger\_id,passenger.fee,passengertype.typename,member\_card.card\_id,selling\_point.location

from passenger,passengertype,member\_card,selling\_point,meh\_sel

where passenger.p\_type\_ıd=passengertype.type\_ıd

and passengertype.type\_ıd=member\_card.m\_type\_ıd

and member\_card.card\_ıd=meh\_sel.card\_id

and meh\_sel.card\_id=selling\_point.sel\_ıd

select \* from employee where d\_id= 3

select \* from employee,department

where employee.d\_id=department.dep\_id

and age> 24

select vehicle.vehicle\_id,vehicle.model,vehicle.p\_id from vehicle,plate

where plate.plate\_id=vehicle.p\_id

select \* from moving\_time

where dep\_time='07.15'

select \*from menu

where menu\_id=2

or menu\_id=4

select passenger.passenger\_id,passenger.fee,passenger.p\_route\_id,passengertype.typename

from passenger,passengertype

where passengertype.type\_id=passenger.p\_type\_id

6. INTERFACE

**6.1. Screenshots**

