



Module: WSQ Database Design and Implementation (SF)

Module Project

Plan, Design, and Implement a Database for eCommerce Portal

Learner Name

Learner Enrolment ID

Start Date: 10/11/2023

End Date: 20/11/2023

Submission Date: 20/11/2023

Presentation Date: <insert date>

Content

| S. No. | Description |
|--------|------------------------------------|
| 1 | Project Background & Objective |
| 2 | Development Tools |
| 3 | Database Requirements |
| 4 | Data normalization |
| 5 | Entities |
| 6 | ER Diagram |
| 7 | Physical Diagram |
| 8 | Tables |
| 9 | Fields |
| 10 | Primary Key, Foreign Key & Indexes |
| 11 | CSV Import |
| 12 | Functional Queries |
| 13 | Report Queries |
| 14 | Account Management |
| 15 | Indexes |
| 16 | Backup & Schedule |
| 17 | Project Milestone & Tasks |
| 18 | Project Result |
| 19 | Reference |

C Project Background & Objective

Background

- I You currently work as a Data Engineer for Brightica design agency, where you design and implement data models for client-centric products. As part of the role, your manager Mr. Andrew assigned the project to develop an optimal database design to deliver Rich Internet Application for Boutiqa. Boutiqa is a marketplace for sellers to promote their products and for consumers to purchase with ease. The company wants to have a consumer-centric application with an enhanced user experience

Project Background & Objective

Objective

CREATE DATABASE TO MANAGE

Sellers

- Seller sell many items
- Seller can login & update seller information
- Register a new catalogue



Consumer

- Allows customer to login & create a new transaction
- Update user information



Items

- Identified & categories by system
- One Item can be bought by many seller
- Can be choose many items by many customer



Login & Update

CRUD

Backup & Restore

Create Queries

Development Tools

Screenshot of development tools used



ERDPlus.com



Dbdes 4.1



MySQL
Workbench 8.0 CE



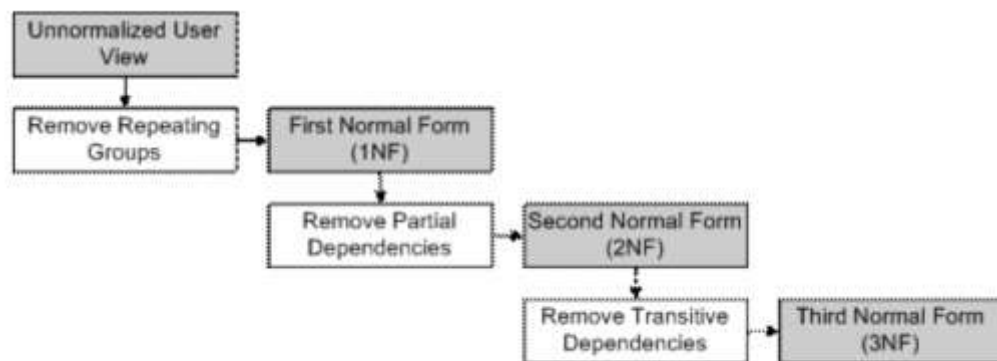
Mockaroo.com



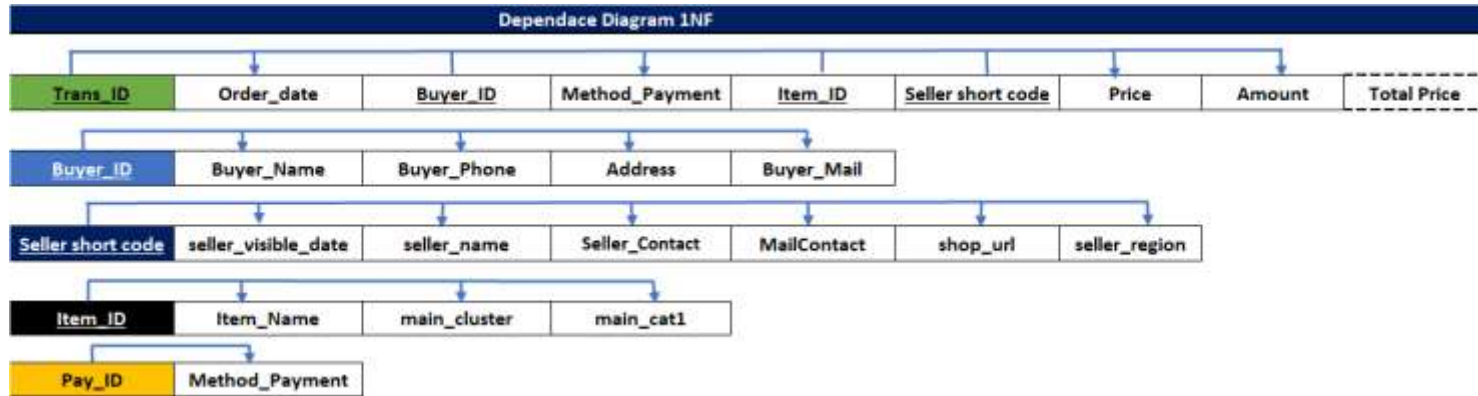
Microsoft 365
- Excel
- Word
- Power Point

Data Normalization

| TS_ID | Order_date | Buyer_ID | Buyer_visible_date | Buyer_name | Buyer_Contact_Phone | Buyer_Contact_Email | Buyer_Address | Buyer_region | Method Payment | Shop_cart_ID | Item_ID | Item | Main_Cluster | main_cat1 | Seller short code | seller_visible_date | seller_name | Seller_contact_phone | Seller_contact_email | Shop_url | Seller_region | Price | Amount | Total Price |
|-------|---------------------|----------|---------------------|--------------------|---------------------|---------------------|----------------|--------------|----------------|--------------|----------|--------------|--------------|------------------|-------------------|---------------------|------------------|----------------------|----------------------|------------------|---------------|----------|--------|-------------|
| 10001 | 2023-10-23 00:01:43 | 08175 | 2023-07-12 12:18:29 | Hoang Duy Thanh | 097777321 | buyer-003@gmail.com | 12 P01 Quận tá | HCM | COD | SC_014 | 20230001 | Item test 01 | 1. EL | Small Appliances | VNU2HG8R | 2023-07-12 12:18:29 | LNG FISHING | +84979444555 | seller01-LZD@g | https://www.laza | Hanoi | \$ 9.00 | 1 | 9 |
| 10002 | 2023-10-23 00:02:35 | 08175 | 2023-07-12 12:18:29 | Hoang Duy Thanh | 097777321 | buyer-003@gmail.com | 12 P01 Quận tá | HCM | E-Wallet | SC_011 | 20230002 | Item test 02 | 1. EL | Computers & L | VNU2HG8R | 2023-07-12 12:18:29 | LNG FISHING | +84979444555 | seller01-LZD@g | https://www.laza | Hanoi | \$ 5.00 | 7 | 35 |
| 10003 | 2023-10-23 00:04:25 | 08175 | 2023-07-12 12:18:29 | Hoang Duy Thanh | 097777321 | buyer-003@gmail.com | 12 P01 Quận tá | HCM | E-Wallet | SC_012 | 20230002 | Item test 02 | 1. EL | Computers & L | VNU2JU4H | 2023-07-24 16:55:42 | Rinn Store (Many | +84979888222 | seller02-LZD@g | https://www.laza | Hanoi | \$ 5.00 | 7 | 35 |
| 10004 | 2023-10-23 00:06:44 | 88469 | 2023-07-27 10:27:10 | Nguyen Thi Lan Anh | 097999123 | buyer-001@gmail.com | 01 P01 Quận tá | Hanoi | Credit Cards | SC_001 | 20230008 | Item test 08 | 4. GC | Household Sup | VNU2JU4H | 2023-07-24 16:55:42 | Rinn Store (Many | +84979888222 | seller02-LZD@g | https://www.laza | Hanoi | \$ 3.00 | 10 | 30 |
| 10005 | 2023-10-23 00:07:43 | 08175 | 2023-07-12 12:18:29 | Hoang Duy Thanh | 097777321 | buyer-003@gmail.com | 12 P01 Quận tá | HCM | E-Wallet | SC_006 | 20230003 | Item test 03 | 2. FA | Bags and Trave | VNU2JU4H | 2023-07-24 16:55:42 | Rinn Store (Many | +84979888222 | seller02-LZD@g | https://www.laza | Hanoi | \$ 2.00 | 7 | 14 |
| 10006 | 2023-10-23 00:08:13 | 88469 | 2023-07-27 10:27:10 | Nguyen Thi Lan Anh | 097999123 | buyer-001@gmail.com | 01 P01 Quận tá | Hanoi | Credit Cards | SC_006 | 20230003 | Item test 03 | 2. FA | Bags and Trave | VNU2JU4H | 2023-07-24 16:55:42 | Rinn Store (Many | +84979888222 | seller02-LZD@g | https://www.laza | Hanoi | \$ 2.00 | 12 | 24 |
| 10007 | 2023-10-25 17:30:35 | 88469 | 2023-07-27 10:27:10 | Nguyen Thi Lan Anh | 097999123 | buyer-001@gmail.com | 01 P01 Quận tá | Hanoi | COD | SC_005 | 20230005 | Item test 05 | 2. FA | Fashion Access | VNU2F190 | 2023-07-03 17:01:17 | PUHA GIFT | +84979123321 | seller01-LZD@g | https://www.laza | HCMC | \$ 7.00 | 8 | 56 |
| 10008 | 2023-10-25 17:30:45 | 88457 | 2023-07-24 16:55:42 | Le Hoang Duc | 097888456 | buyer-002@gmail.com | 02 P01 Quận tá | Hanoi | E-Wallet | SC_008 | 20230008 | Item test 08 | 4. GC | Household Sup | VNU2F190 | 2023-07-03 17:01:17 | PUHA GIFT | +84979123321 | seller01-LZD@g | https://www.laza | HCMC | \$ 12.00 | 20 | 240 |
| 10009 | 2023-10-25 17:31:01 | 08175 | 2023-07-12 12:18:29 | Hoang Duy Thanh | 097777321 | buyer-003@gmail.com | 12 P01 Quận tá | HCM | E-Wallet | SC_008 | 20230008 | Item test 08 | 4. GC | Household Sup | VNU2F190 | 2023-07-03 17:01:17 | PUHA GIFT | +84979123321 | seller01-LZD@g | https://www.laza | HCMC | \$ 12.00 | 10 | 120 |
| 10010 | 2023-10-25 17:31:15 | 08175 | 2023-07-12 12:18:29 | Hoang Duy Thanh | 097777321 | buyer-003@gmail.com | 12 P01 Quận tá | HCM | Credit Cards | SC_010 | 20230006 | Item test 06 | 3. HB | Beauty | VNU2HG8R | 2023-07-12 12:18:29 | LNG FISHING | +84979444555 | seller01-LZD@g | https://www.laza | Hanoi | \$ 3.00 | 9 | 27 |
| 10011 | 2023-10-25 17:31:17 | 88457 | 2023-07-24 16:55:42 | Le Hoang Duc | 097888456 | buyer-002@gmail.com | 02 P01 Quận tá | Hanoi | Credit Cards | SC_009 | 20230008 | Item test 08 | 4. GC | Household Sup | VNU2HG8R | 2023-07-12 12:18:29 | LNG FISHING | +84979444555 | seller01-LZD@g | https://www.laza | Hanoi | \$ 4.00 | 16 | 64 |
| 10012 | 2023-10-29 21:59:20 | 88457 | 2023-07-24 16:55:42 | Le Hoang Duc | 097888456 | buyer-002@gmail.com | 02 P01 Quận tá | Hanoi | COD | SC_006 | 20230003 | Item test 03 | 2. FA | Bags and Trave | VNU2JU4H | 2023-07-24 16:55:42 | Rinn Store (Many | +84979888222 | seller02-LZD@g | https://www.laza | Hanoi | \$ 2.00 | 3 | 6 |
| 10013 | 2023-10-29 22:00:27 | 88469 | 2023-07-27 10:27:10 | Nguyen Thi Lan Anh | 097999123 | buyer-001@gmail.com | 01 P01 Quận tá | Hanoi | E-Wallet | SC_002 | 20230008 | Item test 08 | 4. GC | Household Sup | VNU2LKE3 | 2023-07-31 16:14:00 | MD BOUTIQUE | +84979000222 | seller02-LZD@g | https://www.laza | Other | \$ 5.00 | 10 | 50 |
| 10014 | 2023-10-29 22:01:43 | 88469 | 2023-07-27 10:27:10 | Nguyen Thi Lan Anh | 097999123 | buyer-001@gmail.com | 01 P01 Quận tá | Hanoi | E-Wallet | SC_004 | 20230007 | Item test 07 | 3. HB | Health | VNU2LKE3 | 2023-07-31 16:14:00 | MD BOUTIQUE | +84979000222 | seller02-LZD@g | https://www.laza | Other | \$ 10.00 | 7 | 70 |
| 10015 | 2023-10-29 22:02:11 | 08175 | 2023-07-12 12:18:29 | Hoang Duy Thanh | 097777321 | buyer-003@gmail.com | 12 P01 Quận tá | HCM | COD | SC_013 | 20230002 | Item test 02 | 1. EL | Computers & L | VNU2LKE3 | 2023-07-31 16:14:00 | MD BOUTIQUE | +84979000222 | seller02-LZD@g | https://www.laza | Other | \$ 7.00 | 4 | 28 |
| 10016 | 2023-10-29 22:03:17 | 88469 | 2023-07-27 10:27:10 | Nguyen Thi Lan Anh | 097999123 | buyer-001@gmail.com | 01 P01 Quận tá | Hanoi | E-Wallet | SC_007 | 20230002 | Item test 02 | 1. EL | Computers & L | VNU2NPUB | 2023-07-27 10:27:10 | BKsmart | +84979888111 | seller01-LZD@g | https://www.laza | Hanoi | \$ 3.00 | 13 | 39 |
| 10017 | 2023-10-29 22:03:22 | 88469 | 2023-07-27 10:27:10 | Nguyen Thi Lan Anh | 097999123 | buyer-001@gmail.com | 01 P01 Quận tá | Hanoi | Credit Cards | SC_003 | 20230008 | Item test 08 | 4. GC | Household Sup | VNU2NPUB | 2023-07-27 10:27:10 | BKsmart | +84979888111 | seller01-LZD@g | https://www.laza | Hanoi | \$ 8.00 | 1 | 8 |
| 10018 | 2023-10-29 22:04:53 | 08175 | 2023-07-12 12:18:29 | Hoang Duy Thanh | 097777321 | buyer-003@gmail.com | 12 P01 Quận tá | HCM | COD | SC_003 | 20230008 | Item test 08 | 4. GC | Household Sup | VNU2NPUB | 2023-07-27 10:27:10 | BKsmart | +84979888111 | seller01-LZD@g | https://www.laza | Hanoi | \$ 8.00 | 9 | 72 |
| 10019 | 2023-10-29 22:04:56 | 88457 | 2023-07-24 16:55:42 | Le Hoang Duc | 097888456 | buyer-002@gmail.com | 02 P01 Quận tá | Hanoi | E-Wallet | SC_003 | 20230008 | Item test 08 | 4. GC | Household Sup | VNU2NPUB | 2023-07-27 10:27:10 | BKsmart | +84979888111 | seller01-LZD@g | https://www.laza | Hanoi | \$ 8.00 | 16 | 128 |
| 10020 | 2023-10-29 22:05:42 | 08175 | 2023-07-12 12:18:29 | Hoang Duy Thanh | 097777321 | buyer-003@gmail.com | 12 P01 Quận tá | HCM | COD | SC_015 | 20230006 | Item test 06 | 3. HB | Beauty | VNU2NPUB | 2023-07-27 10:27:10 | BKsmart | +84979888111 | seller01-LZD@g | https://www.laza | Hanoi | \$ 7.00 | 15 | 105 |

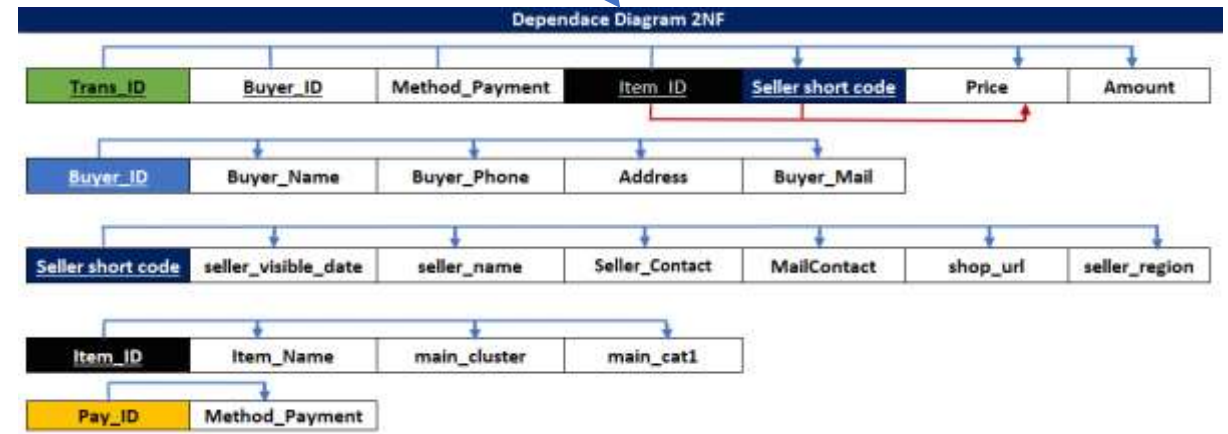


Data Normalization

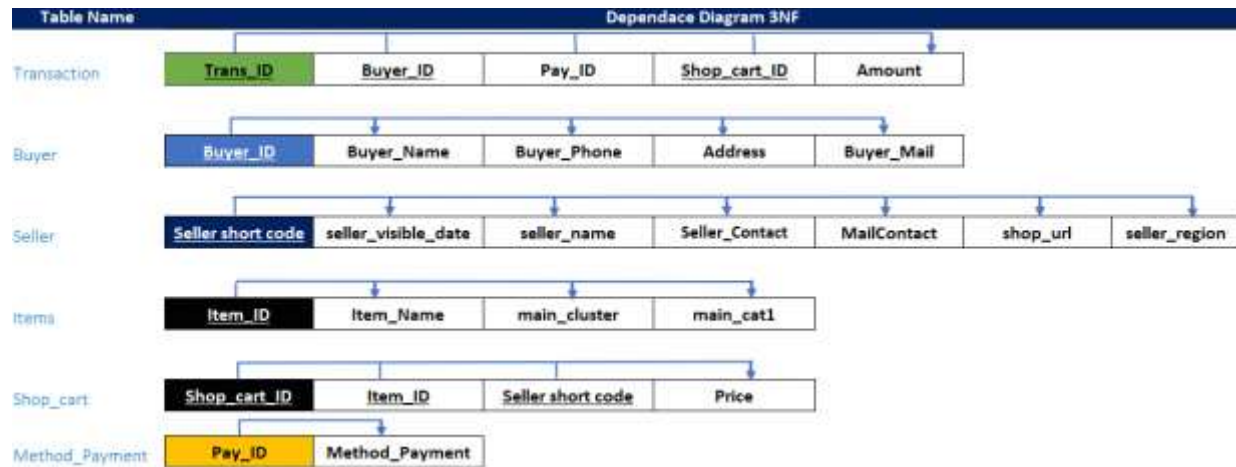


1 NF

2 NF



Data Normalization



Transaction

| TS_ID | Buyer_ID | Pay_ID | Shop_cart_ID | Amount |
|-------|----------|--------|--------------|--------|
| 10001 | 08175 | 3 | SC_014 | 1 |
| 10002 | 08175 | 1 | SC_011 | 7 |
| 10003 | 08175 | 1 | SC_012 | 7 |
| 10004 | 88469 | 2 | SC_001 | 10 |
| 10005 | 08175 | 1 | SC_006 | 7 |
| 10006 | 88469 | 2 | SC_006 | 12 |
| 10007 | 88469 | 3 | SC_005 | 8 |
| 10008 | 88457 | 1 | SC_008 | 20 |
| 10009 | 08175 | 1 | SC_008 | 10 |
| 10010 | 08175 | 2 | SC_010 | 9 |
| 10011 | 88457 | 2 | SC_009 | 16 |
| 10012 | 88457 | 3 | SC_006 | 3 |
| 10013 | 88469 | 1 | SC_002 | 10 |
| 10014 | 88469 | 1 | SC_004 | 7 |
| 10015 | 08175 | 3 | SC_013 | 4 |
| 10016 | 88469 | 1 | SC_007 | 13 |
| 10017 | 88469 | 2 | SC_003 | 1 |
| 10018 | 08175 | 3 | SC_003 | 9 |
| 10019 | 88457 | 1 | SC_003 | 16 |
| 10020 | 08175 | 3 | SC_015 | 15 |

Method payment

| Pay_ID | Method_Pay |
|--------|--------------|
| 1 | E-Wallet |
| 2 | Credit Cards |
| 3 | COD |

Shop cart

| Shop_cart_ID | Item_ID | Seller short code | Price |
|--------------|----------|-------------------|-------|
| SC_001 | 20230008 | VNI2IU4H | 3 |
| SC_002 | 20230008 | VNI2LKE3 | 5 |
| SC_003 | 20230008 | VNI2NPUB | 8 |
| SC_004 | 20230007 | VNI2LKE3 | 10 |
| SC_005 | 20230005 | VNI2F190 | 7 |
| SC_006 | 20230003 | VNI2IU4H | 2 |
| SC_007 | 20230002 | VNI2NPUB | 3 |
| SC_008 | 20230008 | VNI2F190 | 13 |
| SC_009 | 20230008 | VNI2HGBR | 4 |
| SC_010 | 20230006 | VNI2HGBR | 3 |
| SC_011 | 20230002 | VNI2HGBR | 5 |
| SC_012 | 20230002 | VNI2IU4H | 5 |
| SC_013 | 20230002 | VNI2LKE3 | 7 |
| SC_014 | 20230001 | VNI2HGBR | 9 |
| SC_015 | 20230006 | VNI2NPUB | 7 |

Items

| Item_ID | Item_name | main_cluster | main_cat1 |
|----------|--------------|--------------|---------------------|
| 20230001 | Item test 01 | 1. EL | Small Appliances |
| 20230002 | Item test 02 | 1. EL | Computers & Laptops |
| 20230003 | Item test 03 | 2. FA | Bags and Travel |
| 20230004 | Item test 04 | 2. FA | Bags and Travel |
| 20230005 | Item test 05 | 2. FA | Fashion Accessories |
| 20230006 | Item test 06 | 3. HB | Beauty |
| 20230007 | Item test 07 | 3. HB | Beauty |
| 20230008 | Item test 08 | 4. GC | Household Supplies |

Buyer

| Buyer_ID | Buyer_visible_date | Buyer_name | Buyer_Contact_Phone | Buyer_Contact_Mail | Buyer_Address | Buyer_region |
|----------|---------------------|--------------------|---------------------|---------------------|--------------------------------|--------------|
| 88469 | 2023-07-27 10:27:10 | Nguyen Thi Lan Anh | 097999123 | Buyer-001@gmail.com | 123 Đường 01 P01 Quận Tân Bình | Hanoi |
| 88457 | 2023-07-24 16:55:42 | Le Hoang Duc | 097888456 | Buyer-002@gmail.com | 124 Đường 02 P01 Quận Tân Bình | Hanoi |
| 08175 | 2023-07-12 12:18:29 | Hoang Duy Thanh | 097777321 | Buyer-003@gmail.com | 125 Đường 12 P01 Quận Tân Bình | HCM |
| 88282 | 2023-07-31 16:14:00 | Vo Hong Ngoc Tran | 097666789 | Buyer-004@gmail.com | 126 Đường 01 P2 Quận Tân Bình | HCM |

Seller

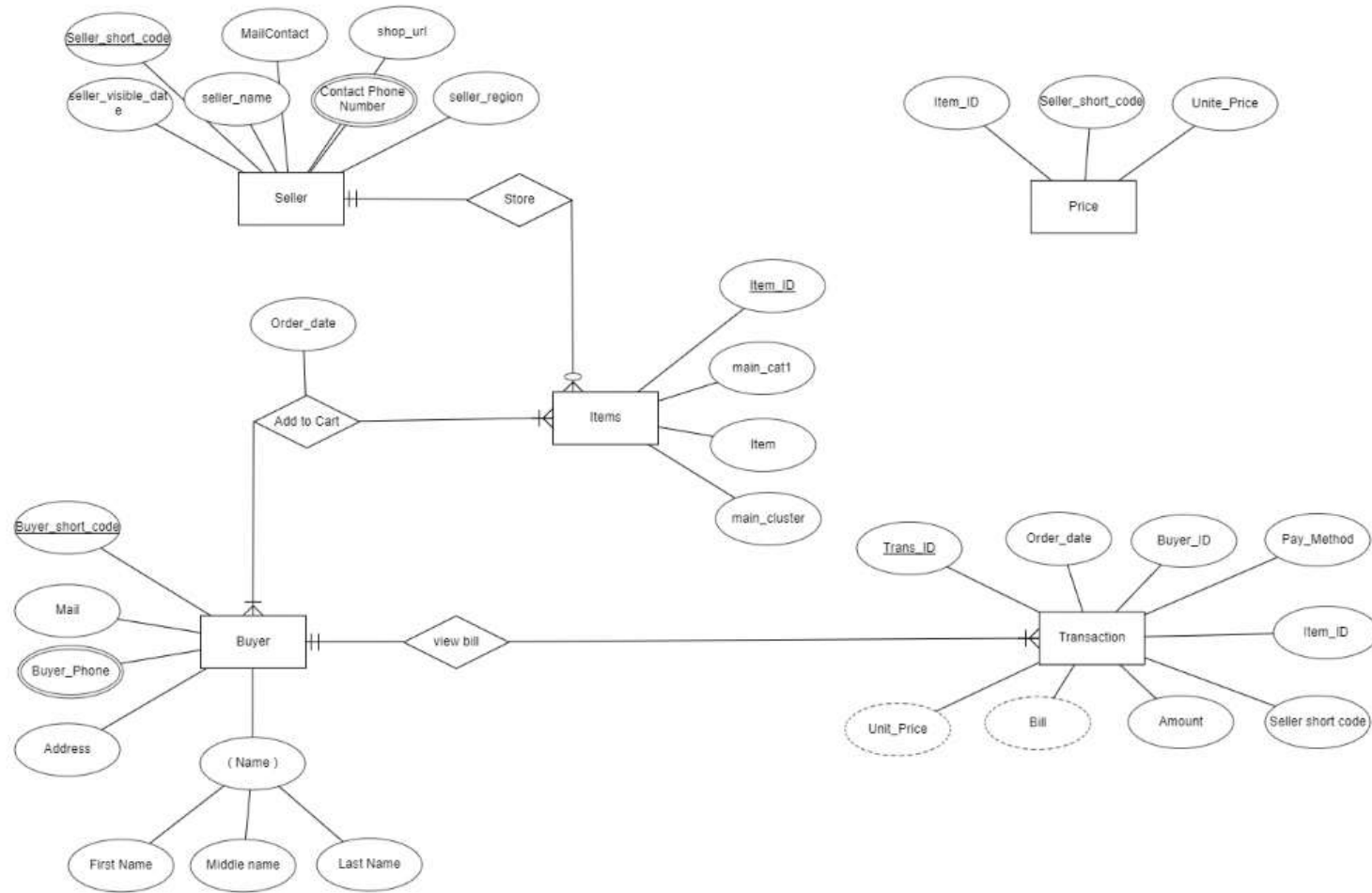
| Seller short code | seller_visible_date | seller_name | Seller_contact_phone | Seller_contact_mail | Shop_url | Seller_region |
|-------------------|---------------------|---------------------|----------------------|------------------------|--------------------------------|---------------|
| VNI2NPUB | 2023-07-27 10:27:10 | BKsmert | +84979888111 | seller01-LTD@gmail.com | https://www.lazada.vn/shop/bk | Hanoi |
| VNI2IU4H | 2023-07-24 16:55:42 | Rinne Store (Manyo) | +84979888222 | seller02-LTD@gmail.com | https://www.lazada.vn/shop/rin | Hanoi |
| VNI2HGBR | 2023-07-12 12:18:29 | LNG FISHING | +84979444555 | seller01-LTD@gmail.com | https://www.lazada.vn/shop/lng | Hanoi |
| VNI2LKE3 | 2023-07-31 16:14:00 | MD BOUTIQUE | +84979000222 | seller02-LTD@gmail.com | https://www.lazada.vn/shop/md | Other |
| VNI2F190 | 2023-07-03 17:01:17 | PUHA GIFT | +84979123321 | seller01-LTD@gmail.com | https://www.lazada.vn/shop/pu | HCMC |

C Entities

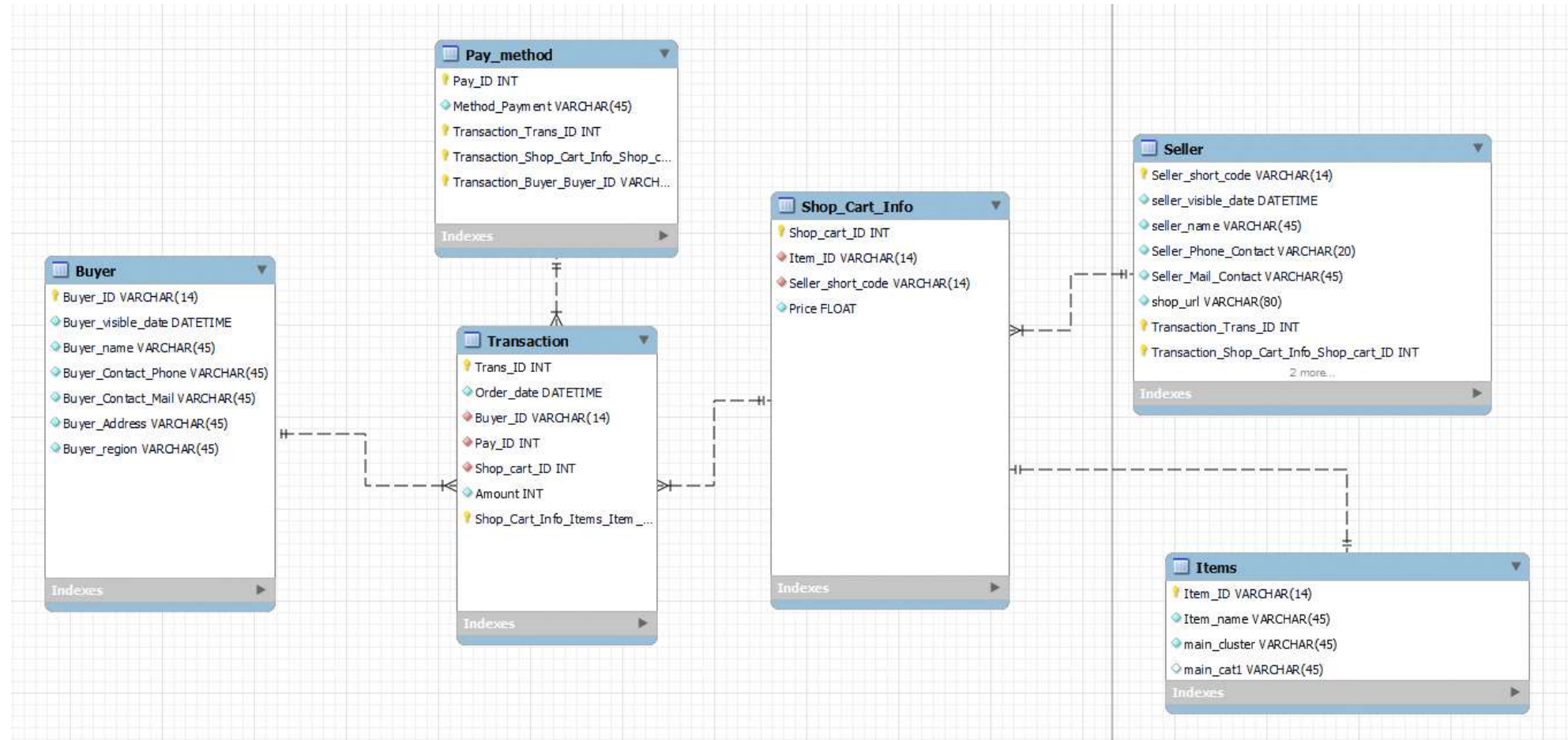
Entities from conceptual design

| Seller | Buyer | Item ID | Shop_cart_info | Transaction |
|-------------------------|------------------|--------------|-------------------|----------------|
| Seller short code | Buyer_short_code | Item_ID | Shop_cart_ID | Trans_ID |
| seller_visible_date | Name | Item | Item_ID | Order_date |
| seller_name | Buyer_Phone | main_cluster | Seller_short_code | Buyer_ID |
| Contact Phone Number | Address | main_cat1 | Price | Method Payment |
| MailContact | Mail | | | Purchase_ID |
| shop_url | | | | Amount |
| seller_region | | | | |

ER Diagram



Physical Design



C Tables

| Entity Name | Attributes (what it contains) | Describe |
|-----------------------|---|--|
| Seller | Seller_short_code(ID), Name, visible date, region, ULR link to seller's shop, Contact, Items sold by that seller. | Contain required information relate to seller. |
| Buyer | ID, Name, Contact, Region, | Contain data related to buyer. |
| Item | Item_ID, Item_Name, Main_Cluster, main_cat1 | Contain data of items, this data will be specified by system. |
| Shop_Cart_Info | Item_ID, Seller_short_Code, Price | Specified price of items, which distributed by different seller. |
| Transaction | Trans_ID, Order_date, Buyer, seller, item, price, amount..... | Contain all data relate to a specific transaction, including data related buyer, seller, item..... |

C Fields

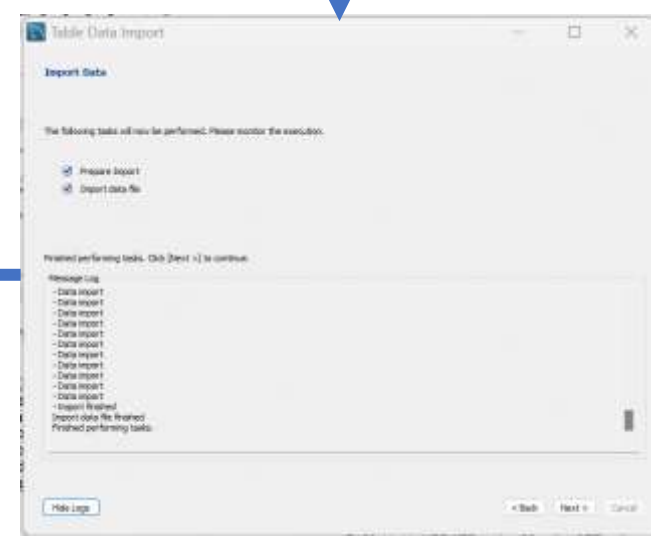
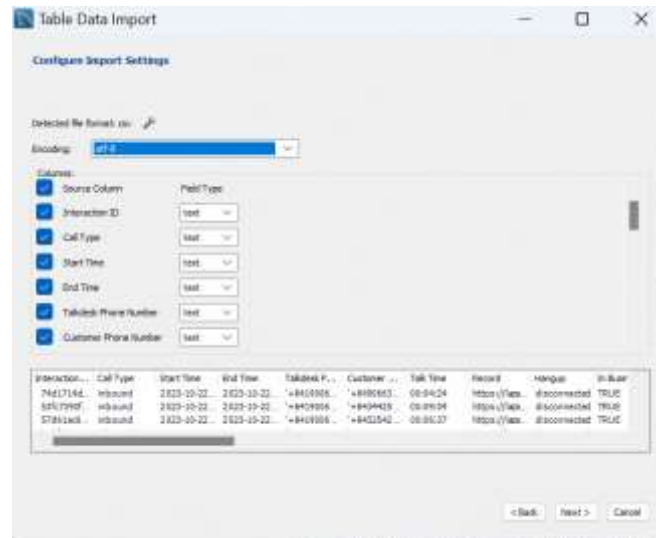
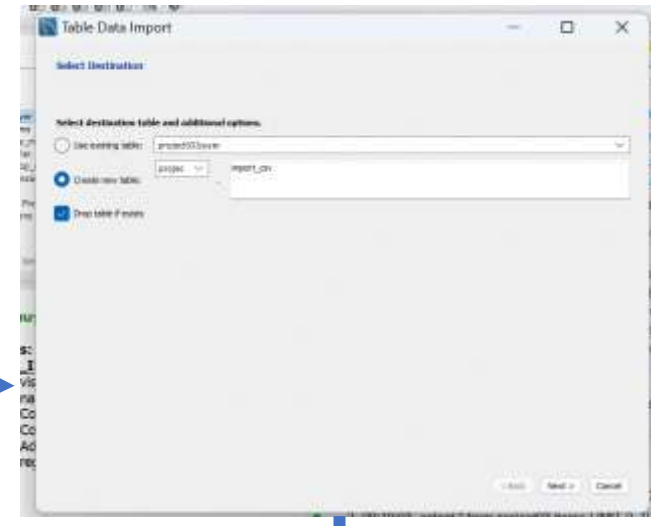
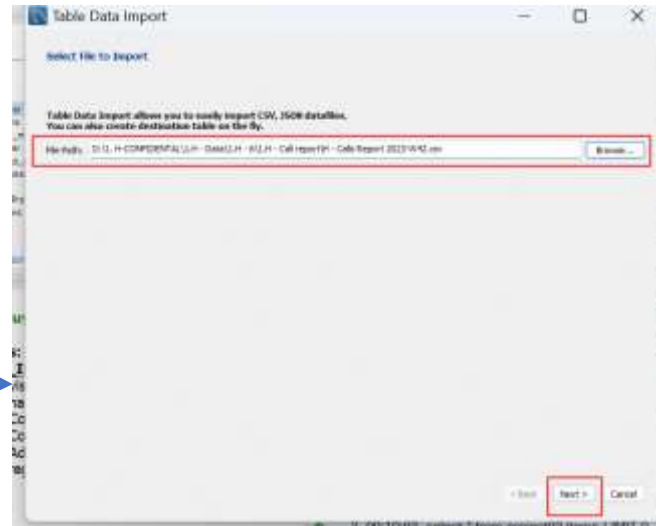
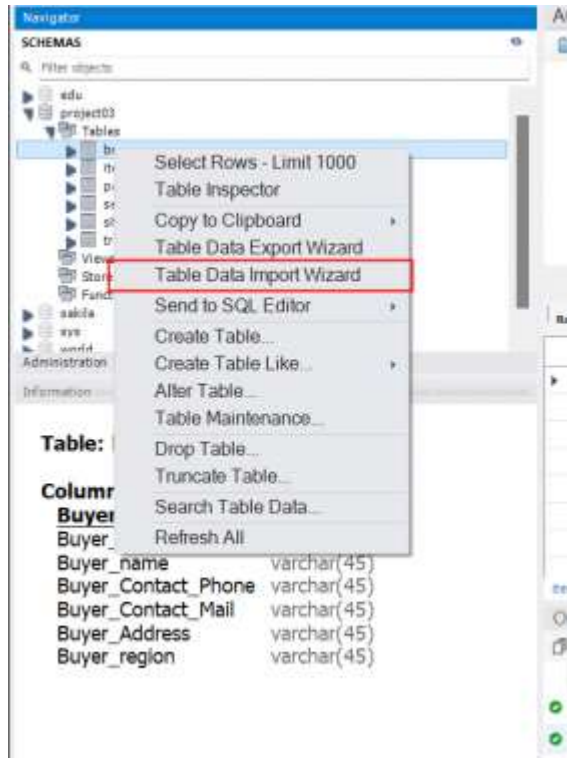
| Data | Attributes | Choosing Appropriate Data Type | Data Types |
|----------------|----------------------|---|-------------|
| Seller | Seller_short_code | Unit ID, contain Text & number with length around 8, so we can choose VARCHAR(14) | VARCHAR(14) |
| | seller_visible_date | The first time seller start to appper, need to detail date & time so we can choose DATETIME | DATETIME |
| | seller_name | This will contain characters of variable length, So we can use VARCHAR(45) | VARCHAR(45) |
| | Seller_Phone_Contact | Phone will also contain characters of width up to 20 Characters. We can use VARCHAR(20), to Accomodateup to 2 numbers | VARCHAR(20) |
| | Seller_Mail_Contact | Email is also variable number of characters with size up to 80 Character | VARCHAR(80) |
| | shop_url | May be a link with long tail so we can choose TEXT | TEXT |
| | seller_region | This will contain characters of variable length, So we can use | VARCHAR(45) |
| Buyer | Buyer_ID | Unit ID, contain Text & number with length around 8, so we can choose VARCHAR(14) | VARCHAR(14) |
| | Buyer_visible_date | The first time seller start to appper, need to detail date & time so we can choose DATETIME | DATETIME |
| | Buyer_name | This will contain characters of variable length, So we can use VARCHAR(45) | VARCHAR(45) |
| | Buyer_Contact_Phone | Phone will also contain characters of width up to 20 Characters. We can use VARCHAR(20), to Accomodateup to 2 numbers | VARCHAR(20) |
| | Buyer_region | This will contain characters of variable length, So we can use VARCHAR(45) | VARCHAR(45) |
| | Buyer_Address | May be a link with long tail so we can choose TEXT | TEXT |
| | Buyer_Contact_Mail | Email is also variable number of characters with size up to 80 Character | VARCHAR(80) |
| Items | Item_ID | Unit ID, contain Text & number with length around 8, so we can choose VARCHAR(14) | VARCHAR(14) |
| | Item_name | This will contain characters of variable length, So we can use VARCHAR(45) | VARCHAR(45) |
| | main_cluster | This will contain characters of variable length, So we can use VARCHAR(45) | VARCHAR(45) |
| | main_cat1 | This will contain characters of variable length, So we can use VARCHAR(45) | VARCHAR(45) |
| Shop_Cart_Info | Shop_cart_ID | Unit ID, contain Text & number with length around 8, so we can choose VARCHAR(14) | INT() |
| | Item_ID | Unit ID, contain Text & number with length around 8, so we can choose VARCHAR(14) | VARCHAR(14) |
| | Seller_short_code | Unit ID, contain Text & number with length around 8, so we can choose VARCHAR(14) | VARCHAR(14) |
| | Price | Value of unit price, we can choose FLOAT | FLOAT() |
| Pay_method | Pay_ID | Unit ID, contain Text & number with length around 8, so we can choose VARCHAR(2) | VARCHAR(2) |
| | Method_Payment | Should be one of some method payment, so we can choose VARCHAR(45) | VARCHAR(45) |
| Transaction | Trans_ID | Unit ID, contain NUMBER so we can choose INT() | INT() |
| | Order_date | The first time seller start to appper, need to detail date & time so we can choose DATETIME | DATETIME |
| | Buyer_ID | Unit ID, contain Text & number with length around 8, so we can choose VARCHAR(14) | VARCHAR(14) |
| | Pay_ID | Unit ID, contain Text & number with length around 8, so we can choose VARCHAR(2) | VARCHAR(2) |
| | Shop_cart_ID | Unit ID, contain Text & number with length around 8, so we can choose VARCHAR(14) | Int() |
| | Amount | Amount of each item will be sold, I want to limit in smallin | SMALLINT() |

Primary Key, Foreign Key & Indexes

| Table | Index name | Query |
|--------------------------|---------------------------------|---|
| project03.seller | Seller_idx Seller_region_idx | CREATE INDEX Seller_idx ON project03.seller(Seller_short_code ASC) VISIBLE; CREATE INDEX Seller_region_idx ON project03.seller(Seller_region ASC) VISIBLE; |
| project03.items | Items_idx Items_cluster_idx | CREATE INDEX Items_idx ON project03.items(Item_ID ASC) VISIBLE; CREATE INDEX Items_cluster_idx ON project03.items(main_cluster ASC) VISIBLE; |
| project03.pay_method | Pay_idx | CREATE INDEX Pay_idx ON project03.pay_method(Pay_ID ASC) VISIBLE; |
| project03.buyer | Buyer_idx | CREATE INDEX Buyer_idx ON project03.buyer(Buyer_ID ASC) VISIBLE; |
| project03.shop_cart_info | Cart_idx | CREATE INDEX Cart_idx ON project03.shop_cart_info(Shop_cart_ID ASC) VISIBLE; |
| project03.transaction | Trans_idx | CREATE INDEX Trans_idx ON project03.transaction(Trans_ID ASC) VISIBLE; |



CSV Import



CSV Import

Table: import_csv

Columns:

- Interaction ID
- Call_Type
- Start Time
- End Time
- Talkdesk Phone Number
- Customer Phone Number
- Talk Time
- Record
- Hangup
- In Business Hours?
- Callback From Queue?
- Waiting Time
- Agent Speed to Answer
- Holding Time
- Rating
- Description
- Agent Name
- Phone Display Name
- Disposition Code
- Transfer?

```
1 * select * from project03.import_csv
2 limit 10;
```

| Interaction ID | Call_Type | Start Time | End Time | Talkdesk Phone Number | Customer Phone Number |
|-------------------------------|-----------|---------------------|---------------------|-----------------------|-----------------------|
| 74d1714d9f9e4682b917ded6c... | Inbound | 2023-10-22 17:56:50 | 2023-10-22 18:02:17 | '+841900636857 | '+84906630338 |
| 53fc7390fa404a4a97a82a4109... | Inbound | 2023-10-22 17:51:27 | 2023-10-22 18:01:31 | '+841900636857 | '+84344258500 |
| 57d61ac610214d28a81a7ab54... | Inbound | 2023-10-22 17:49:06 | 2023-10-22 17:56:35 | '+841900636857 | '+84325424322 |
| bcbfd747c6a740d4864836b7d2... | Inbound | 2023-10-22 17:18:52 | 2023-10-22 17:25:08 | '+841900636857 | '+84984424146 |
| 4ea44e9162b242b3a7d40d2ba... | Inbound | 2023-10-22 17:16:53 | 2023-10-22 17:26:16 | '+841900636857 | '+84903066713 |
| 9311b9c5d3694243ad49d6c52... | Inbound | 2023-10-22 17:08:36 | 2023-10-22 17:15:12 | '+841900636857 | '+84856789109 |
| 2d063307dad54d4bbf6bd774b... | Inbound | 2023-10-22 16:56:32 | 2023-10-22 17:00:27 | '+841900636857 | '+84583590559 |

Action Output

| # | Time | Action | Message |
|---|----------|--|----------------------|
| 1 | 00:47:48 | select * from project03.import_csv LIMIT 0, 1000 | 1000 row(s) returned |
| 2 | 00:48:05 | select * from project03.import_csv limit 10 | 10 row(s) returned |

Functional Queries

| PAGE | Purpose of Query | Query |
|-----------------------|------------------------------------|--|
| Registration | For account creation of new Buyer | INSERT INTO project03.buyer VALUES ('88469','2023-07-27 10:27:10','Nguyen Thi Lan Anh','097999123','Buyer-001@gmail.com','123 Đường 01 P01 Thanh Xuaan','Hanoi'); |
| | For account creation of new Seller | INSERT INTO project03.seller VALUES ('VNJ2NPUB','BKsmart','+84979888111','seller01-LZD@gmail.com','https://www.lazada.vn/shop/bksmart','Hanoi'); |
| Update Profile | From UID Update Profile | UPDATE project03.seller SET seller_name = 'Seller audit 04' WHERE Seller_short_code = 'VNJ2LKE3'; |
| CRUD Items | Maintain Product | INSERT INTO project03.items VALUES ('20230001','Item test 01 ','1. EL','Small Appliances'); UPDATE project03.items SET Item_name = 'Item_test_new' WHERE Item_ID = '20030001' |
| Create payment method | Insert one new Pay method | INSERT INTO project03.pay_method VALUES('1','E-Wallet'); |
| Search Product | Search for Product | SELECT * from project03.Items WHERE Item_ID = '20030001'; |
| Create Catalouge | Create 1 catalouge | INSERT INTO project03.shop_cart_info VALUES ('1','20230008','VNJ2JU4H','3'); |
| Create transaction | Create one transaction | INSERT INTO project03.transaction VALUES ('10001','2023-10-23 00:01:43','08175','3','14','1'); |

Report Queries

Report 01 Overall

| Title of the report | REPORT 01 OVERALL |
|---------------------|---|
| Description | -- HOW MANY SELLER, ITEMS EXIST ON SYSTEM -- TOP 3 SELLER HAVE MOST ITEM BUYED. |
| Purpose | Overview about seller & Item have on system |
| Query | -- HOW MANY SELLER, ITEMS EXIST ON SYSTEM SELECT concat("There are ",COUNT(distinct SELL.seller_name), " Seller and ", count(distinct GOOD.Item_name)," items that exis on system") FROM project03.seller as SELL , project03.items AS GOOD; -- TOP 3 SELLER HAVE MOST ITEM BUYED. SELECT SELL.seller_name, COUNT(DISTINCT CART.Item_ID) AS No_Item FROM shop_cart_info AS CART INNER JOIN seller AS SELL ON CART.Seller_short_code = SELL.Seller_short_code GROUP BY SELL.seller_name ORDER BY No_Item DESC, SELL.seller_name ASC limit 3; |

| | | | |
|---|--------------|---------|--------------------|
| Result Grid | Filter Rows: | Export: | Wrap Cell Content: |
| concat("There are ",COUNT(distinct SELL.seller_name), " Seller and ", count(distinct GOOD.Item_name)," items that exis on system") | | | |
| There are 5 Seller and 8 items that exis on system | | | |

| Result Grid | Filter Rows: |
|---------------------|--------------|
| seller_name | No_Item |
| LNG FISHING | 4 |
| BKsmart | 3 |
| Riinn Store (Manyo) | 3 |

Report Queries

RP 02 Business Status

| Title of the report | BUSSINESS STATUS |
|---------------------|--|
| Description | -- TOTAL No Transaction & total GMV? -- TOP 3 MOST SOLD PRODUCTS -- TOP 3 MAIN_CLUSTER THAT BRING THE BIGGEST GMV |
| Purpose | To Deepdive more about business at this time |
| Query | -- TOTAL No Transaction & total GMV? Select COUNT(*) AS No_of_order, sum(REVENUE) AS Total_Revenue from overall_view; -- TOP 3 MOST SOLD PRODUCTS SELECT Item_name, sum(Amount) AS total_product_sold from overall_view GROUP BY Item_name ORDER BY total_product_sold DESC LIMIT 3; -- TOP 3 MAIN_CLUSTER THAT BRING THE BIGGEST GMV SELECT main_cluster, sum(REVENUE) AS Total_GMV from overall_view GROUP BY main_cluster ORDER BY Total_GMV DESC LIMIT 3; |

```
35 -- TOP 3 MOST SOLD PRODUCTS
36 * SELECT Item_name, sum(Amount) AS total_product_sold from overall_view
37 GROUP BY Item_name
38 ORDER BY total_product_sold DESC
39 LIMIT 3;
```

| Item_name | total_product_sold |
|--------------|--------------------|
| Item test 08 | 92 |
| Item test 02 | 31 |
| Item test 06 | 24 |

```
40 -- TOP 3 MAIN_CLUSTER THAT BRING THE BIGGEST GMV
41 * SELECT main_cluster, sum(REVENUE) AS Total_GMV from overall_view
42 GROUP BY main_cluster
43 ORDER BY Total_GMV DESC
44 LIMIT 3;
```

| main_cluster | Total_GMV |
|--------------|-----------|
| 4. GC | 712 |
| 3. HB | 202 |
| 1. EL | 146 |

```
31 -- RP 02: BUSSINESS STATUS
32 -- -----
33 -- TOTAL No Transaction & total GMV?
34 * Select COUNT(*) AS No_of_order, sum(REVENUE)
35 -- TOP 3 MOST SOLD PRODUCTS
```

| No_of_order | Total_Revenue |
|-------------|---------------|
| 20 | 1160 |

Report Queries

RP 03 Buyer behavior

| | |
|---------------------|---|
| Title of the report | 03: BUYER BEHAVIOR |
| Description | <div>-- How many customers are there in the system? -- How many customers have purchased? -- Which areas do most customers come from? -- Percentage of customers returning to purchase -- Buyer buys cost most?</div> |
| Purpose | To understand more about customer's behavior |
| Query | <div>-- How many customers are there in the system? -- How many customers have purchased? select (Select count(*) from buyer) as No_of_Buyer, (Select count(Distinct Buyer_ID) from transaction) as No_Buyer_Have_Order, Concat(ROUND(((Select count(Distinct Buyer_ID) from transaction)/(Select count(*) from buyer)),2)*100,"%") as Convert_Rate from buyer, transaction limit 1; -- Which areas do most customers come from? Select BUY.Buyer_region, count(*) as No_of_order from transaction AS TRANS inner join buyer AS BUY on TRANS.Buyer_ID = BUY.Buyer_ID GROUP BY BUY.Buyer_region ORDER BY No_of_order DESC LIMIT 1; -- Percentage of customers returning to purchase CREATE VIEW TEMP1 AS Select transaction.Buyer_ID, count(*) AS No_of_Order from transaction GROUP BY transaction.Buyer_ID -- ----- SELECT (SELECT COUNT(*) FROM TEMP1) AS No_Buyer, (SELECT COUNT(*) FROM TEMP1 WHERE No_of_Order > 1) AS No_Buyer_Re_Buy, Concat(ROUND(((SELECT COUNT(*) FROM TEMP1 WHERE No_of_Order > 1)/(SELECT COUNT(*) FROM TEMP1))*100,0,"%") AS RETURN_RATE FROM TEMP1 LIMIT 1; -- Buyer buys cost most? SELECT Buyer_name, sum(REVENUE) AS Total_Revenue FROM overall_view GROUP BY Buyer_name ORDER BY Total_Revenue</div> |

Report Queries

RP 03 Buyer behavior

| | No_of_Buyer | No_Buyer_Have_Order | Convert_Rate |
|---|-------------|---------------------|--------------|
| ▶ | 4 | 3 | 75.00% |

```
69 * SELECT (SELECT COUNT(*) FROM TEMP1) AS No_Buyer,  
70          (SELECT COUNT(*) FROM TEMP1 WHERE No_of_Order > 1) AS No_Buyer_Re_Buy,  
71          CONCAT(ROUND(((SELECT COUNT(*) FROM TEMP1 WHERE No_of_Order > 1)/(SELECT COUNT(*) FROM TEM  
72 FROM TEMP1  
73 LIMIT 1;  
74
```

| | No_Buyer | No_Buyer_Re_Buy | RETURN_RATE |
|---|----------|-----------------|-------------|
| ▶ | 3 | 3 | 100% |

| | Buyer_region | No_of_order |
|---|--------------|-------------|
| ▶ | Hanoi | 11 |

```
75 -- Buyer buys cost most?  
76 • SELECT Buyer_name, sum(REVENUE) AS Total_Revenue  
77 FROM overall_view  
78 GROUP BY Buyer_name  
79 ORDER BY Total_Revenue  
80 LIMIT 1;
```

| | Buyer_name | Total_Revenue |
|---|--------------------|---------------|
| ▶ | Nguyen Thi Lan Anh | 277 |

Account Management

```
-- CREATE USER
CREATE USER 'Buyer_Account'@'localhost' IDENTIFIED BY 'minhtruong';
CREATE USER 'Seller_Account'@'localhost' IDENTIFIED BY 'minhtruong';
-- ALTER ROLE FOR SELLER
GRANT CREATE, DELETE, INSERT, SELECT, UPDATE on project03.seller to 'Seller_Account'@'localhost';
GRANT CREATE, DELETE, INSERT, SELECT, UPDATE on project03.shop_cart_info to 'Seller_Account'@'localhost';
GRANT SELECT on project03.items to 'Seller_Account'@'localhost';
-- ALTER ROLE FOR BUYER
GRANT CREATE, DELETE, INSERT, SELECT, UPDATE on project03.buyer to 'Buyer_Account'@'localhost';
GRANT SELECT on project03.shop_cart_info to 'Buyer_Account'@'localhost';
GRANT SELECT on project03.seller to 'Buyer_Account'@'localhost';
GRANT SELECT on project03.items to 'Buyer_Account'@'localhost';
GRANT SELECT on project03.pay_method to 'Buyer_Account'@'localhost';
GRANT CREATE, DELETE, INSERT, SELECT, UPDATE on project03.transaction to 'Buyer_Account'@'localhost';
-- SHOW GRANT FOR USERS
SHOW GRANTS FOR 'Seller_Account'@'localhost';
SHOW GRANTS FOR 'Buyer_Account'@'localhost';
-- CREATE USER FOR BACKUP
CREATE USER 'User_Backup'@'localhost' IDENTIFIED BY 'minhtruong';
SHOW GRANTS FOR 'Buyer_Account'@'localhost';
```

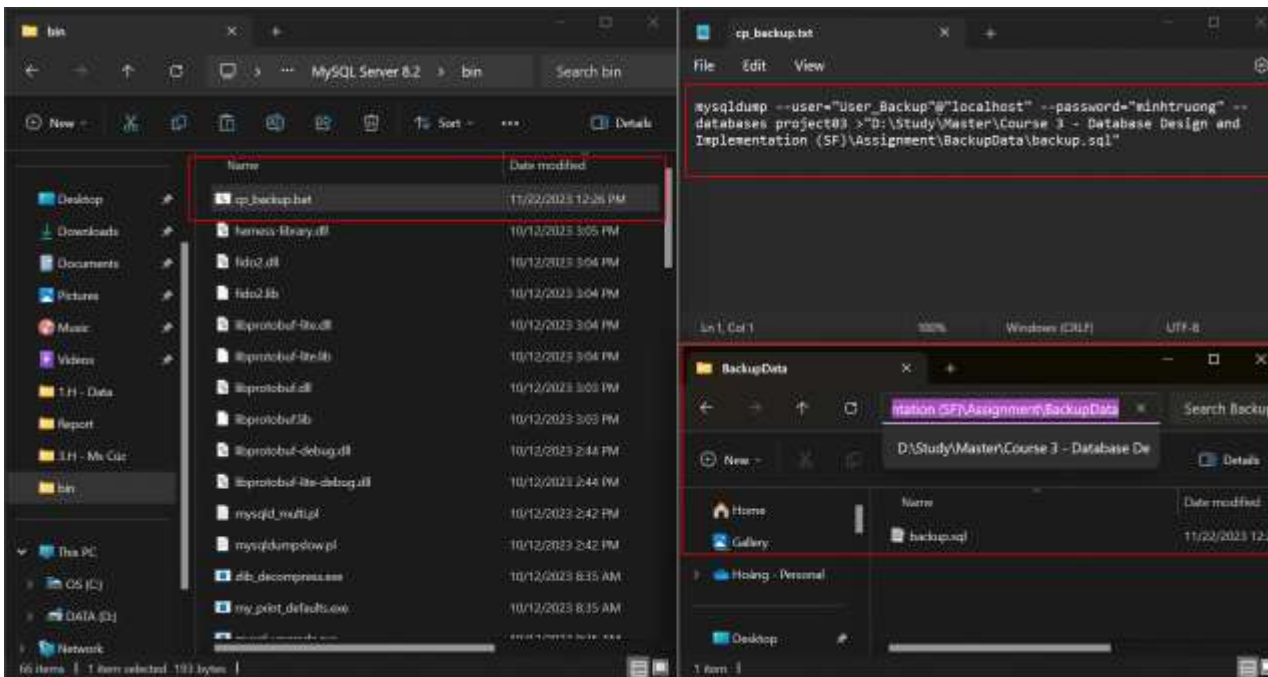

C Indexes

- 1 • `CREATE INDEX Seller_idx ON project03.seller(Seller_short_code ASC) VISIBLE;`
- 2 • `CREATE INDEX Seller_region_idx ON project03.seller(Seller_region ASC) VISIBLE;`
- 3 • `CREATE INDEX Items_idx ON project03.items(Item_ID ASC) VISIBLE;`
- 4 • `CREATE INDEX Items_cluster_idx ON project03.items(main_cluster ASC) VISIBLE;`
- 5 • `CREATE INDEX Pay_idx ON project03.pay_method(Pay_ID ASC) VISIBLE;`
- 6 • `CREATE INDEX Buyer_idx ON project03.buyer(Buyer_ID ASC) VISIBLE;`
- 7 • `CREATE INDEX Cart_idx ON project03.shop_cart_info(Shop_cart_ID ASC) VISIBLE;`
- 8 • `CREATE INDEX Trans_idx ON project03.transaction(Trans_ID ASC) VISIBLE;`

Backup & Schedule

Backup Script

- | `cd "C:\Program Files\MySQL\MySQL Server 8.2\bin"`
- | `mysqldump --user=root --password=minhtruong --databases project03 >"D:\Study\Master\Course 3 - Database Design and Implementation (SF)\Assignment\BackupData\backup.sql"`



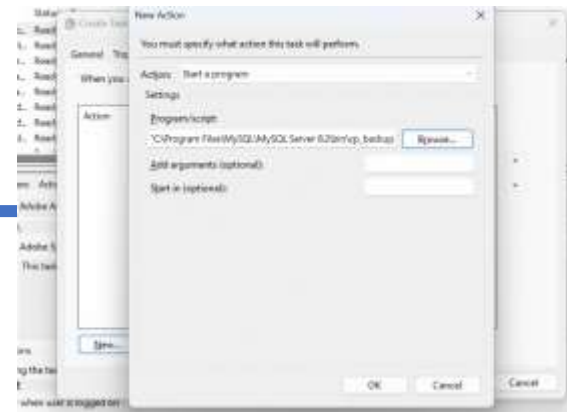
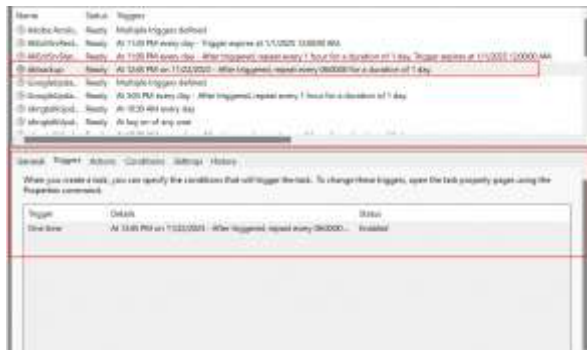
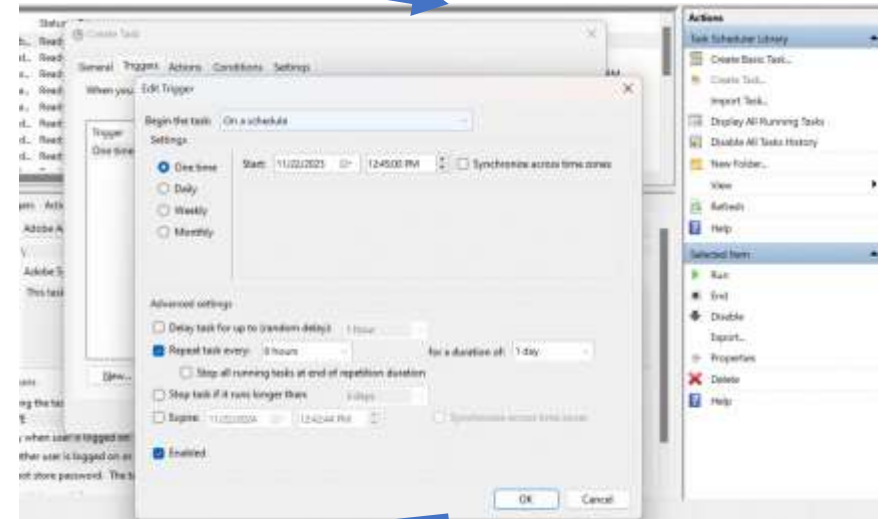
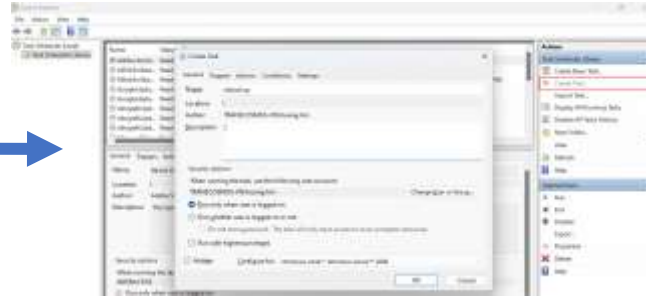
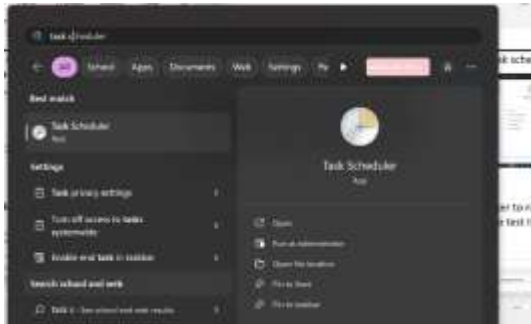
1. Copy the backup command in a text file and save it at cp_backup.bat

2. Create a bat file, in folder C:\Program Files\MySQL\MySQL Server 8.2\bin

3. Run As Admin -> This command will auto create a identified file on folder

Backup & Schedule

Schedule

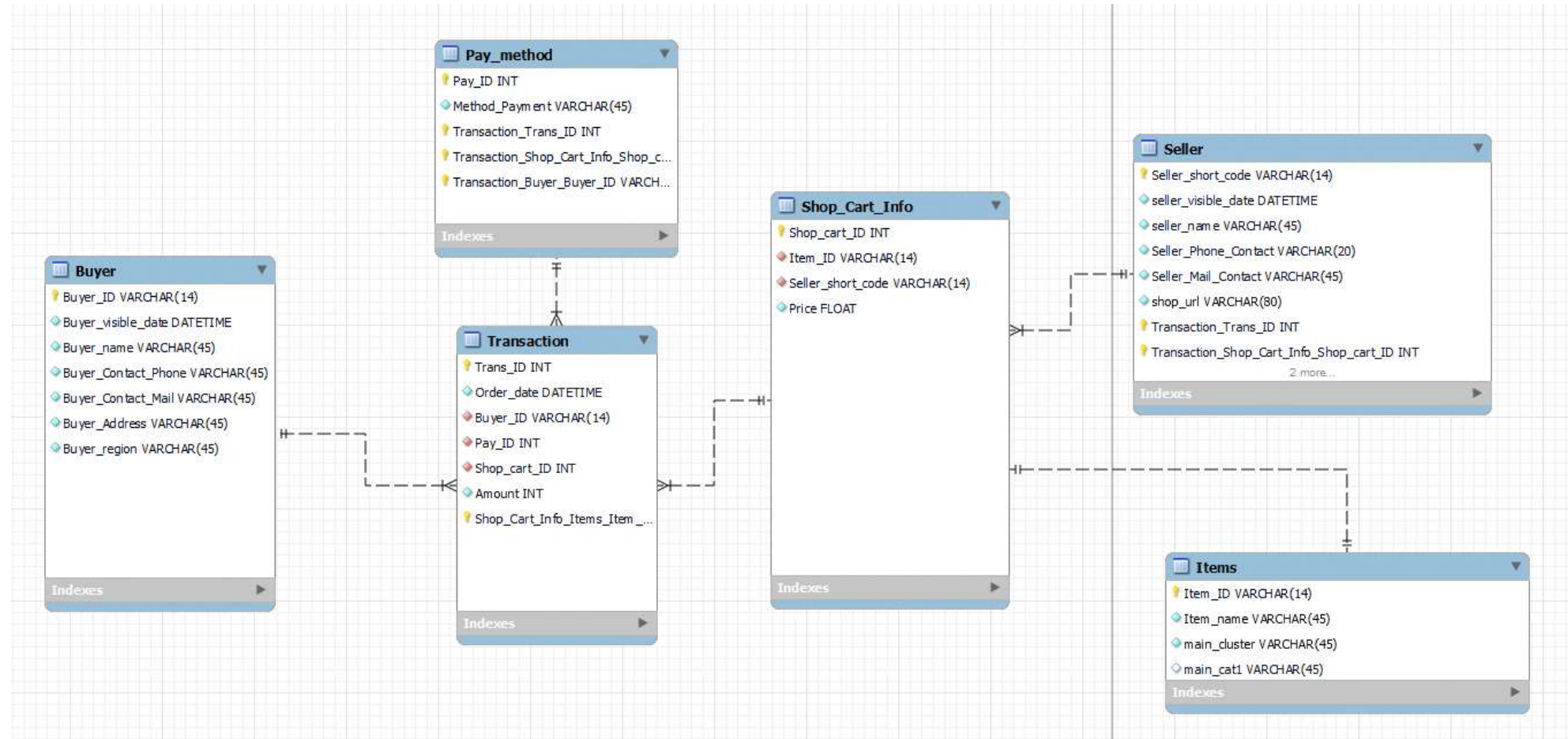


Project Milestones & Tasks

| Project Task ID | Project Major Task Description | Project Milestone ID |
|-----------------|--|----------------------|
| 1 | Setup the Development Environment based on the Technical Development Environment | 1 |
| 2 | Power point detailing the entities, tables and fields which need to created | 1 |
| 3 | Power point will also include Conceptual, Logical Design | 1 |
| 4 | Develop the Schema creation script or Implement using phpMyAdmin | 2 |
| 5 | Power point which analyzes and list the Queries which need to be created based on project requirements | 3 |
| 6 | Indexes & Backup Script | 3 |

Project Results

Schema information



Project Results

Sample data in all tables

- 1 • `Select * from project03.buyer;`
- 2 • `Select * from project03.items;`
- 3 • `Select * from project03.pay_method;`
- 4 • `Select * from project03.seller;`
- 5 • `Select * from project03.shop_cart_info;`
- 6 • `Select * from project03.transaction;`

| Item_ID | Item_name | main_cluster | main_cat1 |
|----------|--------------|--------------|---------------------|
| 20230001 | Item test 01 | 1. EL | Small Appliances |
| 20230002 | Item test 02 | 1. EL | Computers & Lapt... |
| 20230003 | Item test 03 | 2. FA | Bags and Travel |
| 20230004 | Item test 04 | 2. FA | Bags and Travel |
| 20230005 | Item test 05 | 2. FA | Fashion Accessories |
| 20230006 | Item test 06 | 3. HB | Beauty |

| Pay_ID | Method_Payment |
|--------|----------------|
| 3 | COD |
| 2 | Credit Cards |
| 1 | E-Wallet |
| NULL | NULL |

| Buyer_ID | Buyer_visible_date | Buyer_name | Buyer>Contact_Phone | Buyer>Contact_Mail | Buyer_Address | Buyer_region |
|----------|---------------------|--------------------|---------------------|---------------------|--------------------------------|--------------|
| 08175 | 2023-07-12 12:18:29 | Hoang Duy Thanh | 097777321 | Buyer-003@gmail.com | 125 Đường 12 P01 Quận tân B... | HCM |
| 60282 | 2023-07-31 16:14:00 | Vo Hong Ngoc Tran | 097666789 | Buyer-004@gmail.com | 126 Đường 01 P7 Quận tân Bỉnh | HCM |
| 88457 | 2023-07-24 16:55:42 | Le Hoang Duc | 097888456 | Buyer-002@gmail.com | 124 Bà Huyện Thanh Quan | Hanoi |
| 88469 | 2023-07-27 10:27:10 | Nguyen Thi Lan Anh | 097999123 | Buyer-001@gmail.com | 123 Đường 01 P01 Thanh Xuan | Hanoi |

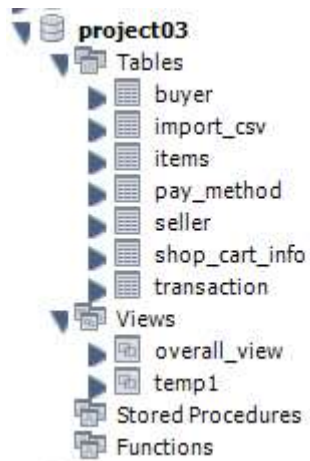
| Seller_short_code | seller_name | Seller_Phone>Contact | Seller-Mail>Contact | shop_url | Seller_region |
|-------------------|---------------------|----------------------|------------------------|-----------------------------------|---------------|
| VN12F19O | PUHA GIFT | +84979123321 | seller01-LZD@gmail.com | https://www.lazada.vn/shop/pu... | HCMC |
| VN12HGBR | LNG FISHING | +84979444555 | seller01-LZD@gmail.com | https://www.lazada.vn/shop/ln... | Hanoi |
| VN12JU4H | Riinn Store (Manyo) | +84979888222 | seller02-LZD@gmail.com | https://www.lazada.vn/shop/rii... | Hanoi |
| VN12LKE3 | Seller audit 04 | +84979000222 | seller02-LZD@gmail.com | https://www.lazada.vn/shop/m... | Other |
| VN12NPUB | BKsmart | +84979888111 | seller01-LZD@gmail.com | https://www.lazada.vn/shop/bk... | Hanoi |

| Shop_cart_ID | Item_ID | Seller_short_code | Price |
|--------------|----------|-------------------|-------|
| 1 | 20230008 | VN12JU4H | 3 |
| 2 | 20230008 | VN12LKE3 | 5 |
| 3 | 20230008 | VN12NPUB | 8 |
| 4 | 20230007 | VN12LKE3 | 10 |
| 5 | 20230005 | VN12F19O | 7 |
| 6 | 20230003 | VN12JU4H | 2 |



| Trans_ID | Order_date | Buyer_ID | Pay_ID | Shop_cart_ID | Amount |
|----------|---------------------|----------|--------|--------------|--------|
| 10001 | 2023-10-23 00:01:43 | 08175 | 3 | 14 | 1 |
| 10002 | 2023-10-23 00:02:35 | 08175 | 1 | 11 | 7 |
| 10003 | 2023-10-23 00:04:25 | 08175 | 1 | 12 | 7 |
| 10004 | 2023-10-23 00:06:44 | 88469 | 2 | 1 | 10 |
| 10005 | 2023-10-23 00:07:43 | 08175 | 1 | 6 | 7 |
| 10006 | 2023-10-23 00:08:13 | 88469 | 2 | 6 | 12 |

Project Results

Results of functional and report queries



| Result Grid | | | |
|--|----------|--|-------------------|
| Filter Rows: | | | |
| Export: Wrap Cell Contents | | | |
| concat("There are ",COUNT(distinct SELL.seller_name), " Seller and ", count(distinct GOOD.item_name)," items that exists on system") | | | |
| There are 5 Seller and 8 items that exists on system | | | |
| Result 22 x Result 23 Result 24 Result 25 Result 26 Result 27 Result 28 Result 29 Result 30 | | | |
| Output | | | |
| Action Output | | | |
| # | Time | Action | Message |
| 8 | 13:43:54 | select (Select count(*) from buyer) as No_of_Buyer, (Select count(Disti... | 1 row(s) returned |
| 9 | 13:43:54 | Select BUY.Buyer_region, count(*) as No_of_order from transaction AS... | 1 row(s) returned |
| 10 | 13:43:54 | SELECT (SELECT COUNT(*) FROM TEMP1) AS No_Buyer, (SELECT... | 1 row(s) returned |
| 11 | 13:43:54 | SELECT Buyer_name, sum(REVENUE) AS Total_Revenue FROM ove... | 1 row(s) returned |




| | | | | | |
|-------------|-------------|---|---|--------------|--|
| Result Grid | |  |  | Filter Rows: | |
| | No_of_order | Total_Revenue | | | |
| ▶ | 20 | 1160 | | | |



Result 22

Result 23

Result 24 x

Result 25

| | | | | |
|-------------|---|---|-----------------------------------|---|
| Result Grid |  |  | Filter Rows: <input type="text"/> | Export:  |
| | Item_name | total_product_sold | | |
| ▶ | Item test 08 | 92 | | |
| | Item test 02 | 31 | | |
| | Item test 06 | 24 | | |

| Result Grid | |  |  Filter Rows: | |
|-------------|---------------------|---|--|--|
| | seller_name | No_Item | | |
| ▶ | LNG FISHING | 4 | | |
| | BKsmart | 3 | | |
| | Riinn Store (Manyo) | 3 | | |

Result 22

Result 23 ×

Result 24

Result 25

| Result Grid | | |
|----------------------------|----|--|
| Filter Rows: | | |
| Export: Wrap Cell Contents | | |
| Buyer_region No_of_order | | |
| Hanoi | 11 | |

| Result Grid | | |
|----------------------------|-----|--|
| Filter Rows: | | |
| Export: Wrap Cell Contents | | |
| Buyer_name Total_Revenue | | |
| Nguyen Thi Lan Anh | 277 | |

| Result Grid | | | |
|--|---|--------|--|
| Filter Rows: | | | |
| Export: Wrap Cell Contents | | | |
| No_of_Buyer No_Buyer_Have_Order Convert_Rate | | | |
| 4 | 3 | 75.00% | |

| Result Grid | | | |
|--------------------------------------|---|------|--|
| Filter Rows: | | | |
| Export: Wrap Cell Contents | | | |
| No_Buyer No_Buyer_Re_Buy RETURN_RATE | | | |
| 3 | 3 | 100% | |

| seller_name | No_Item |
|---------------------|---------|
| LNG FISHING | 4 |
| BKmart | 3 |
| Riinn Store (Manyo) | 3 |

| | | | | | | | | |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Result 22 | Result 23 | Result 24 | Result 25 | Result 26 | Result 27 | Result 28 | Result 29 | Result 30 |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|

Output

| # | Time | Action | Message |
|----|----------|--|-------------------|
| 8 | 13:43:54 | select (Select count(*) from buyer) as No_of_Buyer, (Select count(Disti... | 1 row(s) returned |
| 9 | 13:43:54 | Select BUY.Buyer_region, count(*) as No_of_order from transaction AS... | 1 row(s) returned |
| 10 | 13:43:54 | SELECT (SELECT COUNT(*) FROM TEMP1) AS No_Buyer, (SELECT... | 1 row(s) returned |
| 11 | 13:43:54 | SELECT Buyer_name, sum(REVENUE) AS Total_Revenue FROM ove... | 1 row(s) returned |

C References

- | .EDR
- | Mockaroo
- | MySQL Document :<https://dev.mysql.com/doc/refman/8.0/en/mysqlslap.html>
- | Backup MySQL: <https://dev.mysql.com/doc/workbench/en/wb-mysql-enterprise-backup-backup-recovery.html>
- | MySQL User; <https://dev.mysql.com/doc/workbench/en/wb-mysql-enterprise-backup-backup-recovery.html>

THANK YOU

