International School

CAPSTONE PROJECT 1

CMU-SE 450 BIS

DATABASE DESIGN DOCUMENT

Version 1.0

Date: 21 February, 2023

IMARKET APPLICATION

(GMH)

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PROJECT INFORMATION

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Project Acronym	GMH		
Project Title	iMarket		
Start Date	21 - Feb - 2023		
End Date:	20 - May - 2023		
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DOCUMENT NAME

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REVISION HISTORY

Version	Date	Comments	Author	Approval
1.0		Initial Release	RW Team	
1.1		Update Database	RW Team	
1.2		Update Database	RW Team	

Document Approval

The following signatures are required for approval of this document

Mentor	Nguyen Trung Thuan	**Signature:**	
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	Dao Quang Nhat	**Signature:**	
		Date:	

1. Introduction

1.1. Purpose

- Provide a list of priority features, containing short descriptions of all desired functions in the project.
- Contains a complete list of all requirements under consideration, priority order, and other key features that facilitate planning and prioritization.

1.2.Target

Develop applications that support users in saving time, diet and user health in the best way.

2. Required hardware and software

This section provides an overview of the hardware and software architecture. Below are descriptions of the technology components of the GMH Application (iMarket)

Technology components of the GMH Application (iMarket)	
Attribute	**Description**
Database	
Software	Android Studio, Java
Hardware	Mobile, Computer

3. Database design decision

3.1. Mapping rules

When mapping entities to tables, the following rules apply:

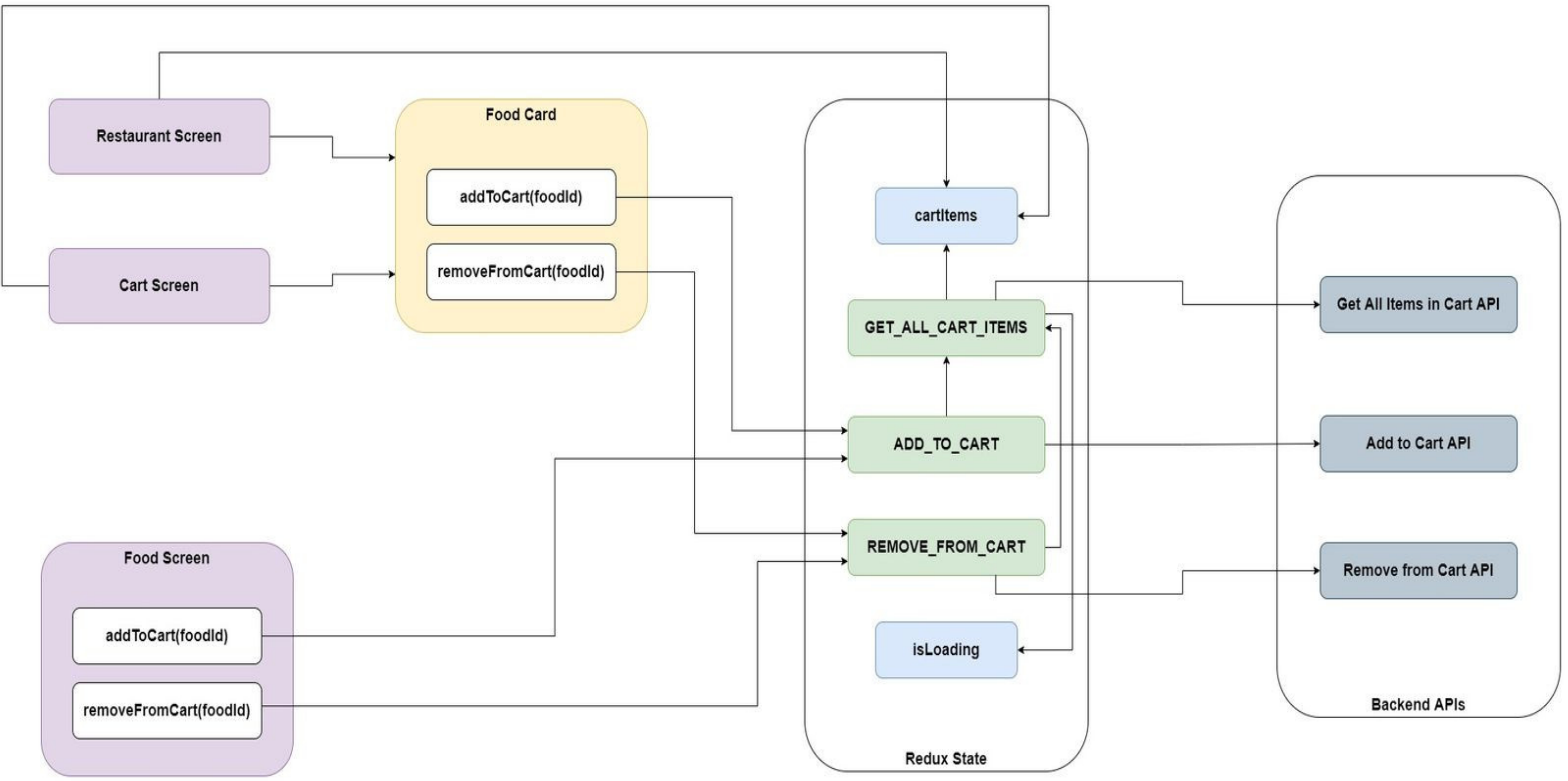
- Entities are mapped to tables in a one-to-one manner
- Properties are mapped to columns in a one-to-one manner
- One-to-many relationships are mapped to a foreign key
- For 1 - 1 association: sets the primary key, one of the two relations to another to create a foreign key.
- With 1 - n association: set the primary key, one relationship into many relationships that create a foreign key

- With n - n link: create a sub table, then set the primary key of the two tables to create a foreign key of the sub table.

3.2. Additional object

The following table lists the database objects (tables or columns) that are not derived from the entity but have been added to the database design for the purposes listed below. This includes intersection tables used to map many-to-many relationships.

3.3. Entity relationship chart



4. Relational Models

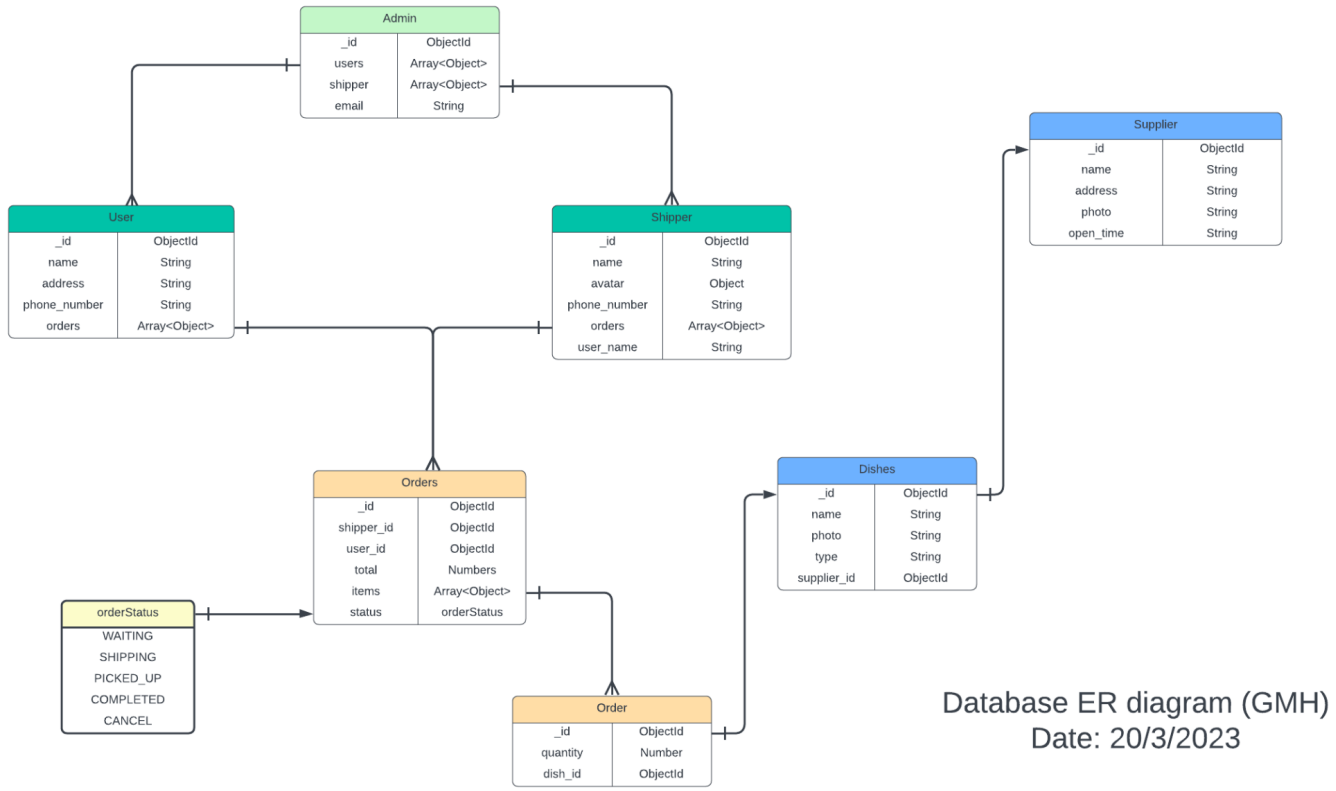


Figure 2: GMH Relational model.

5. Detail of the tables

Table 1: Admin

ID	Field	Datatypes	Constraint	Description
01	_id	ObjectId	Primary key	Consistent, discrete data for easy differentiation
02	Users	Array<Object>		User management
03	Shipper	Array<Object>		Shipper Manager
04	email	String		Contact Email Address

Table 2 : Shipper

ID	Field	Datatypes	Constraint	Description
01	_id	ObjectId	Primary key	Consistent, discrete data for easy differentiation
02	name	String		username's shipper
03	avatar	Object		avatar's shipper
04	phone_number	Number		phone's shipper
05	orders	Array<Object>		orders's shipper
06	user_name	String		name's shipper

Table 3: User

ID	Field	Datatypes	Constraint	Description
01	_id	ObjectId	Primary key	Consistent, discrete data for easy differentiation
02	name	String		Name's user
03	address	String		Place of order
04	phone_number	Number		User contact
05	orders	Array<Object>		The person who ordered the order

Table 4: Orders

ID	Field	Datatypes	Constraint	Description
01	_id	ObjectId	Primary key	Consistent, discrete data for easy differentiation
02	shipper_id	ObjectId		Id of Shipper
03	user_id	ObecjtId		Id of User
04	total	Number		Total order
05	items	Array<Object>		Item Type
06	status	enum		Order Status

Table 5: Order.

ID	Field	Datatypes	Constraint	Description
01	_id	ObjectId	Primary key	Consistent, discrete data for easy differentiation
02	quantity	Number		Number of orders
03	dish_id	ObjectId		Total Orders

Table 6: Dishes

ID	Field	Datatypes	Constraint	Description
01	_id	ObjectId	Primary key	Consistent, discrete data for easy differentiation
02	name	String		
03	photo	String		
04	type	String		
05	supplier_id	ObjectId		

Table 7: Suppliers

ID	Field	Datatypes	Constraint	Description
01	_id	ObjectId	Primary key	Consistent, discrete data for easy differentiation
02	name	String		Supplier Name
03	address	String		Delivery address
04	photo	String		Supplier introduction picture
05	open_time	String		Opening time