



UNIVERSITI TEKNOLOGI MALAYSIA

PANGKALAN DATA (DATABASE) (SECD 2523)

SEMESTER 1 2020/2021

GROUP PROJECT

Hand-Carry Project (Database System)

Muhammad Aqila Karindra Daffa (Report)

Group Members:

1. **MUHAMMAD AQILA KARINDRA DAFFA (A19EC3010)**
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SECTION 07

Lecturer:

NUR EILYAH WONG

04 FEB 2021 (DATE OF PROJECT PRESENTATION)

1. **Ahmad Farhan Sulaiman BIN Zulraimi**
2. **Muhammad Aqila Karindra Daffa**
3. **Nazihah BINTI Surati**
4. **Hafiz Ridwan**

SECTION A: PROJECT DESCRIPTION

In this section you need to provide the description of your project which include the following information.

Synopsis:

Our colleague has a personal business hand-carry from overseas. At the current state, He usually posts to his social media or his WhatsApp group which country he is in at the time and then people can ask him to buy stuff that is only available in that country. He will record the request manually, check the item availability, and then tell the customer the estimated price. He usually stores the record on his phone notes. As the number of customers grows and sometimes one of the orders from the customer will be missed and probably the order can be not accurate. Another problem is the exchange rate could be different all the time, and if there are differences in the exchange rate, he needs to tell the customer again. So, from these problems, his business might be down due to lack of good services from him.

As the solution, we would like to introduce the “Hand-Carry Project” database system to resolve this problem. By creating the system, the business will be handy in a lot of ways because every record of the customer that wants to buy stuff from him is directly recorded.

Objective:

1. Design an online transaction system for the business owner and the customer to simplify the transaction process
2. Provide real-time information related to the transaction process, cost, and obstacles.
3. Improve the current system with real-time currency exchange
4. It should be able to track all the information about product, payment, and delivery
5. Improved efficiency of managing the shopping product

6. Adding, editing, and updating of records is improved which could results in ideal resource management of shopping data

Tools/Software:

Oracle Live SQL (<https://livesql.oracle.com/apex/f?p=590:1000>)

Gantt Chart:

Task Activity	Duration	Nov 2020				Des 2020				Jan 2021				Feb 2021			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Planning																	
Form a team and register online	1																
Prepare Project Propopsal	4																
Read company report	1																
Decide the proposal	1																
Propose an operational feasibilty study	1																
Identify the problem	2																
Set the scope and the objectives	3																
Requirements																	
Gathering Information	4																
System Analysis and Design	6																
Create DFD diagrams (as-is)	3																
Business Process and Workflow	3																
Analysis & Design																	
Structure Chart Design	4																
Context Diagram	4																
Interface Design	6																
Database Definition	4																
Implementation																	
Create database tables	3																
Develop system prototype	6																
Make final report and demo	4																
Peer-Review Evaluation	1																

The work in this page has been done by:

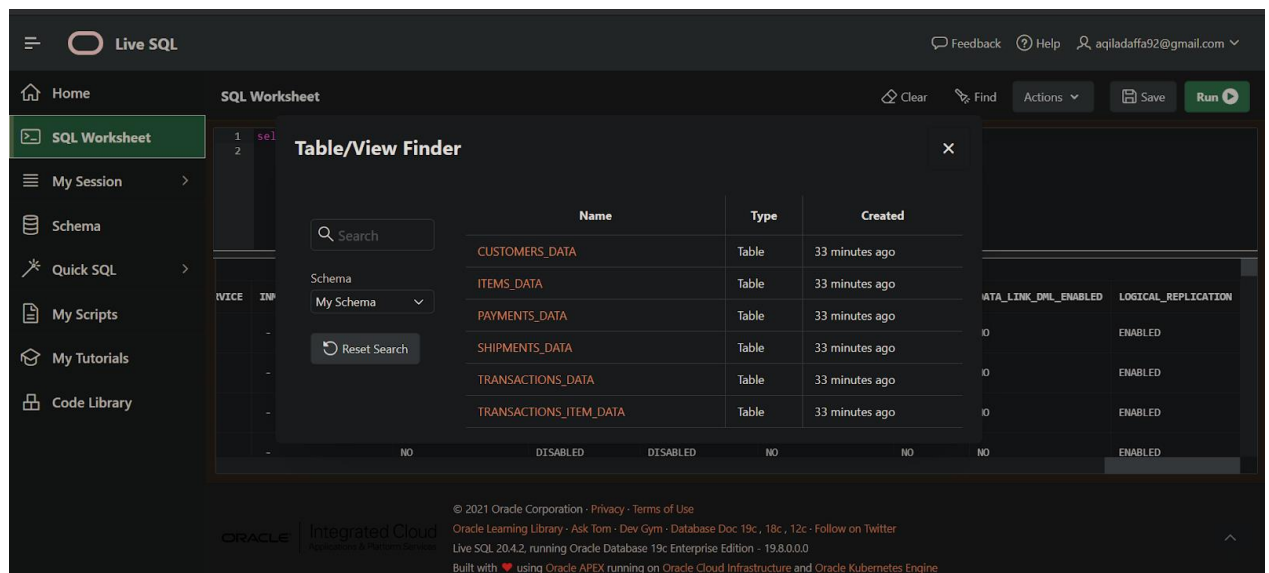
1. Muhammad Aqila Karindra Daffa
2. Nazihah BINTI Surati

Date: 21/January/2021

SECTION B: SCREEN DESIGN

In this section you need to provide the screen design of your project. The screen design serves as a way to present how your project might be looking. You may want to use sketching or computer software to create your drawing. You should also accompany each of your drawing with descriptions.

Main Screen:



There are 6 tables that we created which consists of customers data, items data, payments data, transactions data and also transaction item data. Those tables will handle each of the data that we put in about this project. For example, the customers_data table will handle all the data of the customers that we will use for this project and also all the other tables will do the same thing like that, they will handle their own data. The screenshots below are the codes for every table we make.

And below we also snap all the query that we made for making the system.

These are the pictures of our query that we made for each of the tables.

```
presentation_project.ddl - Notepad
File Edit Format View Help
CREATE TABLE customers_data (
  Customers_id    VARCHAR(10) NOT NULL,
  CName           VARCHAR(50) NOT NULL,
  Address         VARCHAR(50) NOT NULL,
  Phone_number    VARCHAR(50) NOT NULL,
  Email_address   VARCHAR(50) NOT NULL,
  CONSTRAINT customers_data_pk PRIMARY KEY ( Customers_id )
);

CREATE TABLE items_data (
  items_id        VARCHAR(10) NOT NULL,
  IName           VARCHAR(50) NOT NULL,
  Price_RM        FLOAT NOT NULL,
  Stock_item      INTEGER NOT NULL,
  CONSTRAINT items_data_pk PRIMARY KEY ( items_id )
);

CREATE TABLE transactions_data (
  transactions_id  VARCHAR(10) NOT NULL,
  Customers_id     VARCHAR(10) NOT NULL,
  transactions_date DATE,
  transactions_amount_RM  FLOAT,
  transactions_state  VARCHAR(50) NOT NULL,
  CONSTRAINT transactions_data_pk PRIMARY KEY ( transactions_id ),
  CONSTRAINT transactions_data_fk FOREIGN KEY ( Customers_id ) REFERENCES customers_data ( Customers_id )
);

CREATE TABLE transactions_item_data (
  transactions_id  VARCHAR(10) NOT NULL,
  items_id         VARCHAR(10) NOT NULL,
  CONSTRAINT transactions_item_data1_fk FOREIGN KEY ( transactions_id ) REFERENCES transactions_data ( transactions_id ),
  CONSTRAINT transactions_item_data2_fk FOREIGN KEY ( items_id ) REFERENCES items_data ( items_id )
);

CREATE TABLE payments_data (
  payments_id      VARCHAR(10) NOT NULL,
  transactions_id   VARCHAR(10) NOT NULL,
  payments_method   VARCHAR(50) NOT NULL,
  payments_date     DATE,
  payments_amount_RM  FLOAT,
  payments_proof_Link  VARCHAR(100),
  payers_name       VARCHAR(50),
  CONSTRAINT payments_data_pk PRIMARY KEY ( payments_id ),
  CONSTRAINT payments_data_fk FOREIGN KEY ( transactions_id ) REFERENCES transactions_data ( transactions_id )
);

CREATE TABLE shipments_data (
  shipments_id      VARCHAR(10) NOT NULL,
  transactions_id    VARCHAR(10) NOT NULL,
  weight_kg         FLOAT,
  shipments_date     DATE,
  CONSTRAINT shipments_data_pk PRIMARY KEY ( shipments_id ),
  CONSTRAINT shipments_data_fk FOREIGN KEY ( transactions_id ) REFERENCES transactions_data ( transactions_id )
);
```

Screen of each tables that we made:

SQL Worksheet

```
1 select * from customers_data;
2
```

CUSTOMERS_ID	CNAME	ADDRESS	PHONE_NUMBER	EMAIL_ADDRESS
C1	Anna	Taman Pulai Indah Johor Bahru	01117654321	anna@gmail.com
C2	Syaza	Taman Nusajaya Johor Bahru	01110235623	syaza@gmail.com
C3	Aiza	Kampung Melayu Majidee Johor Bahru	0195252364	aiza@gmail.com
C4	Baie	Taman Cempaka Johor Bahru	0124336281	Baie@gmail.com

[Download CSV](#)
4 rows selected.

These data are the customers data that we put into customers_data table which consist of customer id, customer name, customer address, customer phone number and customer email address. The primary key is customer id. So, each customer will have their own unique ID.

SQL Worksheet

```
1 select * from items_data;
2
```

ITEMS_ID	INAME	PRICE_RM	STOCK_ITEM
ITM1	Macbook case	100	5
ITM2	Nike Shoes	400	10
ITM3	Gucci handbag	7000.5	6
ITM4	luggage	2100	8

[Download CSV](#)
4 rows selected.

These data are the items data that we put into the items_data table which consists of item id, item name, price and the number of available stocks. Each item will have their own unique ID, so it is easy for us to churn out reports.

SQL Worksheet

```

1 select * from transactions_data;
2

```

TRANSACTIONS_ID	CUSTOMERS_ID	TRANSACTIONS_DATE	TRANSACTIONS_AMOUNT_RM	TRANSACTIONS_STATE
TR1	C1	15-JAN-20	100	paid and shipped
TR2	C2	16-JAN-20	400	paid and shipped
TR3	C3	18-JAN-20	7000.5	paid
TR4	C4	-	-	Has not paid

[Download CSV](#)
 4 rows selected.

These data are the transaction data that we put into the transactions_data table which consists of transaction id, customer id, transaction date, amount that customers have paid and also the status of payment. Each customer will have their own unique transaction id.

SQL Worksheet

```

1 select * from transactions_item_data;
2

```

TRANSACTIONS_ID	ITEMS_ID
TR1	ITM1
TR2	ITM2
TR3	ITM3
TR4	ITM4

[Download CSV](#)
 4 rows selected.

This table consists of a transactions_id attribute that is taken from transactions_data table and items_id attribute that is taken from items_data table. This table is used for connecting between transactions_data and items_data table.

SQL Worksheet

Clear Find

```
1 select * from payments_data;
```

PAYMENTS_ID	TRANSACTIONS_ID	PAYMENTS_METHOD	PAYMENTS_DATE	PAYMENTS_AMOUNT_RM	PAYMENTS_PROOF_LINK	PAYERS_NAME
PY1	TR1	Bank Transfer	15-JAN-21	100	firstPay.jpg	Anna S.
PY2	TR2	Bank Transfer	16-JAN-21	400	secondPay.jpg	Syaza F.
PY3	TR3	Bank Transfer	18-JAN-21	7000.5	thirdPay.jpg	Aiza G.
PY4	TR4	Bank Transfer	-	-	-	-

Download CSV
4 rows selected.

These data are shipment data that we put into the payments_data table consists of payment id, transaction id, payment method, date, amount, payment proof and payer name. These are the customer's payment info and each customer will have their own payment id. In this data, we will get the info of which customers have paid and when they pay, what payment method they use and also the proof of payment.

SQL Worksheet

```
1 select * from shipments_data;
```

SHIPMENTS_ID	TRANSACTIONS_ID	WEIGHT_KG	SHIPMENTS_DATE
SHP1	TR1	.25	16-JAN-21
SHP2	TR2	.9	17-JAN-21
SHP3	TR3	.4	-
SHP4	TR4	-	-

Download CSV
4 rows selected.

These data are the shipment data that we put into the shipments_data table which consists of shipment id, transaction id, weight and shipment date. Each customer will have their own shipment id. So, after they make a payment, they will receive their own shipment id.

These are the pictures of our query that we made for each of the tables.

```
presentation_project.ddl - Notepad
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INSERT INTO customers_data
VALUES ('C1','Anna',' Taman Pulai Indah Johor Bahru', '01117654321',' anna@gmail.com');
INSERT INTO customers_data
VALUES ('C2','Syaza',' Taman Nusajaya Johor Bahru', '01110235623',' syaza@gmail.com');
INSERT INTO customers_data
VALUES ('C3','Aiza',' Kampung Melayu Majidee Johor Bahru', '0195252364',' aiza@gmail.com');
INSERT INTO customers_data
VALUES ('C4','Baie',' Taman Cempaka Johor Bahru', '0124336281',' Baie@gmail.com');

INSERT INTO items_data
VALUES ('ITM1','Macbook case',100.0, 5);
INSERT INTO items_data
VALUES ('ITM2','Nike Shoes',400.0, 10);
INSERT INTO items_data
VALUES ('ITM3','Gucci handbag', 7000.50, 6);
INSERT INTO items_data
VALUES ('ITM4','luggage', 2100.0, 8);

INSERT INTO transactions_data
VALUES ('TR1', 'C1', DATE '2020-01-15', 100.0, 'paid and shipped');
INSERT INTO transactions_data
VALUES ('TR2', 'C2', DATE '2020-01-16', 400.0, 'paid and shipped');
INSERT INTO transactions_data
VALUES ('TR3', 'C3', DATE '2020-01-18', 7000.50,'paid');
INSERT INTO transactions_data
VALUES ('TR4', 'C4', null , null , 'Has not paid');

INSERT INTO transactions_item_data
VALUES ('TR1', 'ITM1');
INSERT INTO transactions_item_data
VALUES ('TR2', 'ITM2');
INSERT INTO transactions_item_data
VALUES ('TR3', 'ITM3');
INSERT INTO transactions_item_data
VALUES ('TR4', 'ITM4');

INSERT INTO payments_data
VALUES ('PY1', 'TR1', 'Bank Transfer', DATE '2021-01-15', 100.0, 'firstPay.jpg', 'Anna S. ');
INSERT INTO payments_data
VALUES ('PY2', 'TR2', 'Bank Transfer', DATE '2021-01-16', 400.0, 'secondPay.jpg', 'Syaza F. ');
INSERT INTO payments_data
VALUES ('PY3', 'TR3', 'Bank Transfer', DATE '2021-01-18', 7000.50, 'thirdPay.jpg', 'Aiza G. ');
INSERT INTO payments_data
VALUES ('PY4', 'TR4', 'Bank Transfer', null , null , null , null );

INSERT INTO shipments_data
VALUES ('SHP1', 'TR1', 0.25, DATE '2021-01-16');
INSERT INTO shipments_data
VALUES ('SHP2', 'TR2', 0.90, DATE '2021-01-17');
INSERT INTO shipments_data
VALUES ('SHP3', 'TR3', 0.40, null);
INSERT INTO shipments_data
VALUES ('SHP4', 'TR4', null, null);
```

Screen of how the system works:

These pictures are an example of how we manage our data.

SQL Worksheet

```
1 select * from customers_data;  
2
```

CUSTOMERS_ID	CNAME	ADDRESS	PHONE_NUMBER	EMAIL_ADDRESS
C1	Anna	Taman Pulai Indah Johor Bahru	01117654321	anna@gmail.com
C2	Syaza	Taman Nusajaya Johor Bahru	01110235623	syaza@gmail.com
C3	Aiza	Kampung Melayu Majidee Johor Bahru	0195252364	aiza@gmail.com
C4	Baie	Taman Cempaka Johor Bahru	0124336281	Baie@gmail.com

Download CSV
4 rows selected.

First, we can check the data of our customers by selecting the customers_data table.

SQL Worksheet

```
1 select * from customers_data  
2 where customers_id = 'C1';
```

CUSTOMERS_ID	CNAME	ADDRESS	PHONE_NUMBER	EMAIL_ADDRESS
C1	Anna	Taman Pulai Indah Johor Bahru	01117654321	anna@gmail.com

Download CSV

And then for example if we want to check the details of our first customer, we can just select on the first customer row by selecting the ID of them which is in the customers_id attribute because the ID of each customer is unique.

SQL Worksheet

```
1 select * from transactions_data;  
2
```

TRANSACTIONS_ID	CUSTOMERS_ID	TRANSACTIONS_DATE	TRANSACTIONS_AMOUNT_RM	TRANSACTIONS_STATE
TR1	C1	15-JAN-20	100	paid and shipped
TR2	C2	16-JAN-20	400	paid and shipped
TR3	C3	18-JAN-20	7000.5	paid
TR4	C4	-	-	Has not paid

[Download CSV](#)

4 rows selected.

After that we can check the status of our customer in transactions_data table. As we can see in the transactions_state attribute, if the customer already did the payment the status will be paid and if the customer already did the payment and also if their item already shipped then the status will be paid and shipped. But if the customer has not paid yet then the status will be has not paid.

SQL Worksheet

```
1 select * from transactions_item_data  
2 where transactions_id = 'TR1';
```

TRANSACTIONS_ID	ITEMS_ID
TR1	ITM1

[Download CSV](#)

After we see the transactions_data table, we can put the transactions_id of the first customer into transactions_item_data table to see what is the item_id of the first customer.

SQL Worksheet

```

1 select * from items_data
2 where items_id = 'ITM1';

```

ITEMS_ID	INAME	PRICE_RM	STOCK_ITEM
ITM1	Macbook case	100	5

[Download CSV](#)

And then we can put the items_id in the items_data table to see what is the item that the first customer bought.

SQL Worksheet

[Clear](#) [Find](#)

```

1 select * from payments_data
2 where transactions_id = 'TR1';

```

PAYMENTS_ID	TRANSACTIONS_ID	PAYMENTS_METHOD	PAYMENTS_DATE	PAYMENTS_AMOUNT_RM	PAYMENTS_PROOF_LINK	PAYERS_NAME
PY1	TR1	Bank Transfer	15-JAN-21	100	firstPay.jpg	Anna S.

[Download CSV](#)

And we can also check the payment detail for the customer by just putting the transactions_id into the payments_data table.

SQL Worksheet

```

1 select * from shipments_data
2 where transactions_id = 'TR1';

```

SHIPMENTS_ID	TRANSACTIONS_ID	WEIGHT_KG	SHIPMENTS_DATE
SHP1	TR1	.25	16-JAN-21

[Download CSV](#)

After that we also can check the shipment details in the shipment_data table by putting the transactions_id into the shipments_data table.

SQL Worksheet

```
1 select * from transactions_data
2 where customers_id = 'C1';
```

TRANSACTIONS_ID	CUSTOMERS_ID	TRANSACTIONS_DATE	TRANSACTIONS_AMOUNT_RM	TRANSACTIONS_STATE
TR1	C1	15-JAN-20	100	paid and shipped

[Download CSV](#)

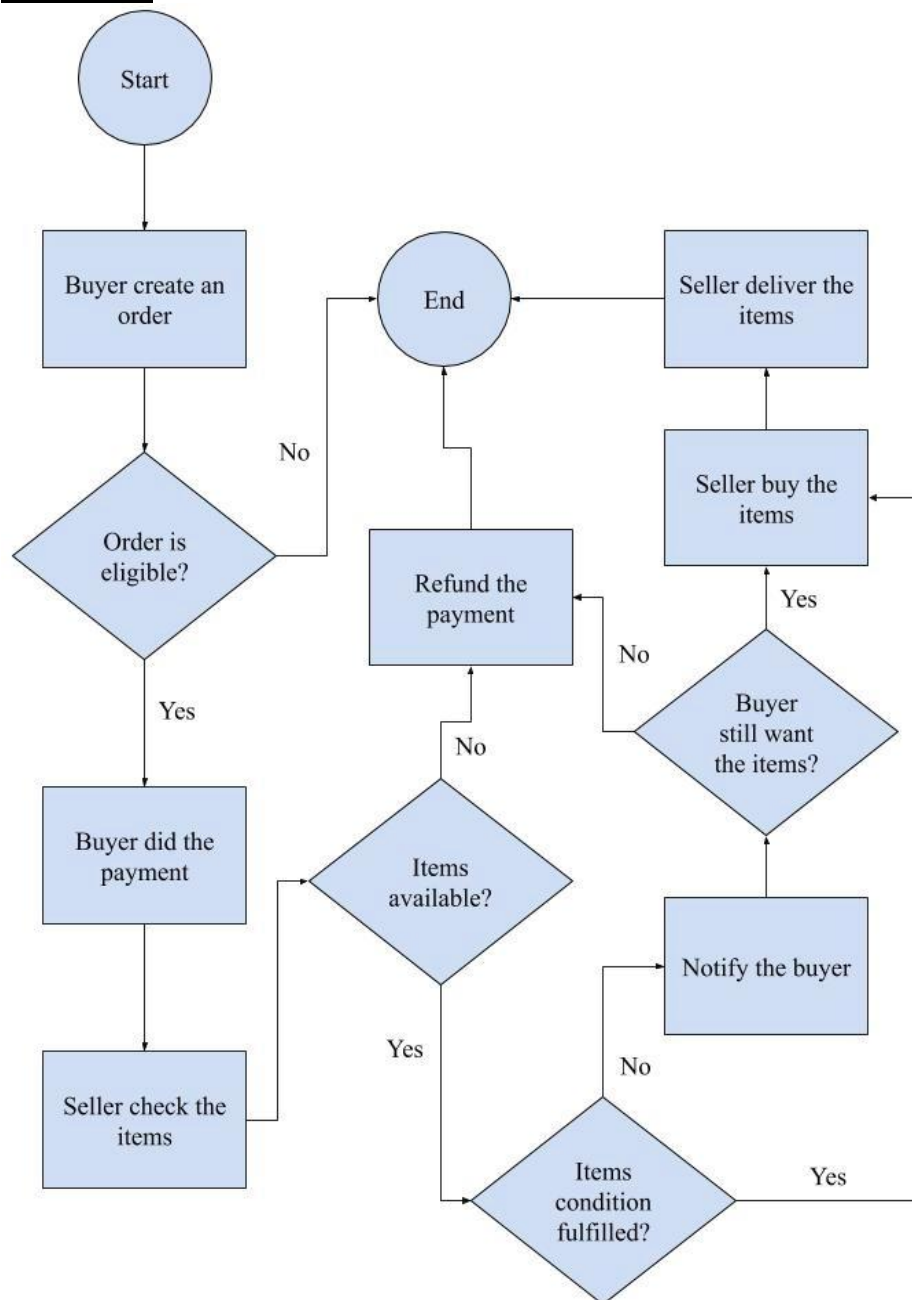
After we checked all the tables, as we can see the transactions_data table is the main table of the system. So, all of the details of the data will be transferred into the transactions_data table so that is why all the status (payment and shipment) will only appear in transaction_data table.

1. Ahmad Farhan Sulaiman BIN Zulraimi
2. Muhammad Aqila Karindra Daffa

SECTION C: FLOW CHART & CLASS DIAGRAM

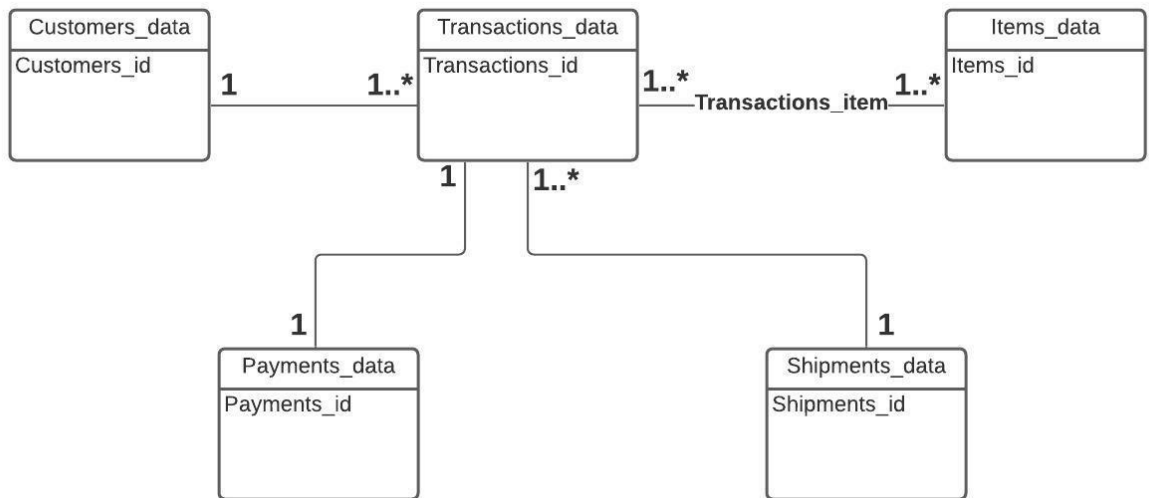
In this section you need to provide the flow chart of your project.

Flowchart:

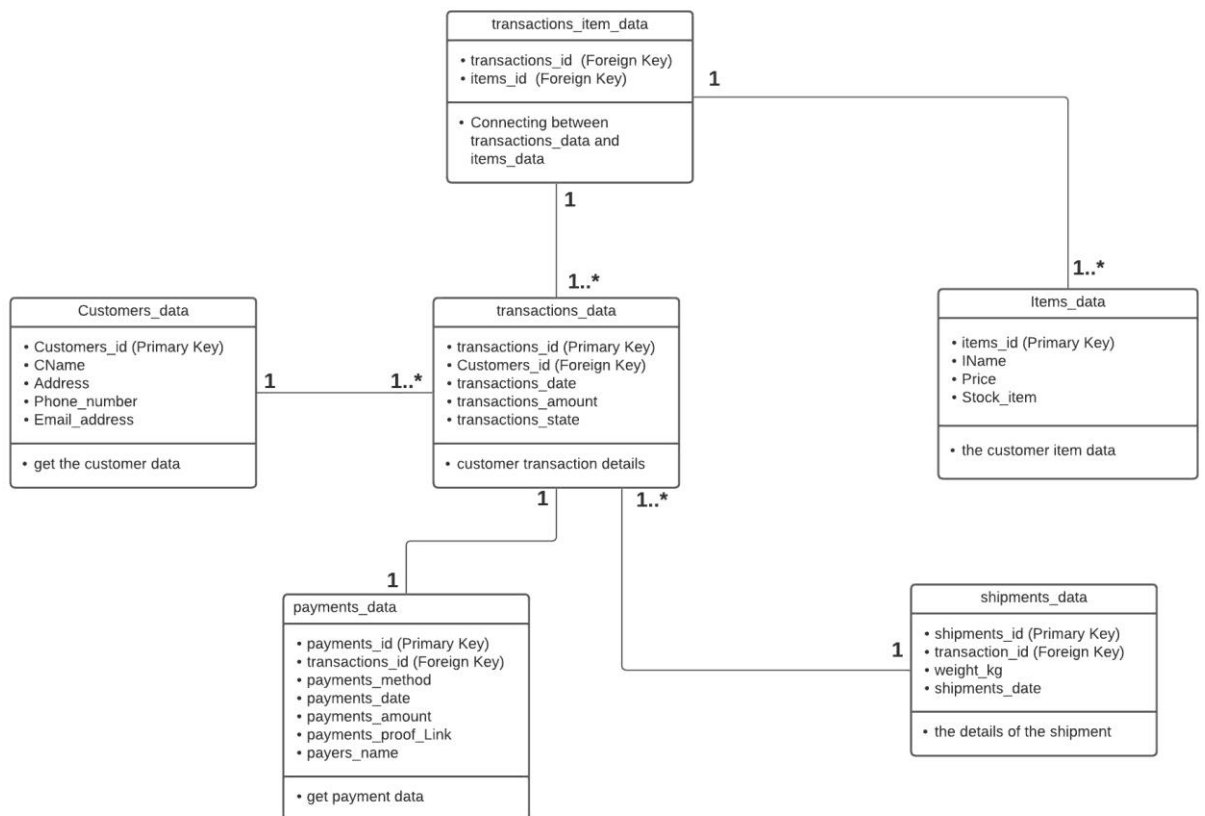


Class Diagram:

A.) Conceptual Diagram

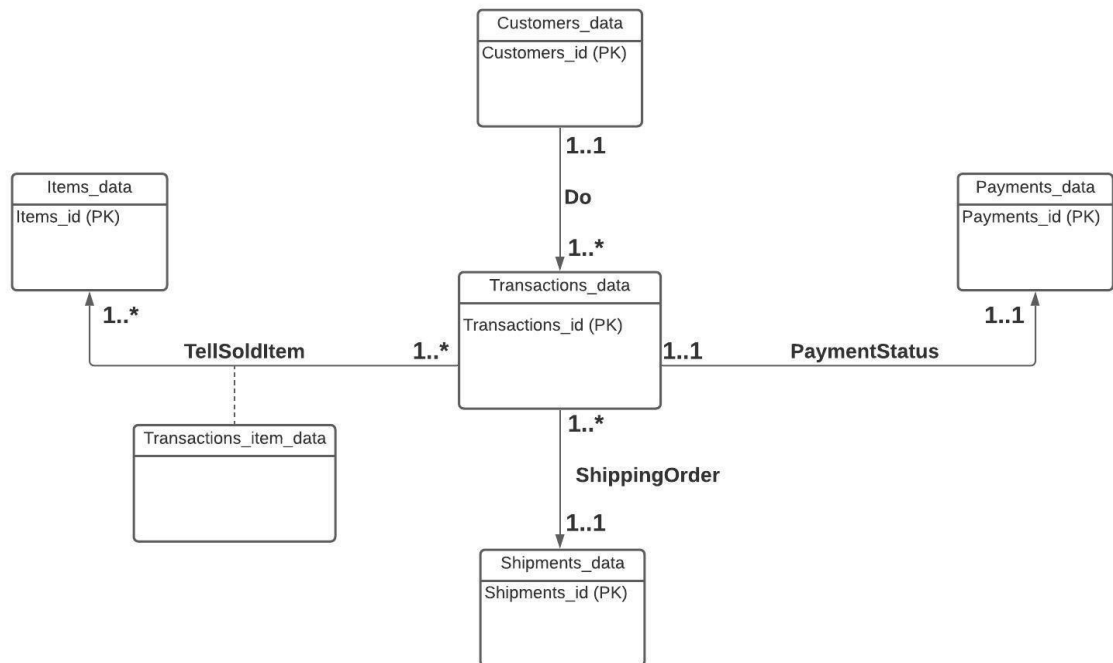


B.) Logical Diagram

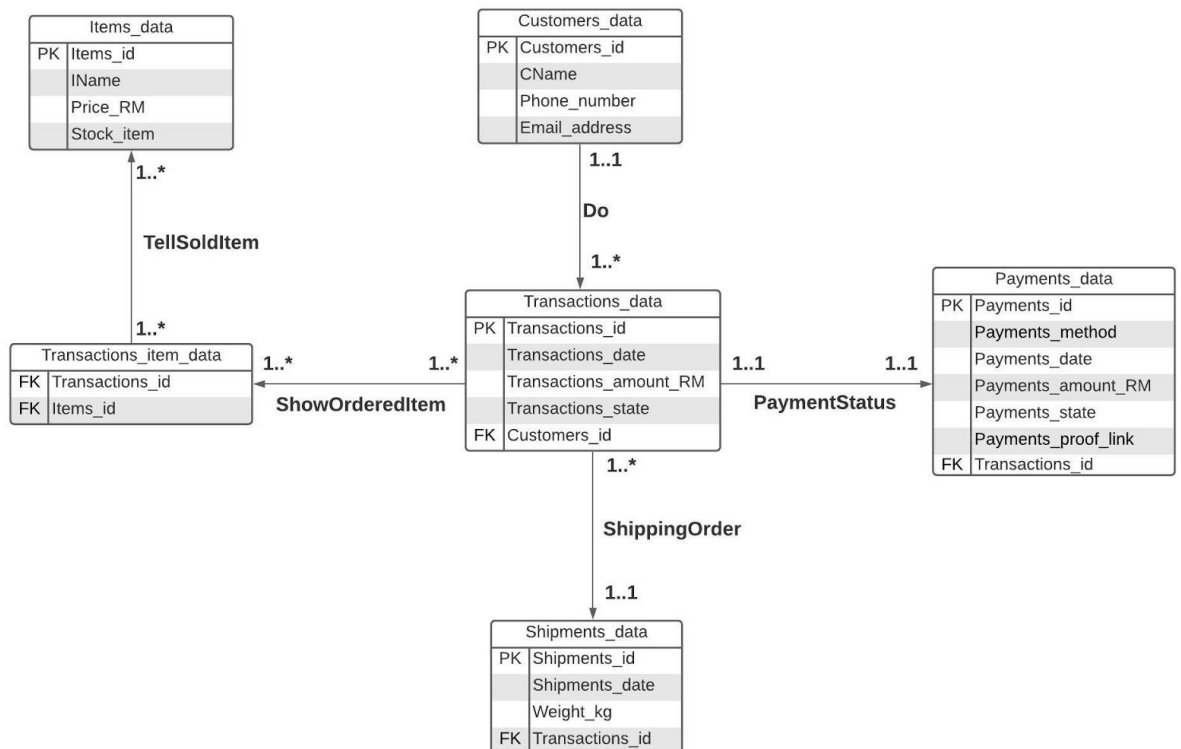


ERD:

A. Conceptual ERD:



B. Logical ERD:



Context Diagram

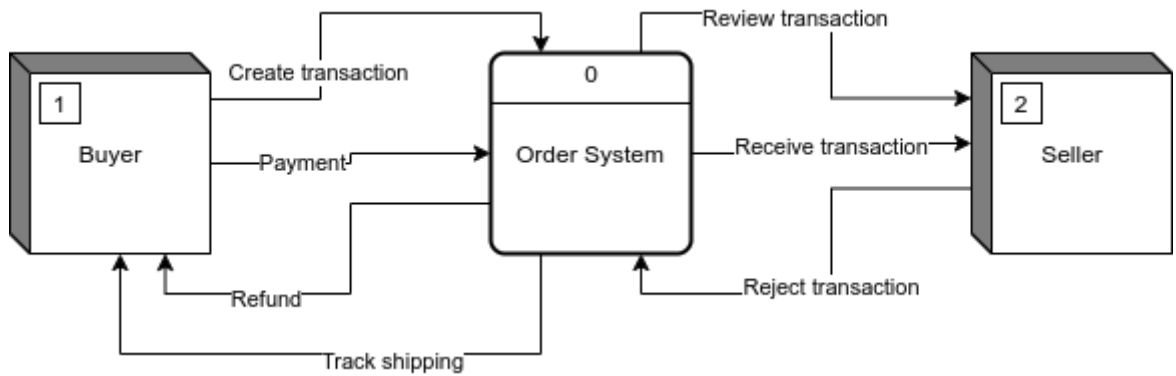
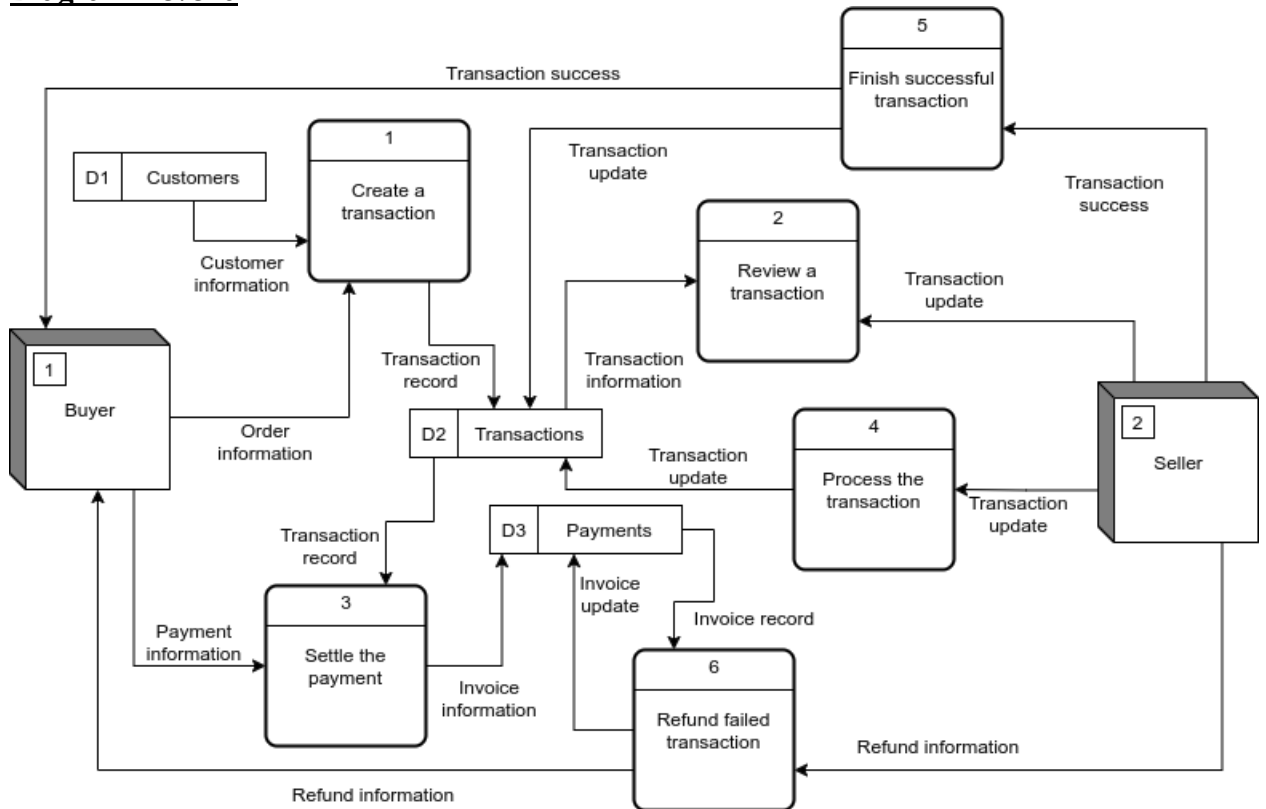


Diagram Level 0



Data Dictionary:

[illegible]

transactions_data	The data of the transactions	transactions_id	The primary identification attribute for each transaction	varchar	10	TRUE	FALSE	TRUE	FALSE
		transactions_date	the date of the customer do the transaction	date	10	FALSE	TRUE	FALSE	FALSE
		transactions_amount_RM	how much the total of all transaction for each customer	float	10	FALSE	TRUE	FALSE	FALSE
		transactions_state	the status of each customer whether the order already paid or already shipped	varchar	50	FALSE	FALSE	FALSE	FALSE
		Customer_ID	The foreign key from customers_data, to connecting this data with customers_data	varchar	10	FALSE	FALSE	TRUE	TRUE
transactions_item_data	Connecting the data of transactions and the item, to update the amount of the item that already sold	items_id	The foreign key from items_data, to connecting this data with items_data	varchar	10	FALSE	FALSE	TRUE	TRUE
		transactions_id	The foreign key from transactions_data, to connecting this data with transactions_data	varchar	10	FALSE	FALSE	TRUE	TRUE

payments_data	The data of the payments	payments_id	The primary identification attribute for each payment	varchar	10	TRUE	FALSE	TRUE	FALSE
		payments_date	the date of the customer do the payment	date	10	FALSE	TRUE	FALSE	FALSE
		payments_amount_RM	how much the total of payment for each item	float	10	FALSE	TRUE	FALSE	FALSE
		payments_proof_Link	the proof link of the payment, only the last path of the link. For example, "/payment.jpg".	varchar	50	FALSE	TRUE	FALSE	FALSE
		payers_name	Name of the payer	varchar	50	FALSE	TRUE	FALSE	FALSE
		payments_method	Method of the payment	varchar	50	FALSE	FALSE	FALSE	FALSE
		transactions_id	The foreign key from transactions_data, to connecting this data with transactions_data	varchar	10	FALSE	FALSE	TRUE	TRUE

shipments_data	The data of the shipments	shipments_id	The primary identification attribute for each shipment	varchar	10	TRUE	FALSE	TRUE	FALSE
		weight_kg	The weight of each item that will be shipped	float	10	FALSE	TRUE	FALSE	FALSE
		shipments_date	The date of the shipment	date	10	FALSE	TRUE	FALSE	FALSE
		transactions_id	The foreign key from transactions_data, to connecting this data with transactions_data	varchar	10	FALSE	FALSE	TRUE	TRUE