Module Title	**Database Design and Development**
Assignment Title	**Genie Delivery Service**
Examination Cycle	**Spring 2023**
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Centre Name	**KMD Computer Centre (Yangon)**
Submission Date:	**12 – January – 2023**

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Centre Name	**:**	**KMD Computer Centre (Yangon)**
Module Name	**:**	**Database Design and Development**
Module Leader	**:**	
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Due Date	**:**	**12 – January – 2023**
Student Signature	**:**	**Saw Thet Phyoe**
Submitted Date	**:**	**12 – January – 2023**

Table of Contents

Task – 1

Task 1 – Business Overview and Requirements

Scenario

"Genie" is a delivery service company based in Yangon, Myanmar. They provide delivery services for various items – small to medium size, from a variety of shops in many townships. Items are delivered to customers by bike riders.

They want a database to help them manage ordering and delivering items as well as managing riders. The database will not be concerned, at least initially, with the allocation of payments to riders.

"Genie" receives tons of orders every day for items from different shops. Each customer can make many orders a day from different locations. Each order is assigned to one rider, who lives in the same township as the customer's delivery address. Customers are defined by member types – bronze, silver, gold and premium.

Payment can be made by different payment methods – cash on delivery, bank transfer and local digital money wallets such as KBZ Pay, Wave Pay or CB Pay. A single payment will have one specific payment method allocated to it.

Each rider will have several orders allocated to him and each order might include more than one item. A shop can have many items and each item is assumed to be associated with only one shop. Shops are defined by shop categories.

Examples of data are as shown in the tables below.

Sample Documents

Document 1 – Customers and Riders on Order Forms

Customer Name	Customer ID	Member Type	Order ID	Rider ID	Rider Name	Township
Kyaw Thu	GC-0012	Bronze	ORD-3111	GR-07	Soe Win	Bahan
Kyaw Thu	GC-0012	Bronze	ORD-3114	GR-08	Hla Myo Tun	Hlaing
Kyaw Thu	GC-0012	Bronze	ORD-3118	GR-09	Myint Thein	Dagon
Kyaw Thu	GC-0012	Bronze	ORD-3122	GR-07	Soe Win	Bahan
Hla Nu	GC-0028	Silver	ORD-3131	GR-12	Moe Hein	Hlaing
Hla Nu	GC-0028	Silver	ORD-3135	GR-13	Phyo Kyaw	Latha
Hla Nu	GC-0028	Silver	ORD-3138	GR-08	Hla Myo Tun	Hlaing
Htun Zaw	GC-0093	Gold	ORD-3143	GR-14	Thuta	Tamwae
Htun Zaw	GC-0093	Gold	ORD-3147	GR-12	Moe Hein	Hlaing
Htun Zaw	GC-0093	Gold	ORD-3149	GR-12	Moe Hein	Hlaing
Htun Zaw	GC-0093	Gold	ORD-3153	GR-10	Min Aung	Bahan
Maung Paing	GC-0004	Platinum	ORD-3155	GR-11	Htun Aye	Bahan
Maung Paing	GC-0004	Platinum	ORD-3158	GR-14	Thuta	Tamwae
Maung Paing	GC-0004	Platinum	ORD-3170	GR-11	Htun Aye	Bahan

Document 2 – Items and Order Details

Order ID	Order Date	Payment Type	Item Name	Item Code	Quantity
ORD-3111	16/8/2022	KBZ Pay	Cloth Face Mask	I-1090	3
ORD-3111	16/8/2022	KBZ Pay	Air-X Tablet	I-1086	1
ORD-3111	16/8/2022	KBZ Pay	Y-Si Vitamin C	I-1077	1
ORD-3114	18/8/2022	COD	Cheesecake Slice	I-2144	3
ORD-3114	18/8/2022	COD	Vanilla Ice Cream	I-2150	1
ORD-3114	18/8/2022	COD	Chicken Curry Puff	I-2138	1
ORD-3118	1/9/2022	AYA Pay	Remax TWS Ear Buds	I-2048	1
ORD-3118	1/9/2022	AYA Pay	Green Tech wireless mouse	I-2067	1
ORD-3122	2/9/2022	COD	Cosrx Acne Patch	I-3144	4
ORD-3122	2/9/2022	COD	A&C Mask Sheet	I-3178	3
ORD-3135	4/9/2022	KBZ Pay	Nestle Milo Jar	I-0126	2
ORD-3135	4/9/2022	KBZ Pay	Jordan Toothbrush	I-0130	6
ORD-3135	4/9/2022	KBZ Pay	Shark Energy Drink Can	I-0148	3

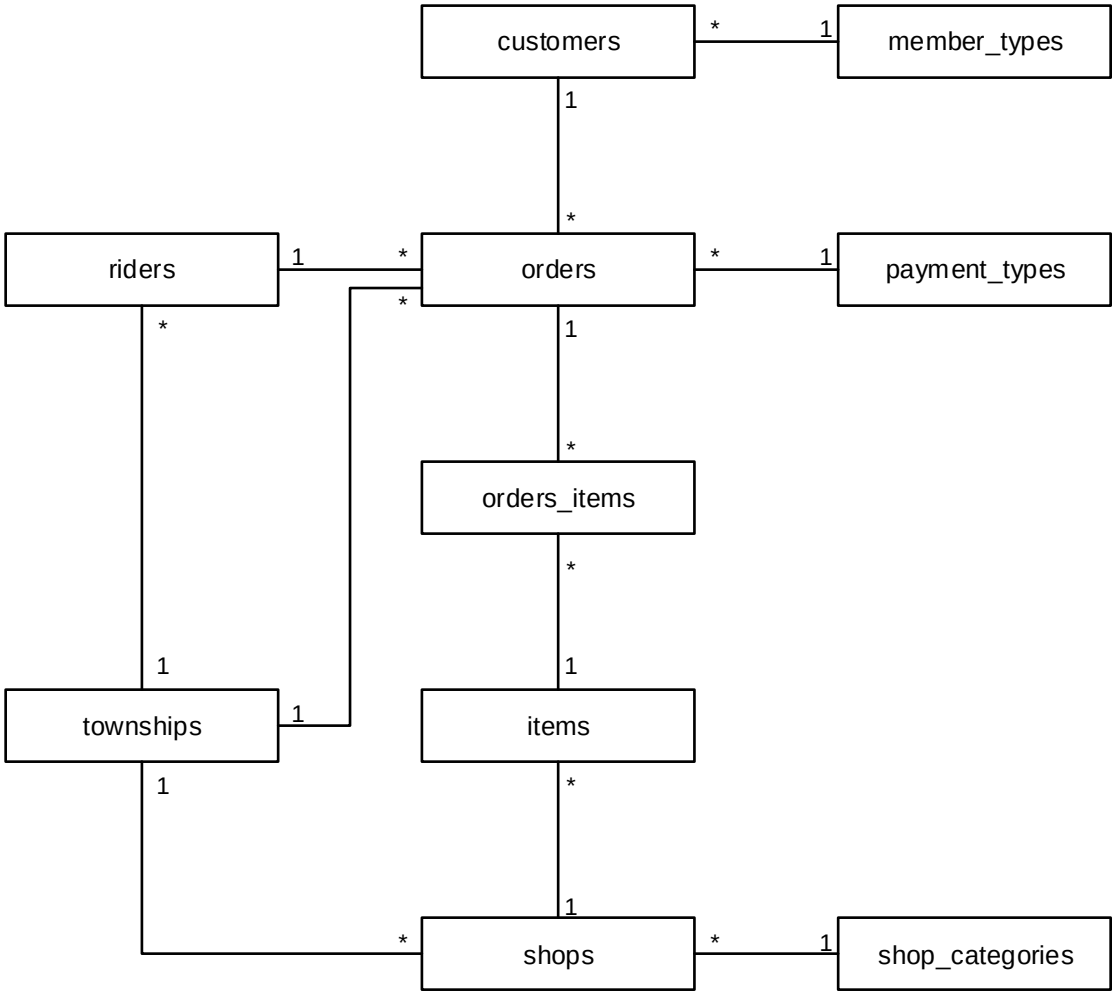
Document 3 – Shops and Items

Shop Name	Shop ID	Shop Category	Township	Item Code	Item Name	Unit Price (Kyats)
Moe's Bakery	S-097	Food	Hlaing	I-2144	Cheesecake Slice	4200
Moe's Bakery	S-097	Food	Hlaing	I-2145	Chocolate Cake	4000
Moe's Bakery	S-097	Food	Hlaing	I-2150	Vanilla Ice Cream	2700
Moe's Bakery	S-097	Food	Hlaing	I-2138	Chicken Curry Puff	5800
Shwe Oh Pharmacy	S-045	Health	Bahan	I-1077	Y-Si Vitamin-C	3200
Shwe Oh Pharmacy	S-045	Health	Bahan	I-1086	Air-X Tablet	1600
Shwe Oh Pharmacy	S-045	Health	Bahan	I-1090	Cloth Face Mask	1200
7Eleven	S-019	Convenience	Latha	I-0126	Nestle Milo Jar	6500
7Eleven	S-019	Convenience	Latha	I-0130	Jordan Toothbrush	2400
7Eleven	S-019	Convenience	Latha	I-0148	Shark Energy Drink Can	1400
Beauty Diary	S-114	Beauty	Bahan	I-3144	Cosrx Acne Patch	1800
Beauty Diary	S-114	Beauty	Bahan	I-3178	A&C Mask Sheet	2700
Tech Guru	S-012	Electronic	Dagon	I-2048	Remax TWS Ear Buds	32000
Tech Guru	S-012	Electronic	Dagon	I-2067	Green Tech wireless mouse	1650

Task – 2

Task 2 – ER and Data Dictionary

Entity Relationship Diagram



Data Dictionary

Table Name: townships

Primary Key: township_code

Foreign Key: totownnone

Attribute	Data Type	Size	Domain Constraint	Description
township_code	Integer	-	Unique Not Null Must be greater than 11000	Unique zip code for the township. Zip codes for Yangon region townships starts with '11'.
township_name	Varchar	50	Not Null	The name of the township

Table Name: member_types

Primary Key: member_type_id

Foreign Key: none

Attribute	Data Type	Size	Domain Constraint	Description
member_type_id	Integer	-	Unique Not Null	Unique identifier for the member type
member_type	Varchar	16	Not Null	Name of the member type

Table Name: shop_categories

Primary Key: shop_category_id

Foreign Key: none

Attribute	Data Type	Size	Domain Constraint	Description
shop_category_id	Integer	-	Unique Not Null	Unique identifier for the shop category
shop_category_name	Varchar	16	Not Null	Name of the shop category

Table Name: payment_types

Primary Key: payment_type_id

Foreign Key: none

Attribute	Data Type	Size	Domain Constraint	Description
payment_type_id	Integer	-	Unique Not Null	Unique identifier for the payment type
payment_type_name	Varchar	16	Not Null	Name of the payment type

Table Name: riders

Primary Key: rider_id

Foreign Key: township_code

Attribute	Data Type	Size	Domain Constraint	Propagation Constraint	Description
rider_id	Varchar	8	Unique Not Null Must start “GR-” following by a sequential number	-	Unique identifier for the rider
township_code	Integer	-	Not Null Must be greater than 11000	On Update Cascade On Delete No Action	Zip code of the township where the rider works
rider_name	Varchar	50	Not Null	-	Name of the rider
rider_phone	Varchar	15	Not Null	-	Contact Number of the rider
rider_address	Varchar	100	Not Null	-	Address of the rider
date_of_birth	Date	-	Not Null	-	Rider’s birth date
rider_registered_date	Date	-	Default current date	-	Registration date of the rider

Table Name: customers

Primary Key: customer_id

Foreign Key: member_type_id

Attribute	Data Type	Size	Domain Constraint	Propagation Constraint	Description
customer_id	Varchar	8	Unique Not Null Must start “GC-” following by a sequential number	-	Unique identifier for the customer
member_type_id	Integer	-	Not Null	On Update Cascade On Delete Restrict	Member type id for the customer
customer_name	Varchar	50	Not Null	-	Full name of the customer
customer_email	Varchar	50	Not Null	-	Email of the customer
customer_phone	Varchar	15	Not Null	-	Contact number of the customer
customer_registered_date	Date	-	Default current date	-	The date at when the customer registered at Genie Delivery

Table Name: shops

Primary Key: shop_id

Foreign Keys: township_code, shop_category_id

Attribute	Data Type	Size	Domain Constraint	Propagation Constraint	Description
shop_id	Varchar	8	Unique Not Null Must start with “S-” followed by a sequential number	-	Unique identifier of the shop
township_code	Integer	-	Not Null Must be greater than 11000	On Update Cascade On Delete Restrict	Zip code of the township the town is located
shop_category_id	Integer	-	Not Null	On Update Cascade On Delete Restrict	Category ID for the shop
shop_name	Varchar	50	Not Null	-	Name of the shop
shop_address	Varchar	100	Not Null	-	Address of the shop

Table Name: Items

Primary Key: item_code

Foreign Keys: shop_id

Attribute	Data Type	Size	Domain Constraint	Propagation Constraint	Description
item_code	Varchar	8	Unique Not Null Must start with “I-” followed by a sequential number	-	Unique identifier for the item
shop_id	Varchar	8	Not Null Must start with “S-” followed by a sequential number	On Update Cascade On Delete Restrict	The code of the shop from which the item is available
item_name	Varchar	50	Not Null	-	Name of the item
price	Decimal	(8,2)	Not Null	-	Unit price of the item

Table Name: orders

Primary Key: order_id

Foreign Keys: customer_id, rider_id, payment_type_id, township_code,

Attribute	Data Type	Size	Domain Constraint	Propagation Constraint	Description
order_id	Varchar	16	Unique Not Null Must start with “ORD-” followed by a sequential number	-	Unique identifier of the order
customer_id	Varchar	8	Not Null Must start “GC-” followed by a sequential number	On Update Cascade On Delete Set Null	The ID of the customer who made the order
rider_id	Varchar	8	Not Null Must start “GR-” followed by a sequential number	On Update Cascade On Delete Set Null	The ID of the rider who will be delivered the order
payment_type_id	Integer	8	Not Null	On Update Cascade On Delete No Action	The ID of the payment type for the order
township_code	Integer	-	Not Null Must be greater than 11000	On Update No Action On Delete No Action	Zip code of the township where the order is to be delivered

order_date	Date	-	Default current date	-	The date on when the customer made the order
order_time	Time	-	Default current time	-	The exact time at when the customer made the order
delivered_time	Time	-	-	-	The exact time at when the order is delivered by the rider
delivery_address	Varchar	100	Not Null	-	The address the order is to be delivered
status	Varchar	16	Default “pending” Must be either “pending”, “delivered” or “canceled”	-	The status of the order whether it is pending, delivered or canceled

Table Name: orders_items

Primary Key: order_id + item_id

Foreign Keys: order_id, item_id

Attribute	Data Type	Size	Domain Constraint	Propagation Constraint	Description
order_id	Varchar	16	Not Null Must start with “ORD-” followed by a sequential number	On Update Cascade On Delete Cascade	Unique identifier of the order
item_code	Varchar	8	Not Null Must start with “I-” followed by a sequential number	On Update No Action On Delete No Action	Unique identifier of the item
quantity	Integer	-	Not Null	-	Total quantity of the item in the order

Task – 3

Task 3 – Normalisation

Purpose of Normalisation

Normalisation is the process of organizing data in a database. The main purpose of normalisation is to minimize redundancy (duplicate data) and to overcome potential anomalies (eliminate inconsistent dependency). Normalisation can even increase security, improve workflow and lessen costs.

Normalisation for Given Documents

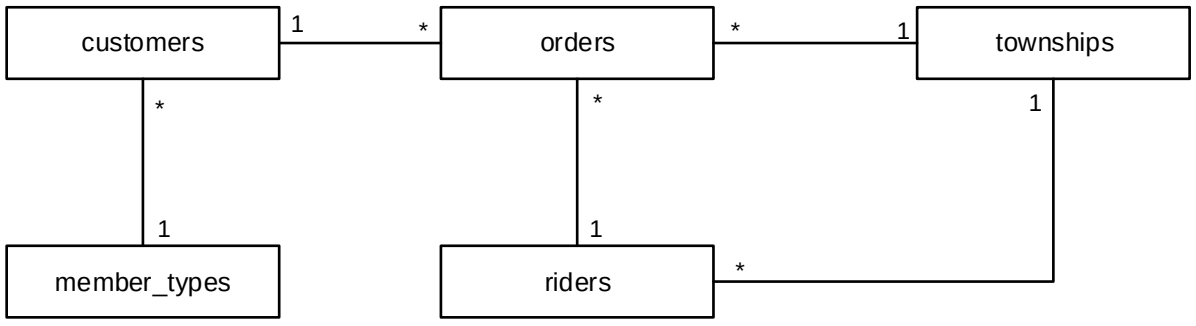
Normalisation for Document 1 – Customers and Riders on Order Forms

UNF	Level	1NF	2NF	3NF	Optimization
CustomerID	1	CustomerID(PK)	CustomerID(PK)	CustomerID(PK)	**[customers]**
CustomerName	1	CustomerName	CustomerName	CustomerName	customer_id(PK)
MemberType	1	MemberType	MemberType	MemberTypeID(FK)	member_type_id(FK)
OrderID	2				customer_name
RiderID	2	OrderID(PK)	OrderID(PK)	MemberTypeID(PK)	customer_email
RiderName	2	CustomerID(FK)	CustomerID(FK)	MemberType	customer_phone
Township	2	RiderID	RiderID(FK)		customer_address
		RiderName		OrderID(PK)	registered_date
		Township	RiderID(PK)	CustomerID(FK)	
			RiderName	RiderID(FK)	**[member_types]**
			Township	TownshipCode(FK)	member_type_id(PK)
					member_type
				RiderID(PK)	
				RiderName	**[orders]**
				TownshipCode(FK)	order_id(PK)
					customer_id(FK)
				TownshipCode(PK)	rider_id(FK)
				TownshipName	township_code(FK)
					order_date
					order_time

					delivered_date deliverey_address **[riders]** rider_id(PK) township_code(FK) rider_name rider_phone rider_address date_of_birth registered_date **[townships]** township_code(PK) towship_name

After normalisation for the first document, five tables are obtained. Although member types can be embedded in “Customers” table, it is decided to use a separate table aiming to store more information about each member. The same concept applies for townships table. It has no dependencies, yet a separate table is used. Another reason to store township in a separate table is that it is related to more than one entity. The ER Diagram is as shown in the following figure.

ER Diagram for Document 1 – Customers and Riders on Order Forms

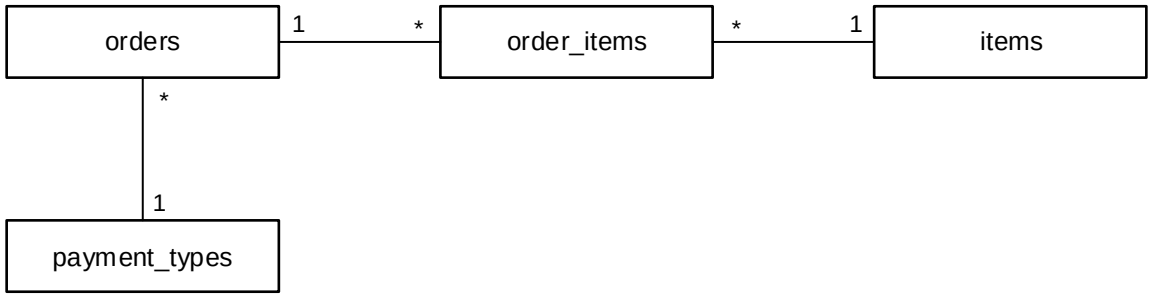


Normalisation for Document 2 – Items and Order Details

UNF	Level	1NF	2NF	3NF	Optimization
OrderID	1	OrderID(PK)	OrderID(PK)	OrderID(PK)	**[orders]**
OrderDate	1	OrderDate	OrderDate	OrderDate	order_id(PK)
PaymentType	1	PaymentType	PaymentType	PaymentTypeID(FK)	payment_type_id(FK)
ItemCode	2				order_date
ItemName	2	OrderID(FK) } PK	OrderID(FK,PK)	PaymentTypeID(PK)	order_time
Quantity	2	ItemCode } PK	ItemCode(FK,PK)	PaymentType	delivered_time
		ItemName	Quantity		delivery_address
		Quantity		OrderID(FK,PK)	
			ItemCode(PK)	ItemCode(FK,PK)	**[payment_types]**
			ItemName	Quantity	payment_type_id(PK)
					payment_type
				ItemCode(PK)	
				ItemName	**[orders_items]**
					order_id(FK,PK)
					item_code(FK,PK)
					quantity
					[items]
					item_code(PK)
					item_name
					price
					in_stock

The normalisation for the second document gives four tables. Orders and Items are related to each other with many to many relationship resulting a link (dummy) table with a composite primary key. Payment types are designed to store in a separate table to make the schema more flexible and to store additional information for each payment type. The ER Diagram is as shown below.

ER Diagram for Document 2 – Items and Order Details

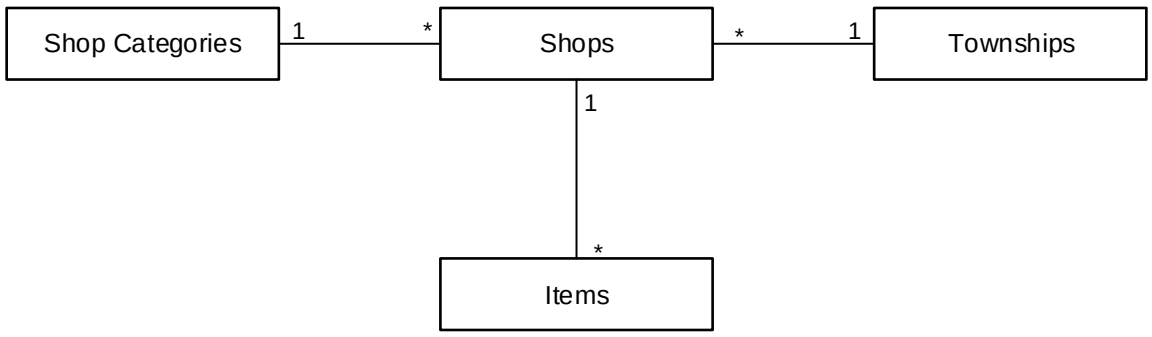


Normalisation for Document 3 – Shops and Items

UNF	Level	1NF	2NF	3NF	Optimization
ShopID	1	ShopID(PK)	ShopID(PK)	ShopID(PK)	**[shops]**
ShopName	1	ShopName	ShopName	ShopName	shop_id(PK)
ShopCategory	1	ShopCategory	ShopCategory	ShopCategoryID(FK)	shop_category_id(FK)
Township	1	Township	Township	TownshipCode(FK)	township_code(FK)
ItemCode	2				shop_name
ItemName	2	ItemCode(PK)	ItemCode(PK)	ShopCategoryID(PK)	shop_address
UnitPrice	2	ShopID(FK)	ShopID(FK)	CategoryName	
		ItemName	ItemName		**[shop_categories]**
		UnitPrice	UnitPrice	TownshipCode(PK)	shop_category_id(PK)
				TownshipName	shop_category_name
				ItemCode(PK)	**[townships]**
				ShopID(FK)	township_code(PK)
				ItemName	township_name
				UnitPrice	
					[Items]
					item_code(PK)
					shop_id(FK)
					item_name
					price
					in_stock

Normalisation for the third document gives four related tables. According to the given document, townships can be embedded into “shops” table. But it may be related to other entities and so it is decided to store in a separate table. The ER Diagram is as shown below.

ER Diagram for Document 3 – Shops and Items



How Normalisation Solves Possible Anomalies

Insert Anomalies

It is said that an order can be paid with different payment types. Suppose that payment types are embedded into orders. If we want to allow customers to use a new payment type and no one has not used that, it is not possible to insert into database because we need an order_id (primary key). Normalisation gives use a separate table for payment types allowing us to insert new methods and other information.

Update Anomalies

Alternative approach to designing shops and items is to embed shops in items table. But if a shop changes its name for some reason, we need to update every items from that shop. After normalisation, shops and items are split into separate tables allowing us to overcome the above problem.

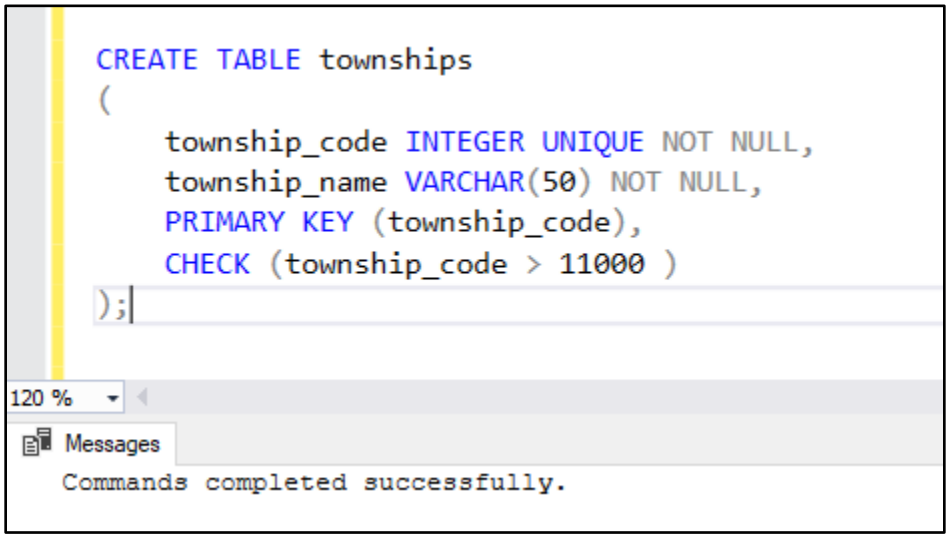
Delete Anomalies

This is a type of anomaly that cause losing information we don’t want to lose, because it is tied to data where it shouldn’t be. Normalisation helps us to overcome this kind of situation by placing every data in its related table and by splitting into separate tables if needed.

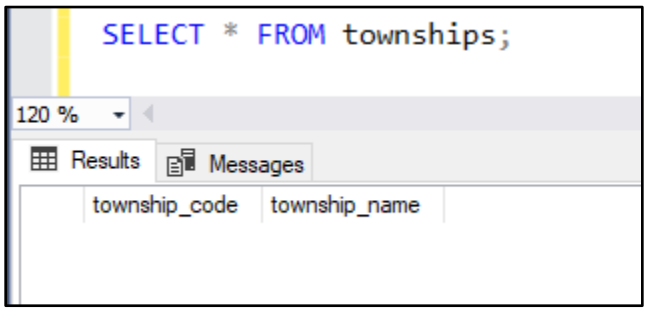
Task – 4

Task 4 – Scripts to create table structures

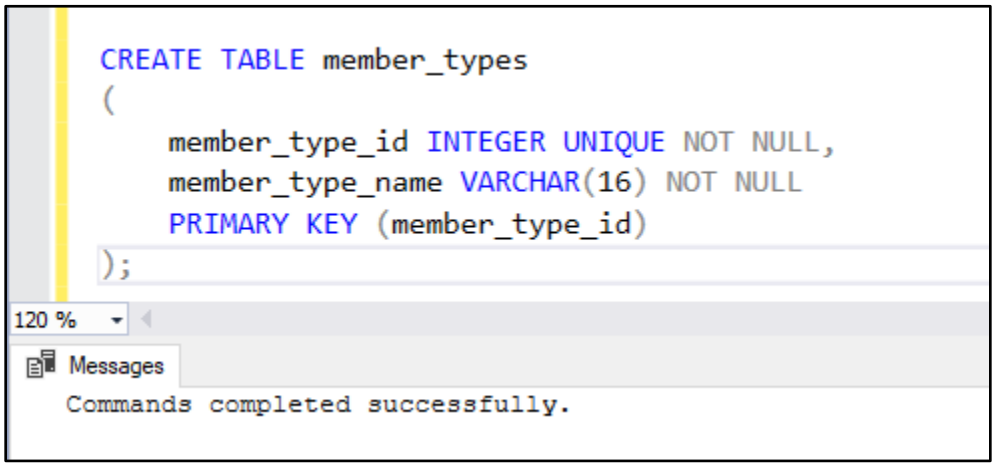
Townships Table



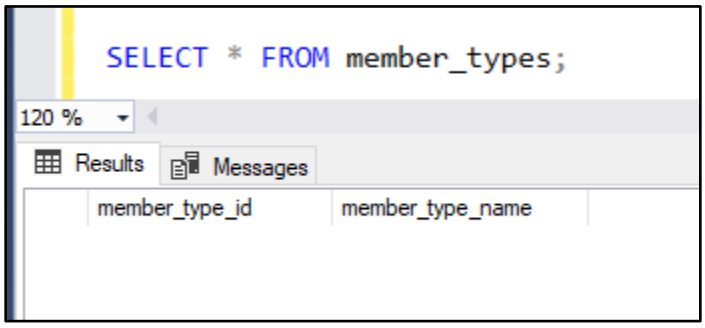
Result



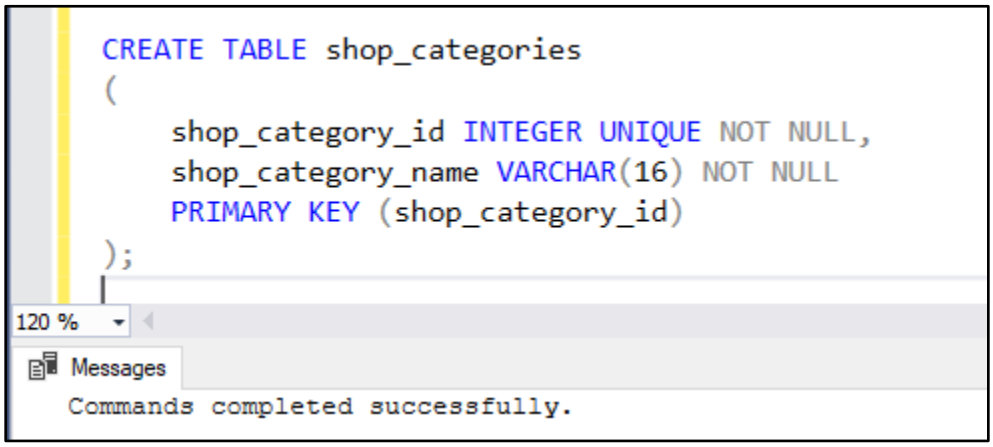
Member Types Table



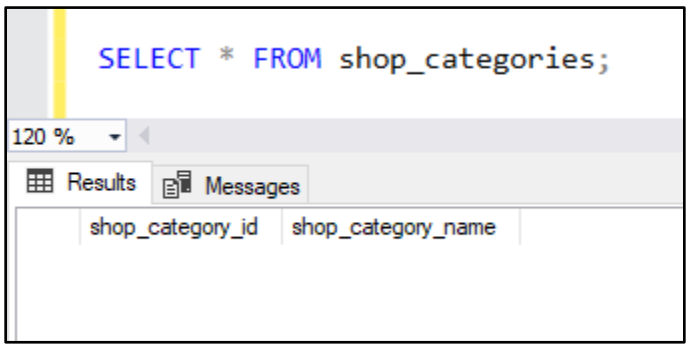
Result



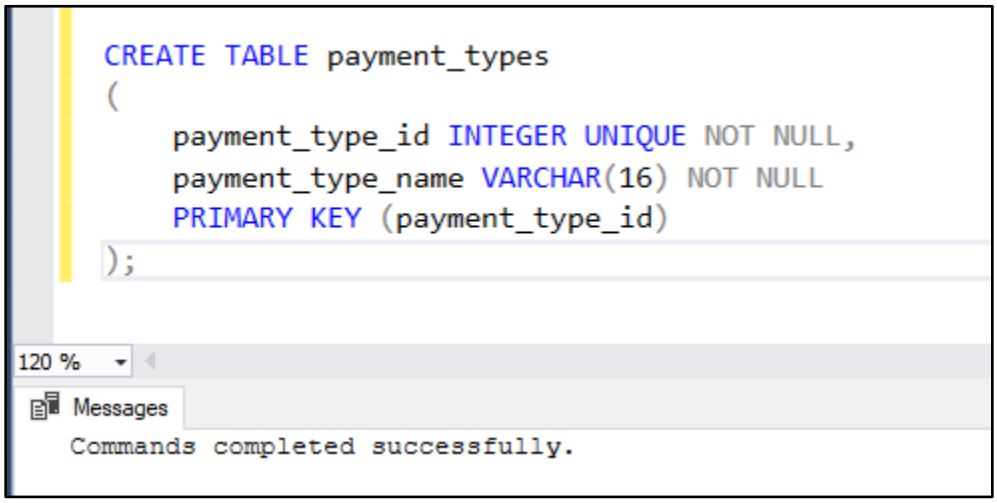
Shop Categories Table



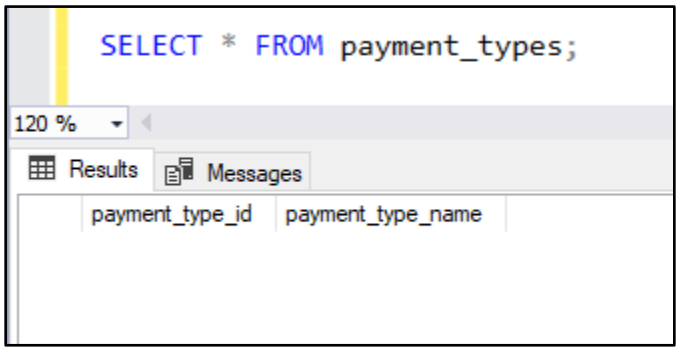
Result



Payment Type Table



Result



Riders Table

```
CREATE TABLE riders
(
    rider_id VARCHAR(8) UNIQUE NOT NULL,
    township_code INTEGER NOT NULL,
    rider_name VARCHAR(50) NOT NULL,
    rider_phone VARCHAR(15) NOT NULL,
    rider_address VARCHAR(100) NOT NULL,
    date_of_birth DATE NOT NULL,
    rider_registered_date DATE DEFAULT CURRENT_TIMESTAMP,
    CHECK (rider_id LIKE('GR-%')),
    CHECK (township_code > 11000),
    PRIMARY KEY (rider_id),
    FOREIGN KEY (township_code) REFERENCES townships(township_code)
    ON UPDATE CASCADE
    ON DELETE NO ACTION
);
```

120 %

Messages

```
Commands completed successfully.
```

Result

```
SELECT * FROM riders;
```

120 %

Results | Messages

rider_id	township_code	rider_name	rider_phone	rider_address	date_of_birth	rider_registered_date

Customers Table

```
CREATE TABLE customers
(
    customer_id VARCHAR(8) UNIQUE NOT NULL,
    member_type_id INTEGER NOT NULL,
    customer_name VARCHAR(50) NOT NULL,
    customer_email VARCHAR(50) NOT NULL,
    customer_phone VARCHAR(15) NOT NULL,
    customer_registered_date DATE DEFAULT CURRENT_TIMESTAMP,
    CHECK (customer_id LIKE('GC-%')),
    PRIMARY KEY (customer_id),
    FOREIGN KEY (member_type_id) REFERENCES member_types(member_type_id)
    ON UPDATE CASCADE
    ON DELETE NO ACTION
);
```

120 %

Messages

```
Commands completed successfully.
```

Result

```
SELECT * FROM customers;
```

120 %

Results | Messages

customer_id	member_type_id	customer_name	customer_email	customer_phone	customer_registered_date

Shops Table

```
CREATE TABLE shops
(
     shop_id VARCHAR(8) UNIQUE NOT NULL,
     township_code INTEGER NOT NULL,
     shop_category_id INTEGER NOT NULL,
     shop_name VARCHAR(50) NOT NULL,
     shop_address VARCHAR(100) NOT NULL,
     CHECK (shop_id LIKE('S-%')),
     CHECK (township_code > 11000),
     PRIMARY KEY (shop_id),
     FOREIGN KEY (township_code) REFERENCES townships(township_code)
     ON UPDATE CASCADE ON DELETE NO ACTION,
     FOREIGN KEY (shop_category_id) REFERENCES shop_categories(shop_category_id)
     ON UPDATE CASCADE ON DELETE NO ACTION
);
```

120 %

Messages

```
Commands completed successfully.
```

Result

```
SELECT * FROM shops;
```

120 %

Results | Messages

shop_id	township_code	shop_category_id	shop_name	shop_address

Items Table

```
CREATE TABLE items
(
    item_code VARCHAR(8) UNIQUE NOT NULL,
    shop_id VARCHAR(8) NOT NULL,
    item_name VARCHAR(50) NOT NULL,
    price DECIMAL(8,2) NOT NULL,
    CHECK (item_code LIKE ('I-%')),
    CHECK (shop_id LIKE ('S-%')),
    PRIMARY KEY (item_code),
    FOREIGN KEY (shop_id) REFERENCES shops(shop_id)
    ON UPDATE CASCADE
    ON DELETE NO ACTION
);
```

120 %

Messages

```
Commands completed successfully.
```

Result

```
SELECT * FROM items;
```

120 %

Results | Messages

item_code	shop_id	item_name	price	in_stock

Orders Table

```
CREATE TABLE orders
(
    order_id VARCHAR(16) UNIQUE NOT NULL,
    customer_id VARCHAR(8),
    rider_id VARCHAR(8),
    payment_type_id INTEGER NOT NULL,
    township_code INTEGER NOT NULL,
    order_date DATE DEFAULT CURRENT_TIMESTAMP,
    order_time TIME DEFAULT CURRENT_TIMESTAMP,
    delivered_time TIME,
    delivery_address VARCHAR(100) NOT NULL,
    order_status VARCHAR(50) DEFAULT 'pending',
    CHECK (order_id LIKE('ORD-%')),
    CHECK (customer_id LIKE('GC-%')),
    CHECK (rider_id LIKE('GR-%')),
    CHECK (township_code > 11000),
    CHECK (order_status IN('pending','delivered','canceled')),
    PRIMARY KEY (order_id),
    FOREIGN KEY (customer_id) REFERENCES customers(customer_id)
    ON UPDATE CASCADE ON DELETE SET NULL,
    FOREIGN KEY (rider_id) REFERENCES riders(rider_id)
    ON UPDATE CASCADE ON DELETE SET NULL,
    FOREIGN KEY (payment_type_id) REFERENCES payment_types(payment_type_id)
    ON UPDATE CASCADE ON DELETE NO ACTION,
    FOREIGN KEY (township_code) REFERENCES townships(township_code)
    ON UPDATE NO ACTION ON DELETE NO ACTION
);
```

120 %

Messages

```
Commands completed successfully.
```

Result

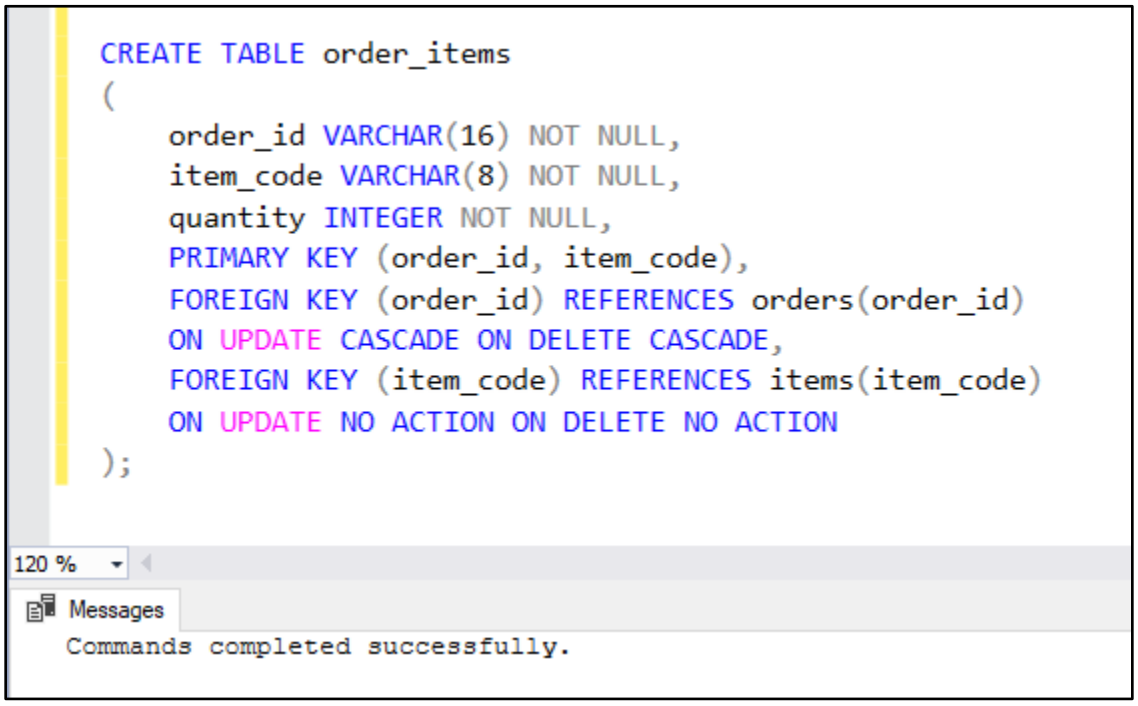
```
SELECT * FROM orders;
```

120 %

Results | Messages

order_id	customer_id	rider_id	payment_type_id	township_code	order_date	order_time	delivered_time	delivery_address	order_status

Order Items Table



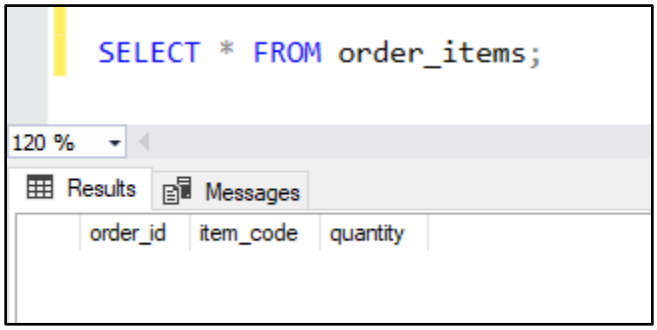
```
CREATE TABLE order_items
(
    order_id VARCHAR(16) NOT NULL,
    item_code VARCHAR(8) NOT NULL,
    quantity INTEGER NOT NULL,
    PRIMARY KEY (order_id, item_code),
    FOREIGN KEY (order_id) REFERENCES orders(order_id)
    ON UPDATE CASCADE ON DELETE CASCADE,
    FOREIGN KEY (item_code) REFERENCES items(item_code)
    ON UPDATE NO ACTION ON DELETE NO ACTION
);
```

120 %

Messages

Commands completed successfully.

Result



```
SELECT * FROM order_items;
```

120 %

Results | Messages

order_id	item_code	quantity

Above scripts are executed on SQL Server 2019 Express using SQL Server Management Studio for development environment. Tables without foreign key references are created first. And then, tables which have one-to-many relationships are created and finally the table with a composite primary key (dummy table) is created. I have encountered with MSSQLSERVER_1785 error a lot which is caused by implementing propagation constraints that can cause multiple cascade paths.

SQL makes the database well-structured and makes it fit with the business needs by providing strong relationships between tables. The use of constraints ensures the accuracy and reliability of the data. Using build-in date functions such as CURRENT_TIMESTAMP for default value makes date and time data in the database more precise.

Task – 5

Task 5 – Data Population

Insert Data into Townships Table

```
INSERT INTO townships VALUES
    (11201, 'Bahan'),
    (11211, 'Tamwae'),
    (11081, 'Yankin'),
    (11052, 'Hlaing'),
    (11121, 'Alone'),
    (11141, 'Latha'),
    (11191, 'Dagon'),
    (11143, 'Pabedan'),
    (11161, 'Botahtaung'),
    (11041, 'Kamayut');
```

120 %

Messages

```
(10 rows affected)
```

Result

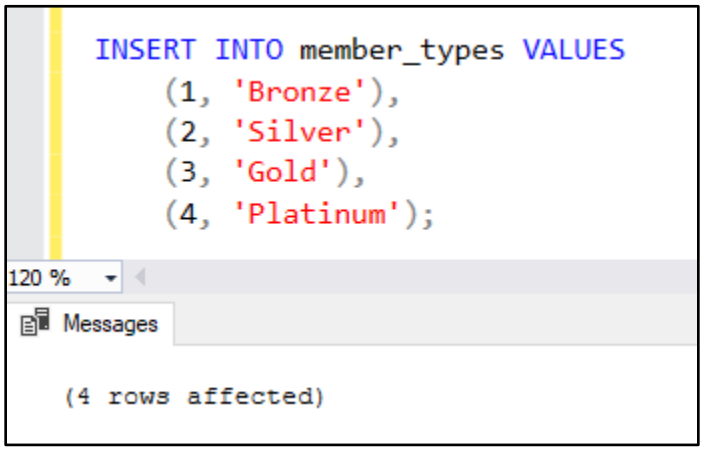
```
SELECT * FROM townships;
```

120 %

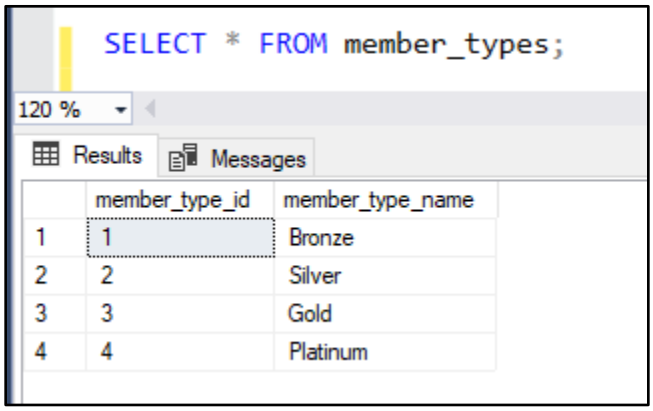
Results | Messages

	township_code	township_name
1	11041	Kamayut
2	11052	Hlaing
3	11081	Yankin
4	11121	Alone
5	11141	Latha
6	11143	Pabedan
7	11161	Botahtaung
8	11191	Dagon
9	11201	Bahan
10	11211	Tamwae

Insert Data into Member Types Table



Result



Insert Data into Shop Categories Table

```
INSERT INTO shop_categories VALUES
    (1, 'Food'),
    (2, 'Health'),
    (3, 'Beauty'),
    (4, 'Grocery'),
    (5, 'Convenience'),
    (6, 'Household'),
    (7, 'Fashion'),
    (8, 'Electronic');
```

120 %

Messages

```
(8 rows affected)
```

Result

```
SELECT * FROM shop_categories;
```

120 %

Results | Messages

	shop_category_id	shop_category_name
1	1	Food
2	2	Health
3	3	Beauty
4	4	Grocery
5	5	Convenience
6	6	Household
7	7	Fashion
8	8	Electronic

Insert Data into Payment Types Table

```
INSERT INTO payment_types VALUES
    (1, 'Cash on Delivery'),
    (2, 'KBZ Pay'),
    (3, 'AYA PAY'),
    (4, 'Wave Pay'),
    (5, 'Bank Transfer');
```

120 %

Messages

```
(5 rows affected)
```

Result

```
SELECT * FROM payment_types;
```

120 %

Results | Messages

	payment_type_id	payment_type_name
1	1	Cash on Delivery
2	2	KBZ Pay
3	3	AYA PAY
4	4	Wave Pay
5	5	Bank Transfer

Insert Data into Riders Table

```
INSERT INTO riders
    (rider_id, township_code, rider_name, rider_phone, rider_address, date_of_birth)
VALUES
    ('GR-07', 11201, 'Soe Win', '09123456789', 'No.3 Mya Street, Sayar San Ward', '1994/02/20'),
    ('GR-08', 11052, 'Hla Myo Tun', '09123456789', 'No.4 Thamine 1 Street, Kyo Kone Ward', '1995-08-02'),
    ('GR-09', 11191, 'Myint Thein', '09123456789', 'No.5 Kyaung Street, Ba Htoo Ward', '1992-03-11'),
    ('GR-10', 11201, 'Min Aung', '09123456789', 'No.82 U Chit Maung Road, Bo Sein Hman Ward', '2002-09-29'),
    ('GR-11', 11201, 'Htun Aye', '09123456789', 'No.92 Pearl Street, Kyeik San Ward', '1998-04-01'),
    ('GR-12', 11052, 'Moe Hein', '09123456789', 'No.25 Parami Road, Thamine 2 Ward', '1998-10-23'),
    ('GR-13', 11141, 'Phyo Kyaw', '09123456789', 'No.101 Shwe Bone Thar Road, Latha 3 Ward', '1997-11-03'),
    ('GR-14', 11211, 'Thuta', '09123456789', 'No.78 Thida Road, Kyauk Myaung Ward', '1996-07-09'),
    ('GR-03', 11081, 'Nyan Lin', '09123456789', 'No.56 Yan Shin Road, Yankin 7 Ward', '2003-09-12'),
    ('GR-22', 11121, 'Min Min', '09123456789', 'No.5 16th Street, Pyi Htaung Su Ward', '2004-01-01');
```

120 %

Messages

```
(10 rows affected)
```

Result

```
SELECT * FROM riders;
```

120 %

Results | Messages

	rider_id	township_code	rider_name	rider_phone	rider_address	date_of_birth	rider_registered_date
1	GR-03	11081	Nyan Lin	09123456789	No.56 Yan Shin Road, Yankin 7 Ward	2003-09-12	2023-01-11
2	GR-07	11201	Soe Win	09123456789	No.3 Mya Street, Sayar San Ward	1994-02-20	2023-01-11
3	GR-08	11052	Hla Myo Tun	09123456789	No.4 Thamine 1 Street, Kyo Kone Ward	1995-08-02	2023-01-11
4	GR-09	11191	Myint Thein	09123456789	No.5 Kyaung Street, Ba Htoo Ward	1992-03-11	2023-01-11
5	GR-10	11201	Min Aung	09123456789	No.82 U Chit Maung Road, Bo Sein Hman Ward	2002-09-29	2023-01-11
6	GR-11	11201	Htun Aye	09123456789	No.92 Pearl Street, Kyeik San Ward	1998-04-01	2023-01-11
7	GR-12	11052	Moe Hein	09123456789	No.25 Parami Road, Thamine 2 Ward	1998-10-23	2023-01-11
8	GR-13	11141	Phyo Kyaw	09123456789	No.101 Shwe Bone Thar Road, Latha 3 Ward	1997-11-03	2023-01-11
9	GR-14	11211	Thuta	09123456789	No.78 Thida Road, Kyauk Myaung Ward	1996-07-09	2023-01-11
10	GR-22	11121	Min Min	09123456789	No.5 16th Street, Pyi Htaung Su Ward	2004-01-01	2023-01-11

Insert Data into Customers Table

```
INSERT INTO customers
    (customer_id, member_type_id, customer_name, customer_email, customer_phone)
VALUES
    ('GC-0028', 2, 'Hla Nu', 'hlanu1@gmail.com', '09123456789'),
    ('GC-0012', 1, 'Kyaw Thu', 'kyawthu1@gmail.com', '09123456789'),
    ('GC-0093', 3, 'Htun Zaw', 'htunzaw1@gmail.com', '09123456789'),
    ('GC-0004', 4, 'Maung Paing', 'mgpaing1@gmail.com', '09123456789'),
    ('GC-0023', 2, 'Zaw Win', 'zawwin1@gmail.com', '09123456789'),
    ('GC-0092', 3, 'Kaung Htet', 'kaunghtet1@gmail.com', '09123456789'),
    ('GC-0099', 1, 'Soe Min', 'soemin1@gmail.com', '09123456789'),
    ('GC-0033', 1, 'Win Naing', 'winnaing1@gmail.com', '09123456789'),
    ('GC-0021', 1, 'Soe Htet', 'soehtet1@gmail.com', '09123456789'),
    ('GC-0067', 2, 'Sithu', 'sithu1@gmail.com', '09123456789');
```

120 %

Messages

```
(10 rows affected)
```

Result

```
SELECT * FROM customers;
```

120 %

Results | Messages

	customer_id	member_type_id	customer_name	customer_email	customer_phone	customer_registered_date
1	GC-0004	4	Maung Paing	mgpaing1@gmail.com	09123456789	2023-01-11
2	GC-0012	1	Kyaw Thu	kyawthu1@gmail.com	09123456789	2023-01-11
3	GC-0021	1	Soe Htet	soehtet1@gmail.com	09123456789	2023-01-11
4	GC-0023	2	Zaw Win	zawwin1@gmail.com	09123456789	2023-01-11
5	GC-0028	2	Hla Nu	hlanu1@gmail.com	09123456789	2023-01-11
6	GC-0033	1	Win Naing	winnaing1@gmail.com	09123456789	2023-01-11
7	GC-0067	2	Sithu	sithu1@gmail.com	09123456789	2023-01-11
8	GC-0092	3	Kaung Htet	kaunghtet1@gmail.com	09123456789	2023-01-11
9	GC-0093	3	Htun Zaw	htunzaw1@gmail.com	09123456789	2023-01-11
10	GC-0099	1	Soe Min	soemin1@gmail.com	09123456789	2023-01-11

Insert Data into Shops Table

```
INSERT INTO shops VALUES
    ('S-097', 11052, 1, 'Moe''s Bakery', 'No.101, Insein Road, Oak Kyin Ward'),
    ('S-045', 11201, 2, 'Shwe Oh Pharmacy', 'No.24, Nat Mouk Road, Bo Gyote Ward'),
    ('S-019', 11141, 5, '7Eleven', 'No.88, Bone Gyi Road, Aung Mingalar Ward'),
    ('S-114', 11201, 3, 'Beauty Diary', 'No.18, U Chit Maung Road, R Zar Ni Ward'),
    ('S-012', 11191, 8, 'Tech Guru', 'No.73, Koe Htet Kyi Road, Ward 33'),
    ('S-023', 11201, 1, 'Bonchon Chicken', 'No.81, Yadanar Street, Kyeik Ka San Ward'),
    ('S-035', 11141, 8, 'Technoland', 'No.126, Sint Oh Tan Street, Latha 3 Ward'),
    ('S-028', 11201, 1, 'Tea Leaf', 'Ground Floor, Ocean Super Center(Tamwae)'),
    ('S-101', 11143, 5, 'CoCo', 'No.97, Anawyahtar Road, 18th Ward'),
    ('S-119', 11081, 4, 'ABC Minimart', 'No.7, Mingalar Road, Yan Kin Ward'),
    ('S-020', 11081, 1, 'Yankin Kyay Oh', 'No.83, Kanbe Road, Yan Kin Ward');
```

120 %

Messages

```
(11 rows affected)
```

Result

```
SELECT * FROM shops;
```

120 %

Results | Messages

	shop_id	township_code	shop_category_id	shop_name	shop_address
1	S-012	11191	8	Tech Guru	No.73, Koe Htet Kyi Road, Ward 33
2	S-019	11141	5	7Eleven	No.88, Bone Gyi Road, Aung Mingalar Ward
3	S-020	11081	1	Yankin Kyay Oh	No.83, Kanbe Road, Yan Kin Ward
4	S-023	11201	1	Bonchon Chicken	No.81, Yadanar Street, Kyeik Ka San Ward
5	S-028	11201	1	Tea Leaf	Ground Floor, Ocean Super Center(Tamwae)
6	S-035	11141	8	Technoland	No.126, Sint Oh Tan Street, Latha 3 Ward
7	S-045	11201	2	Shwe Oh Pharmacy	No.24, Nat Mouk Road, Bo Gyote Ward
8	S-097	11052	1	Moe's Bakery	No.101, Insein Road, Oak Kyin Ward
9	S-101	11143	5	CoCo	No.97, Anawyahtar Road, 18th Ward
10	S-114	11201	3	Beauty Diary	No.18, U Chit Maung Road, R Zar Ni Ward
11	S-119	11081	4	ABC Minimart	No.7, Mingalar Road, Yan Kin Ward

Insert Data into Items Table

Result

Insert Data into Orders Table

Result

Insert Data into Orders Items Table

Result