Database Management Systems (IS221)

PROJECT: Altawuniya car insurance

Reema alshalhoub – 442000618

Raseel alsaleh – 442005360

Shahad alqarni - 442004811

Information Systems Department

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Brief description of the system

Altawuniya is a company that specializes in the insurance sector, specifically Car insurance. Car insurance is a contract between the client and the insurance company in which they both agree to pay premiums in exchange for protection against financial losses that happened from damage to the vehicle. In this project, we developed an application for Altawuniya company which has multiple procedures that display the car's model and calculate the total accident number for the car as well as the city where the accident is located in. and triggers Which do the following, if the car has had an accident previously, the car cant has insurance. also, if the client is under 18, they can't have insurance for their vehicle

a. Create users with privilege:

```
------a.Create user for each group member with different privilege-------------
Create user reema identified by r123123;

Create user raseel identified by a123123;

Create user shahad identified by s123123;


Grant  ALL PRIVILEGES to reema ;
Grant dba to shahad ;
Grant create table , connect to raseel ;
```

Output:

```
SQL>
SQL> Create user reema identified by r123123;

User created.

SQL>
SQL> Create user raseel identified by a123123;

User created.

SQL>
SQL> Create user shahad identified by s123123;

User created.

SQL>
SQL>
SQL>
SQL> Grant  ALL PRIVILEGES to reema ;

Grant succeeded.

SQL> Grant dba to shahad ;

Grant succeeded.

SQL> Grant create table , connect to raseel ;

Grant succeeded.
```

b. Show all current users with their privileges:

```
--=======================b.  Show all current users with their privileges==========================--

SELECT * FROM DBA_SYS_PRIVS WHERE lower(GRANTEE) in ('reema','raseel','shahad' );
------------------------c  ------------------------
```

Output:

```
Select Run SQL Command Line

SQL> SELECT * FROM DBA_SYS_PRIVS WHERE lower(GRANTEE) in ('reema','raseel','shahad' );

GRANTEE                        PRIVILEGE                                ADM
------------------------------ ---------------------------------------- ---
REEMA                          MANAGE ANY FILE GROUP                    NO
REEMA                          CREATE ANY SQL PROFILE                   NO
REEMA                          EXECUTE ANY RULE                         NO
REEMA                          ALTER ANY RULE SET                       NO
REEMA                          MERGE ANY VIEW                           NO
REEMA                          ENQUEUE ANY QUEUE                        NO
REEMA                          DROP ANY DIMENSION                       NO
REEMA                          CREATE DIMENSION                         NO
REEMA                          CREATE ANY OPERATOR                      NO
REEMA                          CREATE ANY TRIGGER                       NO
REEMA                          DROP ANY PROCEDURE                       NO

GRANTEE                        PRIVILEGE                                ADM
------------------------------ ---------------------------------------- ---
REEMA                          ALTER ANY PROCEDURE                      NO
REEMA                          CREATE ANY PROCEDURE                     NO
REEMA                          ALTER ANY ROLE                           NO
REEMA                          DROP ANY INDEX                           NO
REEMA                          LOCK ANY TABLE                           NO
REEMA                          CREATE ROLLBACK SEGMENT                  NO
REEMA                          CREATE EXTERNAL JOB                      NO
REEMA                          ADMINISTER DATABASE TRIGGER              NO
REEMA                          DROP ANY OUTLINE                         NO
REEMA                          ALTER ANY OUTLINE                        NO
REEMA                          CREATE ANY CONTEXT                       NO

GRANTEE                        PRIVILEGE                                ADM
------------------------------ ---------------------------------------- ---
REEMA                          UNDER ANY VIEW                           NO
REEMA                          DROP ANY INDEXTYPE                       NO
REEMA                          EXECUTE ANY LIBRARY                      NO
REEMA                          CREATE ANY MATERIALIZED VIEW             NO
REEMA                          DROP PROFILE                             NO
REEMA                          DROP ANY ROLE                            NO
REEMA                          DROP PUBLIC DATABASE LINK                NO
REEMA                          CREATE SEQUENCE                          NO
REEMA                          ALTER ROLLBACK SEGMENT                   NO
```

```
Select Run SQL Command Line
REEMA                          CREATE RULE                              NO
REEMA                          CREATE ANY RULE SET                      NO
REEMA                          DROP ANY EVALUATION CONTEXT              NO
REEMA                          FLASHBACK ANY TABLE                      NO
REEMA                          ON COMMIT REFRESH                        NO
REEMA                          ALTER ANY DIMENSION                      NO
REEMA                          DROP ANY OPERATOR                        NO
REEMA                          ALTER ANY LIBRARY                        NO
REEMA                          CREATE ANY TYPE                          NO
REEMA                          CREATE TRIGGER                           NO
REEMA                          CREATE VIEW                              NO

GRANTEE                        PRIVILEGE                                ADM
------------------------------ ---------------------------------------- ---
REEMA                          CREATE PUBLIC SYNONYM                    NO
REEMA                          DELETE ANY TABLE                         NO
REEMA                          CREATE TABLE                             NO
REEMA                          ALTER USER                               NO
RASEEL                         CREATE TABLE                             NO
REEMA                          ADMINISTER ANY SQL TUNING SET            NO
REEMA                          DROP ANY SQL PROFILE                     NO
REEMA                          ADVISOR                                  NO
REEMA                          CREATE ANY RULE                          NO
REEMA                          EXPORT FULL DATABASE                     NO
REEMA                          CREATE RULE SET                          NO

GRANTEE                        PRIVILEGE                                ADM
------------------------------ ---------------------------------------- ---
REEMA                          CREATE ANY EVALUATION CONTEXT            NO
REEMA                          GRANT ANY OBJECT PRIVILEGE               NO
REEMA                          DEBUG CONNECT SESSION                    NO
REEMA                          CREATE ANY LIBRARY                       NO
REEMA                          DROP ANY TYPE                            NO
REEMA                          DROP ANY MATERIALIZED VIEW               NO
REEMA                          CREATE ANY SEQUENCE                      NO
REEMA                          ALTER ANY INDEX                          NO
REEMA                          UPDATE ANY TABLE                         NO
REEMA                          ALTER SYSTEM                             NO
REEMA                          ALTER ANY SQL PROFILE                    NO
```

```
Select Run SQL Command Line
GRANTEE                        PRIVILEGE                                ADM
------------------------------ ---------------------------------------- ---
REEMA                          CREATE ANY EVALUATION CONTEXT            NO
REEMA                          GRANT ANY OBJECT PRIVILEGE               NO
REEMA                          DEBUG CONNECT SESSION                    NO
REEMA                          CREATE ANY LIBRARY                       NO
REEMA                          DROP ANY TYPE                            NO
REEMA                          DROP ANY MATERIALIZED VIEW               NO
REEMA                          CREATE ANY SEQUENCE                      NO
REEMA                          ALTER ANY INDEX                          NO
REEMA                          UPDATE ANY TABLE                         NO
REEMA                          ALTER SYSTEM                             NO
REEMA                          ALTER ANY SQL PROFILE                    NO

GRANTEE                        PRIVILEGE                                ADM
------------------------------ ---------------------------------------- ---
REEMA                          SELECT ANY TRANSACTION                   NO
REEMA                          ADMINISTER RESOURCE MANAGER              NO
REEMA                          UNDER ANY TABLE                          NO
REEMA                          UNDER ANY TYPE                           NO
REEMA                          CREATE TYPE                              NO
REEMA                          DROP ANY DIRECTORY                       NO
REEMA                          ALTER DATABASE                           NO
REEMA                          SELECT ANY SEQUENCE                      NO
REEMA                          DROP ANY SEQUENCE                        NO
REEMA                          CREATE ANY VIEW                          NO
REEMA                          CREATE ANY SYNONYM                       NO

GRANTEE                        PRIVILEGE                                ADM
------------------------------ ---------------------------------------- ---
REEMA                          ALTER ANY CLUSTER                        NO
REEMA                          CREATE CLUSTER                           NO
REEMA                          BACKUP ANY TABLE                         NO
REEMA                          CREATE ANY TABLE                         NO
REEMA                          CREATE TABLESPACE                        NO
REEMA                          ALTER SESSION                            NO
SHAHAD                         UNLIMITED TABLESPACE                     NO

161 rows selected.
```

c. tablespaces:

```
drop tablespace Project_Table including contents and datafiles;
drop tablespace Project_INDX including contents and datafiles;
create tablespace Project_Table datafile'C:\Users\Surfacepro7\Desktop\datafiles\tbl.dbf' size 500m ;
create tablespace Project_INDX datafile   'C:\Users\Surfacepro7\Desktop\datafiles\indx.dbf' size 500m ;


alter user reema default tablespace Project_Table;
alter user raseel default tablespace Project_Table;
alter user shahad default tablespace Project_Table;

----------------------------d.Show all tablespaces and datafiles ----------------------------
```

Output:

```
Run SQL Command Line
SQL>  create tablespace Project_Table datafile'C:\Users\Surfacepro7\Desktop\datafiles\tbl.dbf' size 500m ;

Tablespace created.

SQL>  create tablespace Project_INDX datafile   'C:\Users\Surfacepro7\Desktop\datafiles\indx.dbf' size 500m ;

Tablespace created.

SQL>
SQL>
SQL>  alter user reema default tablespace Project_Table;

User altered.

SQL>  alter user raseel default tablespace Project_Table;

User altered.

SQL>  alter user shahad default tablespace Project_Table;

User altered.

SQL>
```

d. Show all tablespaces and datafiles:

```
----------------------------d.Show all tablespaces and datafiles ----------------------------

 select t.tablespace_name, d.file_name
 from dba_tablespaces t join dba_data_files d
 on (t.tablespace_name=d.tablespace_name);
```

output:

```
Run SQL Command Line
SQL>  select t.tablespace_name, d.file_name
  2   from dba_tablespaces t join dba_data_files d
  3   on (t.tablespace_name=d.tablespace_name);

TABLESPACE_NAME
------------------------------
FILE_NAME
--------------------------------------------------------------------------------
USERS
C:\ORACLEXE\ORADATA\XE\USERS.DBF

SYSAUX
C:\ORACLEXE\ORADATA\XE\SYSAUX.DBF

UNDO
C:\ORACLEXE\ORADATA\XE\UNDO.DBF


TABLESPACE_NAME
------------------------------
FILE_NAME
--------------------------------------------------------------------------------
SYSTEM
C:\ORACLEXE\ORADATA\XE\SYSTEM.DBF

PROJECT_TABLE
C:\USERS\SURFACEPRO7\DESKTOP\DATAFILES\TBL.DBF

PROJECT_INDX
C:\USERS\SURFACEPRO7\DESKTOP\DATAFILES\INDX.DBF


6 rows selected.
```

e. Show all users with their default tablespace:

```
-------------------------e.Show all users with their default tablespace -------------------------
select username, default_tablespace from dba_users
where lower(username) in ('reema','raseel','shahad');
```

Output:

```
Select Run SQL Command Line

USERNAME                       DEFAULT_TABLESPACE
------------------------------ ------------------------------
RASEEL                         PROJECT_TABLE
REEMA                          PROJECT_TABLE
SHAHAD                         PROJECT_TABLE

SQL>
```

f. Create DB tables using DDL statements from the relational schema
g. Insert 6 rows at least into each table.

Create & insert for table Customer:

```
CREATE TABLE Customer  (
    ID NUMBER(20) ,
    Name varchar2(255),
    phone VARCHAR2(30),
    DOB date,
    license varchar2(40),
    PRIMARY key (ID)
);

insert into Customer values (1,'meshal','0500000','03-sep-99','220000');
insert into Customer values (2,'deema','0500001','05-jan-98','339999');
insert into Customer values (3,'reem','0510000','05-sep-03','18f838f');
insert into Customer values (4,'abeer','0512120','03-mar-01','119999');
insert into Customer values (5,'sara','05303030','05-feb-02','449999');
insert into Customer values (6,'samar','0599999','03-feb-99','377776');
```

Output:

```
SQL>
SQL> CREATE TABLE Customer  (
  2      ID NUMBER(20) ,
  3      Name varchar2(255),
  4      phone VARCHAR2(30),
  5      DOB date,
  6      license varchar2(40),
  7  PRIMARY key (ID)
  8  );

Table created.

SQL>
SQL>  insert into Customer values (1,'meshal','0500000','03-sep-99','220000');

1 row created.

SQL>  insert into Customer values (2,'deema','0500001','05-jan-98','339999');

1 row created.

SQL>  insert into Customer values (3,'reem','0510000','05-sep-03','18f838f');

1 row created.

SQL>  insert into Customer values (4,'abeer','0512120','03-mar-01','119999');

1 row created.

SQL>  insert into Customer values (5,'sara','05303030','05-feb-02','449999');

1 row created.

SQL>  insert into Customer values (6,'samar','0599999','03-feb-99','377776');

1 row created.
```

Create & insert for table Employee:

```
CREATE TABLE Employee (
    ID number(20) ,
    Name varchar2(255),
    position varchar2(255),
    phone VARCHAR2(30),
    sex varchar2(20),
    supervisor_id number(20),
    PRIMARY key (ID),
    FOREIGN KEY (supervisor_id) REFERENCES Employee(ID)on delete CASCADE
);

  insert into Employee values (1,'nouf',' manager','0593337','m',null);
  insert into Employee values (2,'ameerah','manger','0513347','f',null);
  insert into Employee values (3,'hatoon','accountant','05988887','m',1);
  insert into Employee values (4,'taraf','accountant','05979547','m',1);
  insert into Employee values (5,'hessa','engineer','059426667','f',2);
  insert into Employee values (6,'saleh','accountant','05353567','m',1);
```

Output:

```
SQL> CREATE TABLE Employee (
  2      ID number(20) ,
  3      Name varchar2(255),
  4  position varchar2(255),
  5      phone VARCHAR2(30),
  6      sex varchar2(20),
  7      supervisor_id number(20),
  8  PRIMARY key (ID),
  9  FOREIGN KEY (supervisor_id) REFERENCES Employee(ID)on delete CASCADE
 10  );

Table created.

SQL>
SQL>  insert into Employee values (1,'nouf',' manager','0593337','m',null);

1 row created.

SQL>  insert into Employee values (2,'ameerah','manger','0513347','f',null);

1 row created.

SQL>  insert into Employee values (3,'hatoon','accountant','05988887','m',1);

1 row created.

SQL>  insert into Employee values (4,'taraf','accountant','05979547','m',1);

1 row created.

SQL>  insert into Employee values (5,'hessa','engineer','059426667','f',2);

1 row created.

SQL>  insert into Employee values (6,'saleh','accountant','05353567','m',1);

1 row created.
```

Create & insert for table car:

```
CREATE TABLE car  (
    plate_num number(10),
    customer_id number(20) ,
    model_name varchar2(100),
    yearr  number(4),
    PRIMARY key (plate_num),
    FOREIGN KEY ( customer_id) REFERENCES customer(ID) on delete CASCADE
);


  insert into Car values (333,2,'bmw',2018);
  insert into Car values (155,3,'audi',2022);
  insert into Car values (144,2,'toyota',2019);
  insert into Car values (166,5,'tesla',2020);
  insert into Car values (544,1,'bmw',2019);
  insert into Car values (666,4,'audi',2016);
```

Output:

```
SQL> CREATE TABLE car  (
  2     plate_num number(10),
  3     customer_id number(20) ,
  4     model_name varchar2(100),
  5     yearr  number(4),
  6     PRIMARY key (plate_num),
  7     FOREIGN KEY ( customer_id) REFERENCES customer(ID) on delete CASCADE
  8  );

Table created.

SQL>
SQL>
SQL>  insert into Car values (333,2,'bmw',2018);

1 row created.

SQL>  insert into Car values (155,3,'audi',2022);

1 row created.

SQL>  insert into Car values (144,2,'toyota',2019);

1 row created.

SQL>  insert into Car values (166,5,'tesla',2020);

1 row created.

SQL>  insert into Car values (544,1,'bmw',2019);

1 row created.

SQL>  insert into Car values (666,4,'audi',2016);

1 row created.
```

Create & insert for table Insurance:

```
CREATE TABLE Insurance  (
    policy_number number(30),
    start_date  DATE,
    end_date  DATE ,
    insurance_type  varchar2 (40),
    plate_num number(10),
    employee_Id  number(20),
    PRIMARY key (policy_number ),
    FOREIGN KEY ( plate_num) REFERENCES car (plate_num)on delete CASCADE,
    FOREIGN KEY ( employee_Id ) REFERENCES Employee (id) on delete CASCADE
);

 insert into Insurance values (823,'01-oct-18','01-feb-22','A',333,1);
 insert into Insurance values (824,'01-oct-18','01-feb-20','A',666,3);
 insert into Insurance values (825,'01-oct-18','01-feb-19','P',333,3);
 insert into Insurance values (826,'01-dec-18','01-apr-20','A',144,2);
 insert into Insurance values (827,'01-dec-18','01-apr-22','P',155,4);
 insert into Insurance values (828,'01-Jan-18','01-apr-19','A',544,2);
```

Output:

```
SQL>
SQL> CREATE TABLE Insurance  (
  2      policy_number number(30),
  3      start_date  DATE,
  4      end_date  DATE ,
  5      insurance_type  varchar2 (40),
  6      plate_num number(10),
  7   employee_Id  number(20),
  8   PRIMARY key (policy_number ),
  9      FOREIGN KEY ( plate_num) REFERENCES car (plate_num)on delete CASCADE,
 10      FOREIGN KEY ( employee_Id ) REFERENCES Employee (id) on delete CASCADE
 11  );

Table created.

SQL>
SQL>  insert into Insurance values (823,'01-oct-18','01-feb-22','A',333,1);

1 row created.

SQL>  insert into Insurance values (824,'01-oct-18','01-feb-20','A',666,3);

1 row created.

SQL>  insert into Insurance values (825,'01-oct-18','01-feb-19','P',333,3);

1 row created.

SQL>  insert into Insurance values (826,'01-dec-18','01-apr-20','A',144,2);

1 row created.

SQL>  insert into Insurance values (827,'01-dec-18','01-apr-22','P',155,4);

1 row created.

SQL>  insert into Insurance values (828,'01-Jan-18','01-apr-19','A',544,2);

1 row created.
```

Create & insert for table Accident:

```
CREATE TABLE Accident (
     reportnum  number(10) ,
     datee  DATE,
     description  varchar2(255),
     location  varchar2(255),
     PRIMARY key (reportnum )
);

 insert into Accident values (221,'01-may-19','car crash ','riyadh');
 insert into Accident values (222,'01-jan-20','car crash ','Khober');
 insert into Accident values (223,'04-may-19','car crash ','riyadh');
 insert into Accident values (224,'05-dec-19','car crash ','Jaddah');
 insert into Accident values (225,'03-oct-18','car crash ','makkah');
 insert into Accident values (226,'01-may-17','car crash ','riyadh');
 insert into Accident values (229,'01-may-17','car crash ','Jaddah');
```

Output:

```
SQL>
SQL> CREATE TABLE Accident (
  2       reportnum  number(10) ,
  3       datee  DATE,
  4       description  varchar2(255),
  5       location  varchar2(255),
  6    PRIMARY key (reportnum )
  7  );

Table created.

SQL>
SQL>  insert into Accident values (221,'01-may-19','car crash ','riyadh');

1 row created.

SQL>  insert into Accident values (222,'01-jan-20','car crash ','Khober');

1 row created.

SQL>  insert into Accident values (223,'04-may-19','car crash ','riyadh');

1 row created.

SQL>  insert into Accident values (224,'05-dec-19','car crash ','Jaddah');

1 row created.

SQL>  insert into Accident values (225,'03-oct-18','car crash ','makkah');

1 row created.

SQL>  insert into Accident values (226,'01-may-17','car crash ','riyadh');

1 row created.

SQL>  insert into Accident values (229,'01-may-17','car crash ','Jaddah');

1 row created.
```

Create & insert for table Car_accident:

```
set sqlblanklines on;

CREATE TABLE Car_accident (
      reportnum  number (10) ,
      plate_num number(10) ,
        primary key (reportnum,plate_num),
      FOREIGN KEY (plate_num) REFERENCES car(plate_num)on delete CASCADE,
      FOREIGN KEY (reportnum) REFERENCES accident(reportnum)on delete CASCADE
);

  insert into Car_accident values (221,333);
  insert into Car_accident values (223,666);
  insert into Car_accident values (222,666);
  insert into Car_accident values (224,155);
  insert into Car_accident values (225,155);
  insert into Car_accident values (226,544);
```

Output:

```
SQL> set sqlblanklines on;
SQL>
SQL> CREATE TABLE Car_accident (
  2       reportnum  number (10) ,
  3   plate_num number(10) ,
  4     primary key (reportnum,plate_num),
  5      FOREIGN KEY (plate_num) REFERENCES car(plate_num)on delete CASCADE,
  6      FOREIGN KEY (reportnum) REFERENCES accident(reportnum)on delete CASCADE
  7  );

Table created.

SQL>
SQL>  insert into Car_accident values (221,333);

1 row created.

SQL>  insert into Car_accident values (223,666);

1 row created.

SQL>  insert into Car_accident values (222,666);

1 row created.

SQL>  insert into Car_accident values (224,155);

1 row created.

SQL>  insert into Car_accident values (225,155);

1 row created.

SQL>  insert into Car_accident values (226,544);

1 row created.
```

H. create index:

```
create index insurance_type
on Insurance(start_date)
TABLESPACE Project_INDX;

create index accident_ndx1
on Car_accident(plate_num)
TABLESPACE Project_INDX;
```

Output:

```
Run SQL Command Line
SQL>
SQL>
SQL> create index insurance_type
  2  on Insurance(start_date)
  3  TABLESPACE Project_INDX;

Index created.

SQL>
SQL> create index accident_ndx1
  2  on Car_accident(plate_num)
  3  TABLESPACE Project_INDX;

Index created.

SQL>
```

i. 3 procedures:

1.

```
----PROCEDURE 1----i.* if you enter the plate number the car model will show up
  set serveroutput on;
CREATE OR REPLACE PROCEDURE carmodel(plate_number IN number) IS m varchar2(100);
begin
select model_name into m from car where plate_num=plate_number;
  dbms_output.put_line('car model  '|| m);

 end carmodel;
/

  set serveroutput on;

BEGIN

carmodel(333);
END;
/
```

Output:

```
SQL>    set serveroutput on;
SQL>  CREATE OR REPLACE PROCEDURE carmodel(plate_number IN number) IS m varchar2(100);
  2   begin
  3   select model_name into m from car where plate_num=plate_number;
  4     dbms_output.put_line('car model  '|| m);
  5
  6    end carmodel;
  7   /

Procedure created.

SQL> BEGIN
  2
  3  carmodel(333);
  4  END;
  5  /
car model  bmw

PL/SQL procedure successfully completed.
```

2.

```
----PROCEDURE 2----i.* count number of accedent for the car
set serveroutput on;
CREATE OR REPLACE PROCEDURE accedentcounter(plate_number IN number) IS
allcount number;
BEGIN

select count(*) into allcount from Car_accident
where plate_num = plate_number;

dbms_output.put_line('the total number of accedent=' || allcount );
end accedentcounter;
/
BEGIN

accedentcounter(666);
END;
/
```

Output:

```
SQL>
SQL>  set serveroutput on;
SQL>  CREATE OR REPLACE PROCEDURE accedentcounter(plate_number IN number) IS
  2   allcount number;
  3   BEGIN
  4
  5   select count(*) into allcount from Car_accident
  6   where plate_num = plate_number;
  7
  8   dbms_output.put_line('the total number of accedent=' || allcount );
  9   end accedentcounter;
 10   /

Procedure created.

SQL> BEGIN
  2
  3  accedentcounter(666);
  4  END;
  5  /
the total number of accedent=2

PL/SQL procedure successfully completed.
```

3.

```
-----PROCEDURE 3 -----show the City of  Accedent based on report number------
DROP PROCEDURE cityOfacc;
   set serveroutput on;
 CREATE OR REPLACE PROCEDURE cityOfacc(repnum IN number) IS  c varchar2(255);
begin
 select location into c from Accident where reportnum=repnum;
   dbms_output.put_line('City Of Accedent '|| c );

 end cityOfacc;
/
--------------
BEGIN

cityOfacc(224);
END;
/
```

Output:

```
SQL> DROP PROCEDURE cityOfacc;
DROP PROCEDURE cityOfacc
*
ERROR at line 1:
ORA-04043: object CITYOFACC does not exist


SQL>    set serveroutput on;
SQL>  CREATE OR REPLACE PROCEDURE cityOfacc(repnum IN number) IS  c varchar2(255);
  2   begin
  3   select location into c from Accident where reportnum=repnum;
  4     dbms_output.put_line('City Of Accedent '|| c );
  5
  6    end cityOfacc;
  7   /

Procedure created.

SQL>  --------------
SQL> BEGIN
  2
  3  cityOfacc(224);
  4  END;
  5  /
City Of Accedent Jaddah

PL/SQL procedure successfully completed.
```

j. triggers

1-

```
----------trigger 1 checks the plate number and if it has an accident then he will not be able to get an insurance
CREATE or replace TRIGGER insconnecturance_policy
    BEFORE insert or update ON Insurance
    FOR EACH ROW
DECLARE
   c_accCout NUMBER(10);

BEGIN
  select count(*) into c_accCout
from Car_accident
where plate_num=:new.plate_num;

    If c_accCout > 0 Then
        raise_application_error(-20001, 'Driver has accidents');
    End If;

END;
/
```

Output:

```
SQL> CREATE or replace TRIGGER insconnecturance_policy
  2      BEFORE insert or update ON Insurance
  3      FOR EACH ROW
  4  DECLARE
  5     c_accCout NUMBER(10);
  6
  7  BEGIN
  8    select count(*) into c_accCout
  9  from Car_accident
 10  where plate_num=:new.plate_num;
 11
 12      If c_accCout > 0 Then
 13          raise_application_error(-20001, 'Driver has accidents');
 14      End If;
 15
 16  END;
 17  /

Trigger created.

SQL>  insert into Insurance values (487,'01-Jan-18','01-feb-19','P',144,2);

1 row created.

SQL>  insert into Insurance values (949,'01-Jan-18','01-feb-19','P',666,2);
 insert into Insurance values (949,'01-Jan-18','01-feb-19','P',666,2)
             *
ERROR at line 1:
ORA-20001: Driver has accidents
ORA-06512: at "REEMA.INSCONNECTURANCE_POLICY", line 10
ORA-04088: error during execution of trigger 'REEMA.INSCONNECTURANCE_POLICY'
```

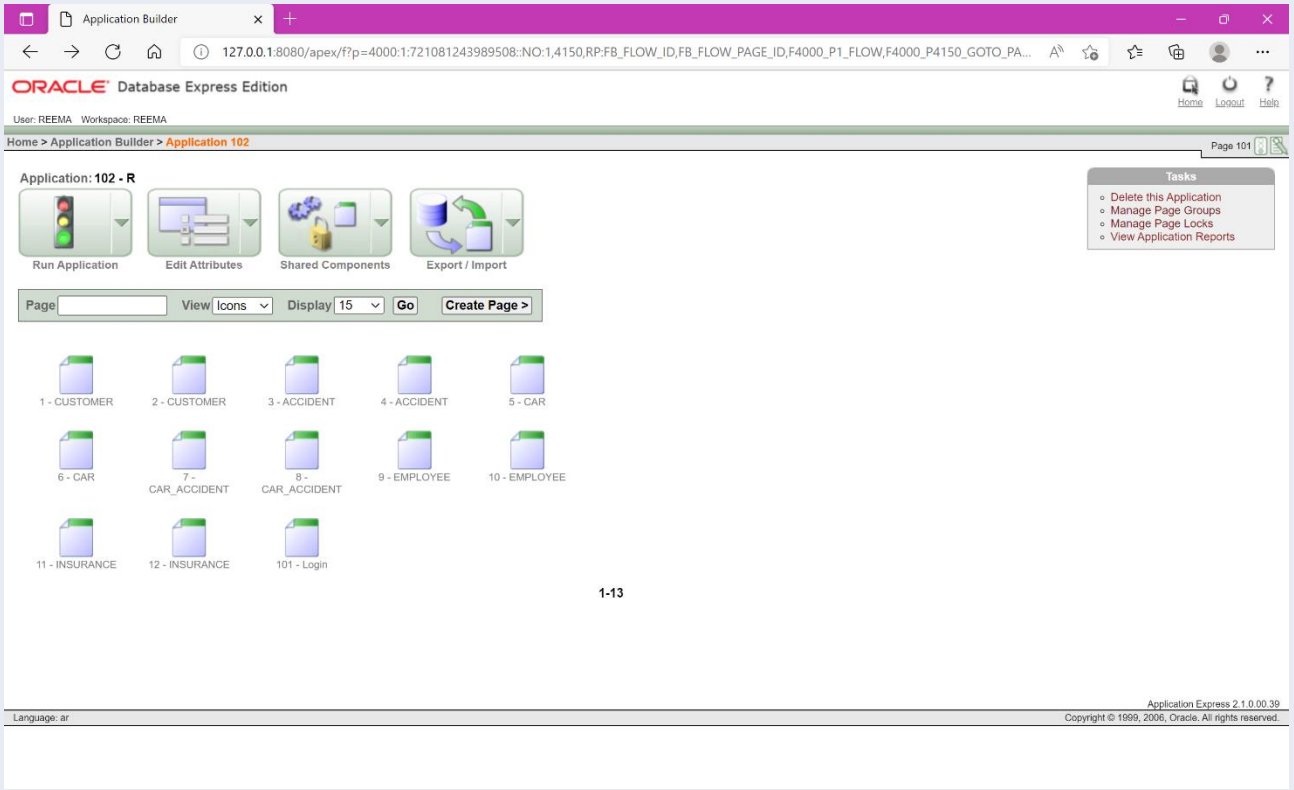
2-

```
----------trigger 2 checks the customer age if it's under 18 then he will not be able to get an insurance
CREATE OR REPLACE TRIGGER cus_age
 BEFORE INSERT OR UPDATE ON Customer
 FOR EACH ROW
 BEGIN
 IF :new.DOB>'1-jan-04' THEN
 raise_application_error(-20001, 'Age should not be greater than 18');
 END IF;

END;
/
```

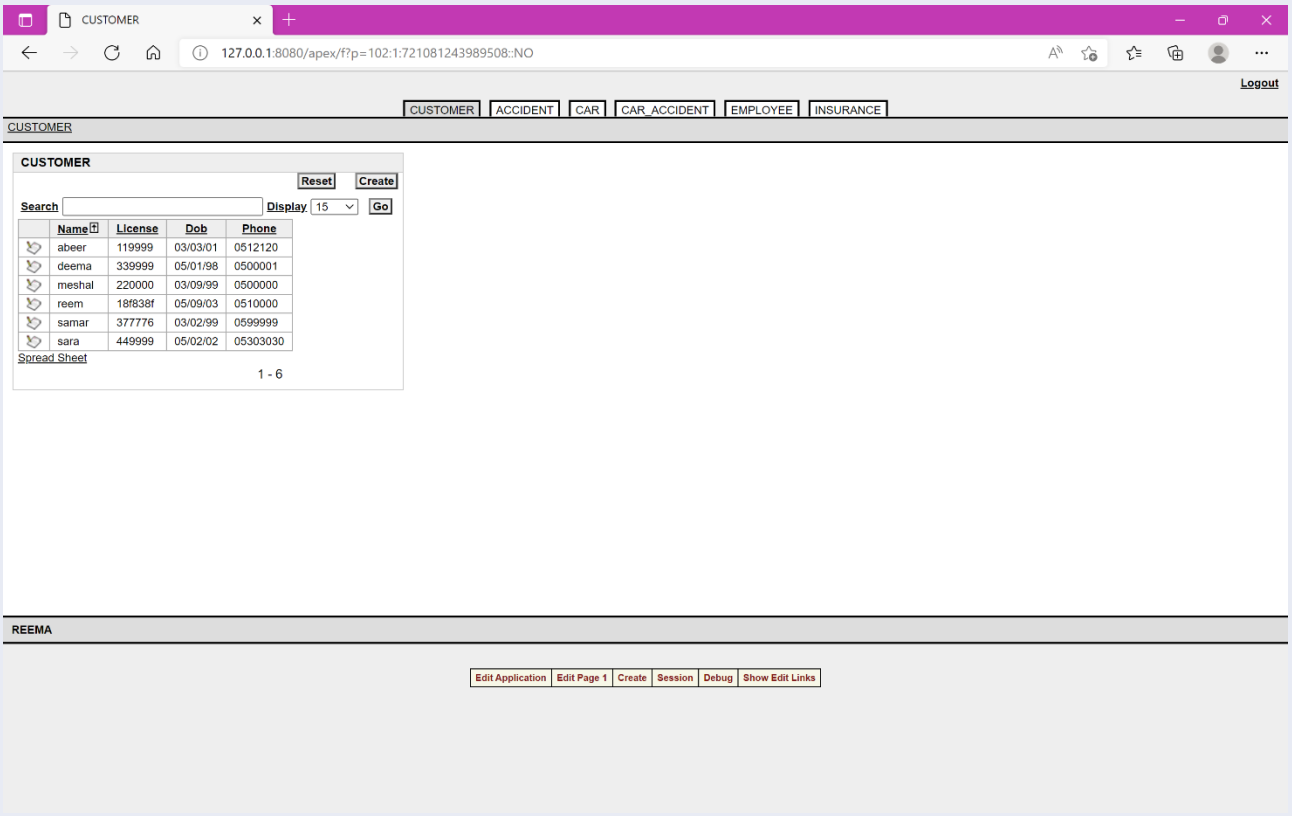
Output:

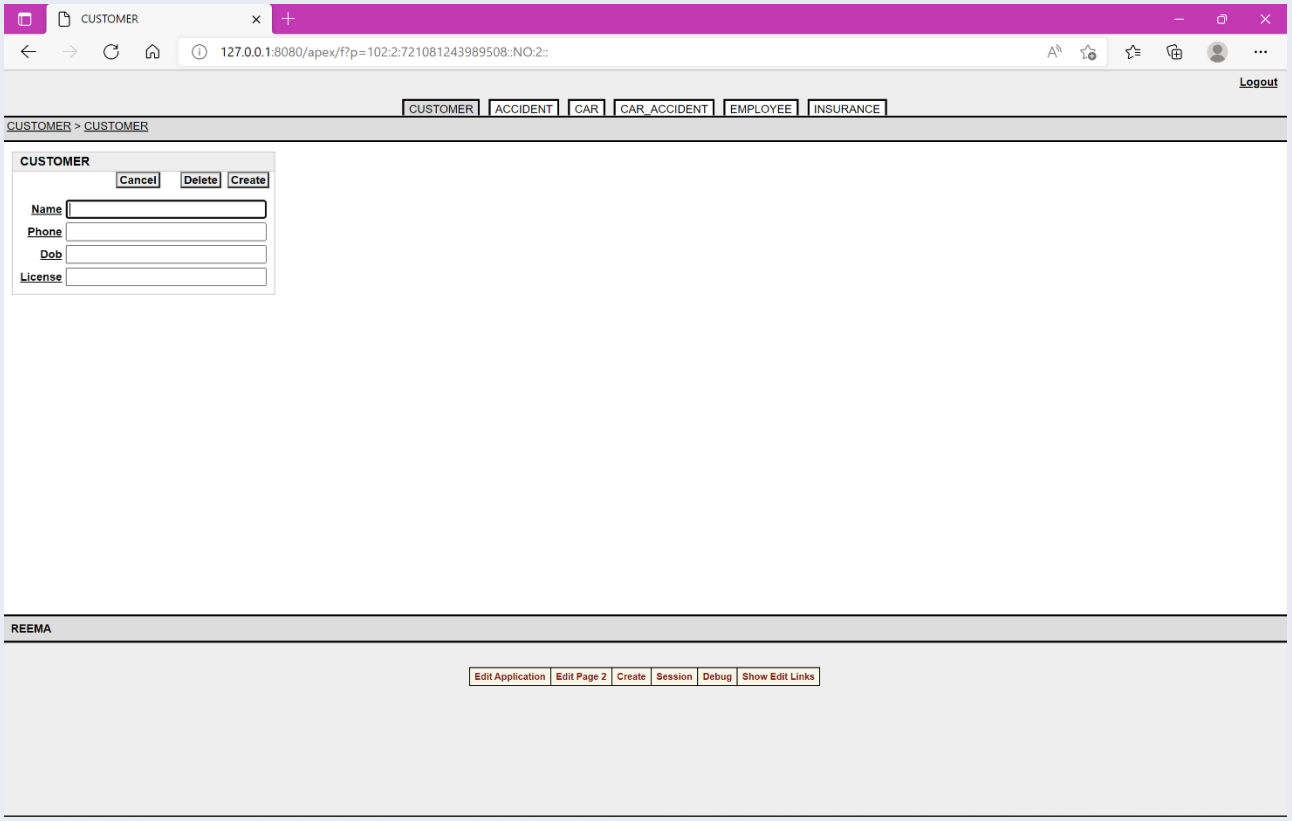
```
SQL> CREATE OR REPLACE TRIGGER cus_age
  2   BEFORE INSERT OR UPDATE ON Customer
  3   FOR EACH ROW
  4   BEGIN
  5   IF :new.DOB>'1-jan-04' THEN
  6   raise_application_error(-20001, 'Age should not be greater than 18');
  7   END IF;
  8
  9  END;
 10  /

Trigger created.

SQL>
SQL>  insert into Customer values (10,'shosho','0500030','03-sep-03','220500');

1 row created.

SQL>   insert into Customer values (11,'shosho','0500040','03-sep-05','220900');
  insert into Customer values (11,'shosho','0500040','03-sep-05','220900')
              *
ERROR at line 1:
ORA-20001: Age should not be greater than 18
ORA-06512: at "REEMA.CUS_AGE", line 3
ORA-04088: error during execution of trigger 'REEMA.CUS_AGE'
```

Application interface:

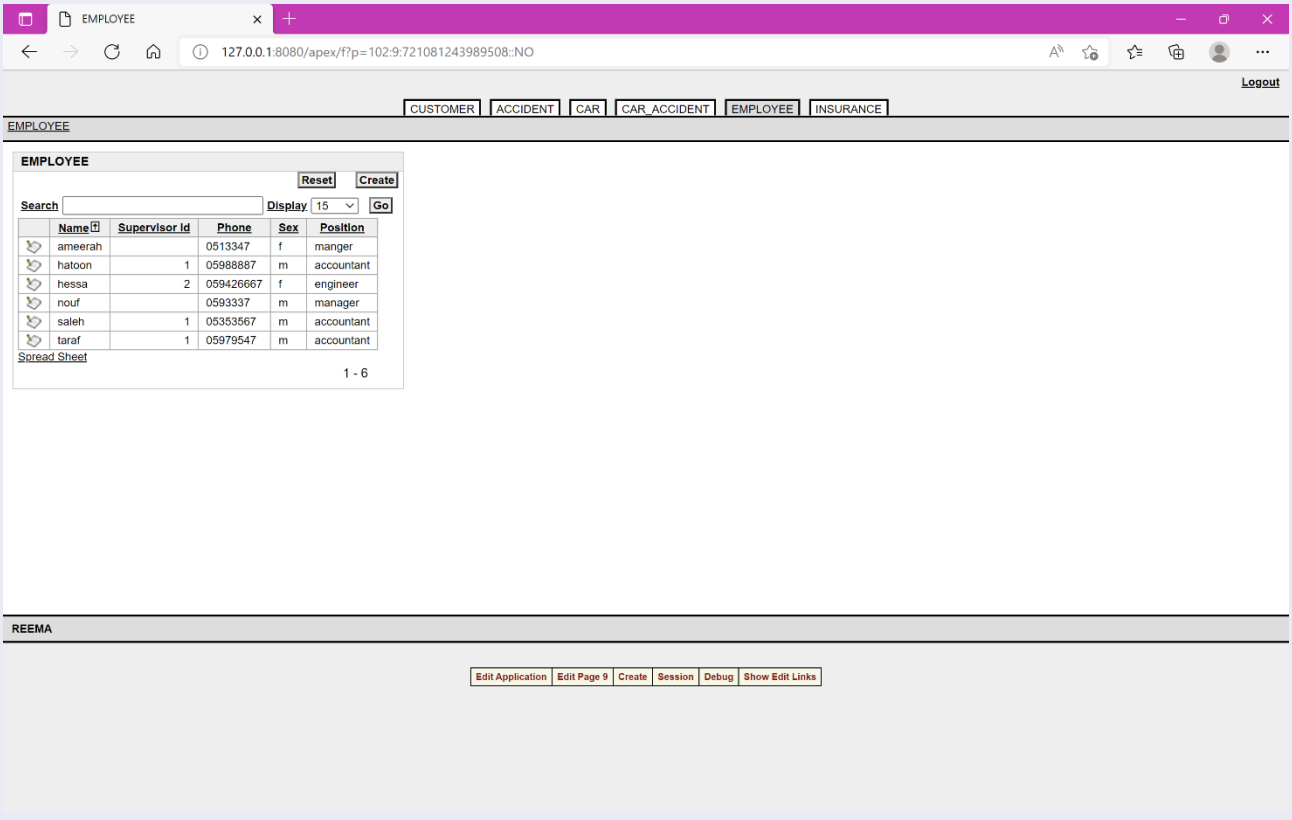


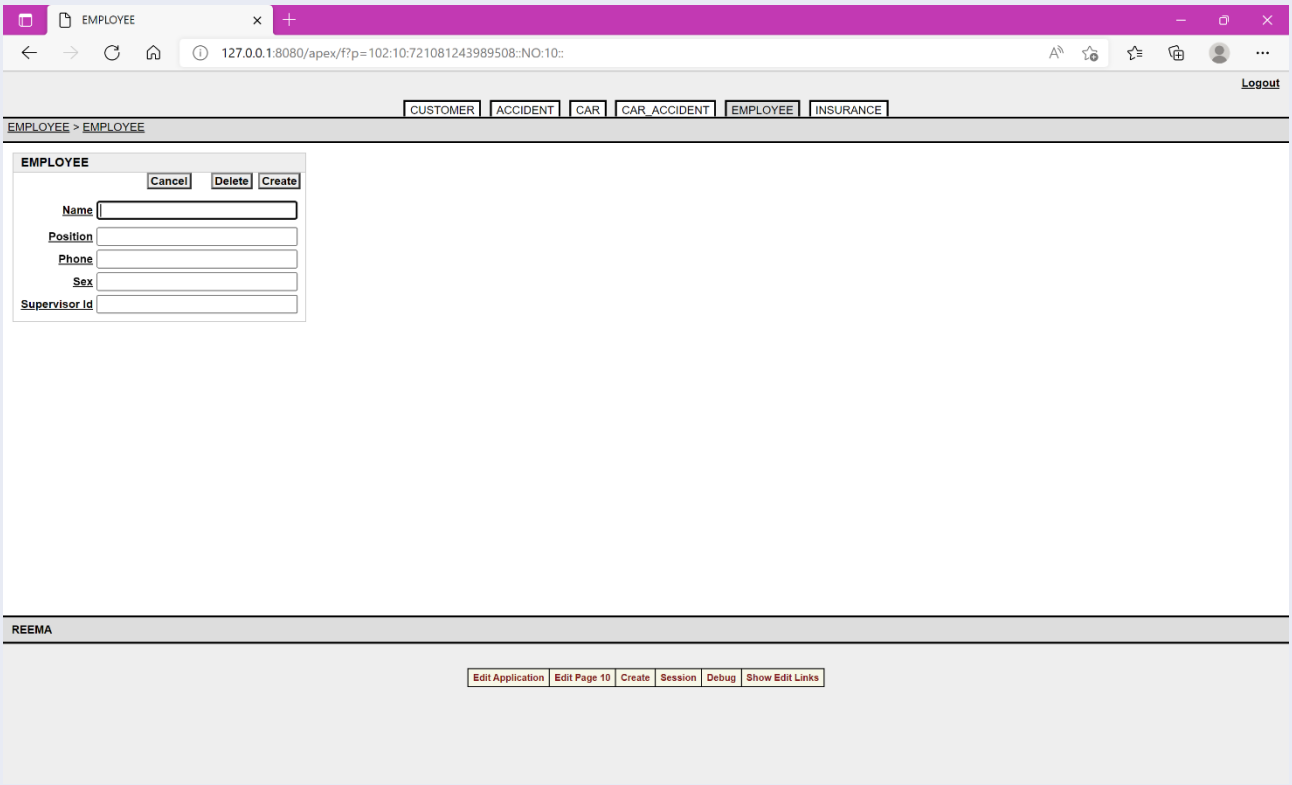
Form and report for costumer:



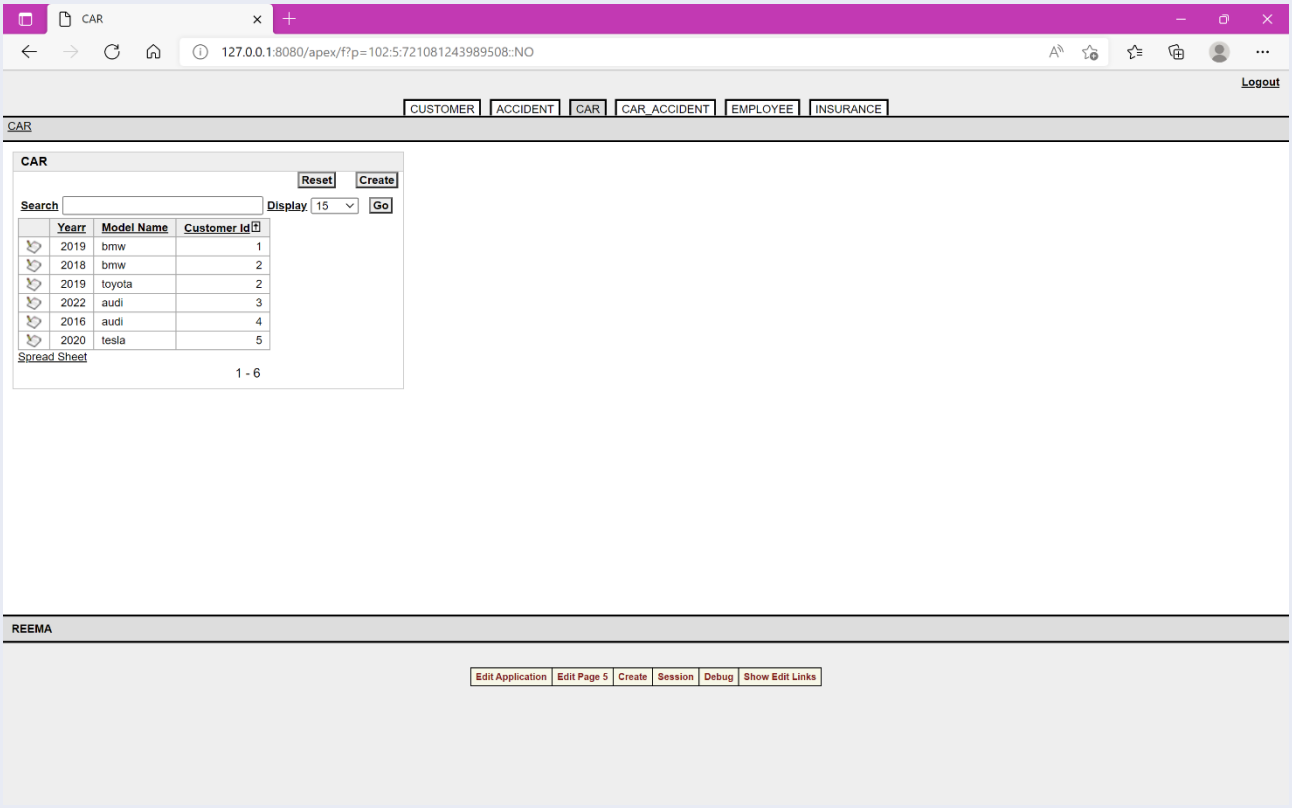


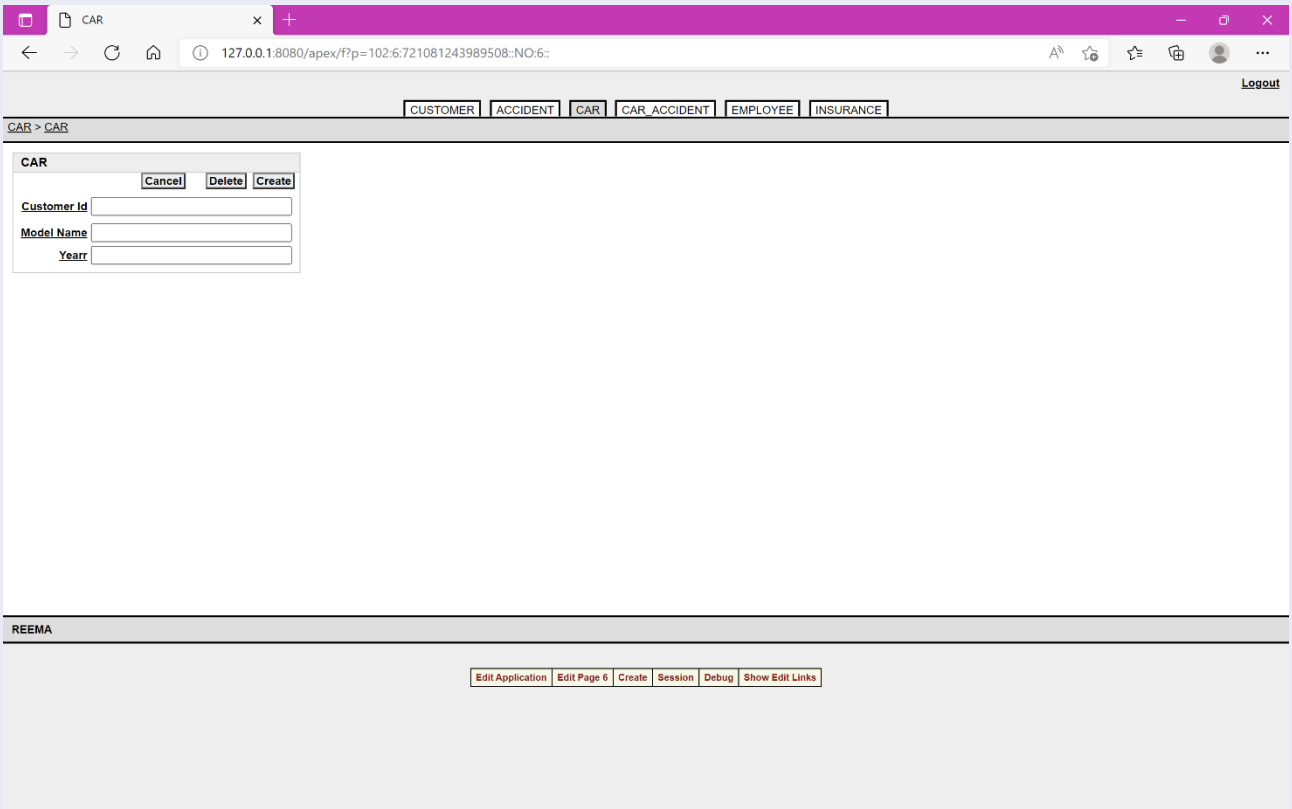
Form and report for employee:



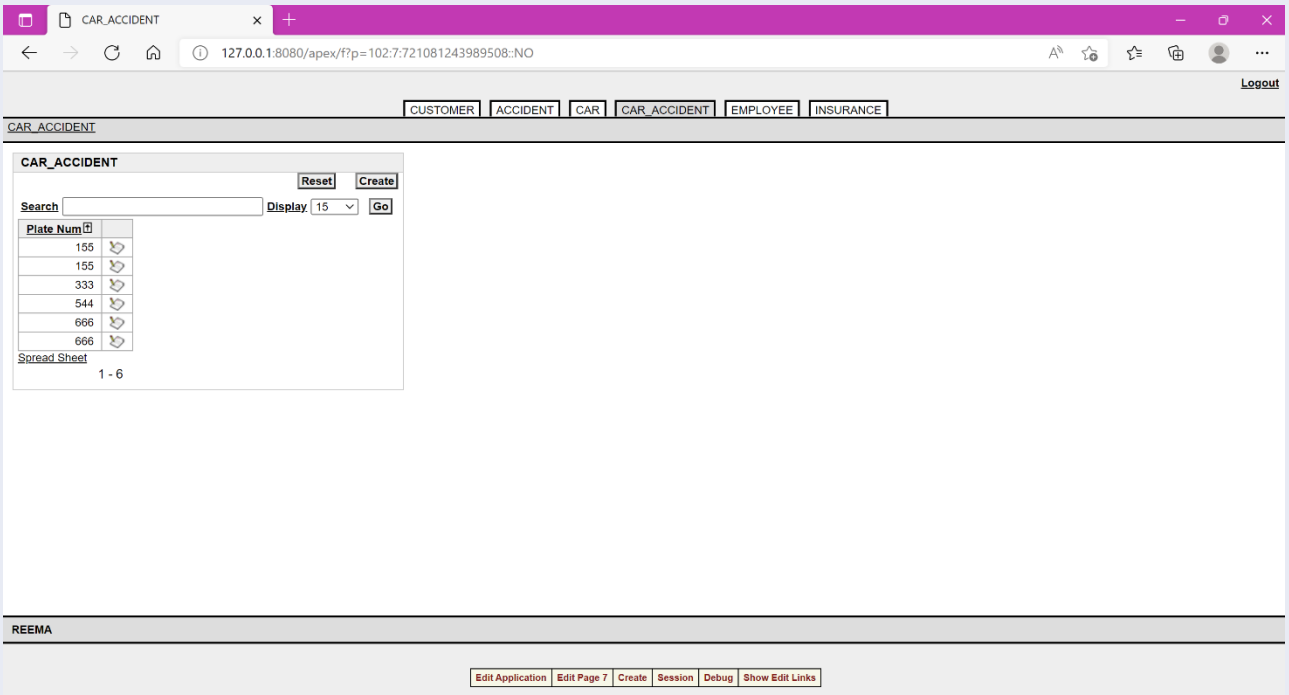


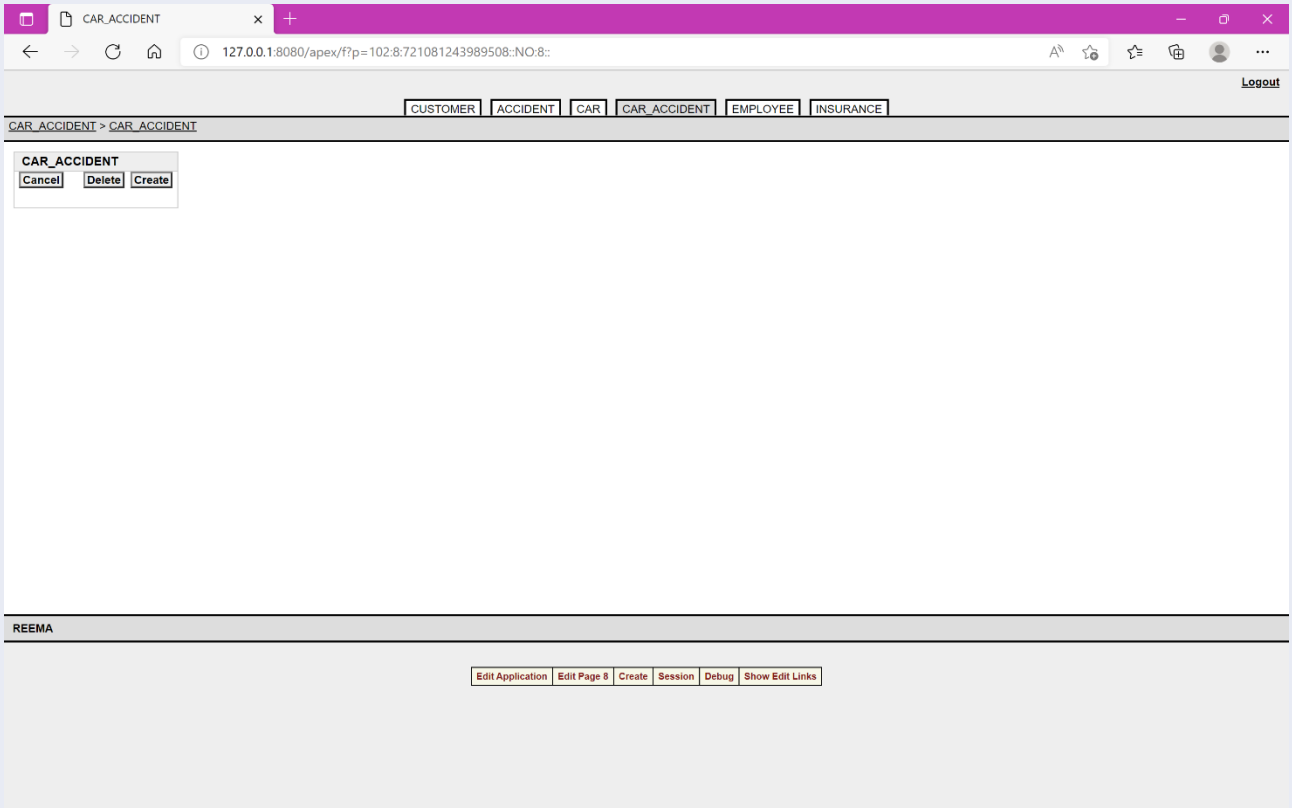
Form and report for car:



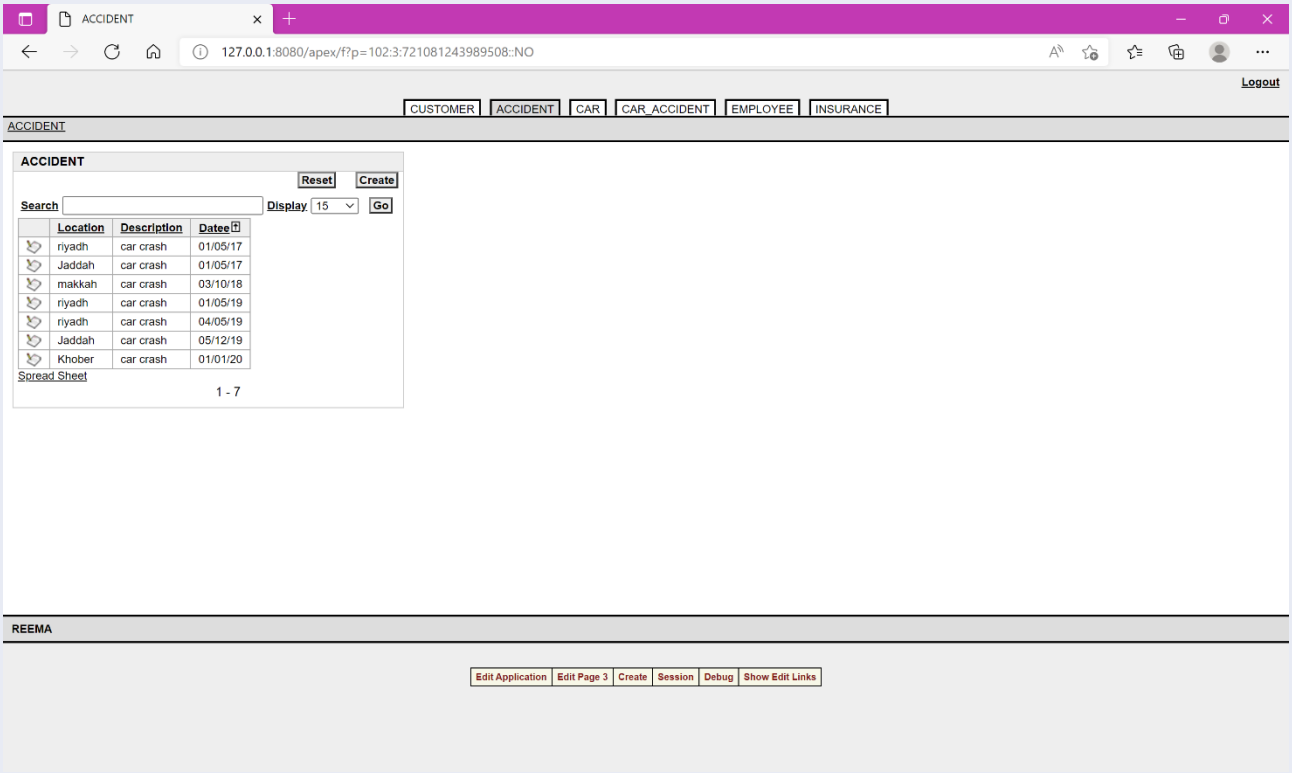


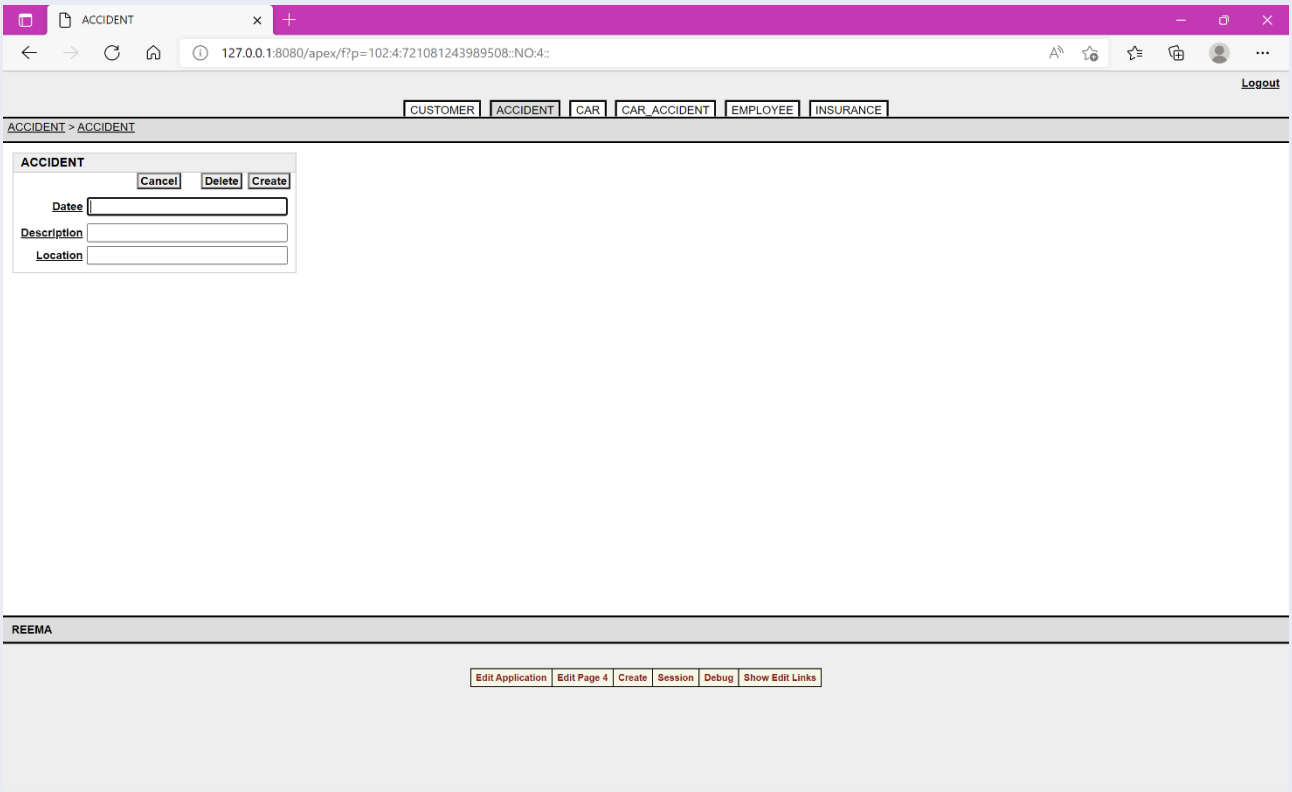
Form and report for car accident:





Form and report for accident:





Form and report for insurance: