Practice Problem:

Purpose: Get you started on SQLDeveloper, Oracle database, and Relational Model concepts.

Please follow the instructions below. Copy and paste the commands and record the details. You will be using Sql\*Developer and your Oracle account. Please write down any comments you received after executing commands. Copy and paste into a document. I may call upon someone to answer. Please review the file Data Modeling and ER.pdf on Canvas. Doing this exercise will help you understand Relational database concepts.

Here we are creating a very simplified bank database for demonstrating concepts. It has customers, accounts, and transactions tables. The attributes are self-explanatory.

Copy and paste in Sql\*Developer workspace.

CREATE TABLE Ex1cust (

CustSSN Char(11) not null,

CustName varchar(20) not null,

CustState char(2) not null,

CustZip number(5) not null,

PRIMARY KEY (CustSSN) );

Now insert new records to the above table:

INSERT INTO Ex1Cust VALUES ('111-11-1111', 'Konana', 'TX', 78750);

Click on “Commit” to make insert permanent.

INSERT INTO Ex1Cust VALUES ('222-22-2222', 'Hasler', 'TX', 78750);

Click on “Commit” to make insert permanent.

INSERT INTO Ex1Cust VALUES ('111-11-1111', 'Konana', 'TX', 78750);

Did this insert work? Why or why not? What type of integrity violation is this?

Now enter the following: This is adding a constraint that state should be either from Texas or Oklahoma:

ALTER TABLE Ex1Cust ADD CONSTRAINT Check\_state CHECK (Custstate IN ('TX', 'OK'));

Insert a new record now:

INSERT INTO Ex1Cust VALUES ('333-33-3333', 'Hasler', 'NM', 78740);

Did this insert work? Why not? What type of integrity violation is this?

INSERT INTO Ex1Cust VALUES ('333-33-3333', 'Hasler', 'OK', 78740);

What happened now?

Create another table for account:

CREATE TABLE Ex1Acct (

AcctNumber char(9) not null,

AcctBalance real not null,

AcctHolder char(11) not null,

PRIMARY KEY (AcctNumber) ,

FOREIGN KEY (AcctHolder) references Ex1cust (custssn) ON DELETE CASCADE);

Insert the following:

INSERT INTO Ex1Acct VALUES ('111111111', 546.78, '111-11-1111');

Click on Commit

INSERT INTO Ex1Acct VALUES ('222222222', 8000.78, '333-33-3333');

Click on Commit

INSERT INTO Ex1Acct VALUES ('111112222', 546.78, '121-11-1111');

Did this insert work? What violation happened and why?

INSERT INTO Ex1Acct VALUES ('111112222', 547.75, '111-11-1111');

Did this insert work? Why or why not?

Create another table by copying and pasting:

CREATE TABLE Ex1trans (

TransNumber char(5) not null,

TransAcct char(9) not null,

TransDate Date not null,

TransAmount real not null,

PRIMARY KEY (TransNumber),

FOREIGN KEY (TransAcct) references Ex1acct (AcctNumber));

Insert the following:

INSERT INTO Ex1Trans VALUES ('12345', '111111111', sysdate, 56.75);

Click on “commit”

INSERT INTO Ex1Trans VALUES ('12350', '111111111', sysdate, 86.75);

Click in commit

INSERT INTO Ex1Trans VALUES ('12350', '111112222', sysdate, 120.75);

Did the above insert work? Why or why not?

Now delete some records and explain what happened:

DELETE FROM Ex1Acct WHERE Acctnumber = '111111111';

DELETE FROM Ex1Acct where Acctnumber = '222222222';

Now drop the table entirely:

DROP Table Ex1Acct;

Explain what happened above?

Now drop the table as below:

DROP Table Ex1trans;

DROP Table Ex1Acct;

DROP Table Ex1Cust;

Did the above sequence work? Why or why not?