**Art Gallery Database Modeling**

**Final Report**

**Group: Mister Freeze**

**Group Members:**

**Xuejun Shen, Bingyue Zeng**

**Xiao Xue, Zengpu Wang**

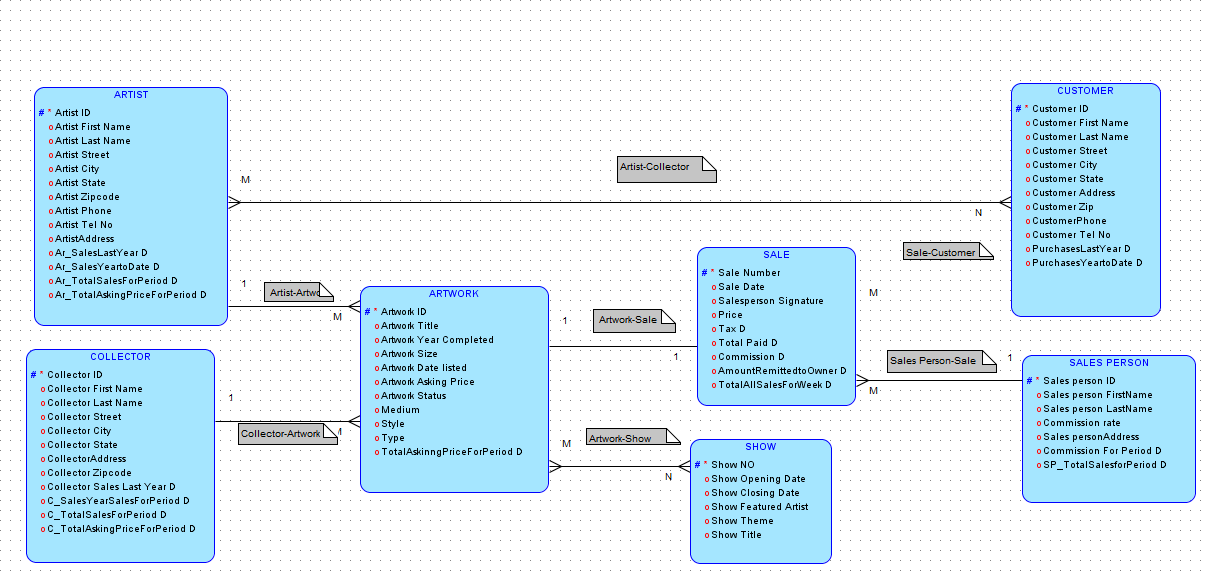
**Professor: RP Raghupathi**

**Date: 12/04/2019**

**Part A.**

1. **Entity Relationship Diagram**

**Entity Relationship Diagram for Art Gallery**

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1. **Data Dictionary for Entity Relational Model**

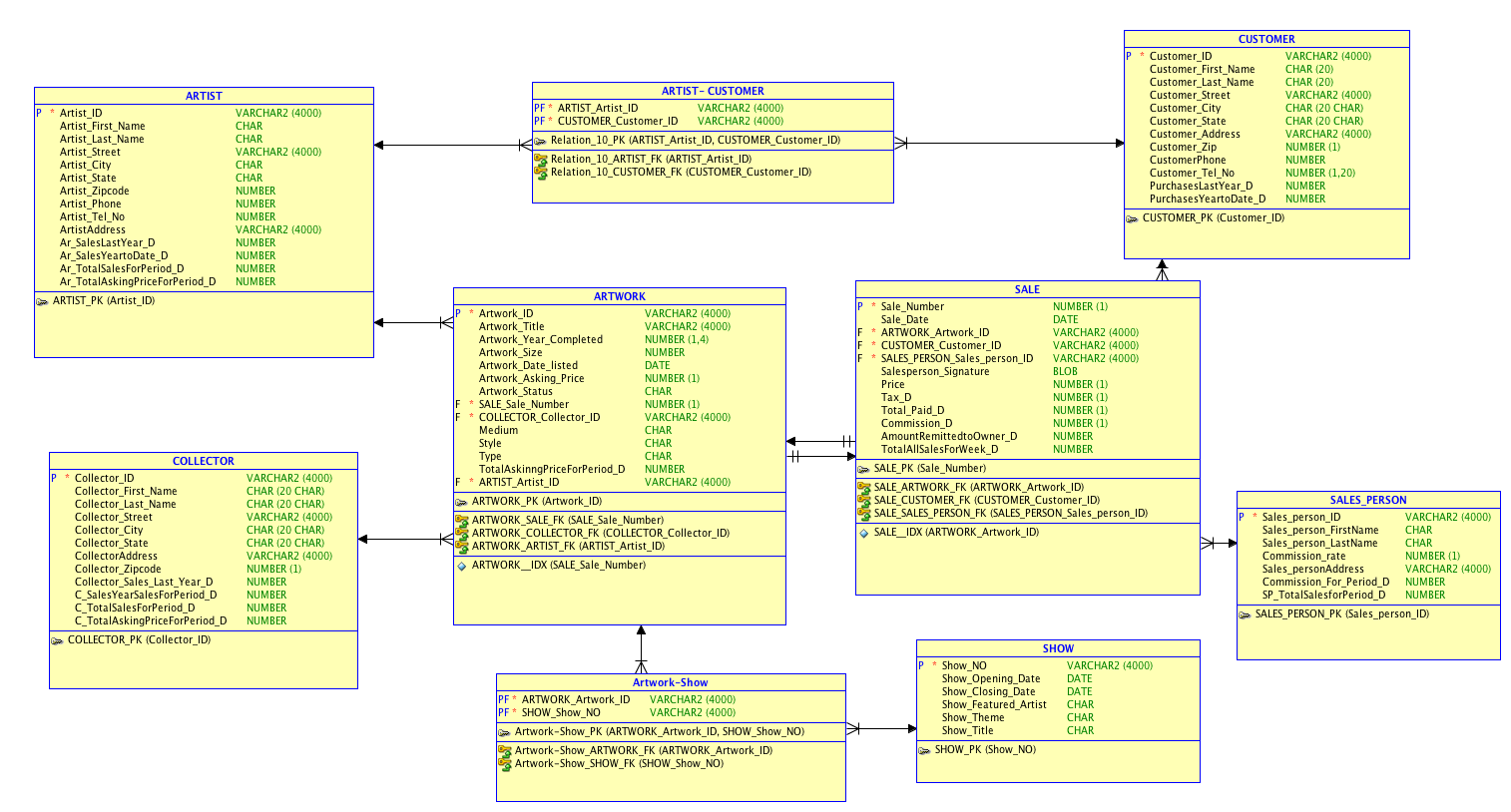
|  |  |  |
| --- | --- | --- |
| **Attribute / Entity Name** | **Unique Identifier** | **Data Type** |
| **Entity: ARTIST** |  |  |
| Artist ID | **Identifier** | VARCHAR2(4000) |
| Ar\_SalesLastYear D |  | NUMBER |
| Ar\_SalesYeartoDate D |  | NUMBER |
| Ar\_TotalAskingPriceForPeriod D |  | NUMBER |
| Ar\_TotalSalesForPeriod D |  | NUMBER |
| ArtistAddress |  | VARCHAR2(4000) |
| Artist City |  | CHAR |
| Artist First Name |  | CHAR(20) |
| Artist Last Name |  | CHAR(20) |
| Artist Phone |  | NUMBER |
| Artist State |  | CHAR |
| Artist Street |  | VARCHAR2(4000) |
| Artist Tel No |  | NUMBER |
| Artist Zipcode |  | NUMBER |
| **Entity: ARTWORK** |  |  |
| Artwork ID | **Identifier** | VARCHAR2(4000) |
| Artist ID |  | VARCHAR2(4000) |
| Artwork Asking Price |  | NUMBER(20,2) |
| Artwork Date listed |  | DATE |
| Artwork Size |  | VARCHAR2(10) |
| Artwork Status |  | VARCHAR2(4000) |
| Artwork Title |  | VARCHAR2(4000) |
| Artwork Year Completed |  | NUMBER(4,0) |
| Collector ID |  | VARCHAR2(4000) |
| Medium |  | CHAR(20) |
| Sale Number |  | NUMBER(38,0) |
| Style |  | CHAR(400) |
| TotalAskingPriceForPeriod D |  | NUMBER |
| Type |  | CHAR(20) |
| **Entity: COLLECTOR** |  |  |
| Collector ID | **Identifier** | VARCHAR2(4000) |
| C\_SalesYearSalesForPeriod D |  | NUMBER |
| C\_TotalAskingPriceForPeriod D |  | NUMBER |
| C\_TotalSalesForPeriod D |  | NUMBER |
| CollectorAddress |  | VARCHAR2(4000) |
| Collector City |  | CHAR(20) |
| Collector First Name |  | CHAR(20) |
| Collector Last Name |  | CHAR(20) |
| Collector Sales Last Year D |  | NUMBER |
| Collector State |  | CHAR(20) |
| Collector Street |  | VARCHAR2(4000) |
| Collector Zipcode |  | NUMBER |
| **Entity: CUSTOMER** |  |  |
| Customer ID | **Identifier** | VARCHAR2(4000) |
| Customer Address |  | VARCHAR2(4000) |
| Customer City |  | CHAR(20) |
| Customer First Name |  | CHAR(20) |
| Customer Last Name |  | CHAR(20) |
| CustomerPhone |  | NUMBER |
| Customer State |  | CHAR(20) |
| Customer Street |  | VARCHAR2(4000) |
| Customer Tel No |  | NUMBER |
| Customer Zip |  | NUMBER |
| PurchasesLastYear D |  | NUMBER |
| PurchasesYeartoDate D |  | NUMBER |
| **Entity: SALE** |  |  |
| Sale Number | **Identifier** | NUMBER(38,0) |
| AmountRemittedtoOwner D |  | NUMBER |
| Artwork ID |  | VARCHAR2(4000) |
| Commission D |  | NUMBER |
| Customer ID |  | VARCHAR2(4000) |
| Price |  | CHAR(1000) |
| Sale Date |  | DATE |
| Salesperson Signature |  | BLOB |
| Sales person ID |  | VARCHAR2(4000) |
| Tax D |  | NUMBER |
| TotalAllSalesForWeek D |  | NUMBER |
| Total Paid D |  | NUMBER |
| **Entity: SALES PERSON** |  |  |
| Sales person ID | **Identifier** | VARCHAR2(4000) |
| Commission For Period D |  | NUMBER |
| Commission rate |  | NUMBER |
| Sales personAddress |  | VARCHAR2(4000) |
| Sales person FirstName |  | CHAR(20) |
| Sales person LastName |  | CHAR(20) |
| SP\_TotalSalesforPeriod D |  | NUMBER |
| **Entity: SHOW** |  |  |
| Show NO | **Identifier** | VARCHAR2(4000) |
| Show Closing Date |  | DATE |
| Show Featured Artist |  | CHAR(100) |
| Show Opening Date |  | DATE |
| Show Theme |  | CHAR(100) |
| Show Title |  | CHAR(100) |

1. **Assumptions For E-R Logical Model**
2. Ar\_SalesLastYear D, Ar\_SalesYeartoDate D, Ar\_TotalSalesforPeriod D, and Ar\_TotalAskingPriceforPeriod D are descriptive attributes between Entity ‘Artwork’ and Entity ‘Artist’.
3. Collector Sales Last Year D, C\_SalesYearSalesforPeriod D, C\_TotalSalesForPerio D, and C\_TotalAskingPriceforPeriod D are descriptive attributes between Entity ‘Collector’ and Entity ‘Artwork’
4. TotalAskingPriceforPeriod D，Tax D, Total Paid D, AmountRemittedtoOwner D, and TotalAllSaleforWeek D are descriptive attributes between Entity ‘Artwork’ and Entity ‘Sale’.
5. Commission D, Commission for Period D, and SP\_TotalSalesforPeriod D are descriptive attributes between Entity ‘Sale’ and Entity ‘SalePerson’.
6. PurchaseLastYear D and PurchasesYeartoDate D are descriptive attributes between Entity ‘Customer’ and Entity ‘Sale’.
7. TotalAskingPriceforPeriod D = Ar\_TotalAskingPriceforPeriod D + C\_TotalAskingPriceforPeriod D
8. **NOTE**: Attribute ‘Price’ does not include tax or tax rate, so we decide that it is eligible for ‘Price’ to be a normal attribute inside Entity ‘Sale’.
9. A show may have many featured artists.
10. An artwork may be presented in many shows and one show may present many artworks.
11. An artist may contact with many customers and a customer may get in touch with many artists.

**Part B.**

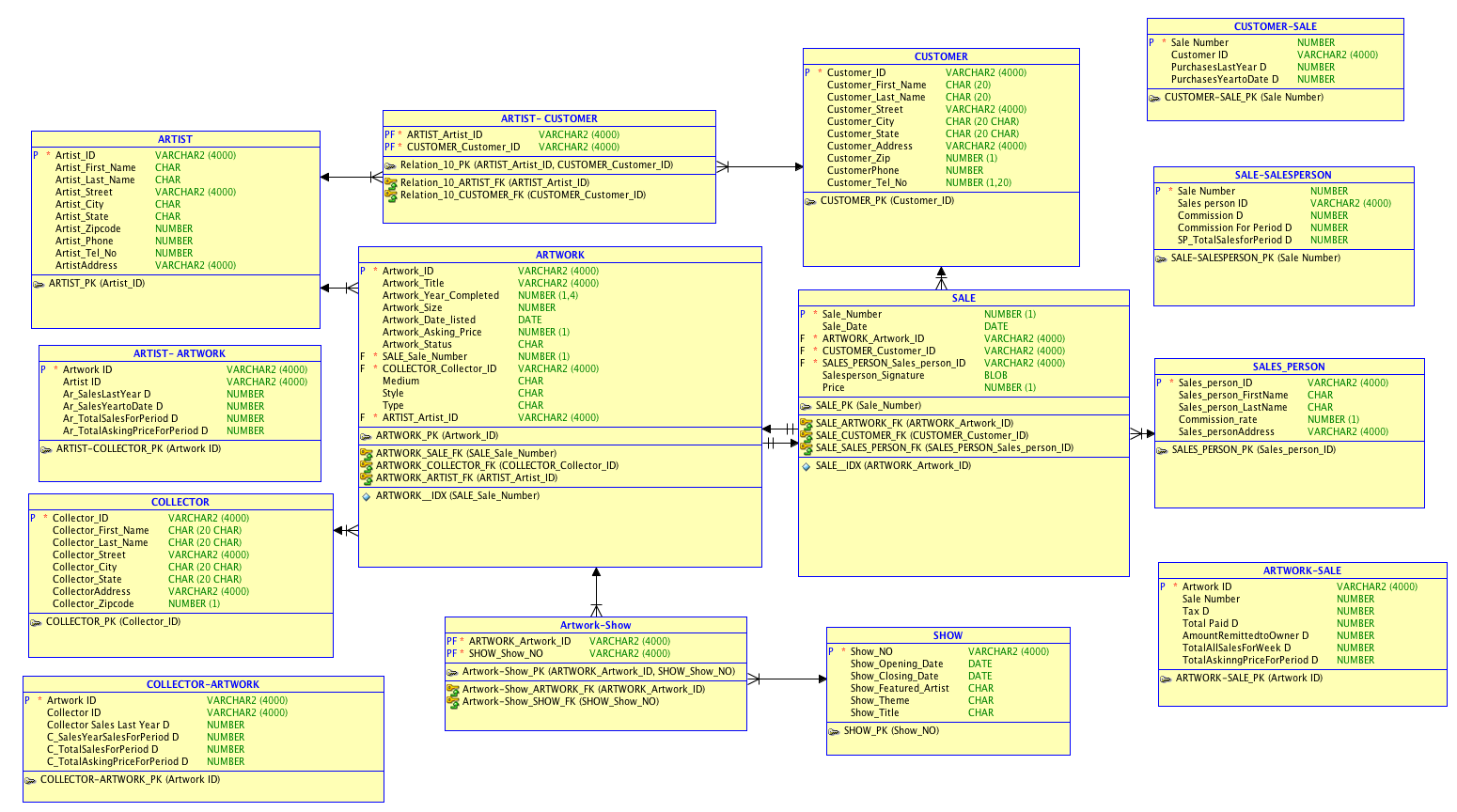
1. **Default Relational Model**

**Default Relational Model for Art Gallery**

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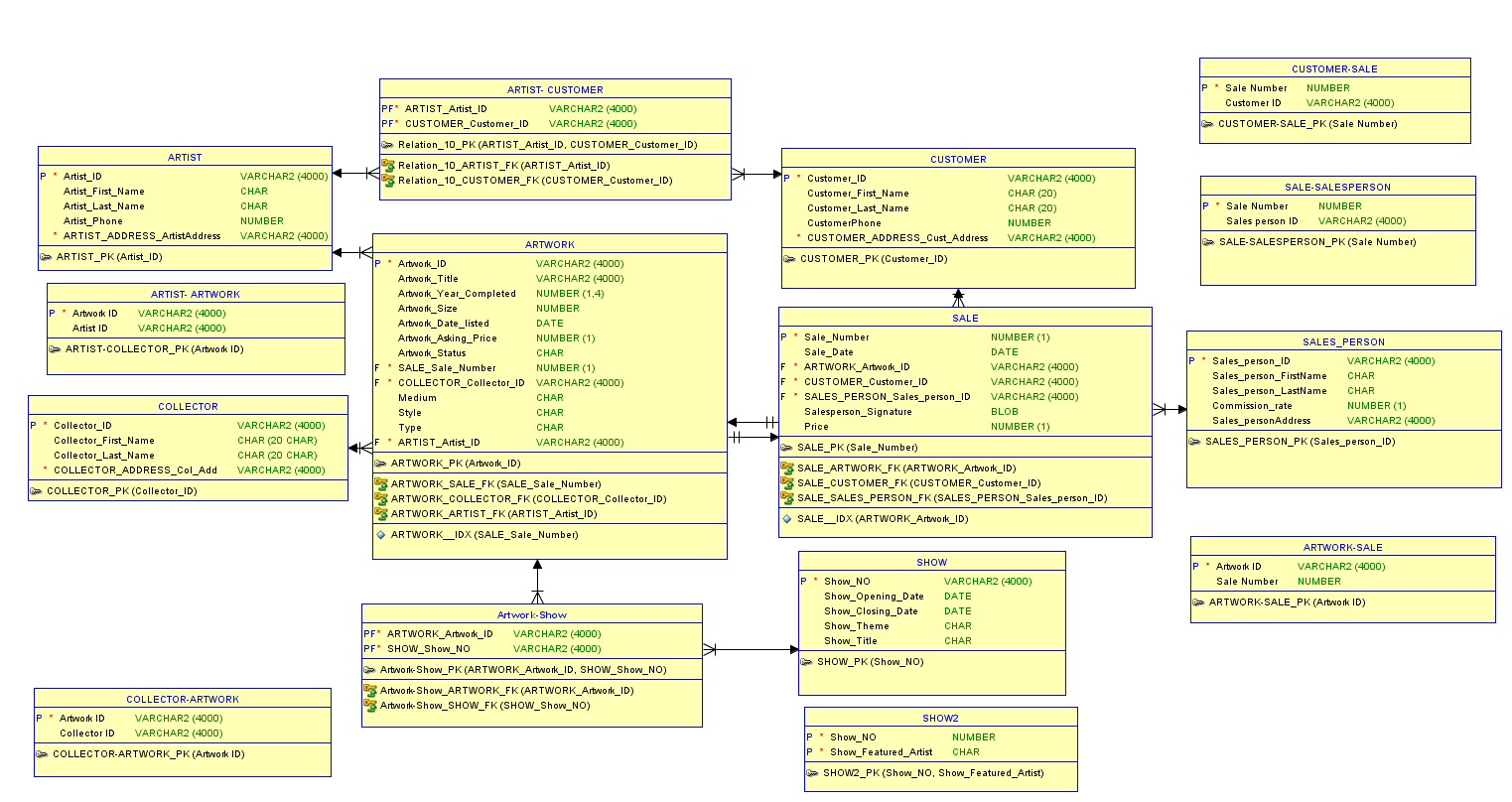
1. **Revised Relational Model**

**Revised Relational Model for Art Gallery**

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1. **Normalized Relational Model**

**Normalized Relational Model for Art Gallery**

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1. **Assumptions for normalized PDM**
2. Total Paid = Price\* (1+Tax). Note: Tax refers to tax rate.
3. Amount Remitted to Owner = 0.9\*(Price) - Commission\_rate\*Price. Note: Commssion\_rate is the rate which we assumed the gallery splits the salesperson with.

**PART C.**

1. **DDL Script:**

CREATE TABLE artist (artist\_id VARCHAR2(4000) NOT NULL,

artist\_first\_name CHAR ,

artist\_last\_name CHAR ,

artist\_phone NUMBER,

artist\_address\_artistaddress VARCHAR2(4000) NOT NULL);

ALTER TABLE artist ADD CONSTRAINT artist\_pk PRIMARY KEY ( artist\_id );

CREATE TABLE "ARTIST- ARTWORK" ("Artwork ID" VARCHAR2(4000) NOT NULL,

"Artist ID" VARCHAR2(4000));

ALTER TABLE "ARTIST- ARTWORK" ADD CONSTRAINT "ARTIST-COLLECTOR\_PK" PRIMARY KEY ( "Artwork ID" );

CREATE TABLE "ARTIST- CUSTOMER" ( artist\_artist\_id VARCHAR2(4000) NOT NULL,

customer\_customer\_id VARCHAR2(4000) NOT NULL);

ALTER TABLE "ARTIST- CUSTOMER" ADD CONSTRAINT relation\_10\_pk PRIMARY KEY ( artist\_artist\_id, customer\_customer\_id );

CREATE TABLE artwork (artwork\_id VARCHAR2(4000) NOT NULL,

artwork\_title VARCHAR2(4000),

artwork\_year\_completed NUMBER(1, 4),

artwork\_size NUMBER,

artwork\_date\_listed DATE,

artwork\_asking\_price NUMBER(1),

artwork\_status CHAR ,

sale\_sale\_number NUMBER(1) NOT NULL,

collector\_collector\_id VARCHAR2(4000) NOT NULL,

medium CHAR

style CHAR

type CHAR

artist\_artist\_id VARCHAR2(4000) NOT NULL);

CREATE UNIQUE INDEX artwork\_\_idx ON artwork ( sale\_sale\_number ASC );

ALTER TABLE artwork ADD CONSTRAINT artwork\_pk PRIMARY KEY ( artwork\_id );

CREATE TABLE "ARTWORK-SALE" ( "Artwork ID" VARCHAR2(4000) NOT NULL,

"Sale Number" NUMBER);

ALTER TABLE "ARTWORK-SALE" ADD CONSTRAINT "ARTWORK-SALE\_PK" PRIMARY KEY ( "Artwork ID" );

CREATE TABLE "Artwork-Show" (artwork\_artwork\_id VARCHAR2(4000) NOT NULL,

show\_show\_no VARCHAR2(4000) NOT NULL);

ALTER TABLE "Artwork-Show" ADD CONSTRAINT "Artwork-Show\_PK" PRIMARY KEY ( artwork\_artwork\_id, show\_show\_no );

CREATE TABLE collector (collector\_id VARCHAR2(4000) NOT NULL,

collector\_first\_name CHAR(20 CHAR),

collector\_last\_name CHAR(20 CHAR),

collector\_address\_col\_add VARCHAR2(4000) NOT NULL);

ALTER TABLE collector ADD CONSTRAINT collector\_pk PRIMARY KEY ( collector\_id );

CREATE TABLE "COLLECTOR-ARTWORK" ( "Artwork ID" VARCHAR2(4000) NOT NULL,

"Collector ID" VARCHAR2(4000));

ALTER TABLE "COLLECTOR-ARTWORK" ADD CONSTRAINT "COLLECTOR-ARTWORK\_PK" PRIMARY KEY ( "Artwork ID" );

CREATE TABLE customer ( customer\_id VARCHAR2(4000) NOT NULL,

customer\_first\_name CHAR(20),

customer\_last\_name CHAR(20),

customerphone NUMBER,

customer\_address\_cust\_address VARCHAR2(4000) NOT NULL);

ALTER TABLE customer ADD CONSTRAINT customer\_pk PRIMARY KEY ( customer\_id );

CREATE TABLE "CUSTOMER-SALE" ( "Sale Number" NUMBER NOT NULL,

"Customer ID" VARCHAR2(4000));

ALTER TABLE "CUSTOMER-SALE" ADD CONSTRAINT "CUSTOMER-SALE\_PK" PRIMARY KEY ( "Sale Number" );

CREATE TABLE sale ( sale\_number NUMBER(1) NOT NULL,

sale\_date DATE,

artwork\_artwork\_id VARCHAR2(4000) NOT NULL,

customer\_customer\_id VARCHAR2(4000) NOT NULL,

sales\_person\_sales\_person\_id VARCHAR2(4000) NOT NULL,

salesperson\_signature BLOB,

price NUMBER(1));

CREATE UNIQUE INDEX sale\_\_idx ON

sale (artwork\_artwork\_id ASC );

ALTER TABLE sale ADD CONSTRAINT sale\_pk PRIMARY KEY ( sale\_number );

CREATE TABLE sales\_person ( sales\_person\_id VARCHAR2(4000) NOT NULL,

sales\_person\_firstname CHAR ,

sales\_person\_lastname CHAR ,

commission\_rate NUMBER(1),

sales\_personaddress VARCHAR2(4000));

ALTER TABLE sales\_person ADD CONSTRAINT sales\_person\_pk PRIMARY KEY ( sales\_person\_id );

CREATE TABLE "SALE-SALESPERSON" (

"Sale Number" NUMBER NOT NULL,

"Sales person ID" VARCHAR2(4000));

ALTER TABLE "SALE-SALESPERSON" ADD CONSTRAINT "SALE-SALESPERSON\_PK" PRIMARY KEY ( "Sale Number" );

CREATE TABLE show ( show\_no VARCHAR2(4000) NOT NULL,

show\_opening\_date DATE,

show\_closing\_date DATE,

show\_theme CHAR

show\_title CHAR );

ALTER TABLE show ADD CONSTRAINT show\_pk PRIMARY KEY ( show\_no );

CREATE TABLE show2 (

show\_no NUMBER NOT NULL,

show\_featured\_artist CHAR NOT NULL);

ALTER TABLE show2 ADD CONSTRAINT show2\_pk PRIMARY KEY ( show\_no, show\_featured\_artist );

ALTER TABLE artwork

ADD CONSTRAINT artwork\_artist\_fk FOREIGN KEY ( artist\_artist\_id )

REFERENCES artist ( artist\_id );

ALTER TABLE artwork

ADD CONSTRAINT artwork\_collector\_fk FOREIGN KEY ( collector\_collector\_id )

REFERENCES collector ( collector\_id );

ALTER TABLE artwork

ADD CONSTRAINT artwork\_sale\_fk FOREIGN KEY ( sale\_sale\_number )

REFERENCES sale ( sale\_number );

ALTER TABLE "Artwork-Show"

ADD CONSTRAINT "Artwork-Show\_ARTWORK\_FK" FOREIGN KEY ( artwork\_artwork\_id )

REFERENCES artwork ( artwork\_id );

ALTER TABLE "Artwork-Show"

ADD CONSTRAINT "Artwork-Show\_SHOW\_FK" FOREIGN KEY ( show\_show\_no )

REFERENCES show ( show\_no );

ALTER TABLE "ARTIST- CUSTOMER"

ADD CONSTRAINT relation\_10\_artist\_fk FOREIGN KEY ( artist\_artist\_id )

REFERENCES artist ( artist\_id );

ALTER TABLE "ARTIST- CUSTOMER"

ADD CONSTRAINT relation\_10\_customer\_fk FOREIGN KEY ( customer\_customer\_id )

REFERENCES customer ( customer\_id );

ALTER TABLE sale

ADD CONSTRAINT sale\_artwork\_fk FOREIGN KEY ( artwork\_artwork\_id )

REFERENCES artwork ( artwork\_id );

ALTER TABLE sale

ADD CONSTRAINT sale\_customer\_fk FOREIGN KEY ( customer\_customer\_id )

REFERENCES customer ( customer\_id );

ALTER TABLE sale

ADD CONSTRAINT sale\_sales\_person\_fk FOREIGN KEY ( sales\_person\_sales\_person\_id )

REFERENCES sales\_person ( sales\_person\_id );

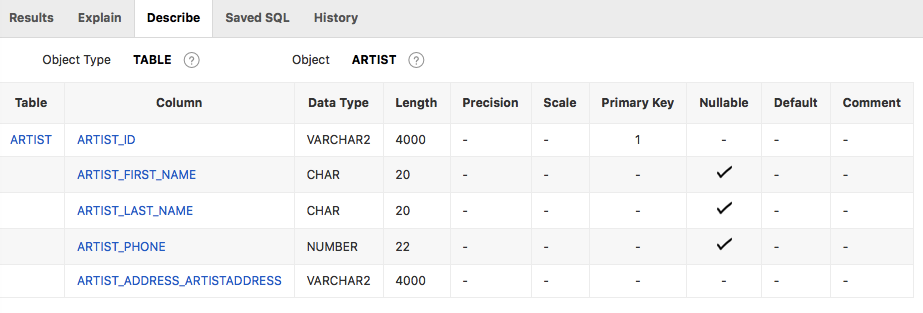
-- Oracle SQL Developer Data Modeler Summary Report:

-- CREATE TABLE 15

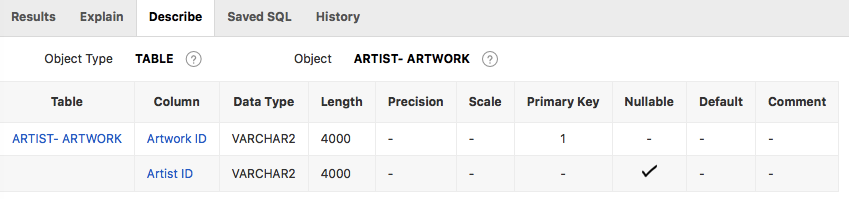
-- CREATE INDEX 2

-- ALTER TABLE 25

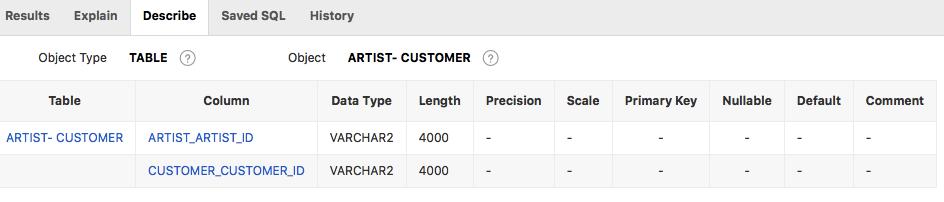
1. **Table Structures**
2. **Artist Table**

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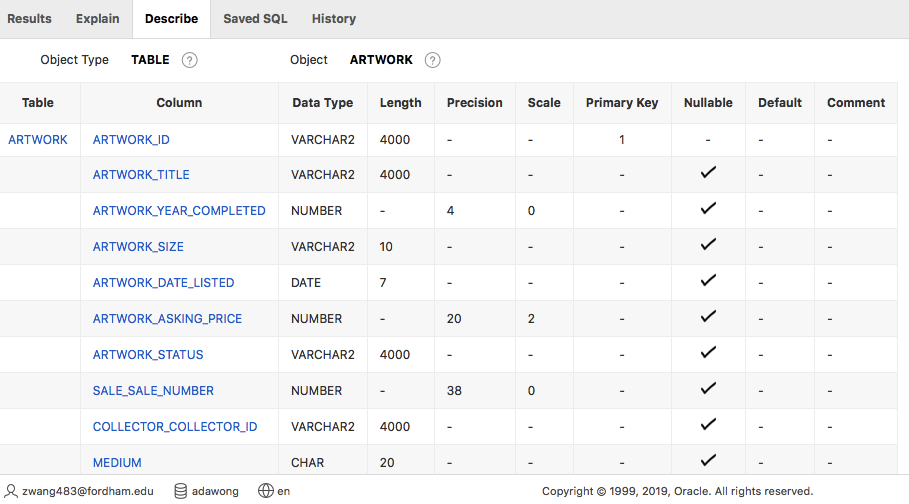
1. **Artist- Artwork Table**

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1. **Artist- Customer Table**

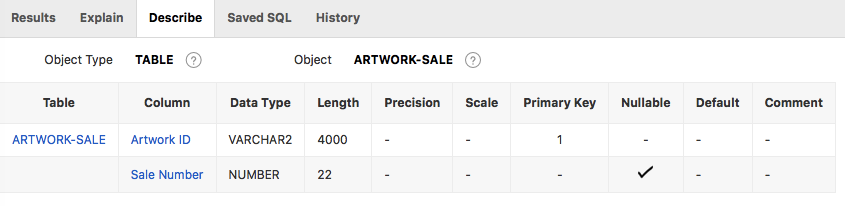
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1. **Artwork Table**

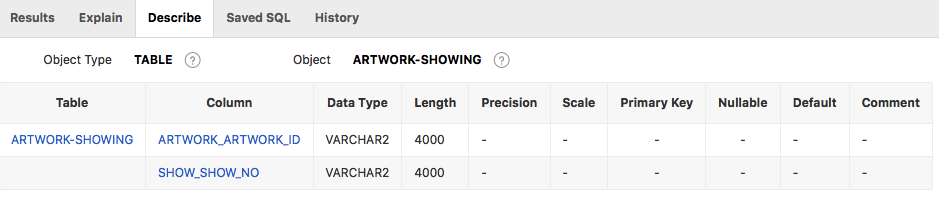
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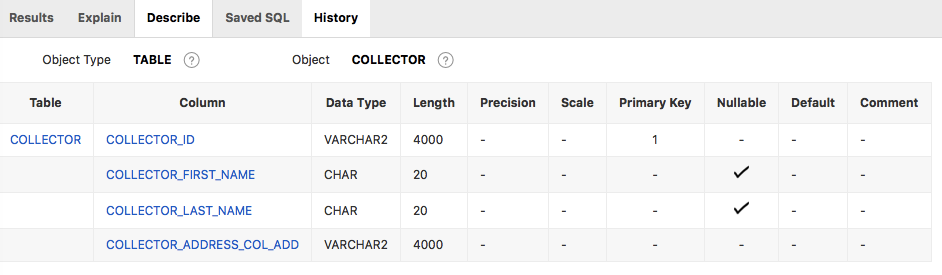
1. **Artwork-Sale Table**

****

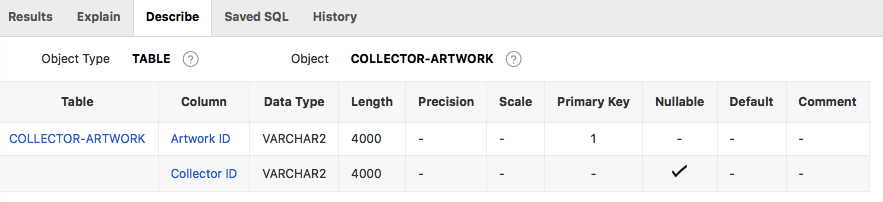
1. **Artwork-Show Table**

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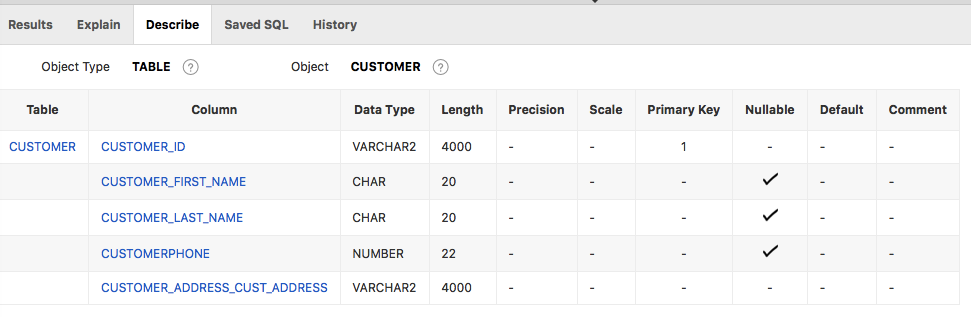
1. **Collector Table**

****

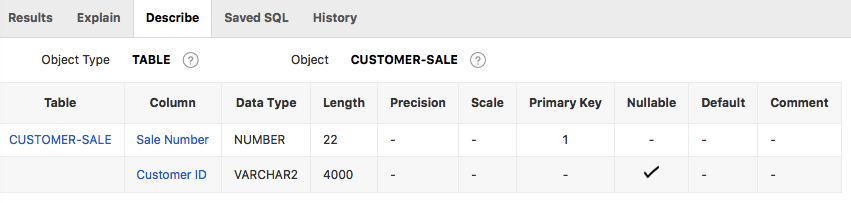
1. **Collector-Artwork Table**

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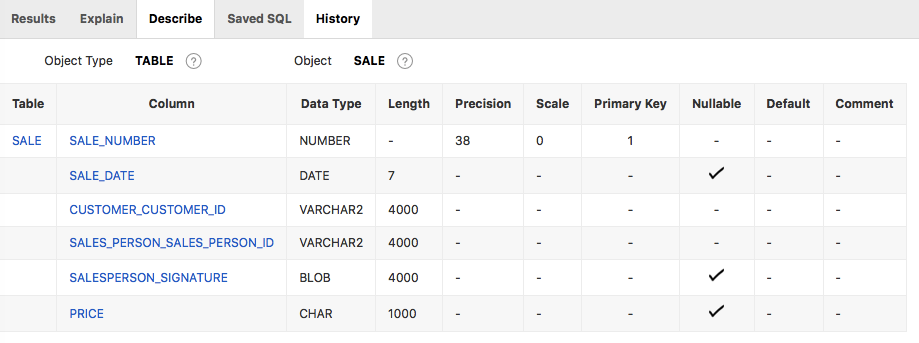
1. **Customer Table**

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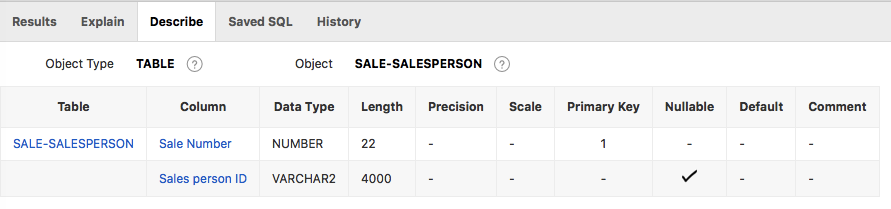
1. **Customer-Sale Table**

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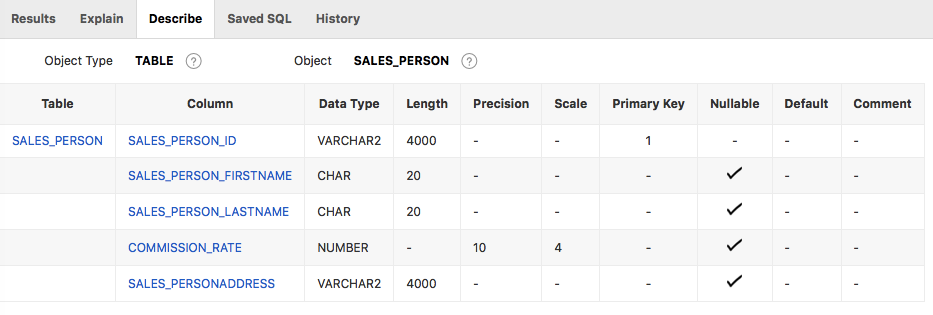
1. **Sale Table**

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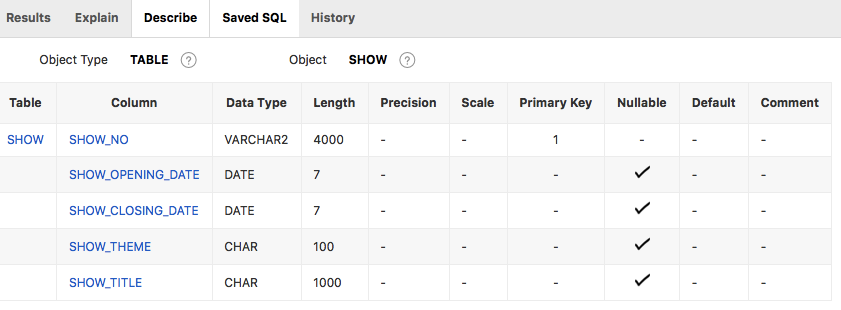
1. **Sale-Salesperson Table**

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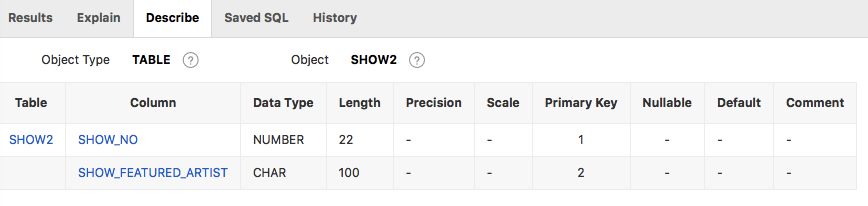
1. **Salesperson Table**

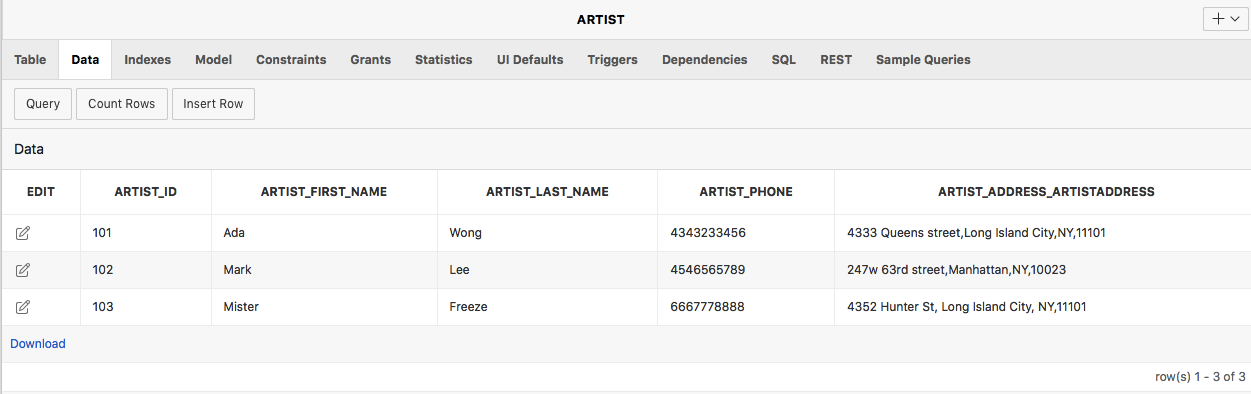
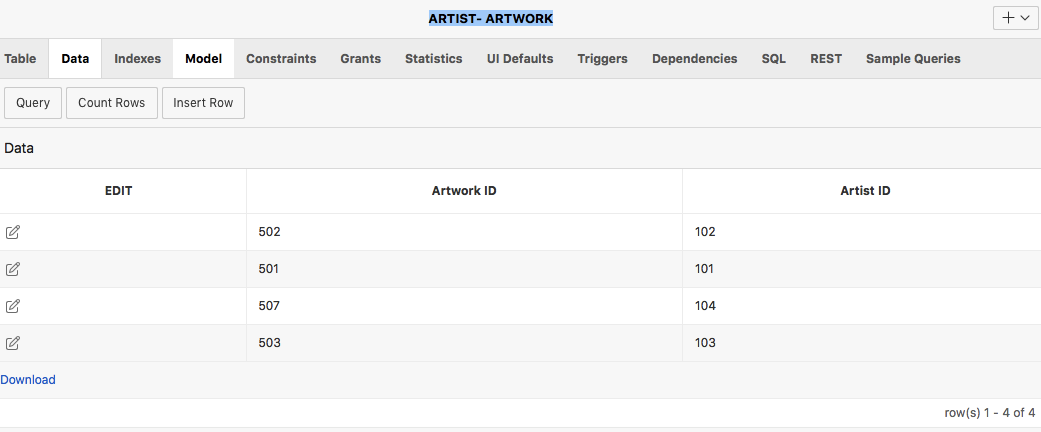
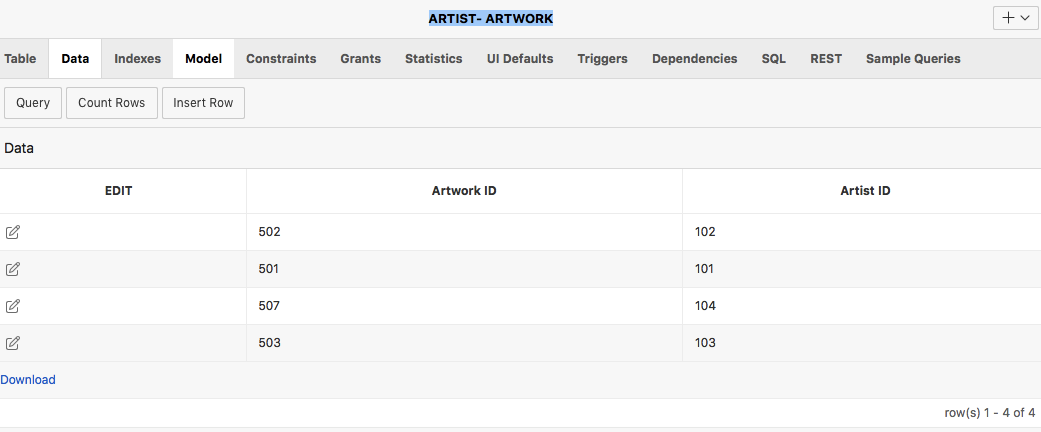
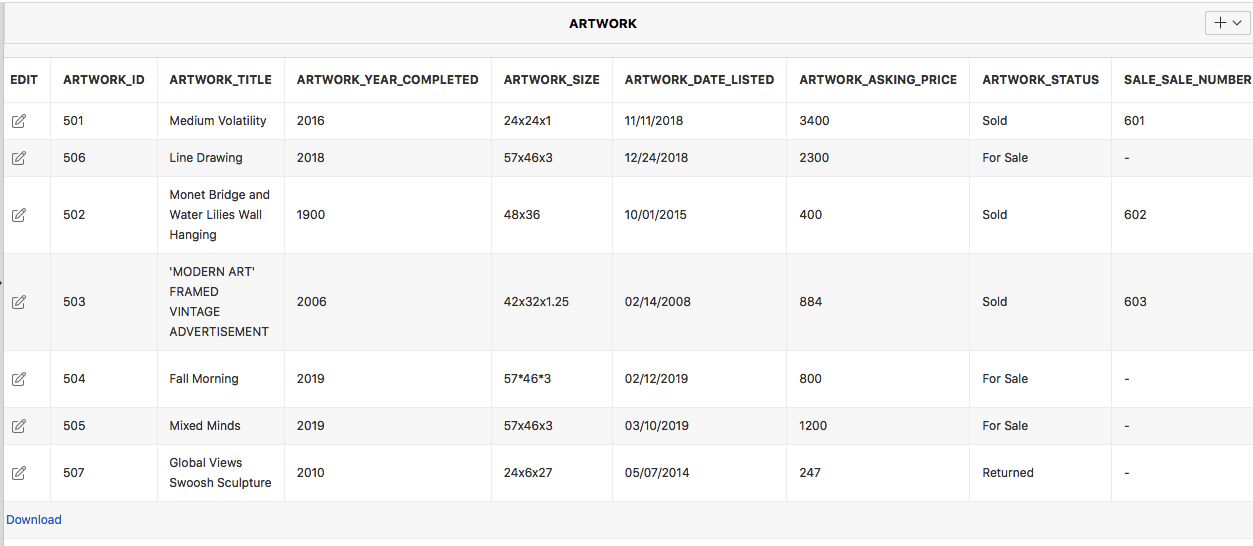
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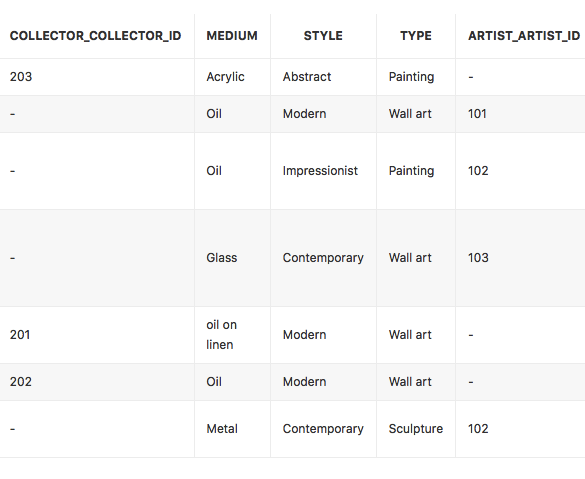
1. **Show Table**

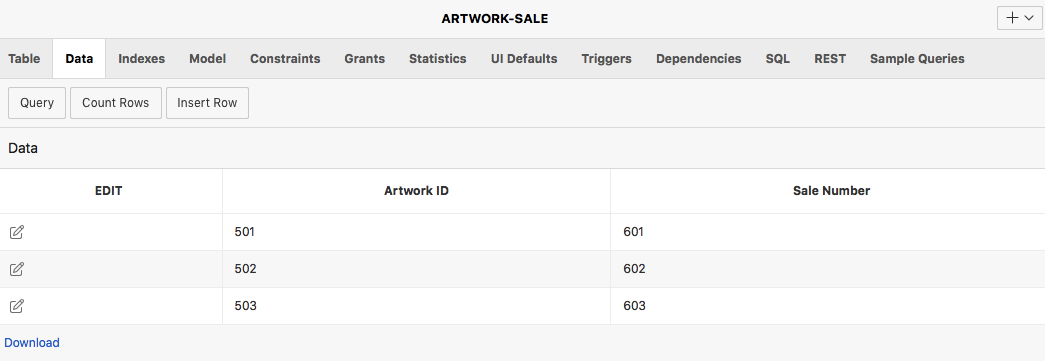
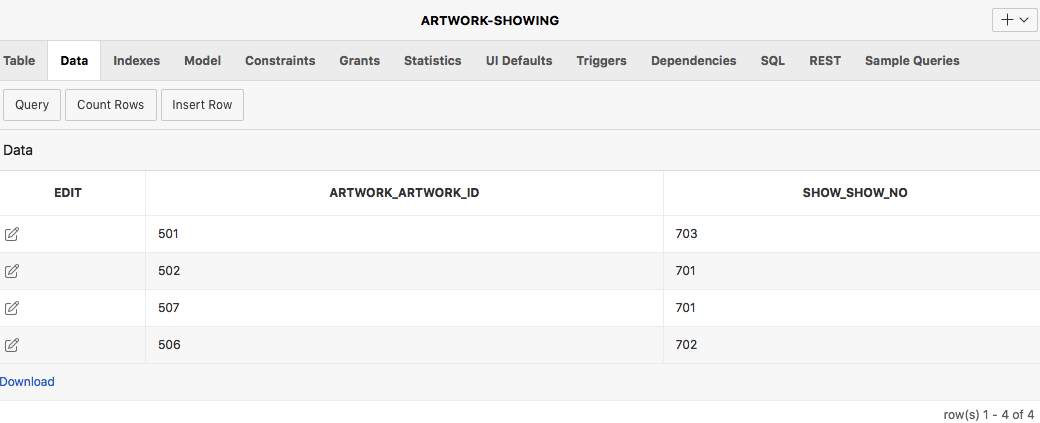
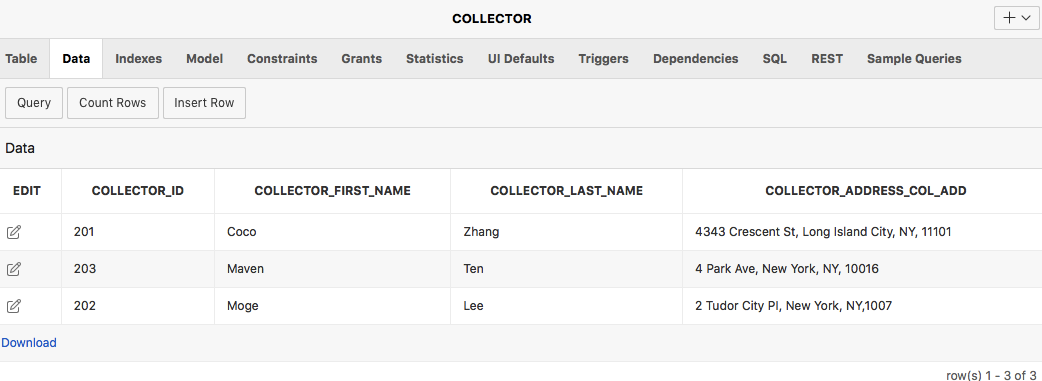
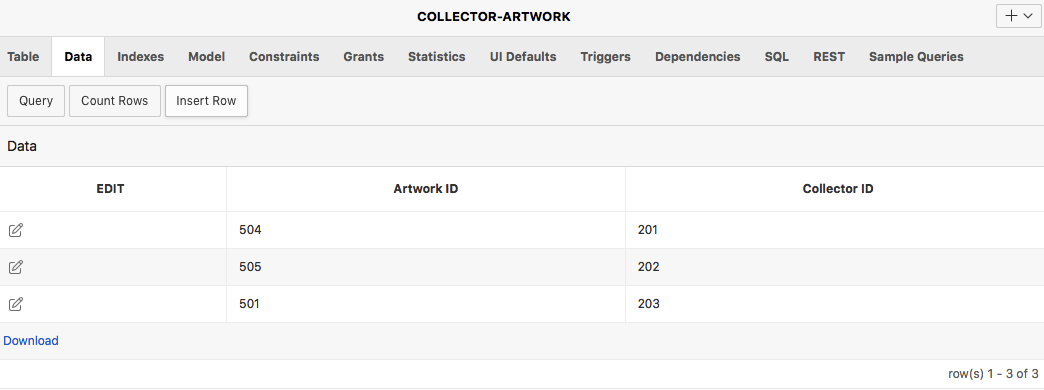
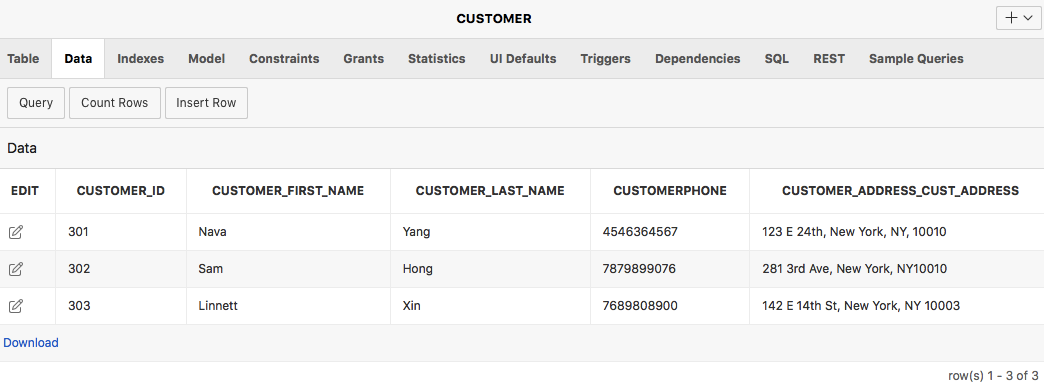
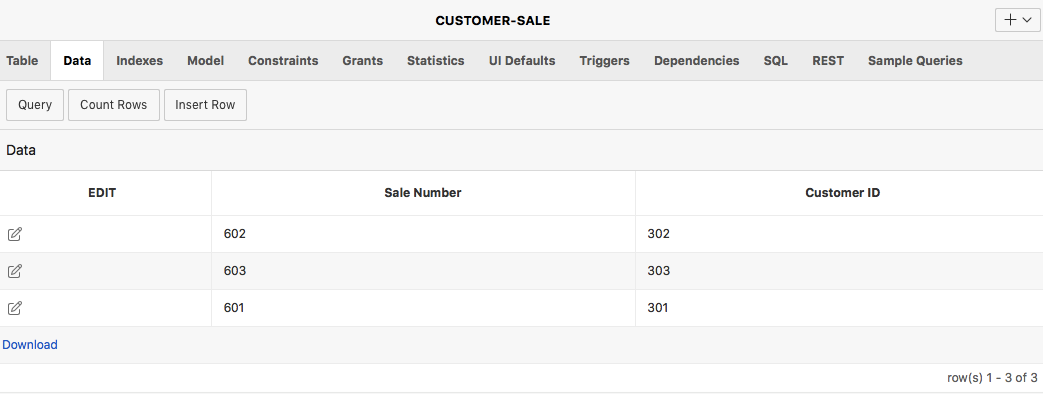
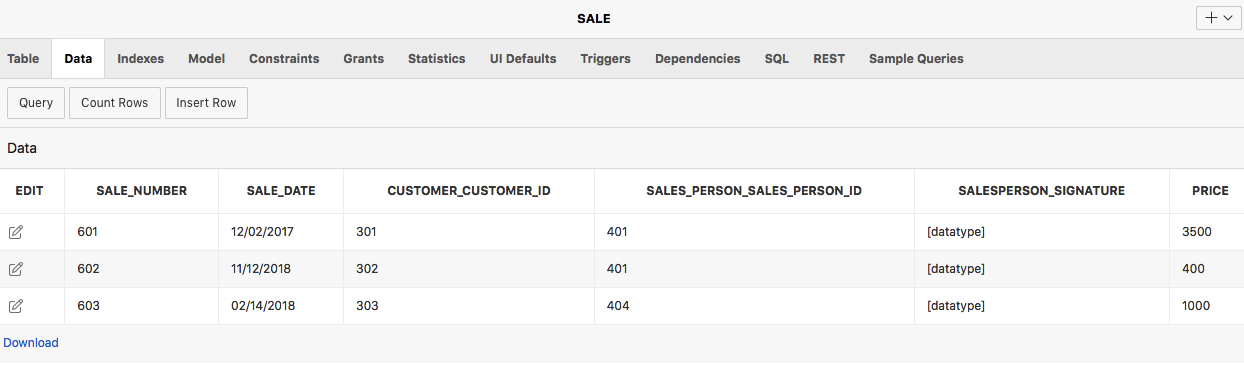
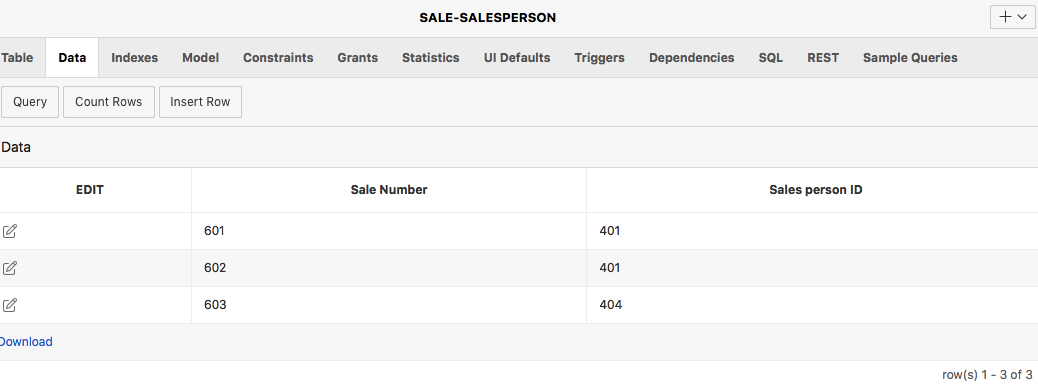
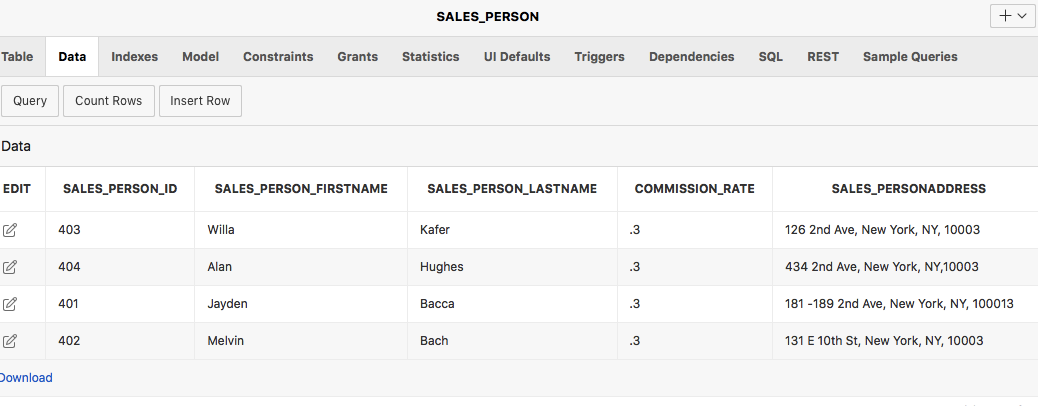
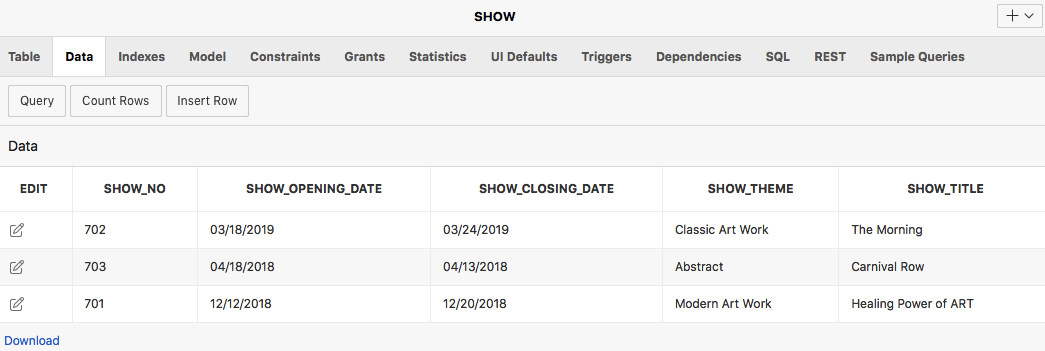
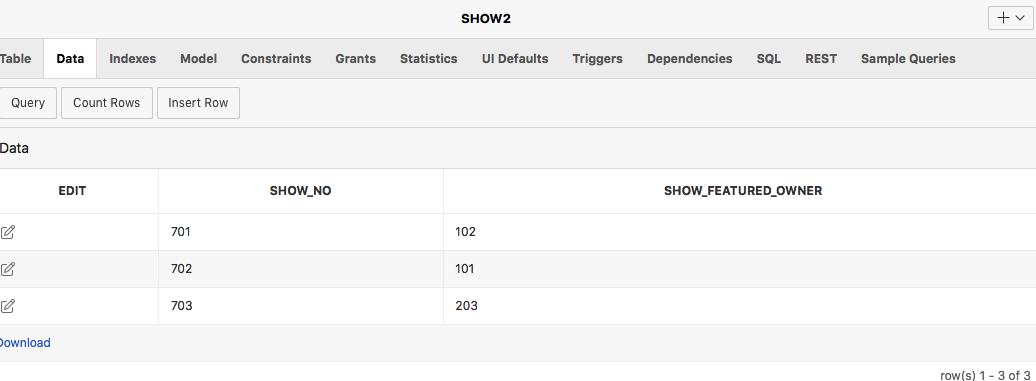
****

1. **Show2 Table**

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1. **Table with Data**
2. **Artist:**
3. **Artist-Artwork:**
4. **Artist-Customer:**
5. **Artwork:**

****

1. **Artwork-Sale:**
2. **Artwork-Showing:**
3. **Collector:**
4. **Collector-Artwork:**
5. **Customer:**
6. **Customer-Sale:**
7. **Sale:**
8. **Sale-Salesperson:**
9. **Salesperson:**
10. **Show:**
11. **Show2:**

1. **12 Queries**
2. **English Version:** Who owns the artwork? his or her title ( artist or collector), full name, and address.
   1. **SQL Version:**

Select artwork\_title, artist\_first\_name || artist\_last\_name as Artist\_Name, ARTIST\_ADDRESS\_ARTISTADDRESS as Artist\_Address, collector\_first\_name || collector\_last\_name as Collector\_Name, COLLECTOR\_ADDRESS\_COL\_ADD as Collector\_Addresss

From artwork

left join artist

on artist.artist\_id = artwork.artist\_artist\_id

left join collector

on collector.COLLECTOR\_ID = artwork.COLLECTOR\_COLLECTOR\_ID

* 1. **Output:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Artwork\_Title** | **Artist\_Name** | **Artist\_Address** | **Collector\_Name** | **Collector\_Address** |
| Fall Morning | **-** | **-** | Coco Zhang | 4343 Crescent St, Long Island City, NY, 11101 |
| Medium Volatility | **-** | **-** | Maven Ten | 4 Park Ave, New York, NY, 10016 |
| Mixed Minds | **-** | **-** | Moge Lee | 2 Tudor City PI, New York, NY,1007 |
| Line Drawing | Ada Wong | 4333 Queens street,Long Island City,NY,11101 | - | **-** |
| Monet Bridge and Water Lilies Wall Hanging | Mark Lee | 247w 63rd street,Manhattan,NY,10023 | **-** | **-** |
| 'MODERN ART' FRAMED VINTAGE ADVERTISEMENT | Mister Freeze | 4352 Hunter St, Long Island City, NY,11101 | **-** | **-** |
| Global Views Swoosh Sculpture | Mark Lee | 247w 63rd street,Manhattan,NY,10023 | **-** | **-** |

1. **English Version:** Give the information about the artwork title with related price, sale date, salesperson name and customer name.

**2.1. SQL Version:**

Select artwork\_title, price, sale\_date，sales\_person\_firstname || sales\_person\_lastname as Salesperson\_name, customer\_first\_name || customer\_last\_name as customer\_name

From artwork

left join customer

on artwork.customer\_id = customer.customer\_id

left join sale

on artwork.sale\_sale\_number = sale\_number

left join sales\_person sp

on sale.sales\_person\_sales\_person\_id = sp.sales\_person\_id

**2.2. Output:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Artwork\_Title** | **Price** | **Sale\_Date** | **Salesperson\_name** | **Customer\_name** |
| Medium Volatility | 3500 | 12/02/2017 | Jayden Bacca | Nava Yang |
| Line Drawing | - | - | - | - |
| Monet Bridge and Water Lilies Wall Hanging | 400 | 11/12/2018 | Jayden Bacca | Sam Hong |
| 'MODERN ART' FRAMED VINTAGE ADVERTISEMENT | 1000 | 02/14/2018 | Alan Hughes | Linnett Xin |
| Fall Morning | **-** | **-** | **-** | **-** |
| Mixed Minds | **-** | **-** | **-** | **-** |
| Global Views Swoosh Sculpture | **-** | **-** | **-** | **-** |

1. **English Version:** Give related sales information of artworks which are owned by collector.
   1. **SQL Version:**

Select artwork\_title,collector\_first\_name || collector\_last\_name as collector\_name,

SALES\_PERSON\_FIRSTNAME|| SALES\_PERSON\_lastname as Salesperson\_name,sale.price，sale.SALE\_DATE

From artwork

left join collector

on collector.COLLECTOR\_ID = artwork.COLLECTOR\_COLLECTOR\_ID

left join sale

on artwork.sale\_sale\_number = sale\_number

left join sales\_person sp

on sale.SALES\_PERSON\_SALES\_PERSON\_ID=sp.SALES\_PERSON\_ID

* 1. **Output:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Artwork\_Title** | **Collector\_Name** | **Salesperson\_Name** | **Price** | **SALE\_Date** |
| 'MODERN ART' FRAMED VINTAGE ADVERTISEMENT | - | Alan Hughes | 1000 | 02/14/2018 |
| Medium Volatility | Maven Ten | Jayden Bacca | 3500 | 12/02/2017 |
| Monet Bridge and Water Lilies Wall Hanging | - | Jayden Bacca | 400 | 11/12/2018 |
| Fall Morning | Coco Zhang | - | - | - |
| Mixed Minds | Moge Lee | - | - | - |
| Line Drawing | - | - | - | - |
| Global Views Swoosh Sculpture | - | - | - | - |

1. **English Version:** Give the information about the artwork title with related artist name, customer name and show theme in exhibition.

**4.1. SQL Version:**

Select artwork\_title, artist\_first\_name || artist\_last\_name as artist\_name, customer\_first\_name || customer\_last\_name as customer\_name, show\_theme

From artwork

left join artist

on artist.artist\_id = artwork.artist\_artist\_id

left join sale

on artwork.sale\_sale\_number = sale\_number

left join customer

on sale.customer\_customer\_id = customer\_id

left join show

on show\_no = artwork.show\_number

**4.2. Output:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Artwork Title** | **Artist Name** | **Customer Name** | **Show Theme** |
| Medium Volatility | - | Nava Yang | Classic Art Work |
| ‘Modern Art’ Framed Vintage Advertisement | Mister Freeze | Linnett Xin | Classic Art Work |
| Monet Bridge and Water Lilies Wall Hanging | Mark Lee | Sam Hong | Abstract |
| Line Drawing | Ada Wong | - | Abstract |
| Fall Morning | - | - | Modern Art Work |
| Mixed Minds | - | - | Modern Art Work |
| Global Views Swoosh Sculpture | Mark Lee | - | Modern Art Work |

1. **English Version:** Give Tax of all sales and their related customer name.
   1. **SQL Version:**

Select sale.sale\_number, customer.customer\_first\_name||' '||customer.customer\_last\_name

as customer\_name, sale.price\* 0.08875 as Tax

From sale, customer

Where customer.customer\_ID=sale.customer\_customer\_ID

* 1. **Output:**

|  |  |  |
| --- | --- | --- |
| **SALE\_NUMBER** | **CUSTOMER\_NAME** | **TAX** |
| 601 | Nava Yang | 310.625 |
| 602 | Sam Hong | 35.5 |
| 603 | Linnett Xin | 88.75 |

1. **English Version:** Give artwork information including title, asking price and medium and their related artist name.
   1. **SQL Version:**

Select artwork\_title, artwork\_asking\_price, medium, artist.artist\_first\_name||' '||artist.artist\_last\_name as artist\_name

From ARTWORK, ARTIST

Where artist.artist\_ID=artwork.artist\_artist\_ID

Order by artwork\_asking\_price desc

**6.2. Output:**

|  |  |  |  |
| --- | --- | --- | --- |
| **ARTWORK\_TITLE** | **ARTWORK\_ASKING\_PRICE** | **MEDIUM** | **ARTIST\_NAME** |
| Line Drawing | 2300 | Oil | Ada Wong |
| ‘MODERN ART’ FRAMED VINTAGE ADVERTISEMENT | 884 | Glass | Mister Freeze |
| Monet Bridge and Water Lilies Wall Hanging | 400 | Oil | Mark Lee |
| Global Views Swoosh Sculpture | 247 | Metal | Mark Lee |

1. **English Version:** Give commissions of all salespersons and their related sales
   1. **SQL Version:**

Select SALES\_PERSON.SALES\_PERSON\_FIRSTNAME ||'

'|| SALES\_PERSON.SALES\_PERSON\_LASTNAME as Salesperson\_Name,

SALE.SALE\_NUMBER,SALES\_PERSON.COMMISSION\_RATE,

sale.price\* SALES\_PERSON.COMMISSION\_RATE as Commission

From sale,SALES\_PERSON

Where SALES\_PERSON.SALES\_PERSON\_ID=sale.SALES\_PERSON\_SALES\_PERSON\_ID

Order by Salesperson\_Name

* 1. **Output:**

|  |  |  |  |
| --- | --- | --- | --- |
| **SALESPERSON\_NAME** | **SALE\_NUMBER** | **COMMISSION\_RATE** | **COMMISSION** |
| Alan Hughes | 603 | 0.3 | 300 |
| Jayden Bacca | 601 | 0.3 | 1050 |
| Melvin Bach | 602 | 0.3 | 120 |

1. **English Version:** Give all price differences of artwork between selling and asking price
   1. **SQL Version:**

Select Artwork.ARTWORK\_ID,

ARTWORK.ARTWORK\_TITLE,ARTWORK.ARTWORK\_ASKING\_PRICE,

sale.price,(sale.price-ARTWORK.ARTWORK\_ASKING\_PRICE) as PRICE\_DIFFERENCE

From Artwork, sale

Where artwork.SALE\_SALE\_NUMBER=sale.SALE\_NUMBER

Order by Artwork.Artwork\_ID

* 1. **Output:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ARTWORK\_ID** | **ARTWORK\_TITLE** | **ARTWORK\_ASKING\_PRICE** | **PRICE** | **PRICE\_DIFFERENCE** |
| 501 | Medium Volatility | 3400 | 3500 | 100 |
| 502 | Monet Bridge and Water Lilies Wall Hanging | 400 | 400 | 0 |
| 503 | 'MODERN ART' FRAMED VINTAGE ADVERTISEMENT | 884 | 1000 | 116 |

1. **English Version:** show the information of artwork which has been sold and previously owned by artist and completed after 2000.

**9.1. SQL Version:**

SELECT ARTIST.ARTIST\_ID , ARTWORK.ARTWORK\_ID, ARTWORK.Artwork\_Title, ARTWORK.Artwork\_Year\_Completed, SALE.PRICE

FROM ARTIST, ARTWORK,SALE

WHERE ARTWORK.Artwork\_Year\_Completed > 2000 AND ARTIST.Artist\_ID = ARTWORK.ARTIST\_ARTIST\_ID AND ARTWORK.SALE\_SALE\_NUMBER = SALE.SALE\_NUMBER

**9.2. Output:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ARTIST\_ID** | **ARTWORK\_ID** | **ARTWORK\_TITLE** | **ARTWORK\_YEAR\_COMPLETED** | **PRICE** |
| 103 | 503 | 'MODERN ART' FRAMED VINTAGE ADVERTISEMENT | 2006 | 1000 |

1. **English Version:** Obtain the information of different style of artwork, involving price, Salesperson’s ID, and quantity.

**10.1. SQL Version:**

SELECT ARTWORK.STYLE, SALE.PRICE,SALES\_PERSON.SALES\_PERSON\_ID, COUNT(\*)

FROM ARTWORK, SALE,SALES\_PERSON

WHERE ARTWORK.SALE\_SALE\_NUMBER = SALE.SALE\_NUMBER AND SALES\_PERSON.SALES\_PERSON\_ID = SALE.SALES\_PERSON\_SALES\_PERSON\_ID

GROUP BY ARTWORK.STYLE, SALE.PRICE, SALES\_PERSON.SALES\_PERSON\_ID

**10.2. Output:**

|  |  |  |  |
| --- | --- | --- | --- |
| **STYLE** | **PRICE** | **SALES\_PERSON\_ID** | **COUNT(\*)** |
| Abstract | 3500 | 401 | 1 |
| Contemporary | 1000 | 404 | 1 |
| Impressionist | 400 | 401 | 1 |

1. **English Version:** Give information of Artworks that are not on show
   1. **SQL Version:**

Select ARTWORK\_ID, ARTWORK\_TITLE, ARTWORK\_DATE\_LISTED,ARTWORK\_ASKING\_PRICE

From ARTWORK

Where ARTWORK\_ID not in (

Select ARTWORK\_ARTWORK\_ID

From "ARTWORK-SHOWING" )

Order by ARTWORK\_DATE\_LISTED

* 1. **Output:**

|  |  |  |  |
| --- | --- | --- | --- |
| **ARTWORK\_ID** | **ARTWORK\_TITLE** | **ARTWORK\_DATE\_LISTED** | **ARTWORK\_ASKING\_PRICE** |
| 503 | 'MODERN ART' FRAMED VINTAGE ADVERTISEMENT | 2/14/08 | 884 |
| 504 | Fall Morning | 2/12/19 | 800 |
| 505 | Mixed Minds | 3/10/19 | 1200 |

1. **English Version:** give all the information of artist whose artwork has been sold, containing artist ID, artwork ID, artwork title, artwork size and artwork asking price

**12.1. SQL Version:**

SELECT ARTIST.Artist\_ID ,ARTWORK.Artwork\_ID, ARTWORK.Artwork\_Title, ARTWORK.Artwork\_Size, ARTWORK.Artwork\_Asking\_Price

FROM ARTIST

JOIN ARTWORK

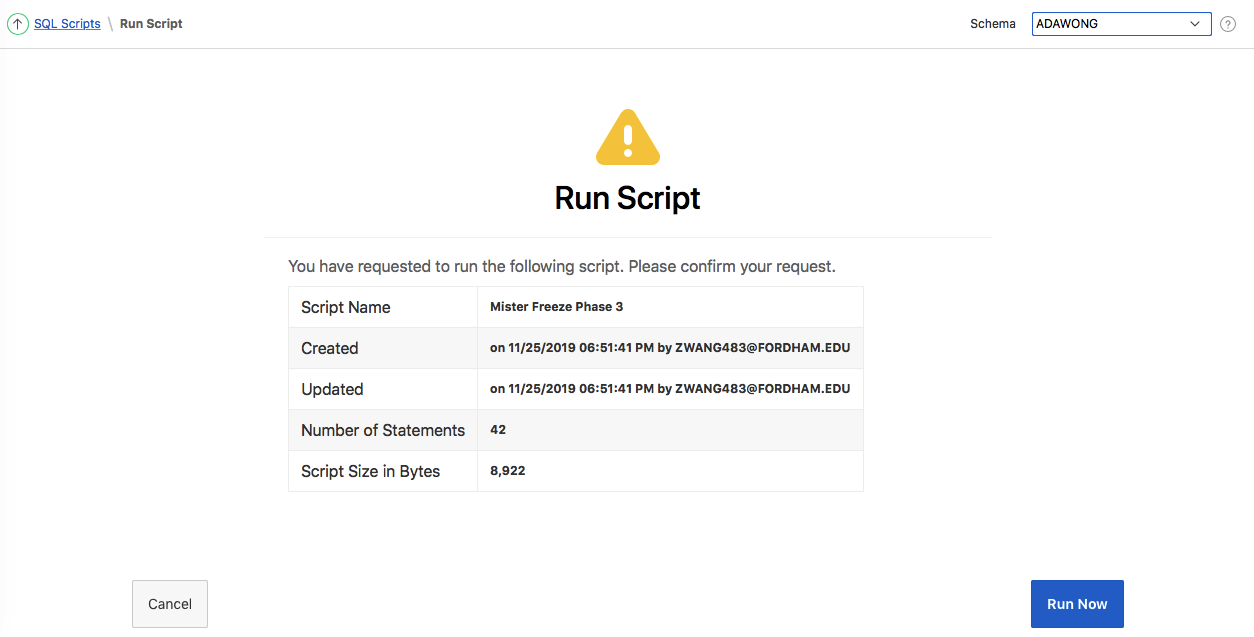
ON ARTIST.Artist\_ID = ARTWORK.Artist\_Artist\_ID

ORDER BY Artist\_ID

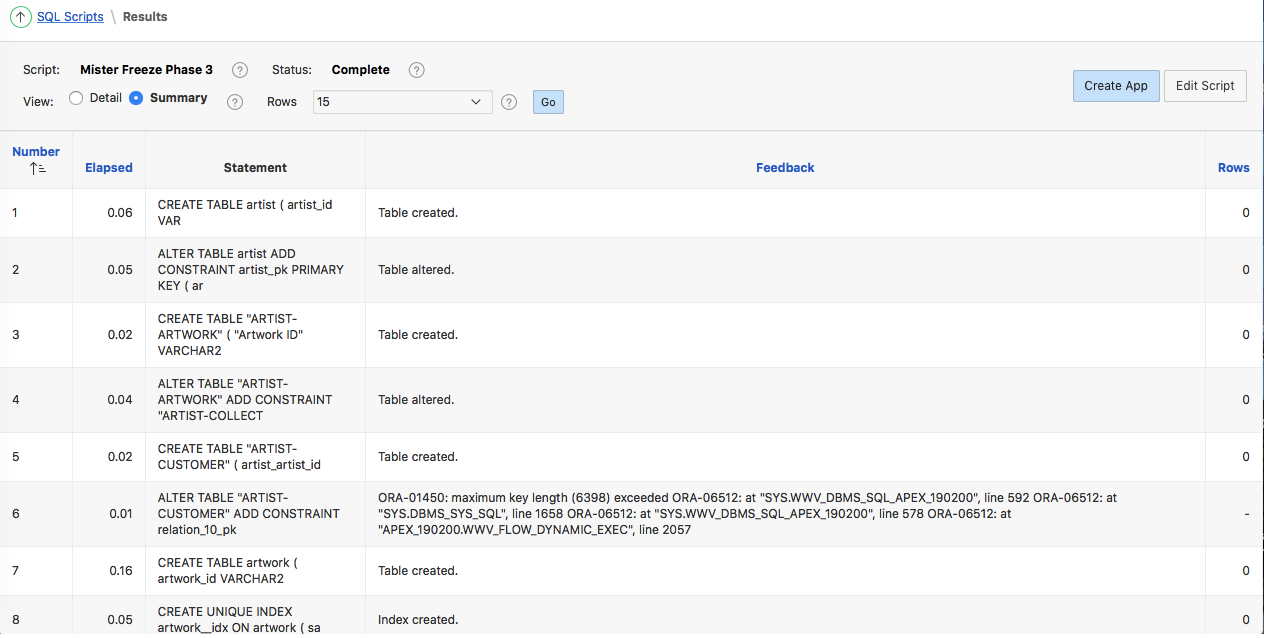
**12.2. Output:**

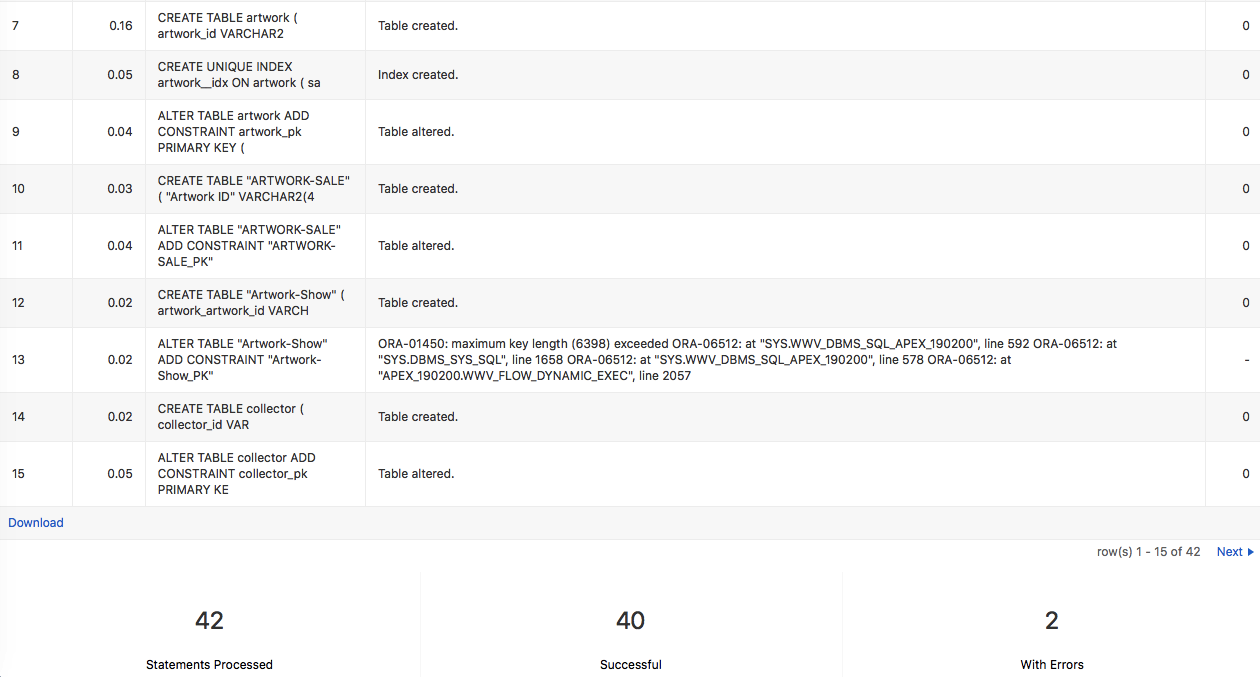
|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ARTIST\_ID** | **ARTWORK\_ID** | **ARTWORK\_TITLE** | **ARTWORK\_SIZE** | **ARTWORK\_ASKING\_PRICE** |
| 101 | 506 | Line Drawing | 57x46x3 | 2300 |
| 102 | 507 | Global Views Swoosh Sculpture | 24x6x27 | 247 |
| 102 | 502 | Monet Bridge and Water Lilies Wall Hanging | 48x36 | 400 |
| 103 | 503 | 'MODERN ART' FRAMED VINTAGE ADVERTISEMENT | 42x32x1.25 | 884 |

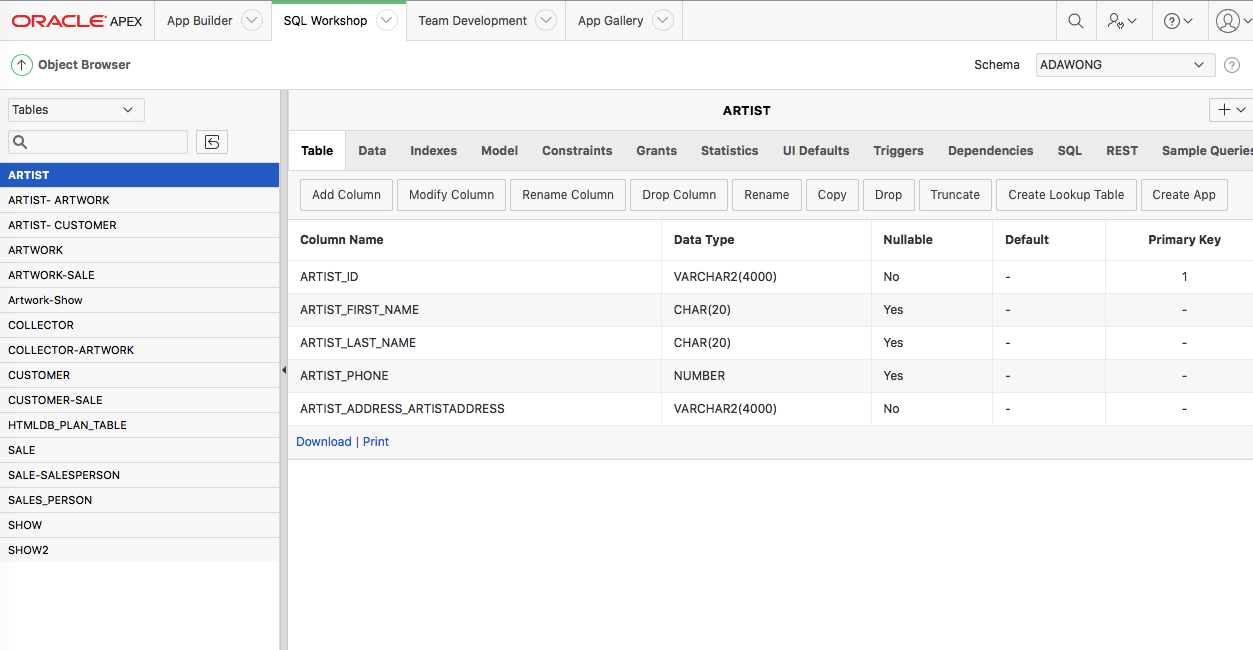
1. **Screenshot of database**

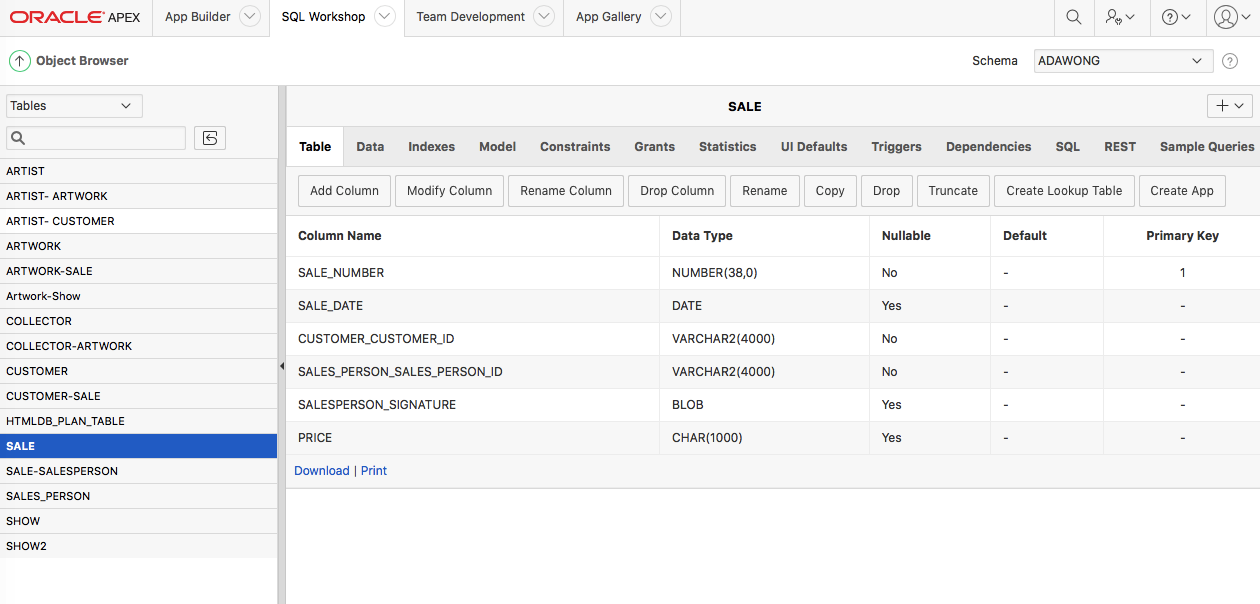
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