

CS 327 Spring 2025

Homework 4

SQL Queries.

Consider the following schema based on the VRG database given in class. Note: the tables shown here have fewer columns than the actual tables in the database to keep the problem simple.

**ARTIST** (ARTISTID : integer [PK], FIRSTNAME : string, LASTNAME : string, NATIONALITY: string, DATEOFBIRTH: integer)

**WORK** (WORKID : integer [PK], TITLE : string, ARTISTID : string)

**CUSTOMER** (CUSTOMERID : integer [PK], FIRSTNAME : string, LASTNAME : string, COUNTRY: string)

**TRANS** (TRANSACTIONID: integer [PK], CUSTOMERID : integer, WORKID : integer, SALESPRICE: float)

The key fields are underlined, and the domain of each field is listed after the field name. WORK.ARTISTID is a foreign key referring to ARTIST.ARTISTID, TRANS.CUSTOMERID is a foreign key referencing CUSTOMER.CUSTOMERID, and TRANS.WORKID is a foreign key referring to WORK.WORKID.

**Write the following queries in SQL in the space given:**

**a) Display the titles and sales prices of all works sold for more than \$10,000**

```
SELECT WORK.TITLE
FROM WORK
JOIN TRANS ON WORK.WORKID = TRANS.WORKID
WHERE TRANS.SALESPRICE > 10000;
```

**b) Display the first and last names of all artists whose at least one work sold for more than \$10,000.**

**Each name must appear only once.**

```
SELECT DISTINCT ARTIST.FIRSTNAME, ARTIST.LASTNAME
FROM ARTIST
JOIN WORK ON ARTIST.ARTISTID = WORK.ARTISTID
JOIN TRANS ON WORK.WORKID = TRANS.WORKID
WHERE TRANS.SALESPRICE > 10000;
```

**c) Display the first and last names of all customers who bought a painting for more than \$10,000.**

**Each name must appear only once.**

```
SELECT DISTINCT CUSTOMER.FIRSTNAME, CUSTOMER.LASTNAME
FROM CUSTOMER
JOIN TRANS ON CUSTOMER.CUSTOMERID = TRANS.CUSTOMERID
WHERE TRANS.SALESPRICE > 10000;
```

**d) Display the First and Last Names and Nationalities of all artists who were born between the years 1850 and 1900.**

```
SELECT FIRSTNAME, LASTNAME, NATIONALITY
FROM ARTIST
WHERE DATEOFBIRTH BETWEEN 1850 AND 1900;
```

**e) Display the titles of all paintings that were either painted by a French artist, or bought by a customer from France. Each title must appear once.**

```
SELECT DISTINCT WORK.TITLE
FROM WORK
LEFT JOIN ARTIST ON WORK.ARTISTID = ARTIST.ARTISTID
LEFT JOIN TRANS ON WORK.WORKID = TRANS.WORKID
LEFT JOIN CUSTOMER ON TRANS.CUSTOMERID = CUSTOMER.CUSTOMERID
WHERE ARTIST.NATIONALITY = 'French' OR CUSTOMER.COUNTRY = 'France';
```