**Chapter 5 - Sample Project: Creating and Manipulating a Relational Database for The Art Gallery using the E-R Mapping**

In the sample project section at the end of Chapter 4, we created a relational model for The Art Gallery database from the E-R diagram. Now we will implement the relational schema from the E-R diagram using Oracle. The tables are:

**Artist**(firstName, lastName, street, city, state, zip, interviewDate, interviewerName, areaCode, telephoneNumber, salesLastYear, salesYearToDate, socialSecurityNumber, usualMedium, usualStyle, usualType)

**PotentialCustomer**(firstName, lastName, street, city, state, zip, areaCode, telephoneNumber, dateFilledIn, *preferredArtistLastName, preferredArtistFirstName*, preferredMedium, preferredStyle, preferredType)

**Artwork**(*artistLastName, artistFirstName*, workTitle, askingPrice, dateListed, dateReturned, dateShown, status, workMedium, workSize, workStyle, workType, workYearCompleted, *collectorSocialSecurityNumber*)

**ShownIn**(*artistLastName, artistFirstName, workTitle, showTitle*)

**Collector**(SocialSecurityNumber, firstName, lastName, street, city, state, zip, interviewDate, interviewerName, areaCode, telephonenumber, salesLastYear, salesYearToDate, *collectionArtistFirstName, collectionArtistLastName*, collectionMedium, collectionStyle, collectionType)

**Show**(showTitle, *showFeaturedArtistLastName, showFeaturedArtistFirstName*, showClosingDate, showTheme, showOpeningDate)

**Sale**(InvoiceNumber, *artistLastName, artistFirstName*, *workTitle,* amountRemittedToOwner, saleDate, salePrice, saleSalesPersonCommission, saleTax, SaleTotal, *buyerLastName, buyerFirstName, buyerAreaCode, buyerTelephoneNumber salespersonSocialSecurityNumber*)

**Buyer**(firstName, lastName, areaCode, telephoneNumber, street, city, state, zip, purchasesLastYear, purchasesYearToDate)

**Salesperson**(socialSecurityNumber, firstName, lastName, street, city, state, zip)

**Step 5.1 - Update the data dictionary and list of assumptions (as needed).**

For each table, write the table name and write out the names, data types, and sizes of all the data items, Identify any constraints, using the conventions of the DBMS you will use for implementation.

No changes were made to the list of assumptions. No changes to the listed data items in the data dictionary are needed. For an Oracle database, the tables will have the structures shown below.

TABLE Artist

lastName VARCHAR2 20 (lastName,firstName) PRIMARY KEY

firstName VARCHAR2 15 (lastName,firstName) PRIMARY KEY

street VARCHAR2 50

city VARCHAR2 15

state CHAR 2

zip CHAR 5

interviewDate DATE

interviewerName VARCHAR2 35

areaCode CHAR 3

telephoneNumber CHAR 7

salesLastYear NUMBER 8,2

salesYearToDate NUMBER 8,2

socialSecurityNumber CHAR 9 UNIQUE

usualMedium VARCHAR 15

usualStyle VARCHAR 15

usualType VARCHAR 20

TABLE PotentialCustomer

lastName VARCHAR2 20 (lastName, firstName) PRIMARY KEY

firstname VARCHAR2 15 (lastName, firstName) PRIMARY KEY

street VARCHAR2 50

city VARCHAR2 15

state CHAR 2

zip CHAR 5

areaCode CHAR 3

telephoneNumber CHAR 7

dateFilledIn DATE

preferredArtistLastName VARCHAR2 20 (preferredArtistLastName, preferredArtistFirstName) FOREIGN KEY

preferredArtistFirstName VARCHAR2 15 (preferredArtistLastName, preferredArtistFirstName) FOREIGN KEY

preferredMedium VARCHAR2 15

preferredStyle VARCHAR2 15

preferredType VARCHAR2 20

TABLE Artwork

artistLastName VARCHAR2 20 (artistLastName,artistFirstName,workTitle) PRIMARY KEY

artistFirstName VARCHAR2 15 (artistLastName,artistFirstName,workTitle) PRIMARY KEY

workTitle VARCHAR2 50 (artistLastName,artistFirstName,workTitle) PRIMARY KEY

askingPrice NUMBER 8,2

dateListed DATE

dateReturned DATE

dateShown DATE

status VARCHAR2 15

workMedium VARCHAR2 15

workSize VARCHAR2 15

workStyle VARCHAR2 15

workType VARCHAR2 20

workYearCompleted CHAR 4

TABLE ShownIn

artistLastName VARCHAR2 20 (all attributes) PRIMARY KEY

artistFirstName VARCHAR2 15 (all attributes) PRIMARY KEY

workTitle VARCHAR2 50 (all attributes) PRIMARY KEY

showTitle VARCHAR2 50 (all attributes) PRIMARY KEY

TABLE Collector

socialSecurityNumber CHAR 9 PRIMARY KEY

lastName VARCHAR2 20 NOT NULL , (firstName, lastName) UNIQUE

firstName VARCHAR2 15 NOT NULL , (firstName, lastName) UNIQUE

street VARCHAR2 50

city VARCHAR2 15

state CHAR 2

zip CHAR 5

interviewDate DATE

interviewerName VARCHAR2 35

areaCode CHAR 3

telephoneNumber CHAR 7

salesLastYear NUMBER 8,2

salesYearToDate NUMBER 8,2

collectionArtistLastName VARCHAR2 20

collectionArtistFirstName VARCHAR2 15

collectionMedium VARCHAR 15

collectionStyle VARCHAR 15

collectionType VARCHAR 20

TABLE Show

showTitle VARCHAR2 50 PRIMARY KEY

showFeaturedArtistLastName VARCHAR2 20 ( showFeaturedArtistLastName, showFeaturedArtistFirstName) FOREIGN KEY

showFeaturedArtistFirstName VARCHAR2 15 ( showFeaturedArtistLastName, showFeaturedArtistFirstName)

FOREIGN KEY

showClosingDate DATE

showTheme VARCHAR2 50

showOpeningDate DATE

TABLE Sale

invoiceNumber NUMBER 6 PRIMARY KEY

artistLastName VARCHAR2 20 NOT NULL;

artistFirstName VARCHAR2 15 NOT NULL;

workTitle VARCHAR2 50 NOT NULL

amountRemittedToOwner NUMBER 8,2 DEFAULT 0.00

saleDate DATE

salePrice NUMBER 8,2

saleSalesPersonCommission NUMBER 6,2

saleTax NUMBER 6,2

saleTotal NUMBER 6,2

buyerLastName VARCHAR2 20 NOT NULL (lastName, firstName) FOREIGN KEY

buyerFirstName VARCHAR2 15 NOT NULL (lastName, firstName) FOREIGN KEY

buyerAreaCode CHAR 3

buyerTelephoneNumber CHAR 7

salespersonSocialSecurityNumber CHAR 9 FOREIGN KEY

TABLE Buyer

lastName VARCHAR2 20 (lastName, firstName) PRIMARY KEY

firstName VARCHAR2 15 (lastName, firstName) PRIMARY KEY

areaCode CHAR 3

telephoneNumber CHAR 7

street VARCHAR2 50

city VARCHAR2 15

state CHAR 2

zip CHAR 5

purchasesLastYear NUMBER 8,2

purchasesYearToDate NUMBER 8,2

TABLE Salesperson

socialSecurityNumber CHAR 9 PRIMARY KEY

lastName VARCHAR2 20 NOT NULL; (firstName,lastName) UNIQUE

firstName VARCHAR2 15 NOT NULL; (firstName,lastName) UNIQUE

street VARCHAR2 50

city VARCHAR2 15

state CHAR 2

zip CHAR 5

**Step 5.2 Write and execute SQL statements to create all the tables needed to implement the design.**

Since we wish to specify foreign keys as we create the tables, we must be careful of the order in which we create, because the home table has to exist before the table containing the foreign key is created. Therefore, we will use the following order:

Artist, Collector, Potential Customer, Artwork, Show, ShownIn, Buyer, Salesperson, Sale. The DDL statements to create the tables are shown below. The code for these statements is stored in a text file in this directory called *DDLTheArtGallery-Initial Schema*. You can execute the statements in that file to create the tables in Oracle yourself. We are using Oracle syntax, but the DDL statements should work, with minor modifications, for any relational DBMS.

-- Create the tables for the initial relational model

CREATE TABLE Artist(

lastName VARCHAR2(20),

firstName VARCHAR2(15),

interviewDate DATE,

interviewerName VARCHAR2(35),

areaCode CHAR(3),

telephoneNumber CHAR(7),

street VARCHAR2(50),

city VARCHAR2(15),

state CHAR(2),

zip CHAR(5),

salesLastYear NUMBER (8,2),

salesYearToDate NUMBER (8,2),

socialSecurityNumber CHAR(9),

usualMedium VARCHAR(15),

usualStyle VARCHAR(15),

usualType VARCHAR(20),

CONSTRAINT Artist\_Lname\_Fname\_pk PRIMARY KEY (lastName, firstName),

CONSTRAINT Artist\_socialSecurityNumber\_uk UNIQUE (socialSecurityNumber));

CREATE TABLE Collector(

socialSecurityNumber CHAR(9),

lastName VARCHAR2(20) NOT NULL,

firstName VARCHAR2(15) NOT NULL,

interviewDate DATE,

interviewerName VARCHAR2(35),

areaCode CHAR(3),

telephoneNumber CHAR(7),

street VARCHAR2(50),

city VARCHAR2(15),

state CHAR(2),

zip CHAR(5),

salesLastYear NUMBER(8,2),

salesYearToDate NUMBER(8,2),

collectionArtistLastName VARCHAR2 (20),

collectionArtistFirstName VARCHAR2 (15),

collectionMedium VARCHAR(15),

collectionStyle VARCHAR(15),

collectionType VARCHAR(20),

CONSTRAINT Collector\_SSN\_pk PRIMARY KEY (socialSecurityNumber),

CONSTRAINT Coll\_collArtLnameFname\_fk FOREIGN KEY(collectionArtistLastName, collectionArtistFirstName) REFERENCES Artist (lastName, firstName) ON DELETE CASCADE);

CREATE TABLE PotentialCustomer(

lastName VARCHAR2(20),

firstname VARCHAR2(15),

areaCode CHAR(3),

telephoneNumber CHAR(7),

street VARCHAR2(50),

city VARCHAR2(15),

state CHAR(2),

zip CHAR(5),

dateFilledIn DATE,

preferredArtistLastName VARCHAR2(20),

preferredArtistFirstName VARCHAR2(15),

preferredMedium VARCHAR2(15),

preferredStyle VARCHAR2(15),

preferredType VARCHAR2(20),

CONSTRAINT PotCust\_Lname\_Fname\_pk PRIMARY KEY (lastName, firstName),

CONSTRAINT PotCust\_prefLName\_FName\_fk FOREIGN KEY (preferredArtistLastName,preferredArtistFirstName)REFERENCES Artist(lastName, firstName) ON DELETE CASCADE);

CREATE TABLE Artwork(

artistLastName VARCHAR2 (20),

artistFirstName VARCHAR2 (15),

workTitle VARCHAR2(50),

askingPrice NUMBER(8,2),

dateListed DATE,

dateReturned DATE,

dateShown DATE,

status VARCHAR2(15),

workMedium VARCHAR2(15),

workSize VARCHAR2(15),

workStyle VARCHAR2(15),

workType VARCHAR2(20),

workYearCompleted CHAR(4),

collectorSocialSecurityNumber CHAR(9),

CONSTRAINT Artwork\_artworkId\_pk PRIMARY KEY (artistLastName, artistFirstName, workTitle),

CONSTRAINT Artwork\_artistLname\_Fname\_fk FOREIGN KEY (artistLastName,artistFirstName) REFERENCES Artist(lastName, firstName),

CONSTRAINT Artwork\_collectorSSN\_fk FOREIGN KEY (collectorSocialSecurityNumber) REFERENCES Collector(socialSecurityNumber));

CREATE TABLE Show(

showTitle VARCHAR2(50),

showFeaturedArtistLastName VARCHAR2(20),

showFeaturedArtistFirstName VARCHAR2(15),

showClosingDate DATE,

showTheme VARCHAR2(50),

showOpeningDate DATE,

CONSTRAINT Show\_showTitle\_pk PRIMARY KEY (showTitle),

CONSTRAINT Show\_showArtLname\_Fname\_fk FOREIGN KEY (showFeaturedArtistLastName,showFeaturedArtistFirstName) REFERENCES Artist (lastName, firstName));

CREATE TABLE ShownIn(

artistLastName VARCHAR2 (20),

artistFirstName VARCHAR2 (15),

workTitle VARCHAR2(50),

showTitle VARCHAR2(50),

CONSTRAINT ShownIn\_AllAtt\_pk PRIMARY KEY (artistLastName, artistFirstName, workTitle,showTitle),

CONSTRAINT ShownIn\_\_fk FOREIGN KEY (artistLastName, artistFirstName, workTitle) REFERENCES Artwork (artistLastName, artistFirstName, workTitle),

CONSTRAINT ShownIn\_showTitle\_fk FOREIGN KEY (showTitle) REFERENCES Show (showTitle) );

CREATE TABLE Buyer(

lastName VARCHAR2(20),

firstName VARCHAR2(15),

street VARCHAR2(50),

city VARCHAR2(15),

state CHAR(2),

zip CHAR(5),

areaCode CHAR(3),

telephoneNumber CHAR(7),

purchasesLastYear NUMBER(8,2),

purchasesYearToDate NUMBER(8,2),

CONSTRAINT Buyer\_buyerLName\_FName\_pk PRIMARY KEY (lastName, firstName));

CREATE TABLE Salesperson (

socialSecurityNumber CHAR(9),

lastName VARCHAR2(15) NOT NULL,

firstName VARCHAR2(20) NOT NULL,

street VARCHAR2(50),

city VARCHAR2(15),

state CHAR(2),

zip CHAR(5),

CONSTRAINT Salesperson\_SSN\_pk PRIMARY KEY (socialSecurityNumber),

CONSTRAINT Salesperson\_fName\_lName\_uk UNIQUE (firstName,lastName));

CREATE TABLE Sale (

invoiceNumber NUMBER(6),

artistLastName VARCHAR2 (20),

artistFirstName VARCHAR2 (15),

workTitle VARCHAR2(50),

amountRemittedToOwner NUMBER(8,2) DEFAULT 0.00,

saleDate DATE,

salePrice NUMBER(8,2),

saleTax NUMBER(6,2),

buyerLastName VARCHAR2(15),

buyerFirstName VARCHAR2(20),

buyerAreaCode CHAR(3),

buyerTelephoneNumber CHAR(7),

salespersonSSN CHAR(9),

CONSTRAINT Sale\_invoiceNumber\_pk PRIMARY KEY (invoiceNumber),

CONSTRAINT Sale\_ALName\_FName\_title\_fk FOREIGN KEY (artistLastName,artistFirstName,workTitle) REFERENCES Artwork(artistLastName, artistFirstName, workTitle),

CONSTRAINT Sale\_buyerLName\_FName\_fk FOREIGN KEY (buyerLastName, buyerFirstName) REFERENCES Buyer (lastName, firstName));

--Oracle DDL Statements for The Art Gallery Tables

**Step 5.3 - Insert several records in each table, preserving all constraints. Put in enough data to demonstrate how the database will function.**

The INSERT statements are shown below. The code for these statements is stored in a text file in this directory called *DataforTheArtGallery-Initial Schema*. You should execute this code to populate the tables you created in the previous step.

INSERT INTO Artist VALUES('Vincenti', 'Leonardo', '10-Oct-2015', 'Hughes', '212', '5559999','10 Main Street','New York', 'NY','10101', 9000, 4500,'099999876', 'oil', 'realism', 'painting');

INSERT INTO Artist VALUES('Gogh', 'Vincent', '15-Jun-2014', 'Hughes', '914', '5551234','55 West 18 Street','New Rochelle', 'NY', '10801', 9500, 5500,'099999877', 'oil', 'impressionism', 'painting');

INSERT INTO Artist VALUES('Homes','Winslow', '05-Jan-2015', 'Hughes', '619', '1234567','100 Water Street', 'San Diego', 'CA' ,'92101', 14000, 4000,'083999876', 'watercolor', 'realism', 'painting');

INSERT INTO Artist VALUES('Calderone','Alexander', '10-Feb-2014', 'Hughes', '212', '5559999','10 Main Street', 'New York','NY','10101', 20000, 20000,'123999876', 'steel', 'cubism', 'sculpture');

INSERT INTO Artist VALUES('Keefe','Georgia', '05-Oct-2015', 'Hughes', '305', '1239999','5 Chestnut Street', 'Miami', 'FL','33010', 19000, 14500,'987999876', 'oil', 'realism', 'painting');

INSERT INTO Collector VALUES('102345678','Jackson', 'John', '01-Feb-2015', 'Hughes', '917', '7771234','24 Pine Avenue','New York', 'NY','10101', 4000,3000,'Vincenti', 'Leonardo' , 'oil', 'realism', 'collage');

INSERT INTO Collector VALUES('987654321', 'Lee','Mary', '01-Mar-2014', 'Jones', '305', '5551234','10 Ash Street','Miami', 'FL','33010', 2000',3000, 'Gogh', 'Vincent', 'watercolor', 'realism', 'painting');

INSERT INTO Collector VALUES('034345678', 'Perez','Ramon', '15-Apr-2015', 'Hughes', '619', '8881234','15 Poplar Avenue','San Diego', 'CA' ,'92101', 4500,3500, 'Homes','Winslow', 'oil', 'realism', 'painting');

INSERT INTO Collector VALUES('888881234','Lee', 'Rick', '20-Jun-2015', 'Hughes', '212', '9991234','24 Pine Avenue','New York', 'NY','10101', 4000,3000, 'Homes','Winslow', 'oil', 'realism', 'sculpture');

INSERT INTO Collector VALUES('777345678','Torno', 'Samantha', '05-May-2015', 'Jones', '305', '5551234','10 Ash Street','Miami', 'FL','33010', 40000,30000, 'Vincenti', 'Leonardo', 'acrylic', 'realism', 'painting');

INSERT INTO PotentialCustomer VALUES('Burns','Adam','917','3456789', '1 Spruce Street','New York', 'NY','10101', '12-Dec-2014', 'Vincenti', 'Leonardo', 'watercolor', 'impressionism', 'painting');

INSERT INTO PotentialCustomer VALUES('Burns', 'Carole','917','3456789', '1 Spruce Street', 'New York', 'NY','10101', '12-Dec-2015','Gogh', 'Vincent' , 'watercolor', 'realism', 'sculpture');

INSERT INTO PotentialCustomer VALUES('Engel', 'David','914','7777777', '715 North Avenue', 'New Rochelle', 'NY', '10801', '08-Aug-2015','Homes','Winslow', 'watercolor', 'realism', 'painting');

INSERT INTO PotentialCustomer VALUES('Hughes', 'Frances','619','3216789', '10 Pacific Avenue','San Diego', 'CA' , '92101', '05-Jan-2015','Gogh', 'Vincent', 'oil', 'impressionism', 'painting');

INSERT INTO PotentialCustomer VALUES('Jacobs', 'Irene','312','1239876', '1 Windswept Place','Chicago','IL', '60601', '21-Sep-2015', 'Keefe','Georgia', 'watercolor', 'abs expression', 'painting');

INSERT INTO Artwork VALUES('Vincenti', 'Leonardo', 'Flight', 15000.00, '08-Sep-2015',null,null, 'for sale','oil', '36 in X 48 in', 'realism', 'painting','2001',null );

INSERT INTO Artwork VALUES('Homes','Winslow','Bermuda Sunset', 8000.00, '15-Mar-2015',null ,'01-Apr-2015' , 'sold','watercolor', '22 in X 28 in', 'realism', 'painting','2003',null );

INSERT INTO Artwork VALUES('Homes','Winslow','Mediterranean Coast', 4000.00, '18-Oct-2015',null ,'01-Apr-2015', 'for sale','watercolor', '22 in X 28 in', 'realism', 'painting','2000','102345678');

INSERT INTO Artwork VALUES('Keefe','Georgia','Ghost orchid', 18000.00, '05-Jun-2015',null , null, 'sold','oil', '36 in X 48 in', 'realism', 'painting','2001','034345678' );

INSERT INTO Artwork VALUES('Calderone','Alexander', 'Five Planes', 15000.00, '10-Jan-2015',null ,'10-Mar-2015' , 'for sale','steel', '36 X 30 X 60 in', 'cubism', 'sculpture','2003','034345678' );

INSERT INTO Show VALUES('The Sea in Watercolor','Homes','Winslow', '30-Apr-2015','seascapes','01-Apr-2015');

INSERT INTO Show VALUES('Calderone''s Mastery of Space','Calderone','Alexander','20-Mar-2015',null, '10-Mar-2015');

INSERT INTO ShownIn VALUES('Homes','Winslow','Bermuda Sunset','The Sea in Watercolor');

INSERT INTO ShownIn VALUES('Homes','Winslow','Mediterranean Coast', 'The Sea in Watercolor');

INSERT INTO ShownIn VALUES('Calderone','Alexander', 'Five Planes', 'Calderone''s Mastery of Space');

INSERT INTO Buyer VALUES ('Smiley','Valerie', '15 Hudson Street','New York', 'NY', '10101', '718','5551234', 5000, 7500);

INSERT INTO Buyer VALUES ('Lee','Winston', '20 Liffey Avenue', 'Chicago', 'IL', '60601', '312','7654321', 3000, 0);

INSERT INTO Buyer VALUES ('Babson','Samantha', '25 Thames Lane', 'San Diego', 'CA' ,'92101', '619','4329876', 15000, 0);

INSERT INTO Buyer VALUES ('Flagg','John', '22 Amazon Street', 'New York', 'NY','10101', '212','7659876', 3000, 0);

INSERT INTO Buyer VALUES ( 'Smallshaw','Terrence', '5 Nile Street', 'Miami', 'FL','33010', '305','2323456', 15000, 17000);

INSERT INTO Salesperson VALUES('102445566','Smith', 'John', '10 Sapphire Row', 'New Rochelle', 'NY','10801');

INSERT INTO Salesperson VALUES('121344321', 'Hughes','Alan', '10 Diamond Street', 'New York', 'NY','10101');

INSERT INTO Salesperson VALUES('101889988', 'Brady','Mary', '10 Pearl Avenue', 'New Rochelle', 'NY','10801');

INSERT INTO Salesperson VALUES('111223344', 'Fleming','Jill', '10 Ruby Row','New York', 'NY', '10101');

INSERT INTO Salesperson VALUES('123123123', 'DeSimone','Terrence', '10 Emerald Lane', 'New York', 'NY','10101');

INSERT INTO Sale VALUES(1234, 'Homes','Winslow','Bermuda Sunset',0 ,'05-Apr-2015',7500,600, 'Smiley','Valerie','718','5551234' , '102445566');

INSERT INTO Sale VALUES(1235, 'Keefe','Georgia','Ghost orchid',0, '06-Jun-2015',17000,1360, 'Smallshaw','Terrence', '305','2323456' ,'121344321');

-- Statements to insert data into The Art Gallery Tables

**Step 5.4 - Design SQL statements that will process five non-routine requests for information from the database just created.**

For each, write the request in English, followed by the corresponding SQL command.

The questions and corresponding SQL queries are given below. The code appears in a file in this directory called *Queries forTheArtGallery-Initial Schema*. You should execute these queries using the database you created earlier.

**5.4.a. Find the names of all artists who were interviewed after January 1, 2014 but who have no works of art listed.**

SELECT firstName, lastName

FROM Artist

WHERE interviewDate> '01-JAN-2014' AND NOT EXISTS

(SELECT \*

FROM Artwork

WHERE artistLastName =Artist.lastName AND artistFirstName=Artist.firstName);

**5.4.b. Find the total commission for salesperson John Smith earned between the dates April 1, 2014 and April 15, 2015.** Recall that the gallery charges 10% commission, and the salesperson receives one-half of that, which is 5% of the selling price.

SELECT .05 \* SUM(salePrice)

FROM Sale

WHERE saleDate>='01-APR-2014' AND saleDate<='15-APR-2015' AND

salespersonSSN = (SELECT socialSecurityNumber

FROM Salesperson

WHERE firstName= 'John' AND lastName ='Smith');

**5.4.c. Find the collector names, artist names and titles of all artworks that are owned by collectors, not by the artists themselves, in order by the collector’s last name.**

SELECT Collector.firstName, Collector.lastName, Artist.firstName, Artist.lastName, workTitle

FROM Artist, Artwork, Collector

WHERE Artist.lastname = Artwork.artistLastName AND Artist.firstname = Artwork.artistFirstName AND Artwork.collectorSocialSecurityNumber = Collector.socialSecurityNumber AND collectorSocialSecurityNumber IS NOT NULL

ORDER BY Collector.lastName, Collector.firstName;

**5.4.d. For each potential buyer, find information about shows that feature his or her preferred artist.**

SELECT firstName, lastName, showTitle, showOpeningDate, showClosingDate

FROM Show, PotentialCustomer

WHERE showFeaturedArtistLastName = PotentialCustomer.preferredArtistLastName AND

showFeaturedArtistFirstName = PotentialCustomer.preferredArtistFirstName

ORDER BY LastName, firstname;

**5.4.e. Find the average sale price of works of artist Georgia Keefe.**

SELECT AVG(salePrice)

FROM Sale

WHERE artistLastName='Keefe' AND artistFirstName ='Georgia';

­-Queries for The Art Gallery

**Step 5.5 – Create one trigger for The Art Gallery database.**

The following trigger will update a buyer’s record whenever a sale is made. The code appears in a file in this directory called *Trigger for Initial Schema*. You should create this trigger and then test it by adding a new Sale record, observing the change in the buyer’s record.

-- Create at least one trigger and write the code for it.

--This trigger will update the amount of the buyer’s purchases year-to-date whenever a sale is completed.

create or replace trigger UPDATEBUYERYTD

after insert on Sale

for each row

begin

update Buyer

set purchasesYearToDate = purchasesYearToDate + :NEW.salePrice

where Buyer.LastName = :NEW.buyerLastName and Buyer.FirstName = :NEW.buyerFirstName;

end;

/

-- Code for Trigger