Amazon E-commerce Services

MIS 381N – Information Management – Fall 2022

Final Project

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Group Members:

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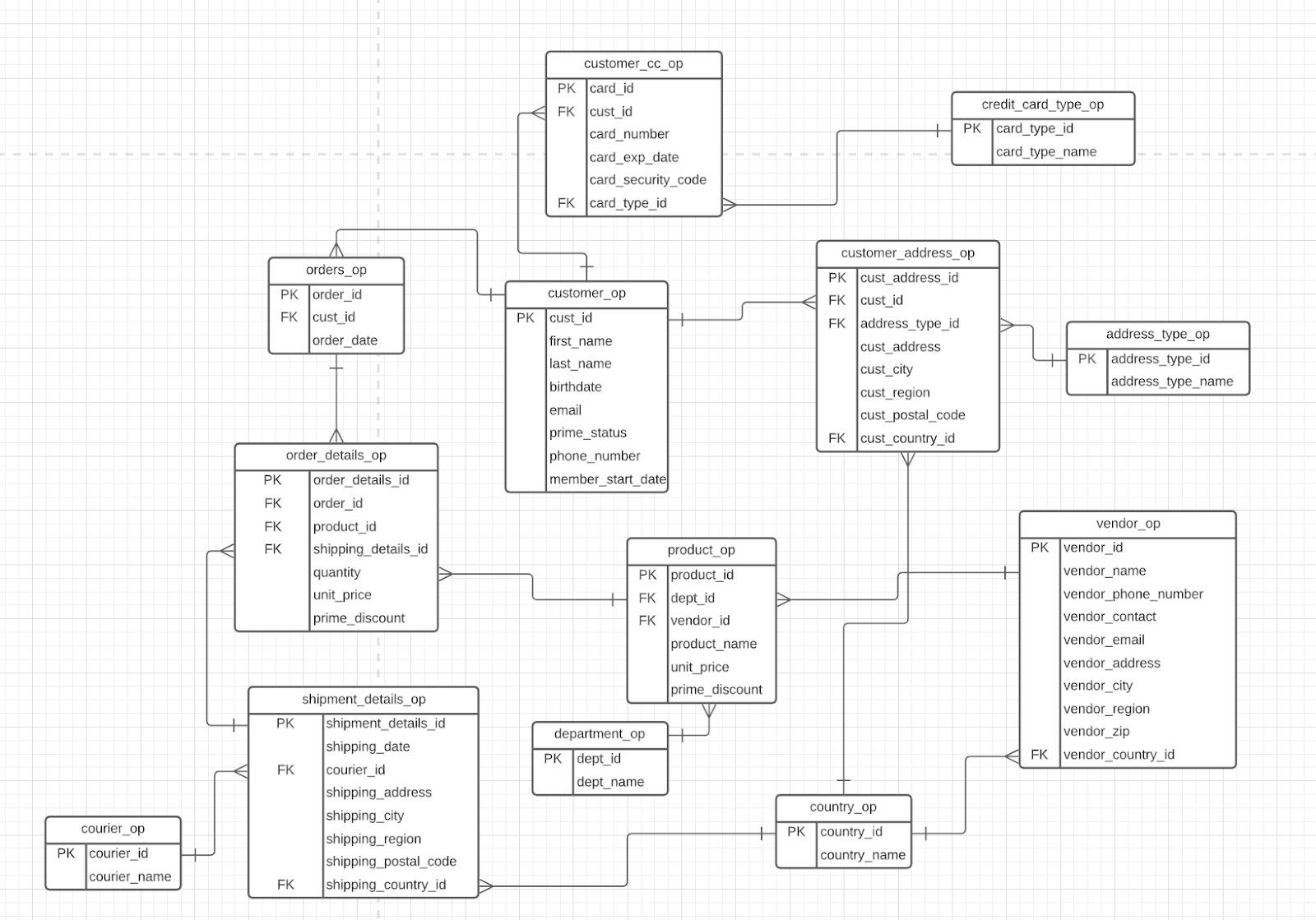
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**Section 1 - Data Models for Transactions:**

1. **Order Processing**

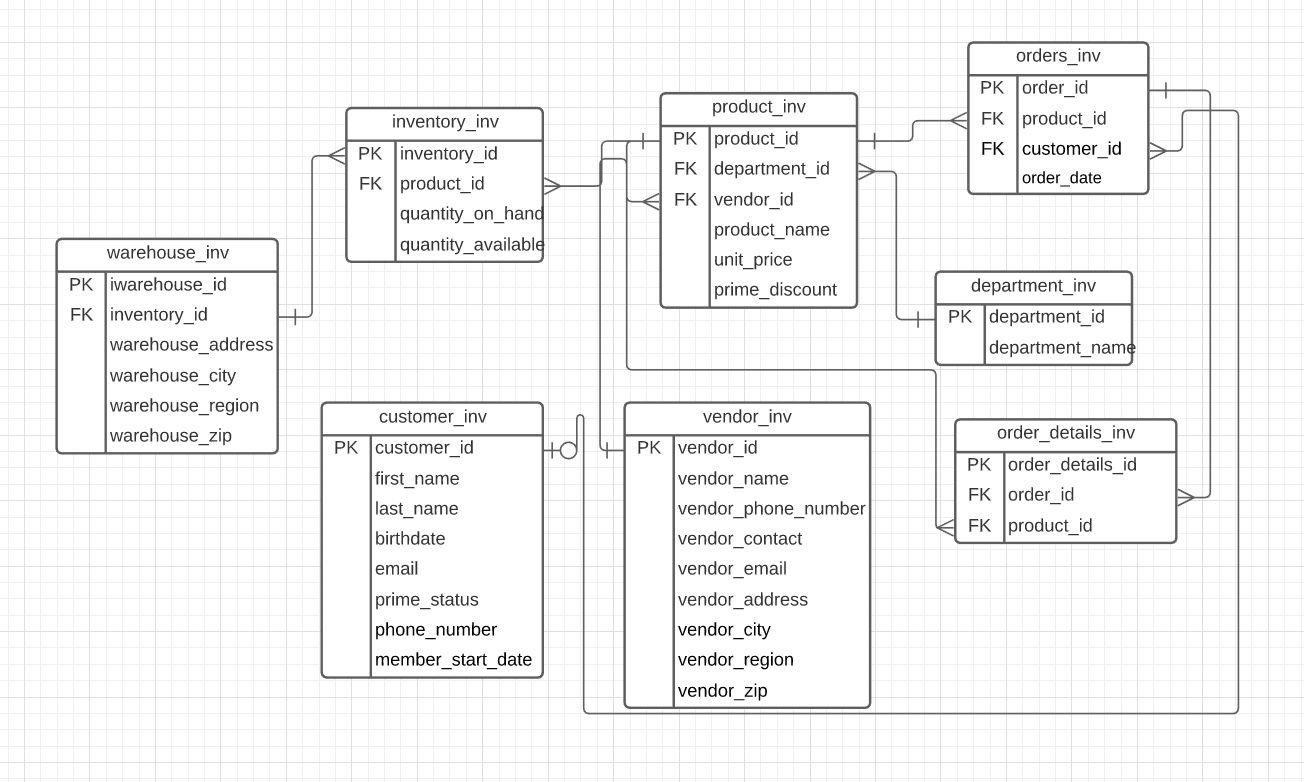


**2.Call Center Operations**

Diagram

Description automatically generated

**3. Inventory Management**



**4.Data Warehouse**​

Diagram

Description automatically generated

**Section 2 - DDL and Inserts:**

**Order Processing DDL:**

DROP TABLE PRODUCT\_OP CASCADE CONSTRAINTS;

DROP TABLE VENDOR\_OP CASCADE CONSTRAINTS;

DROP TABLE CREDIT\_CARD\_TYPE\_OP CASCADE CONSTRAINTS;

DROP TABLE SHIPMENT\_DETAILS\_OP CASCADE CONSTRAINTS;

DROP TABLE COUNTRY\_OP CASCADE CONSTRAINTS; DROP TABLE COURIER\_OP CASCADE CONSTRAINTS;

DROP TABLE CUSTOMER\_CC\_OP CASCADE CONSTRAINTS;

DROP TABLE department\_OP CASCADE CONSTRAINTS;

DROP TABLE order\_details\_OP CASCADE CONSTRAINTS;

DROP TABLE customer\_address\_OP CASCADE CONSTRAINTS;

DROP TABLE address\_type\_OP CASCADE CONSTRAINTS;

DROP TABLE orders\_OP CASCADE CONSTRAINTS;

DROP TABLE customer\_OP CASCADE CONSTRAINTS;

CREATE TABLE address\_type\_op ( address\_type\_id NUMBER(20) NOT NULL, address\_type\_name VARCHAR2(50) NOT NULL,

PRIMARY KEY (address\_type\_id)

);

CREATE TABLE country\_op ( country\_id NUMBER(20) NOT NULL, country\_name VARCHAR2(50) NOT NULL,

PRIMARY KEY (country\_id)

);

CREATE TABLE department\_op ( dept\_id NUMBER(20) NOT NULL, dept\_name VARCHAR2(50) NOT NULL,

PRIMARY KEY (dept\_id)

);

CREATE TABLE courier\_op ( courier\_id NUMBER(20) NOT NULL, courier\_name VARCHAR2(50) NOT NULL, PRIMARY KEY (courier\_id)

);

CREATE TABLE credit\_card\_type\_op ( card\_type\_id NUMBER(20) NOT NULL, card\_type\_name VARCHAR2(50) NOT NULL,

PRIMARY KEY (card\_type\_id)

);

CREATE TABLE customer\_op ( cust\_id NUMBER(20) NOT NULL, first\_name VARCHAR2(50) NOT NULL, last\_name VARCHAR2(50) NOT NULL, birthdate DATE NOT NULL, email VARCHAR2(50) UNIQUE NOT NULL, prime\_status VARCHAR2(1) DEFAULT 'N' NOT NULL, systemdate DATE DEFAULT SYSDATE NOT NULL, phone\_number VARCHAR2(50), member\_start\_date DATE,

PRIMARY KEY (cust\_id)

);

CREATE TABLE customer\_address\_op ( cust\_address\_id NUMBER (20) NOT NULL, cust\_id NUMBER (20) NOT NULL, address\_type\_id NUMBER(20) NOT NULL, cust\_address VARCHAR2(50) NOT NULL, cust\_city VARCHAR2(50) NOT NULL, cust\_region VARCHAR2(50), cust\_postal\_code NUMBER (20) NOT NULL, cust\_country\_id NUMBER(10) NOT NULL,

PRIMARY KEY (cust\_address\_id),

CONSTRAINT FK\_CUSTADD\_CUSTOMER FOREIGN KEY (cust\_id) REFERENCES

CUSTOMER\_op(cust\_id),

CONSTRAINT FK\_CUSTADD\_ADDRTYPE FOREIGN KEY (address\_type\_id) REFERENCES

ADDRESS\_TYPE\_op(address\_type\_id),

CONSTRAINT FK\_CUSTADD\_COUNTRY FOREIGN KEY (cust\_country\_id) REFERENCES COUNTRY\_op(country\_id)

);

CREATE TABLE customer\_cc\_op ( card\_id NUMBER (20) NOT NULL, cust\_id NUMBER (20) NOT NULL, card\_number NUMBER (20) NOT NULL, card\_exp\_date DATE NOT NULL, card\_security\_code NUMBER (20) NOT NULL, card\_type\_id NUMBER(20) NOT NULL,

PRIMARY KEY (card\_id),

CONSTRAINT FK\_CC\_CUSTOMER FOREIGN KEY (cust\_id) REFERENCES

CUSTOMER\_op(cust\_id),

CONSTRAINT FK\_CC\_CARDTYPE FOREIGN KEY (card\_type\_id) REFERENCES credit\_card\_type\_op(card\_type\_id)

);

CREATE TABLE vendor\_op ( vendor\_id NUMBER(20) NOT NULL, vendor\_name VARCHAR2(50) NOT NULL, vendor\_phone\_number VARCHAR2(50) NOT NULL, vendor\_contact VARCHAR2(50) NOT NULL, vendor\_email VARCHAR2(50), vendor\_address VARCHAR2(50) NOT NULL, vendor\_city VARCHAR2(50) NOT NULL, vendor\_region VARCHAR2(50),

vendor\_zip NUMBER(20) NOT NULL, vendor\_country\_id NUMBER(20) NOT NULL,

PRIMARY KEY (vendor\_id),

CONSTRAINT FK\_VENDOR\_COUNTRY FOREIGN KEY (vendor\_country\_id) REFERENCES COUNTRY\_op(country\_id)

);

CREATE TABLE product\_op ( product\_id NUMBER(20) NOT NULL, product\_name VARCHAR2(50) NOT NULL, dept\_id NUMBER(20) NOT NULL, vendor\_id NUMBER(20),

UNIT\_PRICE NUMBER (7,2) NOT NULL, prime\_discount NUMBER(7,2),

PRIMARY KEY (product\_id),

CONSTRAINT FK\_PRODUCT\_DEPT FOREIGN KEY (dept\_id) REFERENCES

DEPARTMENT\_op(dept\_id),

CONSTRAINT FK\_PRODUCT\_VENDOR FOREIGN KEY (vendor\_id) REFERENCES vendor\_op(vendor\_id)

);

CREATE TABLE orders\_op ( order\_id NUMBER(20) NOT NULL, cust\_id NUMBER(20) NOT NULL, order\_date DATE DEFAULT SYSDATE NOT NULL,

PRIMARY KEY (order\_id),

CONSTRAINT FK\_ORDERS\_CUST FOREIGN KEY (cust\_id) REFERENCES

CUSTOMER\_op(cust\_id)

);

CREATE TABLE shipment\_details\_op ( shipment\_details\_id NUMBER(20) NOT NULL, shipping\_date DATE NOT NULL, courier\_id NUMBER(20) NOT NULL, shipping\_address VARCHAR2(50) NOT NULL, shipping\_city VARCHAR2(50) NOT NULL, shipping\_region VARCHAR2(50), shipping\_postal\_code NUMBER(20) NOT NULL, shipping\_country\_id NUMBER(20) NOT NULL,

PRIMARY KEY (shipment\_details\_id),

CONSTRAINT SHIPDETAILS\_courier FOREIGN KEY (courier\_id) REFERENCES courier\_op(courier\_id),

CONSTRAINT SHIPDETAILS\_COUNTRY FOREIGN KEY (shipping\_country\_id)

REFERENCES COUNTRY\_op(country\_id)

);

CREATE TABLE order\_details\_op ( order\_details\_id NUMBER (20) NOT NULL, order\_id NUMBER(20) NOT NULL, product\_id NUMBER(20) NOT NULL, shipping\_details\_id NUMBER(20), quantity NUMBER NOT NULL, unitprice NUMBER(7,2) NOT NULL,

PRIMARY KEY (order\_details\_id),

CONSTRAINT FK\_ORDERDET\_ORDERS FOREIGN KEY (order\_id) REFERENCES orders\_op(order\_id),

CONSTRAINT FK\_ORDERDET\_PRODUCT FOREIGN KEY (product\_id) REFERENCES

PRODUCT\_op(product\_id),

CONSTRAINT FK\_ORDERDET\_SHIPDET FOREIGN KEY (shipping\_details\_id) REFERENCES shipment\_details\_op(shipment\_details\_id)

);

-- ADDRESS\_TYPE TABLE

INSERT INTO "ADDRESS\_TYPE\_OP" (ADDRESS\_TYPE\_ID, ADDRESS\_TYPE\_NAME)

VALUES ('1', 'Billing');

INSERT INTO "ADDRESS\_TYPE\_OP" (ADDRESS\_TYPE\_ID, ADDRESS\_TYPE\_NAME)

VALUES ('2', 'Shipping'); commit;

-- DEPARTMENT TABLE

INSERT INTO "DEPARTMENT\_OP" (DEPT\_ID, DEPT\_NAME) VALUES ('1', 'groccery');

INSERT INTO "DEPARTMENT\_OP" (DEPT\_ID, DEPT\_NAME) VALUES ('2', 'books');

INSERT INTO "DEPARTMENT\_OP" (DEPT\_ID, DEPT\_NAME) VALUES ('3', 'electronics');

INSERT INTO "DEPARTMENT\_OP" (DEPT\_ID, DEPT\_NAME) VALUES ('4', 'wellness'); INSERT INTO "DEPARTMENT\_OP" (DEPT\_ID, DEPT\_NAME) VALUES ('5', 'clothing'); commit;

-- COUNTRY TABLE

INSERT INTO "COUNTRY\_OP" (COUNTRY\_ID, COUNTRY\_NAME) VALUES ('1', 'United

States');

INSERT INTO "COUNTRY\_OP" (COUNTRY\_ID, COUNTRY\_NAME) VALUES ('2', 'China');

INSERT INTO "COUNTRY\_OP" (COUNTRY\_ID, COUNTRY\_NAME) VALUES ('3', 'United Kingdom');

INSERT INTO "COUNTRY\_OP" (COUNTRY\_ID, COUNTRY\_NAME) VALUES ('4', 'Australia'); INSERT INTO "COUNTRY\_OP" (COUNTRY\_ID, COUNTRY\_NAME) VALUES ('5', 'Mexico');

commit;

-- VENDOR TABLE

INSERT INTO "VENDOR\_OP" (VENDOR\_ID, VENDOR\_NAME, VENDOR\_PHONE\_NUMBER,

VENDOR\_CONTACT, VENDOR\_EMAIL, VENDOR\_ADDRESS, VENDOR\_CITY,

VENDOR\_REGION, VENDOR\_ZIP, VENDOR\_COUNTRY\_ID) VALUES ('1', 'GAP',

'214-934-0220', 'Caroline Jordan', 'cjordan@gmail.com', '123 Hut St.', 'Brookshire', 'Northwest', '76889', '4');

INSERT INTO "VENDOR\_OP" (VENDOR\_ID, VENDOR\_NAME, VENDOR\_PHONE\_NUMBER,

VENDOR\_CONTACT, VENDOR\_EMAIL, VENDOR\_ADDRESS, VENDOR\_CITY,

VENDOR\_REGION, VENDOR\_ZIP, VENDOR\_COUNTRY\_ID) VALUES ('2', 'Apple', '972-972-4692', 'Sarah Holiday', 'sholiday@gmail.com', '227 Logistics Street', 'Shanghai', 'South', '43040', '2');

INSERT INTO "VENDOR\_OP" (VENDOR\_ID, VENDOR\_NAME,

VENDOR\_PHONE\_NUMBER, VENDOR\_CONTACT, VENDOR\_EMAIL, VENDOR\_ADDRESS,

VENDOR\_CITY, VENDOR\_REGION, VENDOR\_ZIP, VENDOR\_COUNTRY\_ID) VALUES ('3',

'Microsoft', '469-342-8400', 'John Smith', 'johns@yahoo.com', '1 Microsoft Way', 'Redmond', 'East', '98052', '3');

INSERT INTO "VENDOR\_OP" (VENDOR\_ID, VENDOR\_NAME, VENDOR\_PHONE\_NUMBER,

VENDOR\_CONTACT, VENDOR\_EMAIL, VENDOR\_ADDRESS, VENDOR\_CITY,

VENDOR\_REGION, VENDOR\_ZIP, VENDOR\_COUNTRY\_ID) VALUES ('4', 'Whole Foods

Market', '512-442-9200', 'Jordan Howard', 'Jordanh@gmail.com', '550 Bowie St.', 'Austin', 'South', '78703', '1');

INSERT INTO "VENDOR\_OP" (VENDOR\_ID, VENDOR\_NAME, VENDOR\_PHONE\_NUMBER,

VENDOR\_CONTACT, VENDOR\_EMAIL, VENDOR\_ADDRESS, VENDOR\_CITY,

VENDOR\_REGION, VENDOR\_ZIP, VENDOR\_COUNTRY\_ID) VALUES ('5', 'Samsung',

'512-420-7666', 'Mike Smith', 'Smike@gmail.com', '433 Maple St.', 'Chicago', 'North', '87990',

'1');

commit;

-- CREDIT\_CARD\_TYPE\_TABLE

INSERT INTO "CREDIT\_CARD\_TYPE\_OP" (CARD\_TYPE\_ID, CARD\_TYPE\_NAME) VALUES

('1', 'Visa');

INSERT INTO "CREDIT\_CARD\_TYPE\_OP" (CARD\_TYPE\_ID, CARD\_TYPE\_NAME) VALUES

('2', 'Mastercard');

INSERT INTO "CREDIT\_CARD\_TYPE\_OP" (CARD\_TYPE\_ID, CARD\_TYPE\_NAME) VALUES

('3', 'American Express');

INSERT INTO "CREDIT\_CARD\_TYPE\_OP" (CARD\_TYPE\_ID, CARD\_TYPE\_NAME) VALUES

('4', 'Discover');

commit;

-- COURIER TABLE

INSERT INTO "COURIER\_OP" (COURIER\_ID, COURIER\_NAME) VALUES ('1', 'Amazon');

INSERT INTO "COURIER\_OP" (COURIER\_ID, COURIER\_NAME) VALUES ('2', 'FedEx'); INSERT INTO "COURIER\_OP" (COURIER\_ID, COURIER\_NAME) VALUES ('3', 'UPS'); commit;

-- CUSTOMER TABLE

INSERT INTO "CUSTOMER\_OP" (CUST\_ID, FIRST\_NAME, LAST\_NAME, BIRTHDATE,

EMAIL, PRIME\_STATUS, SYSTEMDATE, PHONE\_NUMBER, MEMBER\_START\_DATE)

VALUES ('1', 'YOU', 'AMAZING', TO\_DATE('2020-11-25 11:43:51', 'YYYY-MM-DD HH24:MI:SS'), 'YOUAMAZING@AMAZING.COM

', 'Y', TO\_DATE('2020-11-25 11:49:43', 'YYYY-MM-DD HH24:MI:SS'), '214-442-8766',

TO\_DATE('2008-11-15 00:00:00', 'YYYY-MM-DD HH24:MI:SS'));

INSERT INTO "CUSTOMER\_OP" (CUST\_ID, FIRST\_NAME, LAST\_NAME, BIRTHDATE,

EMAIL, PRIME\_STATUS, SYSTEMDATE, PHONE\_NUMBER, MEMBER\_START\_DATE)

VALUES ('2', 'Mike', 'Thomas', TO\_DATE('1992-12-24 00:00:00', 'YYYY-MM-DD HH24:MI:SS'),

'mike.thomas@gmai.com', 'N', TO\_DATE('2020-11-25 00:00:00', 'YYYY-MM-DD HH24:MI:SS'),

'214-945-0220', TO\_DATE('2012-07-04 00:00:00', 'YYYY-MM-DD HH24:MI:SS'));

INSERT INTO "CUSTOMER\_OP" (CUST\_ID, FIRST\_NAME, LAST\_NAME, BIRTHDATE,

EMAIL, PRIME\_STATUS, SYSTEMDATE, PHONE\_NUMBER, MEMBER\_START\_DATE)

VALUES ('3', 'Grayson', 'Taylor', TO\_DATE('1996-09-23 00:00:00', 'YYYY-MM-DD

HH24:MI:SS'), 'grayson.taylor@yahoo.com', 'Y', TO\_DATE('2020-11-25 00:00:00',

'YYYY-MM-DD HH24:MI:SS'), '932-468-2300', TO\_DATE('2014-11-07 00:00:00', 'YYYY-MM-DD HH24:MI:SS'));

INSERT INTO "CUSTOMER\_OP" (CUST\_ID, FIRST\_NAME, LAST\_NAME, BIRTHDATE,

EMAIL, PRIME\_STATUS, SYSTEMDATE, PHONE\_NUMBER, MEMBER\_START\_DATE)

VALUES ('4', 'Julie', 'Karnes', TO\_DATE('1986-01-24 00:00:00', 'YYYY-MM-DD HH24:MI:SS'),

'juliek@gmail.com', 'N', TO\_DATE('2020-11-25 00:00:00', 'YYYY-MM-DD HH24:MI:SS'),

'865-421-5600', TO\_DATE('2017-11-04 00:00:00', 'YYYY-MM-DD HH24:MI:SS'));

INSERT INTO "CUSTOMER\_OP" (CUST\_ID, FIRST\_NAME, LAST\_NAME, BIRTHDATE,

EMAIL, PRIME\_STATUS, SYSTEMDATE, PHONE\_NUMBER, MEMBER\_START\_DATE)

VALUES ('5', 'Donald', 'Glover', TO\_DATE('1985-10-09 00:00:00', 'YYYY-MM-DD HH24:MI:SS'),

'dglover@gmail.com', 'N', TO\_DATE('2020-11-25 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), '432-655-9100', TO\_DATE('2019-12-07 00:00:00', 'YYYY-MM-DD HH24:MI:SS')); commit;

-- ORDER TABLE

INSERT INTO "ORDERS\_OP" (ORDER\_ID, CUST\_ID, ORDER\_DATE) VALUES ('10001', '1', TO\_DATE('2020-11-16 00:00:00', 'YYYY-MM-DD HH24:MI:SS'));

INSERT INTO "ORDERS\_OP" (ORDER\_ID, CUST\_ID, ORDER\_DATE) VALUES ('10002', '1',

TO\_DATE('2020-11-08 00:00:00', 'YYYY-MM-DD HH24:MI:SS'));

INSERT INTO "ORDERS\_OP" (ORDER\_ID, CUST\_ID, ORDER\_DATE) VALUES ('10003', '2', TO\_DATE('2020-11-19 00:00:00', 'YYYY-MM-DD HH24:MI:SS'));

INSERT INTO "ORDERS\_OP" (ORDER\_ID, CUST\_ID, ORDER\_DATE) VALUES ('10004', '3', TO\_DATE('2020-11-01 00:00:00', 'YYYY-MM-DD HH24:MI:SS'));

INSERT INTO "ORDERS\_OP" (ORDER\_ID, CUST\_ID, ORDER\_DATE) VALUES ('10005', '5', TO\_DATE('2020-11-05 00:00:00', 'YYYY-MM-DD HH24:MI:SS')); commit;

-- SHIPMENT DETAILS TABLE

INSERT INTO "SHIPMENT\_DETAILS\_OP" (SHIPMENT\_DETAILS\_ID, SHIPPING\_DATE,

COURIER\_ID, SHIPPING\_ADDRESS, SHIPPING\_CITY, SHIPPING\_REGION,

SHIPPING\_POSTAL\_CODE, SHIPPING\_COUNTRY\_ID) VALUES ('5001',

TO\_DATE('2020-11-11 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), '1', '5740 Cadence Lane',

'Plano', 'North', '75024', '1');

INSERT INTO "SHIPMENT\_DETAILS\_OP" (SHIPMENT\_DETAILS\_ID, SHIPPING\_DATE,

COURIER\_ID, SHIPPING\_ADDRESS, SHIPPING\_CITY, SHIPPING\_REGION,

SHIPPING\_POSTAL\_CODE, SHIPPING\_COUNTRY\_ID) VALUES ('5002',

TO\_DATE('2020-11-07 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), '1', '5400 Live Oak', 'London', 'South', '533425', '3');

INSERT INTO "SHIPMENT\_DETAILS\_OP" (SHIPMENT\_DETAILS\_ID, SHIPPING\_DATE,

COURIER\_ID, SHIPPING\_ADDRESS, SHIPPING\_CITY, SHIPPING\_REGION,

SHIPPING\_POSTAL\_CODE, SHIPPING\_COUNTRY\_ID) VALUES ('5003',

TO\_DATE('2020-11-20 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), '2', '5748 Twin Oaks', 'Los Angeles', 'West', '90210', '1');

INSERT INTO "SHIPMENT\_DETAILS\_OP" (SHIPMENT\_DETAILS\_ID, SHIPPING\_DATE,

COURIER\_ID, SHIPPING\_ADDRESS, SHIPPING\_CITY, SHIPPING\_REGION,

SHIPPING\_POSTAL\_CODE, SHIPPING\_COUNTRY\_ID) VALUES ('5004',

TO\_DATE('2020-11-21 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), '3', '4500 Briargrove Lane',

'Dallas', 'Texas', '75093', '1');

INSERT INTO "SHIPMENT\_DETAILS\_OP" (SHIPMENT\_DETAILS\_ID, SHIPPING\_DATE,

COURIER\_ID, SHIPPING\_ADDRESS, SHIPPING\_CITY, SHIPPING\_REGION,

SHIPPING\_POSTAL\_CODE, SHIPPING\_COUNTRY\_ID) VALUES ('5005',

TO\_DATE('2020-11-01 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), '1', '6500 Melshire', 'Melbourne', 'East', '39991', '4');

commit;

-- PRODUCT TABLE

INSERT INTO "PRODUCT\_OP" (PRODUCT\_ID, PRODUCT\_NAME, DEPT\_ID, VENDOR\_ID,

UNIT\_PRICE, PRIME\_DISCOUNT) VALUES ('123', 'Borden Whole Milk', '1', '4', '6.99', '3.00');

INSERT INTO "PRODUCT\_OP" (PRODUCT\_ID, PRODUCT\_NAME, DEPT\_ID, VENDOR\_ID,

UNIT\_PRICE, PRIME\_DISCOUNT) VALUES ('234', 'Lunchable 6 Pack', '1', '4', '15.99', '3.00');

INSERT INTO "PRODUCT\_OP" (PRODUCT\_ID, PRODUCT\_NAME, DEPT\_ID, VENDOR\_ID,

UNIT\_PRICE, PRIME\_DISCOUNT) VALUES ('345', 'Mouse Pad', '3', '3', '10.49', '3.00');

INSERT INTO "PRODUCT\_OP" (PRODUCT\_ID, PRODUCT\_NAME, DEPT\_ID, VENDOR\_ID,

UNIT\_PRICE, PRIME\_DISCOUNT) VALUES ('456', 'Microsoft Mouse 3600', '3', '3', '34.99',

'3.00');

INSERT INTO "PRODUCT\_OP" (PRODUCT\_ID, PRODUCT\_NAME, DEPT\_ID, VENDOR\_ID,

UNIT\_PRICE, PRIME\_DISCOUNT) VALUES ('567', 'Hair Ties', '5', '1', '3.99', '0');

commit;

-- CUSTOMER\_CC TABLE

INSERT INTO "CUSTOMER\_CC\_OP" (CARD\_ID, CUST\_ID, CARD\_NUMBER,

CARD\_EXP\_DATE, CARD\_SECURITY\_CODE, CARD\_TYPE\_ID) VALUES ('70001', '2',

'5480883108534840', TO\_DATE('2025-12-01 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), '947',

'2');

INSERT INTO "CUSTOMER\_CC\_OP" (CARD\_ID, CUST\_ID, CARD\_NUMBER,

CARD\_EXP\_DATE, CARD\_SECURITY\_CODE, CARD\_TYPE\_ID) VALUES ('70002', '1',

'2221007701739686', TO\_DATE('2022-01-01 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), '752',

'2');

INSERT INTO "CUSTOMER\_CC\_OP" (CARD\_ID, CUST\_ID, CARD\_NUMBER,

CARD\_EXP\_DATE, CARD\_SECURITY\_CODE, CARD\_TYPE\_ID) VALUES ('70003', '3',

'4539148550460413', TO\_DATE('2021-01-01 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), '478',

'1');

INSERT INTO "CUSTOMER\_CC\_OP" (CARD\_ID, CUST\_ID, CARD\_NUMBER,

CARD\_EXP\_DATE, CARD\_SECURITY\_CODE, CARD\_TYPE\_ID) VALUES ('70004', '2',

'4485960822519303', TO\_DATE('2023-09-01 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), '342',

'1');

INSERT INTO "CUSTOMER\_CC\_OP"(CARD\_ID, CUST\_ID, CARD\_NUMBER,

CARD\_EXP\_DATE, CARD\_SECURITY\_CODE, CARD\_TYPE\_ID) VALUES ('70005', '1',

'378217231970827', TO\_DATE('2024-07-02 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), '890', '3');

commit;

-- customer\_address\_table

INSERT INTO "CUSTOMER\_ADDRESS\_OP" (CUST\_ADDRESS\_ID, CUST\_ID,

ADDRESS\_TYPE\_ID, CUST\_ADDRESS, CUST\_CITY, CUST\_REGION,

CUST\_POSTAL\_CODE, CUST\_COUNTRY\_ID) VALUES ('87001', '1', '1', '4700 Carolyns

Circle', 'Norwalk', 'South', '90652', '1');

INSERT INTO "CUSTOMER\_ADDRESS\_OP" (CUST\_ADDRESS\_ID, CUST\_ID,

ADDRESS\_TYPE\_ID, CUST\_ADDRESS, CUST\_CITY, CUST\_REGION,

CUST\_POSTAL\_CODE, CUST\_COUNTRY\_ID) VALUES ('87002', '2', '1', '85 Thirsk Road',

'London', 'South', '109823', '3');

INSERT INTO "CUSTOMER\_ADDRESS\_OP" (CUST\_ADDRESS\_ID, CUST\_ID,

ADDRESS\_TYPE\_ID, CUST\_ADDRESS, CUST\_CITY, CUST\_REGION,

CUST\_POSTAL\_CODE, CUST\_COUNTRY\_ID) VALUES ('87003', '3', '1', '42 Umbridge Road',

'Manchester', 'North', '100480', '3');

INSERT INTO "CUSTOMER\_ADDRESS\_OP" (CUST\_ADDRESS\_ID, CUST\_ID,

ADDRESS\_TYPE\_ID, CUST\_ADDRESS, CUST\_CITY, CUST\_REGION,

CUST\_POSTAL\_CODE, CUST\_COUNTRY\_ID) VALUES ('87004', '4', '2', '3663 Fort Street', 'Washington', 'Northeast', '27889', '1');

INSERT INTO "CUSTOMER\_ADDRESS\_OP" (CUST\_ADDRESS\_ID, CUST\_ID,

ADDRESS\_TYPE\_ID, CUST\_ADDRESS, CUST\_CITY, CUST\_REGION,

CUST\_POSTAL\_CODE, CUST\_COUNTRY\_ID) VALUES ('87005', '5', '2', '4500 South Oak',

'Los Angeles', 'Southwest', '90212', '1');

--INSERT INTO "CUSTOMER\_ADDRESS\_OP" (CUST\_ADDRESS\_ID, CUST\_ID,

ADDRESS\_TYPE\_ID, CUST\_ADDRESS, CUST\_CITY, CUST\_REGION,

CUST\_POSTAL\_CODE, CUST\_COUNTRY\_ID) VALUES ('87006', '1', '2', 'La Concepcion

Coatipac 5240', 'Mexico City', 'Northeast', '52333', '5');

commit;

-- ORDER\_DETAILS\_TABLE

INSERT INTO "ORDER\_DETAILS\_OP" (ORDER\_DETAILS\_ID, ORDER\_ID, PRODUCT\_ID,

SHIPPING\_DETAILS\_ID, QUANTITY, UNITPRICE) VALUES ('20001', '10001', '123', '5001', '2',

'6.99');

INSERT INTO "ORDER\_DETAILS\_OP" (ORDER\_DETAILS\_ID, ORDER\_ID, PRODUCT\_ID,

SHIPPING\_DETAILS\_ID, QUANTITY, UNITPRICE) VALUES ('20002', '10002', '123', '5002', '4',

'6.99');

INSERT INTO "ORDER\_DETAILS\_OP" (ORDER\_DETAILS\_ID, ORDER\_ID, PRODUCT\_ID,

SHIPPING\_DETAILS\_ID, QUANTITY, UNITPRICE) VALUES ('20003', '10003', '456', '5003', '1',

'34.99');

INSERT INTO "ORDER\_DETAILS\_OP" (ORDER\_DETAILS\_ID, ORDER\_ID, PRODUCT\_ID,

SHIPPING\_DETAILS\_ID, QUANTITY, UNITPRICE) VALUES ('20004', '10004', '567', '5004', '1',

'3.99');

INSERT INTO "ORDER\_DETAILS\_OP" (ORDER\_DETAILS\_ID, ORDER\_ID, PRODUCT\_ID,

SHIPPING\_DETAILS\_ID, QUANTITY, UNITPRICE) VALUES ('20005', '10005', '567', '5005', '3',

'3.99');

commit;

**Call Center Operations DDL and Inserts:**

DROP TABLE call\_log\_cc;

DROP TABLE order\_details\_cc;

DROP TABLE product\_cc;

DROP TABLE vendor\_cc;

DROP TABLE orders\_cc;

DROP TABLE customer\_cc;

DROP TABLE department\_cc;

DROP TABLE employee\_cc;

CREATE TABLE department\_cc ( dept\_id NUMBER(20) NOT NULL, dept\_name VARCHAR(50) NOT NULL,

PRIMARY KEY (dept\_id)

);

CREATE TABLE customer\_cc ( cust\_id NUMBER(20), first\_name VARCHAR(50) NOT NULL, last\_name VARCHAR(50) NOT NULL, systemdate DATE DEFAULT SYSDATE, birthdate DATE NOT NULL, email VARCHAR(50) UNIQUE NOT NULL, prime\_status VARCHAR(1) DEFAULT 'N' NOT NULL,

PRIMARY KEY (cust\_id)

);

CREATE TABLE employee\_cc ( emp\_id NUMBER(20), first\_name VARCHAR(50) NOT NULL, last\_name VARCHAR(50) NOT NULL, position VARCHAR(50) NOT NULL,

PRIMARY KEY (emp\_id)

);

CREATE TABLE orders\_cc ( order\_id NUMBER(20) NOT NULL, cust\_id NUMBER(20) NOT NULL,

PRIMARY KEY (order\_id),

CONSTRAINT FK\_orderid\_customerid FOREIGN KEY (cust\_id) REFERENCES customer\_cc(cust\_id)

);

CREATE TABLE vendor\_cc ( vendor\_id NUMBER(20) NOT NULL, vendor\_name VARCHAR(50) NOT NULL, address VARCHAR(50) NOT NULL, city VARCHAR(50) NOT NULL, region VARCHAR(50) NOT NULL, zip NUMBER(20) NOT NULL, country VARCHAR(50) NOT NULL,

PRIMARY KEY (vendor\_id)

);

CREATE TABLE product\_cc ( product\_id NUMBER(20) NOT NULL, dept\_id NUMBER(20) NOT NULL, vendor\_id NUMBER(20) NOT NULL,

PRIMARY KEY (product\_id)

);

CREATE TABLE order\_details\_cc ( order\_id NUMBER(20) NOT NULL, product\_id NUMBER(20) NOT NULL, quantity NUMBER(20) NOT NULL, unitprice NUMBER(20) NOT NULL,

PRIMARY KEY (order\_id, product\_id),

CONSTRAINT FK\_od\_prodid FOREIGN KEY (product\_id) REFERENCES product\_cc(product\_id),

CONSTRAINT FK\_od\_orderid FOREIGN KEY (order\_id) REFERENCES orders\_cc(order\_id)

);

CREATE TABLE call\_log\_cc ( call\_id NUMBER(20), cust\_id NUMBER(20), employee\_id NUMBER(20), order\_id NUMBER(20),

time DATE NOT NULL, duration NUMBER NOT NULL,

PRIMARY KEY (call\_id),

CONSTRAINT FK\_callid\_custid FOREIGN KEY (cust\_id) REFERENCES customer\_cc(cust\_id),

CONSTRAINT FK\_callid\_employeeid FOREIGN KEY (employee\_id) REFERENCES employee\_cc(emp\_id),

CONSTRAINT FK\_callid\_orderid FOREIGN KEY (order\_id) REFERENCES orders\_cc(order\_id)

);

-- INSERT STATEMENTS FOR DEPARTMENT TABLE

INSERT INTO "DEPARTMENT\_CC" (DEPT\_ID, DEPT\_NAME) VALUES ('1', 'Grocery');

INSERT INTO "DEPARTMENT\_CC" (DEPT\_ID, DEPT\_NAME) VALUES ('2', 'Books');

INSERT INTO "DEPARTMENT\_CC" (DEPT\_ID, DEPT\_NAME) VALUES ('3', 'Electronics');

INSERT INTO "DEPARTMENT\_CC" (DEPT\_ID, DEPT\_NAME) VALUES ('4', 'Wellness');

INSERT INTO "DEPARTMENT\_CC" (DEPT\_ID, DEPT\_NAME) VALUES ('5', 'Clothing');

COMMIT;

-- INSERT STATEMENTS FOR VENDOR TABLE

INSERT INTO "VENDOR\_CC" (VENDOR\_ID, VENDOR\_NAME, ADDRESS, CITY, REGION,

ZIP, COUNTRY) VALUES ('1', 'GAP', '123 Hut St.', 'Brookshire', 'Northwest', '76889', 'Australia');

INSERT INTO "VENDOR\_CC" (VENDOR\_ID, VENDOR\_NAME, ADDRESS, CITY, REGION,

ZIP, COUNTRY) VALUES ('2', 'Apple', '229 Logistics Dr.', 'Shanghai', 'East', '43040', 'China'); INSERT INTO "VENDOR\_CC" (VENDOR\_ID, VENDOR\_NAME, ADDRESS, CITY, REGION,

ZIP, COUNTRY) VALUES ('3', 'Microsoft', '1 Microsoft Way', 'Redmond', 'East', '98052', 'United Kingdom');

INSERT INTO "VENDOR\_CC" (VENDOR\_ID, VENDOR\_NAME, ADDRESS, CITY, REGION,

ZIP, COUNTRY) VALUES ('4', 'Whole Foods Market', '550 Bowie St.', 'Austin', 'South', '78703', 'United States');

INSERT INTO "VENDOR\_CC" (VENDOR\_ID, VENDOR\_NAME, ADDRESS, CITY, REGION,

ZIP, COUNTRY) VALUES ('5', 'Samsung', '433 Maple St.', 'Chicago', 'North', '87990', 'United States');COMMIT;

-- INSERT STATEMENTS FOR CUSTOMER TABLE

INSERT INTO "CUSTOMER\_CC"(CUST\_ID, FIRST\_NAME, LAST\_NAME, SYSTEMDATE,

BIRTHDATE, EMAIL, PRIME\_STATUS) VALUES ('1', 'You', 'Amazing', TO\_DATE('2020-11-03

00:00:00', 'YYYY-MM-DD HH24:MI:SS'), TO\_DATE('1992-12-24 00:00:00', 'YYYY-MM-DD

HH24:MI:SS'), 'youamazing@amazing.com', 'N');

INSERT INTO "CUSTOMER\_CC"(CUST\_ID, FIRST\_NAME, LAST\_NAME, SYSTEMDATE,

BIRTHDATE, EMAIL, PRIME\_STATUS) VALUES ('2', 'Mike', 'Thomas', TO\_DATE('2020-11-25

00:00:00', 'YYYY-MM-DD HH24:MI:SS'), TO\_DATE('1992-12-24 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), 'mike.thomas@gmail.com', 'N');

INSERT INTO "CUSTOMER\_CC" (CUST\_ID, FIRST\_NAME, LAST\_NAME, SYSTEMDATE,

BIRTHDATE, EMAIL, PRIME\_STATUS) VALUES ('3', 'Grayson', 'Taylor',

TO\_DATE('2020-11-25 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), TO\_DATE('1996-09-23

00:00:00', 'YYYY-MM-DD HH24:MI:SS'), 'grayson.taylor@yahoo.com', 'Y');

INSERT INTO "CUSTOMER\_CC" (CUST\_ID, FIRST\_NAME, LAST\_NAME, SYSTEMDATE,

BIRTHDATE, EMAIL, PRIME\_STATUS) VALUES ('4', 'Julie', 'Karnes', TO\_DATE('2020-11-25

00:00:00', 'YYYY-MM-DD HH24:MI:SS'), TO\_DATE('1986-01-24 00:00:00', 'YYYY-MM-DD

HH24:MI:SS'), 'juliek@gmail.com', 'N');

INSERT INTO "CUSTOMER\_CC"(CUST\_ID, FIRST\_NAME, LAST\_NAME, SYSTEMDATE,

BIRTHDATE, EMAIL, PRIME\_STATUS) VALUES ('5', 'Donald', 'Glover', TO\_DATE('2020-11-25

00:00:00', 'YYYY-MM-DD HH24:MI:SS'), TO\_DATE('1985-10-09 00:00:00', 'YYYY-MM-DD

HH24:MI:SS'), 'dglover@gmail.com', 'Y');

COMMIT;

-- INSERT STATEMENTS FOR EMPLOYEE TABLE

INSERT INTO "EMPLOYEE\_CC" (EMP\_ID, FIRST\_NAME, LAST\_NAME, POSITION) VALUES

('12', 'Abigail', 'Lopez', 'Customer Service Manager');

INSERT INTO "EMPLOYEE\_CC" (EMP\_ID, FIRST\_NAME, LAST\_NAME, POSITION) VALUES

('13', 'Mario', 'Velasquez', 'Customer Service Specialist');

INSERT INTO "EMPLOYEE\_CC" (EMP\_ID, FIRST\_NAME, LAST\_NAME, POSITION) VALUES

('14', 'Ryan', 'Robertson', 'Customer Service Specialist ');

INSERT INTO "EMPLOYEE\_CC" (EMP\_ID, FIRST\_NAME, LAST\_NAME, POSITION) VALUES

('15', 'Maya', 'Angelou', 'Customer Service Specialist');

INSERT INTO "EMPLOYEE\_CC" (EMP\_ID, FIRST\_NAME, LAST\_NAME, POSITION) VALUES

('16', 'Kim', 'Kardy', 'Customer Service Specialist');

COMMIT;

-- INSERT STATEMENTS FOR ORDERS

INSERT INTO "ORDERS\_CC" (ORDER\_ID, CUST\_ID) VALUES ('10001', '1');

INSERT INTO "ORDERS\_CC" (ORDER\_ID, CUST\_ID) VALUES ('10002', '1');

INSERT INTO "ORDERS\_CC" (ORDER\_ID, CUST\_ID) VALUES ('10003', '2');

INSERT INTO "ORDERS\_CC" (ORDER\_ID, CUST\_ID) VALUES ('10004', '3');

INSERT INTO "ORDERS\_CC" (ORDER\_ID, CUST\_ID) VALUES ('10005', '5');

COMMIT;

-- Product

INSERT INTO "PRODUCT\_CC" (PRODUCT\_ID, DEPT\_ID, VENDOR\_ID) VALUES ('123', '1',

'4');

INSERT INTO "PRODUCT\_CC" (PRODUCT\_ID, DEPT\_ID, VENDOR\_ID) VALUES ('234', '1',

'4');

INSERT INTO "PRODUCT\_CC" (PRODUCT\_ID, DEPT\_ID, VENDOR\_ID) VALUES ('345', '3',

'3');

INSERT INTO "PRODUCT\_CC" (PRODUCT\_ID, DEPT\_ID, VENDOR\_ID) VALUES ('456', '3',

'3');

INSERT INTO "PRODUCT\_CC" (PRODUCT\_ID, DEPT\_ID, VENDOR\_ID) VALUES ('567', '5',

'1');

commit;

-- INSERT STATEMENTS FOR ORDER\_DETAILS

INSERT INTO "ORDER\_DETAILS\_CC" (ORDER\_ID, PRODUCT\_ID, QUANTITY, UNITPRICE)

VALUES ('10001', '123', '2', '6.99');

INSERT INTO "ORDER\_DETAILS\_CC" (ORDER\_ID, PRODUCT\_ID, QUANTITY, UNITPRICE)

VALUES ('10002', '234', '1', '15.99');

INSERT INTO "ORDER\_DETAILS\_CC" (ORDER\_ID, PRODUCT\_ID, QUANTITY,

UNITPRICE) VALUES ('10003', '345', '3', '10.49');

INSERT INTO "ORDER\_DETAILS\_CC" (ORDER\_ID, PRODUCT\_ID, QUANTITY,

UNITPRICE) VALUES ('10004', '456', '1', '34.99');

INSERT INTO "ORDER\_DETAILS\_CC" (ORDER\_ID, PRODUCT\_ID, QUANTITY,

UNITPRICE) VALUES ('10005', '567', '1', '3.99');

COMMIT;

-- INSERT STATEMENTS FOR CALL\_LOG

INSERT INTO "CALL\_LOG\_CC" (CALL\_ID, CUST\_ID, EMPLOYEE\_ID, ORDER\_ID, TIME,

DURATION) VALUES ('111', '1', '12', '10001', TO\_DATE('2020-11-03 13:18:41', 'YYYY-MM-DD HH24:MI:SS'), '12');

INSERT INTO "CALL\_LOG\_CC" (CALL\_ID, CUST\_ID, EMPLOYEE\_ID, ORDER\_ID, TIME,

DURATION) VALUES ('112', '2', '13', '10002', TO\_DATE('2020-11-05 05:18:51', 'YYYY-MM-DD

HH24:MI:SS'), '5');

INSERT INTO "CALL\_LOG\_CC" (CALL\_ID, CUST\_ID, EMPLOYEE\_ID, ORDER\_ID, TIME,

DURATION) VALUES ('113', '3', '14', '10003', TO\_DATE('2020-06-06 09:19:02', 'YYYY-MM-DD HH24:MI:SS'), '10');

INSERT INTO "CALL\_LOG\_CC" (CALL\_ID, CUST\_ID, EMPLOYEE\_ID, ORDER\_ID, TIME,

DURATION) VALUES ('114', '4', '15', '10004', TO\_DATE('2020-09-29 04:19:13', 'YYYY-MM-DD HH24:MI:SS'), '30');

INSERT INTO "CALL\_LOG\_CC" (CALL\_ID, CUST\_ID, EMPLOYEE\_ID, ORDER\_ID, TIME,

DURATION) VALUES ('115', '5', '16', '10005', TO\_DATE('2020-08-11 07:19:23', 'YYYY-MM-DD HH24:MI:SS'), '25'); COMMIT;

**Inventory Management DDL and Inserts**

DROP TABLE order\_details\_inv CASCADE CONSTRAINTS;

DROP TABLE orders\_inv CASCADE CONSTRAINTS;

DROP TABLE inventory\_inv CASCADE CONSTRAINTS;

DROP TABLE product\_inv CASCADE CONSTRAINTS;

DROP TABLE warehouse\_inv CASCADE CONSTRAINTS;

DROP TABLE department\_inv CASCADE CONSTRAINTS;

DROP TABLE vendor\_inv CASCADE CONSTRAINTS;

DROP TABLE customer\_inv CASCADE CONSTRAINTS;

CREATE TABLE customer\_inv ( customer\_id NUMBER(20) NOT NULL, first\_name VARCHAR2(50) NOT NULL, last\_name VARCHAR2(50) NOT NULL, birthdate DATE NOT NULL, email VARCHAR2(50) UNIQUE NOT NULL, prime\_status VARCHAR2(1) DEFAULT 'N' NOT NULL, phone\_number VARCHAR2(50), member\_start\_date DATE,

PRIMARY KEY (customer\_id)

);

CREATE TABLE vendor\_inv ( vendor\_id NUMBER(20) NOT NULL, vendor\_name VARCHAR2(50) NOT NULL, vendor\_phone\_number VARCHAR2(50) NOT NULL, vendor\_contact VARCHAR2(50) NOT NULL, vendor\_email VARCHAR2(50) NOT NULL, vendor\_address VARCHAR2(50) NOT NULL, vendor\_city VARCHAR2(50) NOT NULL, vendor\_region VARCHAR2(50) NOT NULL, vendor\_zip VARCHAR2(5) NOT NULL,

PRIMARY KEY (vendor\_id)

);

CREATE TABLE department\_inv ( department\_id NUMBER(20) NOT NULL, department\_name VARCHAR2(50),

PRIMARY KEY (department\_id)

);

CREATE TABLE warehouse\_inv ( warehouse\_id NUMBER(20) NOT NULL, warehouse\_address VARCHAR2(50) NOT NULL, warehouse\_city VARCHAR2(50) NOT NULL, warehouse\_region VARCHAR2(50) NOT NULL, warehouse\_zip VARCHAR2(5) NOT NULL,

PRIMARY KEY (warehouse\_id)

);

CREATE TABLE product\_inv ( product\_id NUMBER(20) NOT NULL, department\_id NUMBER(20) NOT NULL, vendor\_id NUMBER(20) NOT NULL, product\_name VARCHAR2(50) NOT NULL, unit\_price NUMBER(10) NOT NULL, prime\_discount NUMBER(7,2),

PRIMARY KEY (product\_id),

CONSTRAINT FK\_product\_department\_id FOREIGN KEY (department\_id) REFERENCES department\_inv(department\_id),

CONSTRAINT FK\_product\_vendor\_id FOREIGN KEY (vendor\_id) REFERENCES vendor\_inv(vendor\_id)

);

CREATE TABLE inventory\_inv ( inventory\_id NUMBER(20) NOT NULL, warehouse\_id NUMBER(20) NOT NULL, product\_id NUMBER(20) NOT NULL, quantity\_on\_hand NUMBER(10) NOT NULL, quantity\_available NUMBER(20) NOT NULL,

PRIMARY KEY (inventory\_id),

CONSTRAINT FK\_inventory\_product\_id FOREIGN KEY (product\_id) REFERENCES product\_inv(product\_id),

CONSTRAINT FK\_inventory\_warehouse\_id FOREIGN KEY (warehouse\_id) REFERENCES warehouse\_inv(warehouse\_id)

);

CREATE TABLE orders\_inv ( order\_id NUMBER(20) NOT NULL, customer\_id NUMBER(20) NOT NULL, order\_date DATE NOT NULL,

PRIMARY KEY (order\_id),

CONSTRAINT FK\_orders\_customer\_id FOREIGN KEY (customer\_id) REFERENCES customer\_inv(customer\_id)

);

CREATE TABLE order\_details\_inv ( order\_details\_id NUMBER(20) NOT NULL, order\_id NUMBER(20) NOT NULL, product\_id NUMBER(20) NOT NULL, quantity NUMBER(20) NOT NULL,

PRIMARY KEY (order\_details\_id),

CONSTRAINT FK\_od\_order\_id FOREIGN KEY (order\_id) REFERENCES orders\_inv(order\_id),

CONSTRAINT FK\_od\_product\_id FOREIGN KEY (product\_id) REFERENCES product\_inv(product\_id)

);

-- CUSTOMER TABLE

INSERT INTO "CUSTOMER\_INV" (CUSTOMER\_ID, FIRST\_NAME, LAST\_NAME,

BIRTHDATE, EMAIL, PRIME\_STATUS, PHONE\_NUMBER, MEMBER\_START\_DATE)

VALUES ('1', 'YOU', 'AMAZING', TO\_DATE('2020-11-25 11:43:51', 'YYYY-MM-DD

HH24:MI:SS'), 'YOUAMAZING@AMAZING.COM

', 'Y', '214-442-8766', TO\_DATE('2008-11-15 00:00:00', 'YYYY-MM-DD HH24:MI:SS'));

INSERT INTO "CUSTOMER\_INV" (CUSTOMER\_ID, FIRST\_NAME, LAST\_NAME,

BIRTHDATE, EMAIL, PRIME\_STATUS, PHONE\_NUMBER, MEMBER\_START\_DATE)

VALUES ('2', 'Mike', 'Thomas', TO\_DATE('1992-12-24 00:00:00', 'YYYY-MM-DD HH24:MI:SS'),

'mike.thomas@gmai.com', 'N', '214-945-0220', TO\_DATE('2012-07-04 00:00:00',

'YYYY-MM-DD HH24:MI:SS'));

INSERT INTO "CUSTOMER\_INV" (CUSTOMER\_ID, FIRST\_NAME, LAST\_NAME,

BIRTHDATE, EMAIL, PRIME\_STATUS, PHONE\_NUMBER, MEMBER\_START\_DATE)

VALUES ('3', 'Grayson', 'Taylor', TO\_DATE('1996-09-23 00:00:00', 'YYYY-MM-DD

HH24:MI:SS'), 'grayson.taylor@yahoo.com', 'Y', '932-468-2300', TO\_DATE('2014-11-07

00:00:00', 'YYYY-MM-DD HH24:MI:SS'));

INSERT INTO "CUSTOMER\_INV" (CUSTOMER\_ID, FIRST\_NAME, LAST\_NAME,

BIRTHDATE, EMAIL, PRIME\_STATUS, PHONE\_NUMBER, MEMBER\_START\_DATE)

VALUES ('4', 'Julie', 'Karnes', TO\_DATE('1986-01-24 00:00:00', 'YYYY-MM-DD HH24:MI:SS'), 'juliek@gmail.com', 'N', '865-421-5600', TO\_DATE('2017-11-04 00:00:00', 'YYYY-MM-DD HH24:MI:SS'));

INSERT INTO "CUSTOMER\_INV" (CUSTOMER\_ID, FIRST\_NAME, LAST\_NAME,

BIRTHDATE, EMAIL, PRIME\_STATUS, PHONE\_NUMBER, MEMBER\_START\_DATE)

VALUES ('5', 'Donald', 'Glover', TO\_DATE('1985-10-09 00:00:00', 'YYYY-MM-DD HH24:MI:SS'),

'dglover@gmail.com', 'N', '432-655-9100', TO\_DATE('2019-12-07 00:00:00', 'YYYY-MM-DD HH24:MI:SS')); commit;

-- VENDOR TABLE

INSERT INTO "VENDOR\_INV" (VENDOR\_ID, VENDOR\_NAME,

VENDOR\_PHONE\_NUMBER, VENDOR\_CONTACT, VENDOR\_EMAIL, VENDOR\_ADDRESS,

VENDOR\_CITY, VENDOR\_REGION, VENDOR\_ZIP) VALUES ('1', 'GAP', '214-934-0220',

'Caroline Jordan', 'cjordan@gmail.com', '123 Hut St.', 'Brookshire', 'Northwest', '76889');

INSERT INTO "VENDOR\_INV" (VENDOR\_ID, VENDOR\_NAME,

VENDOR\_PHONE\_NUMBER, VENDOR\_CONTACT, VENDOR\_EMAIL, VENDOR\_ADDRESS,

VENDOR\_CITY, VENDOR\_REGION, VENDOR\_ZIP) VALUES ('2', 'Apple', '972-972-4692',

'Sarah Holiday', 'sholiday@gmail.com', '227 Logistics Street', 'Shanghai', 'South', '43040');

INSERT INTO "VENDOR\_INV" (VENDOR\_ID, VENDOR\_NAME,

VENDOR\_PHONE\_NUMBER, VENDOR\_CONTACT, VENDOR\_EMAIL, VENDOR\_ADDRESS,

VENDOR\_CITY, VENDOR\_REGION, VENDOR\_ZIP) VALUES ('3', 'Microsoft', '469-342-8400',

'John Smith', 'johns@yahoo.com', '1 Microsoft Way', 'Redmond', 'East', '98052');

INSERT INTO "VENDOR\_INV" (VENDOR\_ID, VENDOR\_NAME,

VENDOR\_PHONE\_NUMBER, VENDOR\_CONTACT, VENDOR\_EMAIL, VENDOR\_ADDRESS,

VENDOR\_CITY, VENDOR\_REGION, VENDOR\_ZIP) VALUES ('4', 'Whole Foods Market',

'512-442-9200', 'Jordan Howard', 'Jordanh@gmail.com', '550 Bowie St.', 'Austin', 'South', '78703');

INSERT INTO "VENDOR\_INV" (VENDOR\_ID, VENDOR\_NAME,

VENDOR\_PHONE\_NUMBER, VENDOR\_CONTACT, VENDOR\_EMAIL, VENDOR\_ADDRESS,

VENDOR\_CITY, VENDOR\_REGION, VENDOR\_ZIP) VALUES ('5', 'Samsung', '512-420-7666',

'Mike Smith', 'Smike@gmail.com', '433 Maple St.', 'Chicago', 'North', '87990'); commit;

-- DEPARTMENT TABLE

INSERT INTO "DEPARTMENT\_INV" (DEPARTMENT\_ID, DEPARTMENT\_NAME) VALUES

('1', 'groccery');

INSERT INTO "DEPARTMENT\_INV" (DEPARTMENT\_ID, DEPARTMENT\_NAME) VALUES

('2', 'books');

INSERT INTO "DEPARTMENT\_INV" (DEPARTMENT\_ID, DEPARTMENT\_NAME) VALUES

('3', 'electronics');

INSERT INTO "DEPARTMENT\_INV" (DEPARTMENT\_ID, DEPARTMENT\_NAME) VALUES

('4', 'wellness');

INSERT INTO "DEPARTMENT\_INV" (DEPARTMENT\_ID, DEPARTMENT\_NAME) VALUES

('5', 'clothing');

commit;

-- WAREHOUSE TABLE

INSERT INTO "WAREHOUSE\_INV" (WAREHOUSE\_ID, WAREHOUSE\_ADDRESS,

WAREHOUSE\_CITY, WAREHOUSE\_REGION, WAREHOUSE\_ZIP) VALUES ('10','100 BEVO

WAY','AUSTIN','TX','78705');

INSERT INTO "WAREHOUSE\_INV" (WAREHOUSE\_ID, WAREHOUSE\_ADDRESS,

WAREHOUSE\_CITY, WAREHOUSE\_REGION, WAREHOUSE\_ZIP) VALUES ('11','200

COWBOY CIR','DALLAS','TX','75251');

INSERT INTO "WAREHOUSE\_INV" (WAREHOUSE\_ID, WAREHOUSE\_ADDRESS,

WAREHOUSE\_CITY, WAREHOUSE\_REGION, WAREHOUSE\_ZIP) VALUES ('12','300

TEXAN ST','HOUSTON','TX','71001');

INSERT INTO "WAREHOUSE\_INV" (WAREHOUSE\_ID, WAREHOUSE\_ADDRESS,

WAREHOUSE\_CITY, WAREHOUSE\_REGION, WAREHOUSE\_ZIP) VALUES ('13','400

SPURS RD','SAN ANTONIO','TX','72002');

INSERT INTO "WAREHOUSE\_INV" (WAREHOUSE\_ID, WAREHOUSE\_ADDRESS,

WAREHOUSE\_CITY, WAREHOUSE\_REGION, WAREHOUSE\_ZIP) VALUES ('14','500 DESERT DR','EL PASO','TX','73003'); commit;

-- PRODUCT TABLE

INSERT INTO "PRODUCT\_INV" (PRODUCT\_ID, PRODUCT\_NAME, DEPARTMENT\_ID,

VENDOR\_ID, UNIT\_PRICE, PRIME\_DISCOUNT) VALUES ('123', 'Borden Whole Milk', '1', '4',

'6.99', '3.00');

INSERT INTO "PRODUCT\_INV" (PRODUCT\_ID, PRODUCT\_NAME, DEPARTMENT\_ID,

VENDOR\_ID, UNIT\_PRICE, PRIME\_DISCOUNT) VALUES ('234', 'Lunchable 6 Pack', '1', '4',

'15.99', '3.00');

INSERT INTO "PRODUCT\_INV" (PRODUCT\_ID, PRODUCT\_NAME, DEPARTMENT\_ID,

VENDOR\_ID, UNIT\_PRICE, PRIME\_DISCOUNT) VALUES ('345', 'Mouse Pad', '3', '3', '10.49',

'3.00');

INSERT INTO "PRODUCT\_INV" (PRODUCT\_ID, PRODUCT\_NAME, DEPARTMENT\_ID,

VENDOR\_ID, UNIT\_PRICE, PRIME\_DISCOUNT) VALUES ('456', 'Microsoft Mouse 3600', '3',

'3', '34.99', '3.00');

INSERT INTO "PRODUCT\_INV" (PRODUCT\_ID, PRODUCT\_NAME, DEPARTMENT\_ID,

VENDOR\_ID, UNIT\_PRICE, PRIME\_DISCOUNT) VALUES ('567', 'Hair Ties', '5', '1', '3.99', '0'); commit;

-- INVENTORY TABLE

INSERT INTO "INVENTORY\_INV" (INVENTORY\_ID, WAREHOUSE\_ID, PRODUCT\_ID,

QUANTITY\_ON\_HAND, QUANTITY\_AVAILABLE) VALUES ('100', '12', '123', '300', '200'); INSERT INTO "INVENTORY\_INV" (INVENTORY\_ID, WAREHOUSE\_ID, PRODUCT\_ID,

QUANTITY\_ON\_HAND, QUANTITY\_AVAILABLE) VALUES ('101', '12', '234', '200', '100'); INSERT INTO "INVENTORY\_INV" (INVENTORY\_ID, WAREHOUSE\_ID, PRODUCT\_ID,

QUANTITY\_ON\_HAND, QUANTITY\_AVAILABLE) VALUES ('102', '12', '345', '350', '250'); INSERT INTO "INVENTORY\_INV" (INVENTORY\_ID, WAREHOUSE\_ID, PRODUCT\_ID,

QUANTITY\_ON\_HAND, QUANTITY\_AVAILABLE) VALUES ('103', '13', '456', '250', '150');

INSERT INTO "INVENTORY\_INV" (INVENTORY\_ID, WAREHOUSE\_ID, PRODUCT\_ID, QUANTITY\_ON\_HAND, QUANTITY\_AVAILABLE) VALUES ('104', '14', '567', '1000', '500'); commit;

-- ORDERS TABLE

INSERT INTO "ORDERS\_INV" (ORDER\_ID, CUSTOMER\_ID, ORDER\_DATE) VALUES ('10001', '1', TO\_DATE('2020-11-16 00:00:00', 'YYYY-MM-DD HH24:MI:SS'));

INSERT INTO "ORDERS\_INV" (ORDER\_ID, CUSTOMER\_ID, ORDER\_DATE) VALUES ('10002', '1', TO\_DATE('2020-11-08 00:00:00', 'YYYY-MM-DD HH24:MI:SS'));

INSERT INTO "ORDERS\_INV" (ORDER\_ID, CUSTOMER\_ID, ORDER\_DATE) VALUES ('10003', '2', TO\_DATE('2020-11-19 00:00:00', 'YYYY-MM-DD HH24:MI:SS'));

INSERT INTO "ORDERS\_INV" (ORDER\_ID, CUSTOMER\_ID, ORDER\_DATE) VALUES ('10004', '3', TO\_DATE('2020-11-01 00:00:00', 'YYYY-MM-DD HH24:MI:SS'));

INSERT INTO "ORDERS\_INV" (ORDER\_ID, CUSTOMER\_ID, ORDER\_DATE) VALUES

('10005', '5', TO\_DATE('2020-11-05 00:00:00', 'YYYY-MM-DD HH24:MI:SS')); commit;

-- ORDER\_DETAILS TABLE

INSERT INTO "ORDER\_DETAILS\_INV" (ORDER\_DETAILS\_ID, ORDER\_ID, PRODUCT\_ID,

QUANTITY) VALUES ('20001', '10001', '123', '2');

INSERT INTO "ORDER\_DETAILS\_INV" (ORDER\_DETAILS\_ID, ORDER\_ID, PRODUCT\_ID,

QUANTITY) VALUES ('20002', '10002', '123', '4');

INSERT INTO "ORDER\_DETAILS\_INV" (ORDER\_DETAILS\_ID, ORDER\_ID, PRODUCT\_ID,

QUANTITY) VALUES ('20003', '10003', '456', '1');

INSERT INTO "ORDER\_DETAILS\_INV" (ORDER\_DETAILS\_ID, ORDER\_ID, PRODUCT\_ID,

QUANTITY) VALUES ('20004', '10004', '567', '1');

INSERT INTO "ORDER\_DETAILS\_INV" (ORDER\_DETAILS\_ID, ORDER\_ID, PRODUCT\_ID,

QUANTITY) VALUES ('20005', '10005', '567', '3');

Commit;

**Data Warehouse DDL**

DROP TABLE product\_dw;

DROP TABLE customer\_dw;

DROP TABLE inventory\_dw;

DROP TABLE vendor\_dw;

DROP TABLE measures\_dw;

CREATE TABLE product\_dw (

product\_id NUMBER(20), dept\_name VARCHAR(50) NOT NULL, vendor\_name VARCHAR(50) NOT NULL, product\_name VARCHAR(50) NOT NULL, unit\_price NUMBER(7,2) NOT NULL,

CONSTRAINT pk\_prod\_dept\_vend\_id

PRIMARY KEY (product\_id)

);

CREATE TABLE inventory\_dw ( inventory\_id NUMBER(20) NOT NULL, warehouse\_address VARCHAR2(50) NOT NULL, warehouse\_city VARCHAR2(50) NOT NULL, warehouse\_region VARCHAR2(50) NOT NULL, product\_name VARCHAR2(50) NOT NULL, quantity\_on\_hand NUMBER(10) NOT NULL, quantity\_available NUMBER(20) NOT NULL,

PRIMARY KEY (inventory\_id)

);

CREATE TABLE customer\_dw (

cust\_id NUMBER(10) NOT NULL, call\_time DATE NOT NULL, call\_duration NUMBER NOT NULL, first\_name VARCHAR2(50) NOT NULL, last\_name VARCHAR2(50) NOT NULL, birthdate DATE NOT NULL, email VARCHAR2(50) UNIQUE NOT NULL, prime\_status VARCHAR2(1) DEFAULT 'N' NOT NULL, phone\_number VARCHAR2(50), member\_start\_date DATE, cust\_address VARCHAR2(50) NOT NULL, cust\_city VARCHAR2(50) NOT NULL, cust\_region VARCHAR2(50), CONSTRAINT pk\_cust\_id

PRIMARY KEY (cust\_id)

);

CREATE TABLE vendor\_dw ( vendor\_id NUMBER(20) NOT NULL, vendor\_name VARCHAR2(50) NOT NULL, vendor\_phone\_number VARCHAR2(50) NOT NULL, vendor\_contact VARCHAR2(50) NOT NULL, vendor\_email VARCHAR2(50), vendor\_address VARCHAR2(50) NOT NULL, vendor\_city VARCHAR2(50) NOT NULL, vendor\_region VARCHAR2(50), vendor\_zip NUMBER(20) NOT NULL, country\_name VARCHAR2(50) NOT NULL,

PRIMARY KEY (vendor\_id)

);

CREATE TABLE measures\_dw (

call\_id NUMBER(20) NOT NULL, inventory\_id NUMBER(20) NOT NULL, vendor\_id NUMBER(20) NOT NULL, cust\_id NUMBER(20) NOT NULL, product\_id NUMBER(20) NOT NULL, quantity NUMBER(10) NOT NULL, unit\_price NUMBER(7,2) NOT NULL, quantity\_on\_hand NUMBER(10) NOT NULL, quantity\_available NUMBER(10) NOT NULL

);

**Section 3 - Data Warehouse ETL:**

DROP VIEW op\_product\_view;

DROP VIEW op\_department\_view;

DROP VIEW op\_vendor\_view;

DROP VIEW op\_cust\_view;

DROP VIEW cc\_call\_view;

DROP VIEW op\_cust\_add;

DROP VIEW inv\_inv\_view; DROP VIEW wh\_inv\_view;

DROP VIEW prod\_inv\_view; DROP VIEW op\_vend\_view;

DROP VIEW op\_ctry\_view;

DROP VIEW op\_prod\_view;

DROP VIEW order\_details\_view;

-- product views --

CREATE OR REPLACE VIEW op\_product\_view AS

SELECT \*

FROM product\_op;

CREATE OR REPLACE VIEW op\_department\_view AS

SELECT\*

FROM department\_op;

CREATE OR REPLACE VIEW op\_vendor\_view AS

SELECT\*

FROM vendor\_op;

-- inventory views --

CREATE OR REPLACE VIEW inv\_inv\_view AS

SELECT \*

FROM inventory\_inv;

CREATE OR REPLACE VIEW wh\_inv\_view AS

SELECT \*

FROM warehouse\_inv;

CREATE OR REPLACE VIEW prod\_inv\_view AS

SELECT \*

FROM product\_inv;

-- customer views --

CREATE OR REPLACE VIEW op\_cust\_view AS

SELECT \*

FROM customer\_op;

CREATE OR REPLACE VIEW cc\_call\_view AS

SELECT \*

FROM call\_log\_cc;

CREATE OR REPLACE VIEW op\_cust\_add AS

SELECT \*

FROM customer\_address\_op;

-- vendor views --

CREATE OR REPLACE VIEW op\_vend\_view AS

SELECT \*

FROM vendor\_op;

CREATE OR REPLACE VIEW op\_ctry\_view AS

SELECT \*

FROM country\_op;

CREATE OR REPLACE VIEW op\_prod\_view AS

SELECT \*

FROM product\_op;

CREATE OR REPLACE VIEW order\_details\_view AS

SELECT \*

FROM order\_details\_op;

commit;

-- MEASURES TABLE ETL --

CREATE OR REPLACE PROCEDURE measures\_etl\_proc

AS

BEGIN

INSERT INTO measures\_dw

SELECT ccv.call\_id, iiv.inventory\_id, piv.vendor\_id, ccv.cust\_id, iiv.product\_id, odv.quantity, odv.unitprice, iiv.quantity\_on\_hand, iiv.quantity\_available

FROM cc\_call\_view ccv

JOIN order\_details\_view odv ON ccv.order\_id = odv.order\_id

JOIN inv\_inv\_view iiv ON odv.product\_id = iiv.product\_id

JOIN prod\_inv\_view piv ON piv.product\_id = odv.product\_id

LEFT JOIN measures\_dw mdw

ON ccv.call\_id = mdw.call\_id

WHERE mdw.call\_id IS NULL;

-- UPDATE from opv\_view --

MERGE INTO measures\_dw mdw

USING (SELECT ccv.call\_id, iiv.inventory\_id, piv.vendor\_id, ccv.cust\_id, iiv.product\_id, odv.quantity, odv.unitprice, iiv.quantity\_on\_hand, iiv.quantity\_available

FROM cc\_call\_view ccv

JOIN order\_details\_view odv ON ccv.order\_id = odv.order\_id

JOIN inv\_inv\_view iiv ON odv.product\_id = iiv.product\_id

JOIN prod\_inv\_view piv ON piv.product\_id = odv.product\_id) oip

ON (oip.call\_id = mdw.call\_id)

WHEN MATCHED THEN

UPDATE SET mdw.inventory\_id = oip.inventory\_id, mdw.vendor\_id = oip.vendor\_id, mdw.cust\_id = oip.cust\_id, mdw.product\_id = oip.product\_id, mdw.quantity = oip.quantity, mdw.unit\_price = oip.unitprice, mdw.quantity\_on\_hand = oip.quantity\_on\_hand, mdw.quantity\_available = oip.quantity\_available

WHEN NOT MATCHED THEN

INSERT (call\_id, inventory\_id, vendor\_id, cust\_id, product\_id, quantity, unit\_price, quantity\_on\_hand, quantity\_available)

VALUES (oip.call\_id, oip.inventory\_id, oip.vendor\_id, oip.cust\_id, oip.product\_id, oip.quantity, oip.unitprice, oip.quantity\_on\_hand, oip.quantity\_available);

COMMIT;

END;

/

-- PRODUCT TABLE ETL --

CREATE OR REPLACE PROCEDURE product\_etl\_proc

AS

BEGIN

INSERT INTO product\_dw

SELECT opv.product\_id, opv.product\_name, odv.dept\_name, ovv.vendor\_name, opv.unit\_price

FROM op\_product\_view opv

JOIN op\_department\_view odv ON opv.dept\_id = odv.dept\_id

JOIN op\_vendor\_view ovv ON ovv.vendor\_id = opv.vendor\_id

LEFT JOIN product\_dw prod\_dw

ON opv.product\_id = prod\_dw.product\_id

WHERE prod\_dw.product\_id IS NULL;

-- UPDATE from opv\_view --

MERGE INTO product\_dw prod\_dw

USING (SELECT opv.product\_id, opv.product\_name, odv.dept\_name, ovv.vendor\_name, opv.unit\_price

FROM op\_product\_view opv

JOIN op\_department\_view odv ON opv.dept\_id = odv.dept\_id

JOIN op\_vendor\_view ovv ON ovv.vendor\_id = opv.vendor\_id) pvd

ON (pvd.product\_id = prod\_dw.product\_id)

WHEN MATCHED THEN

UPDATE SET prod\_dw.product\_name = pvd.product\_name, prod\_dw.dept\_name = pvd.dept\_name, prod\_dw.vendor\_name = pvd.vendor\_name, prod\_dw.unit\_price = pvd.unit\_price

WHEN NOT MATCHED THEN

INSERT (product\_id, product\_name, dept\_name, vendor\_name, unit\_price) VALUES (pvd.product\_id, pvd.product\_name, pvd.dept\_name, pvd.vendor\_name, pvd.unit\_price);

COMMIT;

END;

/

-- INVENTORY TABLE ETL --

CREATE OR REPLACE PROCEDURE inventory\_etl\_proc

AS

BEGIN

INSERT INTO inventory\_dw

SELECT iiv.inventory\_id, whv.warehouse\_address, whv.warehouse\_city,

whv.warehouse\_region, piv.product\_name, iiv.quantity\_on\_hand, iiv.quantity\_available

FROM inv\_inv\_view iiv

JOIN wh\_inv\_view whv ON whv.warehouse\_id = iiv.warehouse\_id

JOIN prod\_inv\_view piv ON piv.product\_id = iiv.product\_id

LEFT JOIN inventory\_dw inv\_dw

ON iiv.inventory\_id = inv\_dw.inventory\_id

WHERE inv\_dw.inventory\_id IS NULL;

-- UPDATE from iiv\_view --

MERGE INTO inventory\_dw inv\_dw

USING (SELECT iiv.inventory\_id, whv.warehouse\_address, whv.warehouse\_city, whv.warehouse\_region, piv.product\_name, iiv.quantity\_on\_hand, iiv.quantity\_available

FROM inv\_inv\_view iiv

JOIN wh\_inv\_view whv ON whv.warehouse\_id = iiv.warehouse\_id

JOIN prod\_inv\_view piv ON piv.product\_id = iiv.product\_id) iwp

ON (iwp.inventory\_id = inv\_dw.inventory\_id)

WHEN MATCHED THEN

UPDATE SET inv\_dw.warehouse\_address = iwp.warehouse\_address, inv\_dw.warehouse\_city = iwp.warehouse\_city, inv\_dw.warehouse\_region = iwp.warehouse\_region, inv\_dw.product\_name = iwp.product\_name, inv\_dw.quantity\_on\_hand = iwp.quantity\_on\_hand, inv\_dw.quantity\_available = iwp.quantity\_available

WHEN NOT MATCHED THEN

INSERT (inventory\_id, warehouse\_address, warehouse\_city, warehouse\_region, product\_name, quantity\_on\_hand, quantity\_available)

VALUES (iwp.inventory\_id, iwp.warehouse\_address, iwp.warehouse\_city,

iwp.warehouse\_region, iwp.product\_name, iwp.quantity\_on\_hand, iwp.quantity\_available);

COMMIT;

END;

/

-- CUSTOMER ETL --

CREATE OR REPLACE PROCEDURE customer\_etl\_proc

AS

BEGIN

INSERT INTO customer\_dw

SELECT cust.cust\_id, cv.time, cv.duration, cust.first\_name, cust.last\_name, cust.birthdate, cust.email, cust.prime\_status, cust.phone\_number, cust.member\_start\_date, oca.cust\_address, oca.cust\_city, oca.cust\_region

FROM op\_cust\_view cust

JOIN cc\_call\_view cv ON cust.cust\_id = cv.cust\_id

JOIN op\_cust\_add oca ON cust.cust\_id = oca.cust\_id

LEFT JOIN customer\_dw cdw

ON cust.cust\_id = cdw.cust\_id;

-- UPDATE from opv\_view --

MERGE INTO customer\_dw cust\_dw

USING (SELECT cust.cust\_id, cv.time, cv.duration, cust.first\_name, cust.last\_name, cust.birthdate, cust.email, cust.prime\_status, cust.phone\_number, cust.member\_start\_date, oca.cust\_address, oca.cust\_city, oca.cust\_region

FROM op\_cust\_view cust

JOIN cc\_call\_view cv ON cust.cust\_id = cv.cust\_id

JOIN op\_cust\_add oca ON cust.cust\_id = oca.cust\_id) cco

ON (cco.cust\_id = cust\_dw.cust\_id)

WHEN MATCHED THEN

UPDATE SET cust\_dw.call\_time = cco.time, cust\_dw.call\_duration = cco.duration, cust\_dw.first\_name = cco.first\_name, cust\_dw.last\_name = cco.last\_name, cust\_dw.birthdate = cco.birthdate, cust\_dw.email = cco.email, cust\_dw.prime\_status = cco.prime\_status, cust\_dw.phone\_number = cco.phone\_number, cust\_dw.member\_start\_date = cco.member\_start\_date, cust\_dw.cust\_address = cco.cust\_address, cust\_dw.cust\_city = cco.cust\_city, cust\_dw.cust\_region = cco.cust\_region

WHEN NOT MATCHED THEN

INSERT (cust\_id, call\_time, call\_duration, first\_name, last\_name, birthdate, email, prime\_status, phone\_number, member\_start\_date, cust\_address, cust\_city, cust\_region)

VALUES (cco.cust\_id, cco.time, cco.duration, cco.first\_name, cco.last\_name, cco.birthdate, cco.email, cco.prime\_status, cco.phone\_number, cco.member\_start\_date, cco.cust\_address, cco.cust\_city, cco.cust\_region);

COMMIT;

END;

/

-- vendor ETL --

CREATE OR REPLACE PROCEDURE vendor\_etl\_proc

AS

BEGIN

INSERT INTO vendor\_dw

SELECT ovv.vendor\_id, ovv.vendor\_name, ovv.vendor\_phone\_number, ovv.vendor\_contact, ovv.vendor\_email, ovv.vendor\_address, ovv.vendor\_city, ovv.vendor\_region, ovv.vendor\_zip, ocv.country\_name

FROM op\_vend\_view ovv

JOIN op\_ctry\_view ocv ON ovv.vendor\_country\_id = ocv.country\_id

LEFT JOIN vendor\_dw vend\_dw

ON ovv.vendor\_id = vend\_dw.vendor\_id

WHERE vend\_dw.vendor\_id IS NULL;

-- UPDATE from opv\_view -- MERGE INTO vendor\_dw vdw

USING (SELECT ovv.vendor\_id, ovv.vendor\_name, ovv.vendor\_phone\_number, ovv.vendor\_contact, ovv.vendor\_email, ovv.vendor\_address, ovv.vendor\_city, ovv.vendor\_region,

ovv.vendor\_zip, ocv.country\_name

FROM op\_vend\_view ovv

JOIN op\_ctry\_view ocv ON ovv.vendor\_country\_id = ocv.country\_id) vc

ON (vc.vendor\_id = vdw.vendor\_id)

WHEN MATCHED THEN UPDATE SET vdw.vendor\_name = vc.vendor\_name, vdw.vendor\_phone\_number = vc.vendor\_phone\_number, vdw.vendor\_contact = vc.vendor\_contact, vdw.vendor\_email = vc.vendor\_email, vdw.vendor\_address = vc.vendor\_address, vdw.vendor\_city = vc.vendor\_city, vdw.vendor\_region = vc.vendor\_region, vdw.vendor\_zip = vc.vendor\_zip, vdw.country\_name = vc.country\_name

WHEN NOT MATCHED THEN

INSERT (vendor\_id, vendor\_name, vendor\_phone\_number, vendor\_contact, vendor\_email, vendor\_address, vendor\_city, vendor\_region, vendor\_zip, country\_name)

VALUES (vc.vendor\_id, vc.vendor\_name, vc.vendor\_phone\_number, vc.vendor\_contact, vc.vendor\_email, vc.vendor\_address, vc.vendor\_city, vc.vendor\_region, vc.vendor\_zip, vc.country\_name);

COMMIT;

END;

/

EXECUTE measures\_etl\_proc;

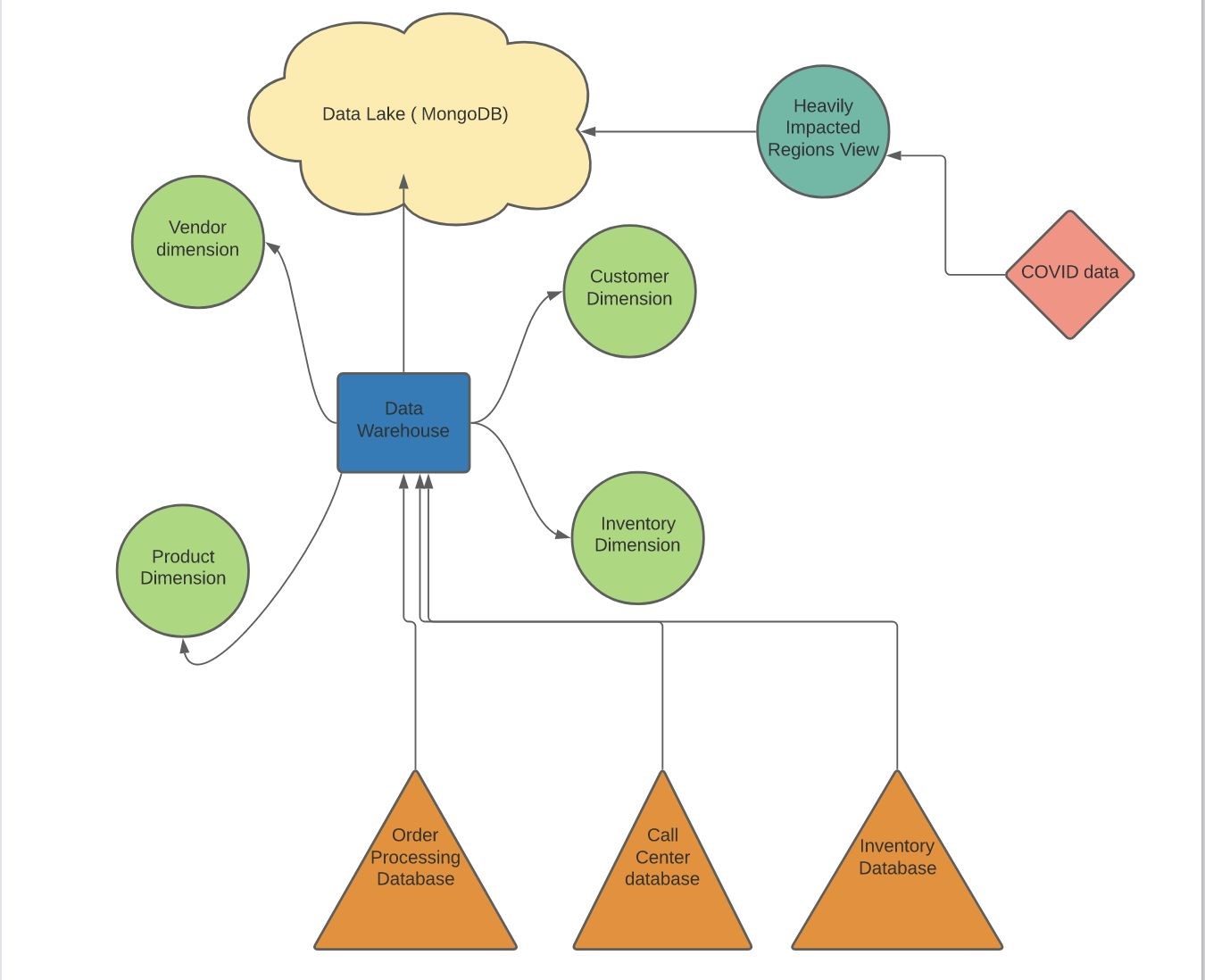
EXECUTE product\_etl\_proc;

EXECUTE inventory\_etl\_proc;

EXECUTE customer\_etl\_proc;

EXECUTE vendor\_etl\_proc;

Section 4: Data Lake Model



Graphical user interface, application

Description automatically generatedGraphical user interface, application

Description automatically generated

Section 5: Analytics Code for MongoDB Data Lake

Code :

[

{

"$group": {

"\_id": {

"\_\_alias\_0": "$PRODUCT\_ID"

},

"\_\_alias\_1": {

"$addToSet": "$CALL\_ID"

}

}

},

{

"$project": {

"\_id": 0,

"\_\_alias\_0": "$\_id.\_\_alias\_0",

"\_\_alias\_1": {

"$size": "$\_\_alias\_1"

}

}

},

{

"$project": {

"x": "$\_\_alias\_1",

"y": "$\_\_alias\_0",

"\_id": 0

}

},

{

"$addFields": {

"\_\_agg\_sum": {

"$sum": [

"$x"

]

}

}

},

{

"$sort": {

"\_\_agg\_sum": 1

}

},

{

"$project": {

"\_\_agg\_sum": 0

}

},

{

"$limit": 5000

}

]

Code for 2nd chart:

[

{

"$group": {

"\_id": {

"\_\_alias\_0": "$COUNTRY\_NAME"

},

"\_\_alias\_1": {

"$sum": {

"$cond": [

{

"$ne": [

{

"$type": "$VENDOR\_CITY"

},

"missing"

]

},

1,

0

]

}

}

}

},

{

"$project": {

"\_id": 0,

"\_\_alias\_0": "$\_id.\_\_alias\_0",

"\_\_alias\_1": 1

}

},

{

"$project": {

"x": "$\_\_alias\_0",

"y": "$\_\_alias\_1",

"\_id": 0

}

},

{

"$addFields": {

"\_\_agg\_sum": {

"$sum": [

"$y"

]

}

}

},

{

"$sort": {

"\_\_agg\_sum": -1

}

},

{

"$project": {

"\_\_agg\_sum": 0

}

},

{

"$limit": 5000

}

]

Code for 1st chart:

[

{

"$group": {

"\_id": {

"\_\_alias\_0": "$COUNTRY\_NAME"

},

"\_\_alias\_1": {

"$sum": {

"$cond": [

{

"$ne": [

{

"$type": "$VENDOR\_CITY"

},

"missing"

]

},

1,

0

]

}

}

}

},

{

"$project": {

"\_id": 0,

"\_\_alias\_0": "$\_id.\_\_alias\_0",

"\_\_alias\_1": 1

}

},

{

"$project": {

"y": "$\_\_alias\_1",

"x": "$\_\_alias\_0",

"\_id": 0

}

},

{

"$addFields": {

"\_\_agg\_sum": {

"$sum": [

"$y"

]

}

}

},

{

"$sort": {

"\_\_agg\_sum": -1

}

},

{

"$project": {

"\_\_agg\_sum": 0

}

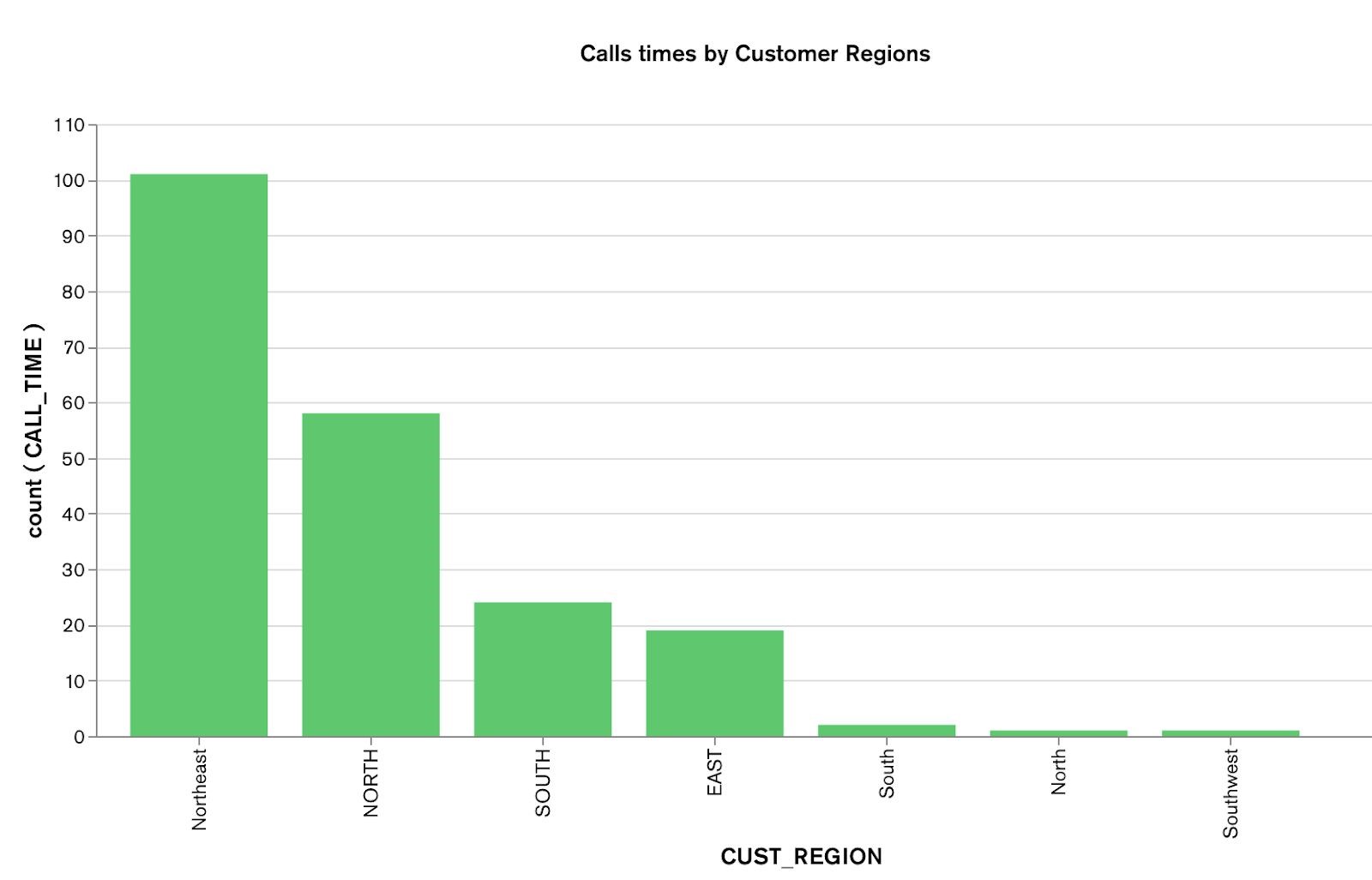
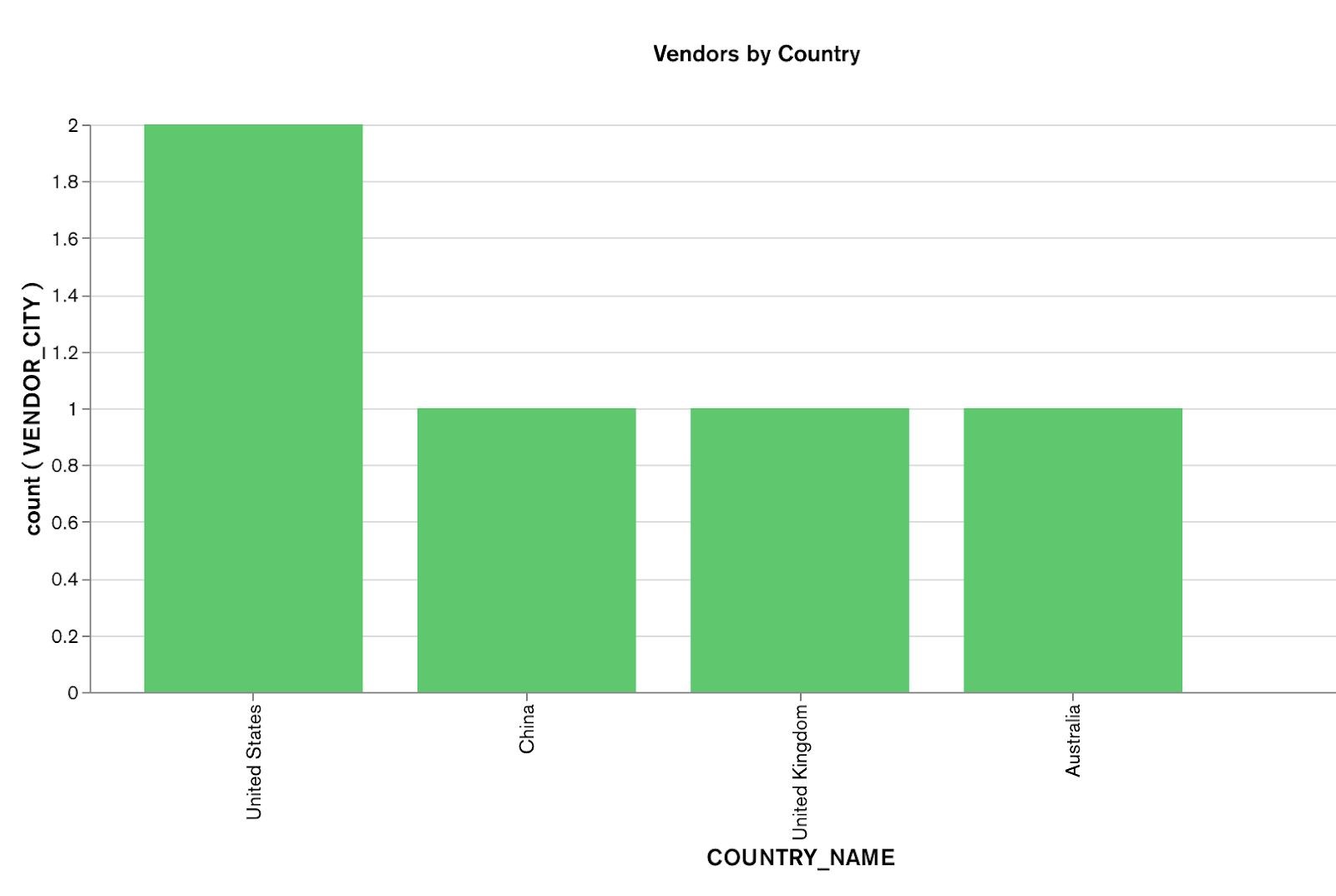
},

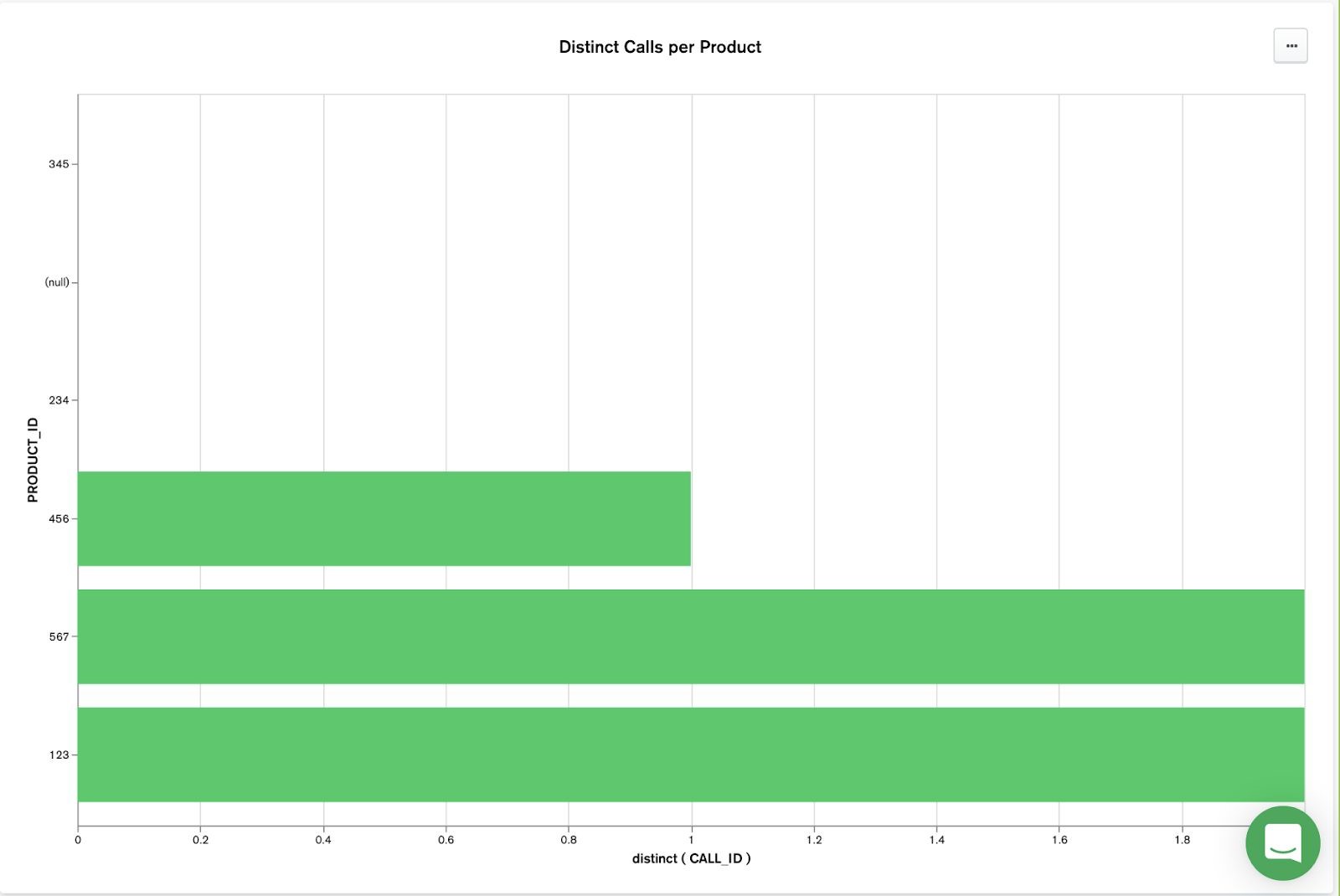
{

"$limit": 5000

}

]





Analytics Code for Amazon S3 Data Lake

import pandas as pd

import matplotlib as plt

df1=pd.read\_csv("Call.csv")

df2=pd.read\_csv("Customer.csv")

df3=pd.read\_csv("Order.csv")

df4=pd.read\_csv("Product.csv")

df5=pd.read\_csv("Supplier.csv")

df2['city'].value\_counts().plot(kind='bar')

**Number of customers per city**

Chart, histogram

Description automatically generated

import seaborn as sns

import matplotlib.pyplot as plt

%matplotlib inline

ax=sns.histplot(binwidth=0.5, x="city", hue="prime\_member", data=df2, stat="count", multiple="stack")

ax.set\_xticklabels(df2['city'].tolist(), rotation=90, horizontalalignment='right')

**No. of Prime members per city**

Chart, bar chart

Description automatically generated

**Relation between call length and customer satisfaction**

df1.plot(x='call\_length', y='satisfaction', style='o')

**Chart, scatter chart

Description automatically generated**

df5=df4[df4["product\_category"]=="Clothing"]

value\_dict=dict()

value\_dict["Clothing"]=df5["average\_rating"].mean()

df5=df4[df4["product\_category"]=="Kitchen"]

value\_dict["Kitchen"]=df5["average\_rating"].mean()

df5=df4[df4["product\_category"]=="Electronics"]

value\_dict["Electronics"]=df5["average\_rating"].mean()

plt.bar(value\_dict.keys(), value\_dict.values(), color='g')

**Average rating for each product category**

Chart, bar chart

Description automatically generated

df3['payment\_type'].value\_counts().plot(kind='bar')

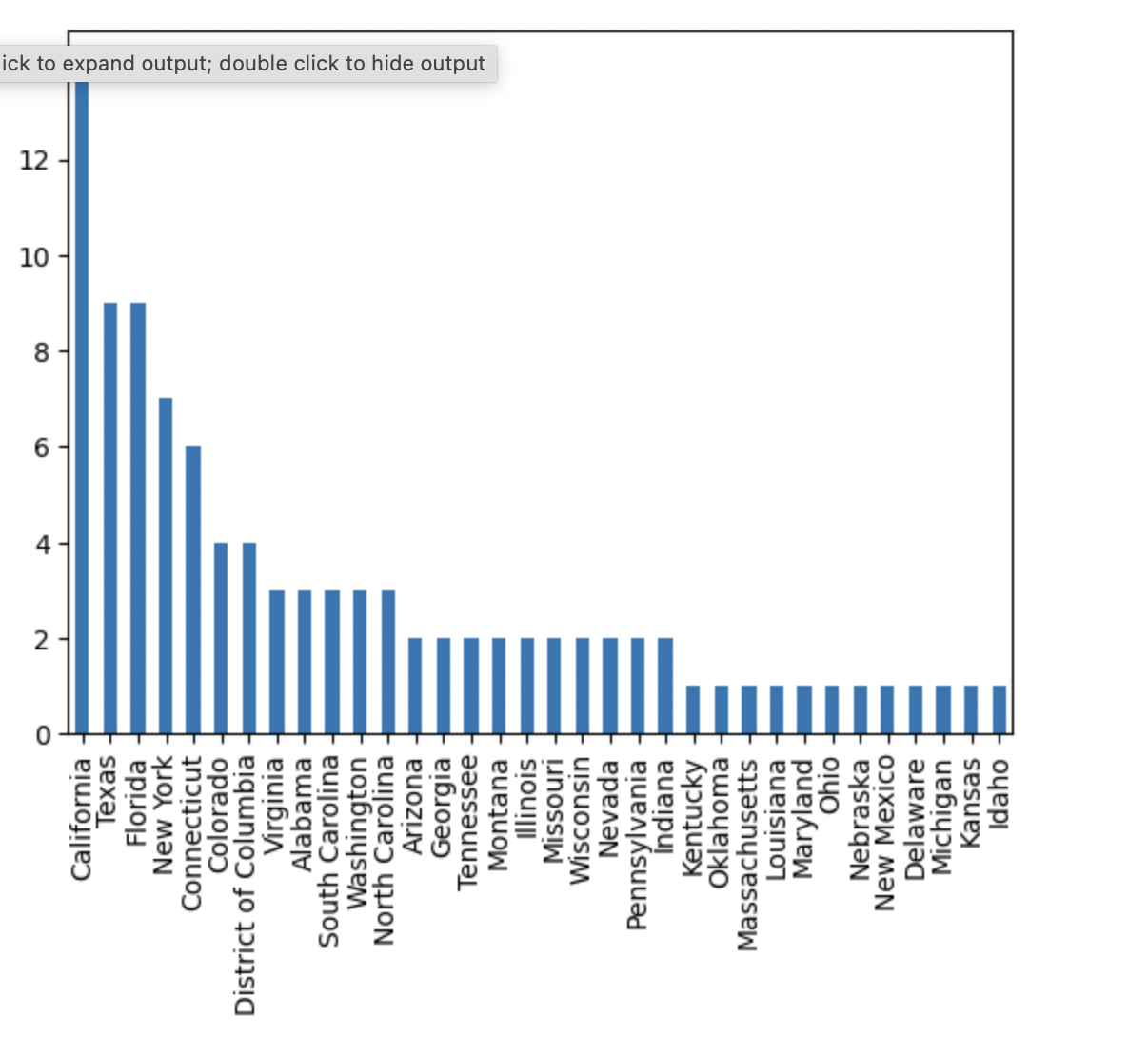
**Number of customers using each payment method**

Chart, bar chart

Description automatically generated

df5['state\_province'].value\_counts().plot(kind='bar')

**Number of suppliers per city**



Supplementary Analysis on Transaction Tables in Oracle

1. Evaluating our shipping vendors by seeing how many of their deliveries aren’t on time:

SELECT Shipping\_Vendor.shipping\_vendor\_name AS "Shipping Vendor", COUNT(Shipping\_Vendor.shipping\_vendor\_id) AS "# Late Deliveries"

FROM Shipping\_Vendor

INNER JOIN "Order"

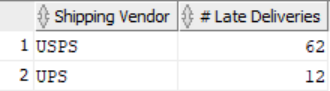
ON Shipping\_Vendor.shipping\_vendor\_id = "Order".shipping\_vendor\_id

INNER JOIN "Call"

ON "Order".order\_id = "Call".order\_id

WHERE "Call".problem\_id=4

GROUP BY shipping\_vendor\_name;



1. Looking into the most complained about products on customer service calls vs. online rating

SELECT Product.product\_name AS "Product", COUNT(Product.product\_id) AS "# Complaints", Product.average\_rating AS "5-Star Rating"

FROM Product

INNER JOIN "Call"

ON Product.product\_id = "Call".product\_id

GROUP BY Product.product\_id, Product.product\_name, Product.average\_rating

ORDER BY COUNT(Product.product\_id) desc;

Graphical user interface, text, application

Description automatically generated