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Assignment 5

1. Normalize the data to 3NF

Customers	Address	Orders
PK: Customer ID	**PK: Address ID**	**PK: Order Number**
A = customer last name	**FK: Customer ID**	**FK: Customer ID**
B = customer first name	**G** = customer address street 1	**M =** product name
C = customer suffix	**H** = customer address street 2	**N =** list price (msrp)
D = customer phone number	**I = city**	**O =** sell price
E = customer email address	**J = state**	**P =** sell date
F = first seen date	**K = zip code**	**Q =** ship date
	L = last modified date	

Customers

PK	A	B	C	D	E	F
customer_id	customer_last_ name	customer_ first_name	customer_suffix	customer_phone _number	customer_ email_address	first_seen_date

Address

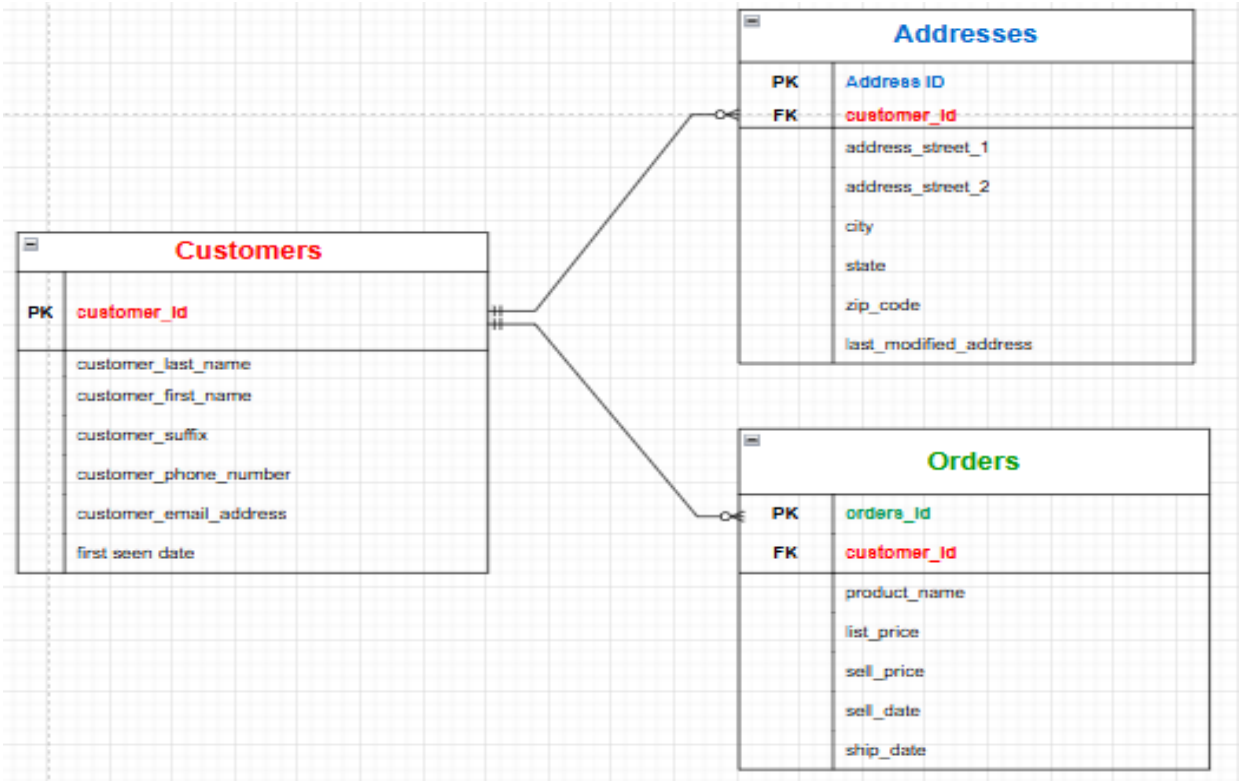
PK	FK	G	H	I	J	K	L
address_id	customer_id	address_street_1	address_street_2	city	state	zip_code	last_modified_address

Orders

PK	FK	M	N	O	P	Q
order_number	customer_id	product_name	list_price	sell_price	sell_date	ship_date

Create the ER diagram for Step 1

2. Screenshot of Your ER diagram



3. Copy and paste your SQL code for the table creation based on the ER diagram you created
- Copy and paste the Insert Commands you created for each table

4. Screenshot of the results of the following command: SELECT table_name FROM user_tables

```
SELECT table_name FROM user_tables;
```

TABLE_NAME
ADDRESSES
CUSTOMERS
ORDERS

```
CREATE TABLE Customers (
    customer_id NUMBER (10),
    last_name VARCHAR2(50) NOT NULL,
    first_name VARCHAR2(50) NOT NULL,
    middle_name VARCHAR2(50),
    suffix VARCHAR2(10),
    phone_number VARCHAR2(15),
    email_address VARCHAR2(100),
    first_seen_date DATE NOT NULL,
CONSTRAINT Customers_customer_id_pk PRIMARY KEY (customer_id),
CONSTRAINT Customers_email_address_uk UNIQUE (email_address)
);
```

Write the SQL code to Insert at least 5 rows of data into each table you create and execute it in Oracle.

5. Screen shot of the results of running the DESC command on each table you created.

```
DESC Customers;
CREATE TABLE Customers (
    customer id NUMBER(10),
```

TABLE CUSTOMERS

Column	Null?	Type
CUSTOMER_ID	NOT NULL	NUMBER(10,0)
LAST_NAME	NOT NULL	VARCHAR2(50)
FIRST_NAME	NOT NULL	VARCHAR2(50)
MIDDLE_NAME	-	VARCHAR2(50)
SUFFIX	-	VARCHAR2(10)
PHONE_NUMBER	-	VARCHAR2(15)
EMAIL_ADDRESS	-	VARCHAR2(100)
FIRST_SEEN_DATE	NOT NULL	DATE

```
DESC Addresses;
CREATE TABLE Customers (
    customer id NUMBER(10),
```

TABLE ADDRESSES

Column	Null?	Type
ADDRESS_ID	NOT NULL	NUMBER(10,0)
CUSTOMER_ID	-	NUMBER(10,0)
ADDRESS_STREET1	-	VARCHAR2(100)
ADDRESS_STREET2	-	VARCHAR2(100)
ADDRESS_CITY	-	VARCHAR2(50)
ADDRESS_STATE	-	VARCHAR2(2)
ADDRESS_ZIP	-	VARCHAR2(10)
ADDRESS_LAST_MODIFIED_DATE	NOT NULL	DATE

```
DESC Orders;
CREATE TABLE Customers (
    customer id NUMBER(10),
```

TABLE ORDERS

Column	Null?	Type
ORDER_NUMBER	NOT NULL	NUMBER(10,0)
CUSTOMER_ID	NOT NULL	NUMBER
PRODUCT_NAME	NOT NULL	VARCHAR2(100)
LIST_PRICE	NOT NULL	NUMBER(10,2)
SELL_PRICE	NOT NULL	NUMBER(10,2)
SELL_DATE	NOT NULL	DATE
SHIP_DATE	NOT NULL	DATE

- Copy and paste your SQL code for the data insertion in the tables.

6. Screen shot of the results of SELECT * from each table

```
SELECT * FROM Customers;

CREATE TABLE Customers; (
```

CUSTOMER_ID	LAST_NAME	FIRST_NAME	MIDDLE_NAME	SUFFIX	PHONE_NUMBER	EMAIL_ADDRESS	FIRST_SEEN_DATE
1000	Meisner	Ryder	Scott	Jr.	8465309	dogs@lol.com	09-MAR-25
1001	Johnson	Mary	-	-	555-0102	mary.j@email.com	10-FEB-23
1002	Brown	Robert	T	-	555-0103	robert.brown@email.com	05-MAR-23
1003	Davis	Sarah	-	Sr	555-0104	sarah.d@email.com	12-APR-23
1004	Wilson	Michael	J	-	555-0105	michael.w@email.com	20-MAY-23

```
SELECT * FROM Addresses;

CREATE TABLE Customers; (
```

ADDRESS_ID	CUSTOMER_ID	ADDRESS_STREET1	ADDRESS_STREET2	ADDRESS_CITY	ADDRESS_STATE	ADDRESS_ZIP	ADDRESS_LAST_MODIFIED_DATE
4000	1000	1000 Owl Street Drive	Apt. 206	Miami	FL	43567	10-MAR-25
4001	1001	456 Oak Ave	Apt 4B	New York	NY	10001	10-MAR-25
4002	1002	789 Pine Rd	-	Chicago	IL	60601	10-MAR-25
4003	1003	101 Elm St	-	Seattle	WA	98101	10-MAR-25
4004	1004	202 Maple Dr	-	Denver	CO	80202	10-MAR-25

```
SELECT * FROM Orders;

CREATE TABLE Customers; (
```

ORDER_NUMBER	CUSTOMER_ID	PRODUCT_NAME	LIST_PRICE	SELL_PRICE	SELL_DATE	SHIP_DATE
2123456789	1000	Cats	20000	15000	09-MAR-25	10-MAR-25
2123456790	1001	Dogs	800	750	11-JUN-23	13-JUN-23
2123456791	1002	Birds	400	350	12-JUN-23	14-JUN-23
2123456792	1003	Fish	150	130	13-JUN-23	15-JUN-23
2123456793	1004	Hamsters	300	280	14-JUN-23	16-JUN-23

8. Screen shot of the Oracle output that shows constraints in each table.

```
SELECT constraint_name, constraint_type, search_condition, r_constraint_name
FROM user_constraints
    WHERE table_name = 'CUSTOMERS';
```

CONSTRAINT_NAME	CONSTRAINT_TYPE	SEARCH_CONDITION	R_CONSTRAINT_NAME
SYS_C00184034538	C	"LAST_NAME" IS NOT NULL	-
SYS_C00184034539	C	"FIRST_NAME" IS NOT NULL	-
SYS_C00184034540	C	"FIRST_SEEN_DATE" IS NOT NULL	-
CUSTOMERS_CUSTOMER_ID_PK	P	-	-
CUSTOMERS_EMAIL_ADDRESS_UK	U	-	-

```sql
SELECT constraint_name, constraint_type, search_condition, r_constraint_name
FROM user_constraints
    WHERE table_name = 'ADDRESSES';
```

CONSTRAINT_NAME	CONSTRAINT_TYPE	SEARCH_CONDITION	R_CONSTRAINT_NAME
SYS_C00184034543	C	"ADDRESS_LAST_MODIFIED_DATE" IS NOT NULL	-
ADDRESSES_ADDRESS_ID_PK	P	-	-
ADDRESSES_CUSTOMER_ID_FK	R	-	CUSTOMERS_CUSTOMER_ID_PK

```sql
SELECT constraint_name, constraint_type, search_condition, r_constraint_name
FROM user_constraints
    WHERE table_name = 'ORDERS';
```

CONSTRAINT_NAME	CONSTRAINT_TYPE	SEARCH_CONDITION	R_CONSTRAINT_NAME
SYS_C00184034546	C	"CUSTOMER_ID" IS NOT NULL	-
SYS_C00184034547	C	"PRODUCT_NAME" IS NOT NULL	-
SYS_C00184034548	C	"LIST_PRICE" IS NOT NULL	-
SYS_C00184034549	C	"SELL_PRICE" IS NOT NULL	-
SYS_C00184034550	C	"SELL_DATE" IS NOT NULL	-
SYS_C00184034551	C	"SHIP_DATE" IS NOT NULL	-
ORDERS_PK	P	-	-
ORDERS_CUSTOMER_ID_FK	R	-	CUSTOMERS_CUSTOMER_ID_PK
SELL_DATE_CK	C	sell_date <= ship_date	-

9. Update data that has already been inserted into each table then take a screenshot of the results of SELECT* from each table

```sql
UPDATE Customers
SET phone_number = '846-530-9000'
WHERE customer id = 1000;
```

CUSTOMER_ID	LAST_NAME	FIRST_NAME	MIDDLE_NAME	SUFFIX	PHONE_NUMBER	EMAIL_ADDRESS	FIRST_SEEN_DATE
1000	Meisner	Ryder	Scott	Jr.	846-530-9000	dogs@lol.com	09-MAR-25
1001	Johnson	Mary	-	-	555-0102	mary.j@email.com	10-FEB-23
1002	Brown	Robert	T	-	555-0103	robert.brown@email.com	05-MAR-23
1003	Davis	Sarah	-	Sr	555-0104	sarah.d@email.com	12-APR-23
1004	Wilson	Michael	J	-	555-0105	michael.w@email.com	20-MAY-23

```sql
UPDATE Addresses
SET ADDRESS_CITY = 'Sunshine State'
WHERE ADDRESS_CITY = 'Miami';
```

ADDRESS_ID	CUSTOMER_ID	ADDRESS_STREET1	ADDRESS_STREET2	ADDRESS_CITY	ADDRESS_STATE	ADDRESS_ZIP	ADDRESS_LAST_MODIFIED_DATE
4000	1000	1001 Owl Street Drive	Apt. 206	Sunshine State	FL	43567	10-MAR-25
4001	1001	456 Oak Ave	Apt 4B	New York	NY	10001	10-MAR-25
4002	1002	789 Pine Rd	-	Chicago	IL	60601	10-MAR-25
4003	1003	101 Elm St	-	Seattle	WA	98101	10-MAR-25
4004	1004	202 Maple Dr	-	Denver	CO	80202	10-MAR-25

```sql
UPDATE Orders
SET product_name = 'LION KING'
WHERE product_name = 'Cats';
```

ORDER_NUMBER	CUSTOMER_ID	PRODUCT_NAME	LIST_PRICE	SELL_PRICE	SELL_DATE	SHIP_DATE
2123456789	1000	Lion King	20000	16000	09-MAR-25	10-MAR-25
2123456790	1001	Dogs	800	750	11-JUN-23	13-JUN-23
2123456791	1002	Birds	400	350	12-JUN-23	14-JUN-23
2123456792	1003	Fish	150	130	13-JUN-23	15-JUN-23
2123456793	1004	Hamsters	300	280	14-JUN-23	16-JUN-23

Here is my entire code just in case. :)

```
CREATE TABLE Customers (
    customer_id NUMBER(10),
    last_name VARCHAR2(50) NOT NULL,
    first_name VARCHAR2(50) NOT NULL,
    middle_name VARCHAR2(50),
    suffix VARCHAR2(10),
    phone_number VARCHAR2(15),
    email_address VARCHAR2(100),
    first_seen_date DATE NOT NULL,
    CONSTRAINT Customers_customer_id_pk PRIMARY KEY (customer_id),
    CONSTRAINT Customers_email_address_uk UNIQUE (email_address)
);
CREATE TABLE Addresses (
    address_id NUMBER(10),
    customer_id NUMBER(10),
    address_street1 VARCHAR2(100),
    address_street2 VARCHAR2(100),
    address_city VARCHAR2(50),
    address_state VARCHAR2(2),
    address_zip VARCHAR2(10),
    address_last_modified_date DATE DEFAULT SYSDATE NOT NULL,
    CONSTRAINT Addresses_address_id_pk PRIMARY KEY (address_id),
    CONSTRAINT Addresses_customer_id_fk FOREIGN KEY (customer_id)
    REFERENCES Customers(customer_id)
);
CREATE TABLE Orders (
    order_number NUMBER(10),
    customer_id NUMBER NOT NULL,
    product_name VARCHAR2(100) NOT NULL,
    list_price NUMBER(10,2) NOT NULL,
    sell_price NUMBER(10,2) NOT NULL,
    sell_date DATE NOT NULL,
    ship_date DATE NOT NULL,
    CONSTRAINT Orders_pk PRIMARY KEY (order_number),
    CONSTRAINT Orders_customer_id_fk FOREIGN KEY (customer_id)
        REFERENCES Customers(customer_id)
);
ALTER TABLE Orders
ADD CONSTRAINT sell_date_ck CHECK (sell_date <= ship_date);

INSERT INTO Customers (customer_id, last_name, first_name, middle_name, suffix, phone_number, email_address, first_seen_date)
VALUES (1000, 'Meisner', 'Ryder', 'Scott', 'Jr.', '8465309', 'dogs@lol.com', TO_DATE('03-09-2025', 'MM-DD-YYYY'));
INSERT INTO Customers (customer_id, last_name, first_name, middle_name, suffix, phone_number, email_address, first_seen_date)
VALUES (1001, 'Johnson', 'Mary', NULL, NULL, '555-0102', 'mary.j@email.com', TO_DATE('2023-02-10', 'YYYY-MM-DD'));
INSERT INTO Customers (customer_id, last_name, first_name, middle_name, suffix, phone_number, email_address, first_seen_date)
VALUES (1002, 'Brown', 'Robert', 'T', NULL, '555-0103', 'robert.brown@email.com', TO_DATE('2023-03-05', 'YYYY-MM-DD'));
INSERT INTO Customers (customer_id, last_name, first_name, middle_name, suffix, phone_number, email_address, first_seen_date)
VALUES (1003, 'Davis', 'Sarah', NULL, 'Sr', '555-0104', 'sarah.d@email.com', TO_DATE('2023-04-12', 'YYYY-MM-DD'));
INSERT INTO Customers (customer_id, last_name, first_name, middle_name, suffix, phone_number, email_address, first_seen_date)
VALUES (1004, 'Wilson', 'Michael', 'J', NULL, '555-0105', 'michael.w@email.com', TO_DATE('2023-05-20', 'YYYY-MM-DD'));
COMMIT;
```

```
INSERT INTO Addresses (address_id, customer_id, address_street1, address_street2, address_city, address_state, address_zip)
VALUES (4000, 1000, '1000 Owl Street Drive', 'Apt. 206', 'Miami', 'FL', '43567');
INSERT INTO Addresses (address_id, customer_id, address_street1, address_street2, address_city, address_state, address_zip)
VALUES (4001, 1001, '456 Oak Ave', 'Apt 4B', 'New York', 'NY', '10001');
INSERT INTO Addresses (address_id, customer_id, address_street1, address_city, address_state, address_zip)
VALUES (4002, 1002, '789 Pine Rd', 'Chicago', 'IL', '60601');
INSERT INTO Addresses (address_id, customer_id, address_street1, address_city, address_state, address_zip)
VALUES (4003, 1003, '101 Elm St', 'Seattle', 'WA', '98101');
INSERT INTO Addresses (address_id, customer_id, address_street1, address_city, address_state, address_zip)
VALUES (4004, 1004, '202 Maple Dr', 'Denver', 'CO', '80202');
COMMIT;
```

```
INSERT INTO Orders (order_number, customer_id, product_name, list_price, sell_price, sell_date, ship_date)
VALUES (2123456789, 1000, 'Cats', 20000.00, 15000.00, TO_DATE('03-09-2025', 'MM-DD-YYYY'), TO_DATE('03-10-2025', 'MM-DD-YYYY'));
INSERT INTO Orders (order_number, customer_id, product_name, list_price, sell_price, sell_date, ship_date)
VALUES (2123456790, 1001, 'Dogs', 800.00, 750.00, TO_DATE('2023-06-11', 'YYYY-MM-DD'), TO_DATE('2023-06-13', 'YYYY-MM-DD'));
INSERT INTO Orders (order_number, customer_id, product_name, list_price, sell_price, sell_date, ship_date)
VALUES (2123456791, 1002, 'Birds', 400.00, 350.00, TO_DATE('2023-06-12', 'YYYY-MM-DD'), TO_DATE('2023-06-14', 'YYYY-MM-DD'));
INSERT INTO Orders (order_number, customer_id, product_name, list_price, sell_price, sell_date, ship_date)
VALUES (2123456792, 1003, 'Fish', 150.00, 130.00, TO_DATE('2023-06-13', 'YYYY-MM-DD'), TO_DATE('2023-06-15', 'YYYY-MM-DD'));
INSERT INTO Orders (order_number, customer_id, product_name, list_price, sell_price, sell_date, ship_date)
VALUES (2123456793, 1004, 'Hamsters', 300.00, 280.00, TO_DATE('2023-06-14', 'YYYY-MM-DD'), TO_DATE('2023-06-16', 'YYYY-MM-DD'));
COMMIT;
```

```
SELECT * FROM Customers;
SELECT * FROM Addresses;
SELECT * FROM Orders;

UPDATE Customers
SET phone_number = '846-530-9000'
WHERE customer_id = 1000;

UPDATE Addresses
SET ADDRESS_CITY = 'Sunshine State'
WHERE ADDRESS_CITY = 'Miami';

UPDATE Orders
SET product_name = 'LION KING'
WHERE product_name = 'Cats';

COMMIT;
```