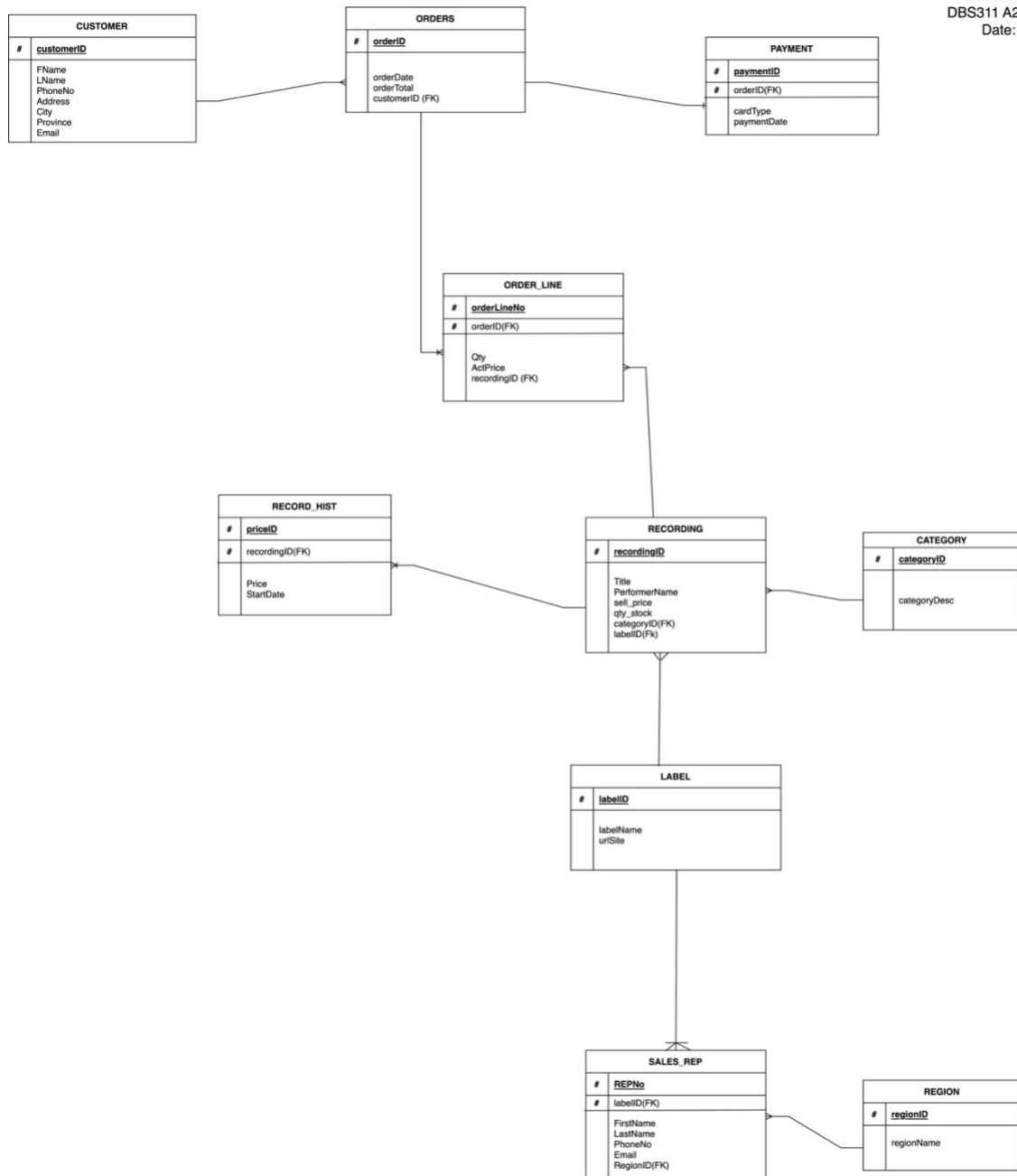Name: Aparajeeta Diwya
Student No: 130958218
DBS311 A2
Date: 04/11/2023

Part 1: The ERD Diagram for assignment two is given below:

Name: Aparajeeta Diwya
Student ID: 130958218
DBS311 A2 ERD DIAGRAM
Date: 04/11/2023

The screenshots of the records of the sample data for the tables are given as:

1. Customer Table

2. Orders Table

3. Payment Table

```sql
CREATE TABLE PAYMENT (
    paymentID INT PRIMARY KEY,
    orderID INT,
    cardType VARCHAR(4) CHECK (cardType IN ('VISA', 'MAST', 'AMEX')),
    paymentDate DATE,
    FOREIGN KEY (orderID) REFERENCES orders(orderID)
);

--Payment table sample records
INSERT ALL
INTO Payment (paymentID, orderID, cardType, paymentDate) VALUES (10, 1, 'VISA','2023-01-05')
INTO Payment (paymentID, orderID, cardType, paymentDate) VALUES (11, 2, 'MAST','2023-02-12')
INTO Payment (paymentID, orderID, cardType, paymentDate) VALUES (12, 3, 'AMEX','2023-03-24')
INTO Payment (paymentID, orderID, cardType, paymentDate) VALUES (13, 4, 'VISA','2023-04-04')
INTO Payment (paymentID, orderID, cardType, paymentDate) VALUES (14, 5, 'MAST','2023-01-20')
SELECT *
    FROM dual;
desc payment;
SELECT *
    FROM payment;
```

Query Result | All Rows Fetched: 5 in 0.15 seconds

	PAYMENTID	ORDERID	CARDTYPE	PAYMENTDATE
1	10	1	VISA	23-01-05
2	11	2	MAST	23-02-12
3	12	3	AMEX	23-03-24
4	13	4	VISA	23-04-04
5	14	5	MAST	23-01-20

Saved: /Users/aparajeetadiwya/dbs311_A2.sql

4. Order_Line Table

```sql
    Qty INT CHECK (Qty >= 0),
    ActPrice DECIMAL(10, 2) CHECK (ActPrice > 0),
    orderID INT,
    FOREIGN KEY (orderID) REFERENCES orders(orderID)
);

--Order_Line table sample records
INSERT INTO order_line (orderID, orderLineNo, Qty, ActPrice) VALUES (1, 100, 3, 29.99);
INSERT INTO order_line (orderID, orderLineNo, Qty, ActPrice) VALUES (2, 101, 4, 13.25);
INSERT INTO order_line (orderID, orderLineNo, Qty, ActPrice) VALUES (3, 102, 1, 34.90);
INSERT INTO order_line (orderID, orderLineNo, Qty, ActPrice) VALUES (4, 103, 3, 25.55);
INSERT INTO order_line (orderID, orderLineNo, Qty, ActPrice) VALUES (5, 104, 5, 23.85);
SELECT *
    FROM dual;
desc order_line;
SELECT *
    FROM order_line;

ALTER TABLE order_line
ADD FOREIGN KEY (recordingID)
REFERENCES recording(recordingID);
```

Query Result | All Rows Fetched: 5 in 0.12 seconds

	ORDERLINENO	QTY	ACTPRICE	ORDERID
1	100	3	29.99	1
2	101	4	13.25	2
3	102	1	34.9	3
4	103	3	25.55	4
5	104	5	23.85	5

Saved: /Users/aparajeetadiwya/dbs311_A2.sql

5. Record_Hist Table

```sql
---Record_Hist table
CREATE TABLE record_hist (
    priceID INT NOT NULL PRIMARY KEY,
    price DECIMAL(5, 2) CHECK (price > 0 AND price <= 999.99),
    startDate DATE
);

---Record_Hist table sample records
INSERT ALL
INTO record_hist (priceID, price, startDate) VALUES (1, 199.99, '2023-01-04')
INTO record_hist (priceID, price, startDate) VALUES (2, 180.85, '2023-02-10')
INTO record_hist (priceID, price, startDate) VALUES (3, 355.50, '2023-04-02')
INTO record_hist (priceID, price, startDate) VALUES (4, 990.00, '2023-03-14')
INTO record_hist (priceID, price, startDate) VALUES (5, 789.99, '2023-02-24')
SELECT *
    FROM dual;
SELECT *
    FROM record_hist;

desc record_hist;

ALTER TABLE record_hist
```

All Rows Fetched: 5 in 0.131 seconds

	PRICEID	PRICE	STARTDATE
1	1	199.99	23-01-04
2	2	180.85	23-02-10
3	3	355.5	23-04-02
4	4	990	23-03-14
5	5	789.99	23-02-24

Saved: /Users/aparajeetadiwya/dbs311_A2.sql   Line 123 Column 22   Insert   Unix/Mac: LF

6. Recording Table

```sql
    recordingID INT PRIMARY KEY,
    title VARCHAR(20),
    performerName VARCHAR(50),
    sell_price DECIMAL(10, 2) NOT NULL,
    qty_stock INT NOT NULL
);

---Recording table sample records
INSERT ALL
INTO recording (recordingID, title, performerName, sell_price, qty_stock) VALUES (1, 'Paper Rings', 'Taylor Swift', 299.99, 20)
INTO recording (recordingID, title, performerName, sell_price, qty_stock) VALUES (2, 'Die For You', 'The Weeknd', 220.99, 23)
INTO recording (recordingID, title, performerName, sell_price, qty_stock) VALUES (3, 'Dusk Till Dawn', 'Zayn Mallik', 350.00, 34)
INTO recording (recordingID, title, performerName, sell_price, qty_stock) VALUES (4, 'Good 4 U', 'Olivia Rodrigo', 190.00, 50)
INTO recording (recordingID, title, performerName, sell_price, qty_stock) VALUES (5, 'Calm Down', 'Selena Gomez', 499.99, 39)
SELECT *
    FROM dual;
desc recording;
SELECT *
    FROM recording;

ALTER TABLE recording
ADD FOREIGN KEY (categoryID)
```

All Rows Fetched: 5 in 0.145 seconds

	RECORDINGID	TITLE	PERFORMERNAME	SELL_PRICE	QTY_STOCK
1	1	Paper Rings	Taylor Swift	299.99	20
2	2	Die For You	The Weeknd	220.99	23
3	3	Dusk Till Dawn	Zayn Mallik	350	34
4	4	Good 4 U	Olivia Rodrigo	190	50
5	5	Calm Down	Selena Gomez	499.99	39

Saved: /Users/aparajeetadiwya/dbs311_A2.sql   Line 149 Column 1   Insert   Unix/Mac: LF

7. Category Table

```sql
        categoryId INT PRIMARY KEY,
        categoryDesc VARCHAR(50) NOT NULL CHECK (CategoryDesc IN ('R&B', 'Jazz', 'Metal Rock', 'Alt Rock', 'Easy Rock', 'Classic Rock', 'Hip-Hop'))
);

--Category table sample records
INSERT ALL
INTO category (categoryId, categoryDesc) VALUES (1, 'Metal Rock')
INTO category (categoryId, categoryDesc) VALUES (2, 'Easy Rock')
INTO category (categoryId, categoryDesc) VALUES (3, 'Hip-Hop')
INTO category (categoryId, categoryDesc) VALUES (4, 'Jazz')
INTO category (categoryId, categoryDesc) VALUES (5, 'Alt Rock')
INTO category (categoryId, categoryDesc) VALUES (6, 'Classic Rock')
INTO category (categoryId, categoryDesc) VALUES (7, 'R&B')
SELECT *
    FROM dual;
desc category;
SELECT *
    FROM category;

--Label table
CREATE TABLE label (
    labelID INT PRIMARY KEY,
```

Query Result — All Rows Fetched: 7 in 0.174 seconds

	CATEGORYID	CATEGORYDESC
1	1	Metal Rock
2	2	Easy Rock
3	3	Hip-Hop
4	4	Jazz
5	5	Alt Rock
6	6	Classic Rock
7	7	Rb

Saved: /Users/aparajeetadiwya/dbs311_A2.sql — Line 179 Column 19 — Insert — Modified — Unix/Mac: LF

8. Label Table

```sql
        urlSite VARCHAR(100) NOT NULL
);

--Label table sample records
INSERT ALL
INTO label (labelID, labelName, urlSite) VALUES (1001, 'Sony', 'sonylabels.ca')
INTO label (labelID, labelName, urlSite) VALUES (1002, 'Virginia', 'virginialabels.ca')
INTO label (labelID, labelName, urlSite) VALUES (1003, 'Columbia', 'columbialabels.ca')
INTO label (labelID, labelName, urlSite) VALUES (1004, 'Top Charts', 'topchartslabels.ca')
INTO label (labelID, labelName, urlSite) VALUES (1005, 'Music Masters', 'musicmasterslabels.ca')
INTO label (labelID, labelName, urlSite) VALUES (1006, 'Hit Records', 'hitrecordslabels.ca')
INTO label (labelID, labelName, urlSite) VALUES (1007, 'Songs On The House', 'songsonthehouselabels.ca')
SELECT *
    FROM dual;
desc label;
SELECT *
    FROM label;

--Sales_Rep table
CREATE TABLE sales_rep (
    REPNo INT PRIMARY KEY,
    FirstName VARCHAR(20),
```

Query Result — All Rows Fetched: 7 in 0.143 seconds

	LABELID	LABELNAME	URLSITE
1	1001	Sony	sonylabels.ca
2	1002	Virginia	virginialabels.ca
3	1003	Columbia	columbialabels.ca
4	1004	Top Charts	topchartslabels.ca
5	1005	Music Masters	musicmasterslabels.ca
6	1006	Hit Records	hitrecordslabels.ca
7	1007	Songs On The House	songsonthehouselabels.ca

Saved: /Users/aparajeetadiwya/dbs311_A2.sql — Line 202 Column 5 — Insert — Modified — Unix/Mac: LF

9. Sales_Rep Table

```
        LastName VARCHAR(20),
        PhoneNumber VARCHAR(20),
        Email VARCHAR(20) UNIQUE
);

---Sales_Rep table sample records
INSERT ALL
INTO sales_rep (REPNo, FirstName, LastName, PhoneNumber, Email) VALUES (2000, 'Ananya', 'Sharma', '(647) 574-7720','ananya.s@gmail.com')
INTO sales_rep (REPNo, FirstName, LastName, PhoneNumber, Email) VALUES (2001, 'Jack', 'Wright', '(553) 578-8673','jack.w@gmail.com')
INTO sales_rep (REPNo, FirstName, LastName, PhoneNumber, Email) VALUES (2002, 'Alia', 'Menon', '(633) 986-1346','alia.m@yahoo.com')
INTO sales_rep (REPNo, FirstName, LastName, PhoneNumber, Email) VALUES (2003, 'Aanand', 'Shrestha','(806) 484-9797','aanand.s@gmail.com')
INTO sales_rep (REPNo, FirstName, LastName, PhoneNumber, Email) VALUES (2004, 'Rina', 'Bright', '(678) 345-1842','rina.b@gmail.com')
SELECT *
    FROM dual;
desc sales_rep;
SELECT *
    FROM sales_rep;

ALTER TABLE sales_rep
ADD FOREIGN KEY (labelID)
REFERENCES label(labelID);
```

Query Result | All Rows Fetched: 5 in 0.128 seconds

	REPNO	FIRSTNAME	LASTNAME	PHONENUMBER	EMAIL
1	2000	Ananya	Sharma	(647) 574-7720	ananya.s@gmail.com
2	2001	Jack	Wright	(553) 578-8673	jack.w@gmail.com
3	2002	Alia	Menon	(633) 986-1346	alia.m@yahoo.com
4	2003	Aanand	Shrestha	(806) 484-9797	aanand.s@gmail.com
5	2004	Rina	Bright	(678) 345-1842	rina.b@gmail.com

Saved: /Users/aparajeetadiwya/dbs311_A2.sql — Line 223 Column 18 — Insert — Modified — Unix/Mac: LF

10. Region Table

```
CREATE TABLE region (
    regionId INT PRIMARY KEY,
    regionName VARCHAR(20) NOT NULL
);

---Region table sample records
INSERT ALL
INTO region (regionId, regionName) VALUES (301, 'USA')
INTO region (regionId, regionName) VALUES (302, 'US-North')
INTO region (regionId, regionName) VALUES (303, 'US-EAST')
INTO region (regionId, regionName) VALUES (304, 'CANADA')
INTO region (regionId, regionName) VALUES (305, 'ASIA')
SELECT *
    FROM dual;
desc region;
SELECT *
    FROM region;

---QUESTION 3 - Stored Procedure
CREATE OR REPLACE PROCEDURE Recording_Selling_Price_Report IS
```
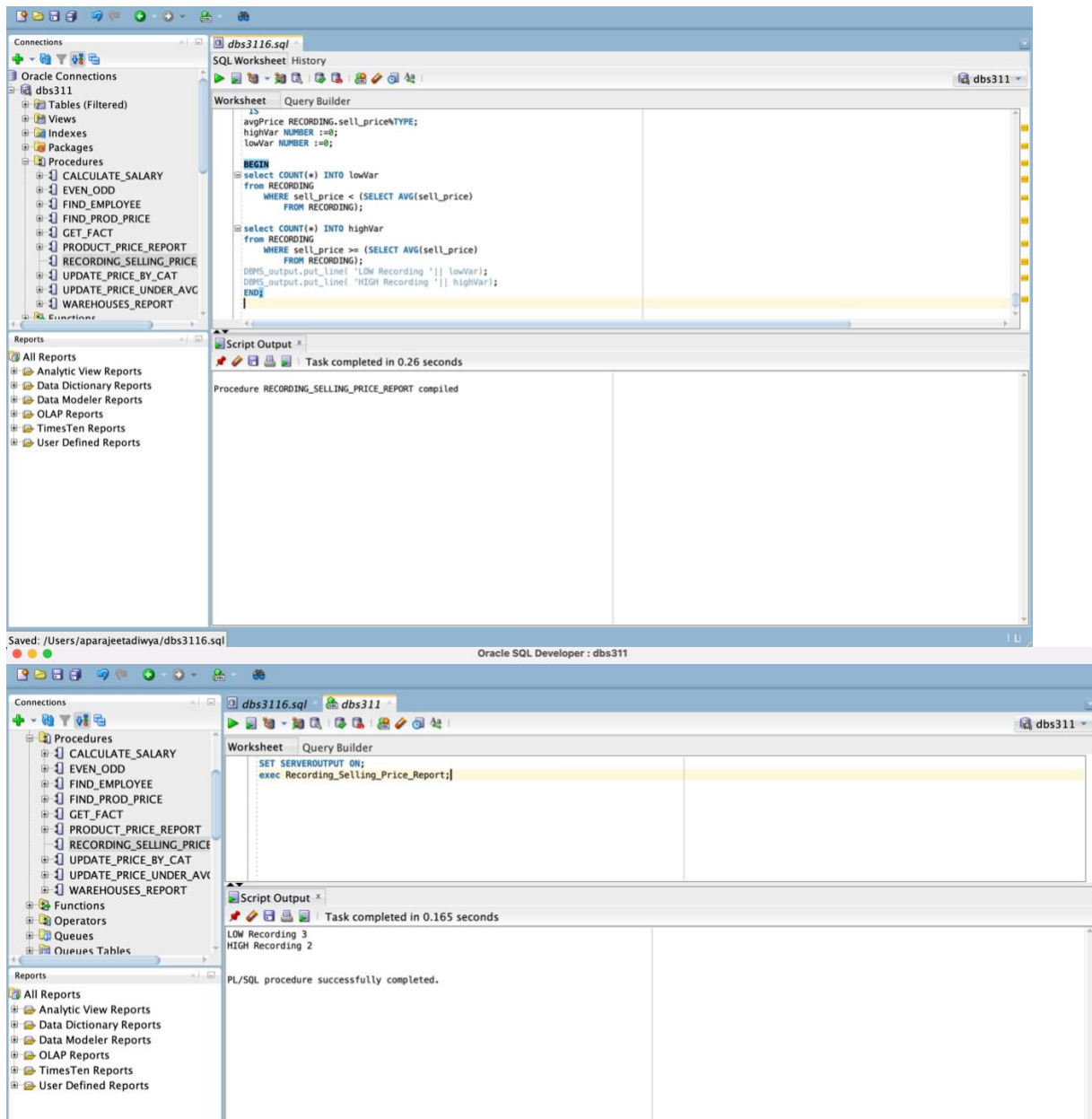
Query Result | All Rows Fetched: 5 in 0.121 seconds

	REGIONID	REGIONNAME
1	301	USA
2	302	US-North
3	303	US-EAST
4	304	CANADA
5	305	ASIA

Saved: /Users/aparajeetadiwya/dbs311_A2.sql — Line 250 Column 15 — Insert — Modified — Unix/Mac: LF

Part – 3: The screenshot of the procedure with code and output is given below:

For Part – 4, I used MongoDB Compass to display my sample json data design. The screenshots of the collection documents are given below for all the tables and sample data that I used in Part 2.

1. Customer Collection

DBS311A2.Customer

5 DOCUMENTS   **1** INDEXES

Documents | Aggregations | Schema | Explain Plan | Indexes | Validation

Filter☑ ●▼   Type a query: { field: 'value' }   Reset **Find** ‹/› More Options ▶

⬇ ADD DATA ▼   ☑ EXPORT COLLECTION   1–5 of 5 ↻ ‹ › ≣ {} ⊞

```
_id: ObjectId('64333141a7c4153d938d4e41')
CustomerID: 1001
FName: "Aparajeeta"
LName: "Diwya"
PhoneNo: 6475739720
Address: "40 Cal Cres"
City: "Scarborough"
Province: "ON"
Email: "apd.diwya@gmail.com"
```

```
_id: ObjectId('64333157a7c4153d938d4e43')
CustomerID: 1002
FName: "Ranju"
LName: "Shah"
PhoneNo: 1235885673
Address: "42 Cal Cres"
City: "Scarborough"
Province: "ON"
Email: "ranju.shah@gmail.com"
```

```
_id: ObjectId('6433319aa7c4153d938d4e45')
CustomerID: 1003
FName: "Aryan"
LName: "Shah"
PhoneNo: 3337860946
Address: "81 Jarvis Dr"
City: "Barrie"
Province: "ON"
Email: "aryan.shah@gmail.com"
```

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DBS311A2.Customer

5 DOCUMENTS   **1** INDEXES

Documents | Aggregations | Schema | Explain Plan | Indexes | Validation

Filter☑ ●▼   Type a query: { field: 'value' }   Reset **Find** ‹/› More Options ▶

⬇ ADD DATA ▼   ☑ EXPORT COLLECTION   1–5 of 5 ↻ ‹ › ≣ {} ⊞

```
_id: ObjectId('6433319aa7c4153d938d4e45')
CustomerID: 1003
FName: "Aryan"
LName: "Shah"
PhoneNo: 3337860946
Address: "81 Jarvis Dr"
City: "Barrie"
Province: "ON"
Email: "aryan.shah@gmail.com"
```

```
_id: ObjectId('643331d5a7c4153d938d4e47')
CustomerID: 1004
FName: "Rina"
LName: "Shreshtha"
PhoneNo: 8764446757
Address: "10 Med Dr"
City: "Montreal"
Province: "QC"
Email: "rina.shreshtha@gmail.com"
```

```
_id: ObjectId('64333207a7c4153d938d4e49')
CustomerID: 1005
FName: "Riva"
LName: "Shah"
PhoneNo: 6783451842
Address: "52 Cal Post"
City: "Scarborough"
Province: "ON"
Email: "riva.shah@gmail.com"
```

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2. Orders Collection

3. Order_Line Collection

4. Payment Collection

5. Record_Hist Collection

6. Recording Collection

DBS311A2.Recording

```
_id: ObjectId('64333692a7c4153d938d4e7f')
recordingID: 1
title: "Paper Rings"
performerName: "Taylor Swift"
sell_price: 299.99
qty_stock: 20

_id: ObjectId('643336aea7c4153d938d4e81')
recordingID: 2
title: "Die For You"
performerName: "The Weeknd"
sell_price: 220.99
qty_stock: 23

_id: ObjectId('643336cea7c4153d938d4e83')
recordingID: 3
title: "Dusk Till Dawn"
performerName: "Zayn Mallik"
sell_price: 350
qty_stock: 34

_id: ObjectId('643336f5a7c4153d938d4e86')
recordingID: 4
title: "Good 4 u"
performerName: "Olivia Rodrigo"
sell_price: 190
qty_stock: 50
```

DBS311A2.Recording

```
_id: ObjectId('643336aea7c4153d938d4e81')
recordingID: 2
title: "Die For You"
performerName: "The Weeknd"
sell_price: 220.99
qty_stock: 23

_id: ObjectId('643336cea7c4153d938d4e83')
recordingID: 3
title: "Dusk Till Dawn"
performerName: "Zayn Mallik"
sell_price: 350
qty_stock: 34

_id: ObjectId('643336f5a7c4153d938d4e86')
recordingID: 4
title: "Good 4 u"
performerName: "Olivia Rodrigo"
sell_price: 190
qty_stock: 50

_id: ObjectId('64333715a7c4153d938d4e88')
recordingID: 5
title: "Calm Down"
performerName: "Selena Gomez"
sell_price: 499.99
qty_stock: 39
```

7. Category Collection

DBS311A2.Category

7 DOCUMENTS   1 INDEXES

Documents   Aggregations   Schema   Explain Plan   Indexes   Validation

Filter   Type a query: { field: 'value' }   Reset   Find   </>   More Options ▸

ADD DATA ▾   EXPORT COLLECTION   1-7 of 7

```
_id: ObjectId('6433374aa7c4153d938d4e8b')
categoryID: 1
categoryDesc: "Metal Rock"

_id: ObjectId('64333758a7c4153d938d4e8d')
categoryID: 2
categoryDesc: "Easy Rock"

_id: ObjectId('64333763a7c4153d938d4e8f')
categoryID: 3
categoryDesc: "Hip-Hop"

_id: ObjectId('6433376da7c4153d938d4e91')
categoryID: 4
categoryDesc: "Jazz"

_id: ObjectId('64333784a7c4153d938d4e93')
categoryID: 5
categoryDesc: "Alt Rock"

_id: ObjectId('64333793a7c4153d938d4e95')
categoryID: 6
categoryDesc: "Classic Rock"
```

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8. Label Collection

DBS311A2.Label

7 DOCUMENTS   1 INDEXES

Documents   Aggregations   Schema   Explain Plan   Indexes   Validation

Filter   Type a query: { field: 'value' }   Reset   Find   </>   More Options ▸

ADD DATA ▾   EXPORT COLLECTION   1-7 of 7

```
_id: ObjectId('64333800a7c4153d938d4e9a')
labelID: 1001
labelName: "Sony"
urlSite: "sonylabels.ca"

_id: ObjectId('64333812a7c4153d938d4e9c')
labelID: 1002
labelName: "Virginia"
urlSite: "virginialabels.ca"

_id: ObjectId('64333825a7c4153d938d4e9e')
labelID: 1003
labelName: "Columbia"
urlSite: "columbialabels.ca"

_id: ObjectId('6433383da7c4153d938d4ea0')
labelID: 1004
labelName: "Top Charts"
urlSite: "topchartslabels.ca"

_id: ObjectId('64333856a7c4153d938d4ea2')
labelID: 1005
labelName: "Music Masters"
urlSite: "musicmasterslabels.ca"

_id: ObjectId('64333871a7c4153d938d4ea4')
```

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Documents
DBS311A2.Label

DBS311A2.Label

7 DOCUMENTS   **1** INDEXES

Documents   Aggregations   Schema   Explain Plan   Indexes   Validation

Filter   Type a query: { field: 'value' }   Reset   Find   </>   More Options ▶

± ADD DATA ▾   ☑ EXPORT COLLECTION   1–7 of 7

```
_id: ObjectId('64333825a7c4153d938d4e9e')
labelID: 1003
labelName: "Columbia"
urlSite: "columbialabels.ca"
```

```
_id: ObjectId('6433383da7c4153d938d4ea0')
labelID: 1004
labelName: "Top Charts"
urlSite: "topchartslabels.ca"
```

```
_id: ObjectId('64333856a7c4153d938d4ea2')
labelID: 1005
labelName: "Music Masters"
urlSite: "musicmasterslabels.ca"
```

```
_id: ObjectId('64333871a7c4153d938d4ea4')
labelID: 1006
labelName: "Hit Records"
urlSite: "hitrecordslabels.ca"
```

```
_id: ObjectId('6433388ea7c4153d938d4ea6')
labelID: 1007
labelName: "Songs On The House"
urlSite: "songsonthehouselabels.ca"
```

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9. Sales_Rep Collection

Documents
DBS311A2.Sales_R...

DBS311A2.Sales_Rep

5 DOCUMENTS   **1** INDEXES

Documents   Aggregations   Schema   Explain Plan   Indexes   Validation

Filter   Type a query: { field: 'value' }   Reset   Find   </>   More Options ▶

± ADD DATA ▾   ☑ EXPORT COLLECTION   1–5 of 5

```
_id: ObjectId('64333911a7c4153d938d4eaa')
REPNo: 2000
FirstName: "Ananya"
LastName: "Sharma"
PhoneNumber: 6475747720
Email: "ananya.s@gmail.com"
```

```
_id: ObjectId('6433393ba7c4153d938d4eac')
REPNo: 2001
FirstName: "Jack"
LastName: "Wright"
PhoneNumber: 5535788673
Email: "jack.w@gmail.com"
```

```
_id: ObjectId('6433396da7c4153d938d4eb0')
REPNo: 2002
FirstName: "Alia"
LastName: "Menon"
PhoneNumber: 6339861346
Email: "alia.m@gmail.com"
```

```
_id: ObjectId('643339aea7c4153d938d4eb3')
REPNo: 2003
FirstName: "Aanand"
LastName: "Shreshtha"
PhoneNumber: 8064849797
Email: "aanand.s@gmail.com"
```

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Documents
DBS311A2.Sales_R...

DBS311A2.Sales_Rep

5 DOCUMENTS **1** INDEXES

Documents   Aggregations   Schema   Explain Plan   Indexes   Validation

Filter ⊕ 🕓 ▾   Type a query: { field: 'value' }   Reset   Find   </>   More Options ▸

⬇ ADD DATA ▾   ✎ EXPORT COLLECTION   1–5 of 5 ↻ ‹ ›

```
_id: ObjectId('6433393ba7c4153d938d4eac')
REPNo: 2001
FirstName: "Jack"
LastName: "Wright"
PhoneNumber: 5535788673
Email: "jack.w@gmail.com"
```

```
_id: ObjectId('6433396da7c4153d938d4eb0')
REPNo: 2002
FirstName: "Alia"
LastName: "Menon"
PhoneNumber: 6339861346
Email: "alia.m@gmail.com"
```

```
_id: ObjectId('643339aea7c4153d938d4eb3')
REPNo: 2003
FirstName: "Aanand"
LastName: "Shreshtha"
PhoneNumber: 8064849797
Email: "aanand.s@gmail.com"
```

```
_id: ObjectId('643339d2a7c4153d938d4eb5')
REPNo: 2004
FirstName: "Rina"
LastName: "Bright"
PhoneNumber: 6783451842
Email: "rina.b@gmail.com"
```

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10. Region Collection

Documents
DBS311A2.Region

DBS311A2.Region

5 DOCUMENTS **1** INDEXES

Documents   Aggregations   Schema   Explain Plan   Indexes   Validation

Filter ⊕ 🕓 ▾   Type a query: { field: 'value' }   Reset   Find   </>   More Options ▸

⬇ ADD DATA ▾   ✎ EXPORT COLLECTION   1–5 of 5 ↻ ‹ ›

```
_id: ObjectId('643339fda7c4153d938d4eb8')
regionId: 301
regionName: "USA"
```

```
_id: ObjectId('64333a07a7c4153d938d4eba')
regionId: 302
regionName: "US-North"
```

```
_id: ObjectId('64333a11a7c4153d938d4ebc')
regionId: 331
regionName: "US-EAST"
```

```
_id: ObjectId('64333a1aa7c4153d938d4ebe')
regionId: 304
regionName: "CANADA"
```

```
_id: ObjectId('64333a24a7c4153d938d4ec0')
regionId: 305
regionName: "ASIA"
```

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