Entity Design

Ver 1.0

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Entity Diagram
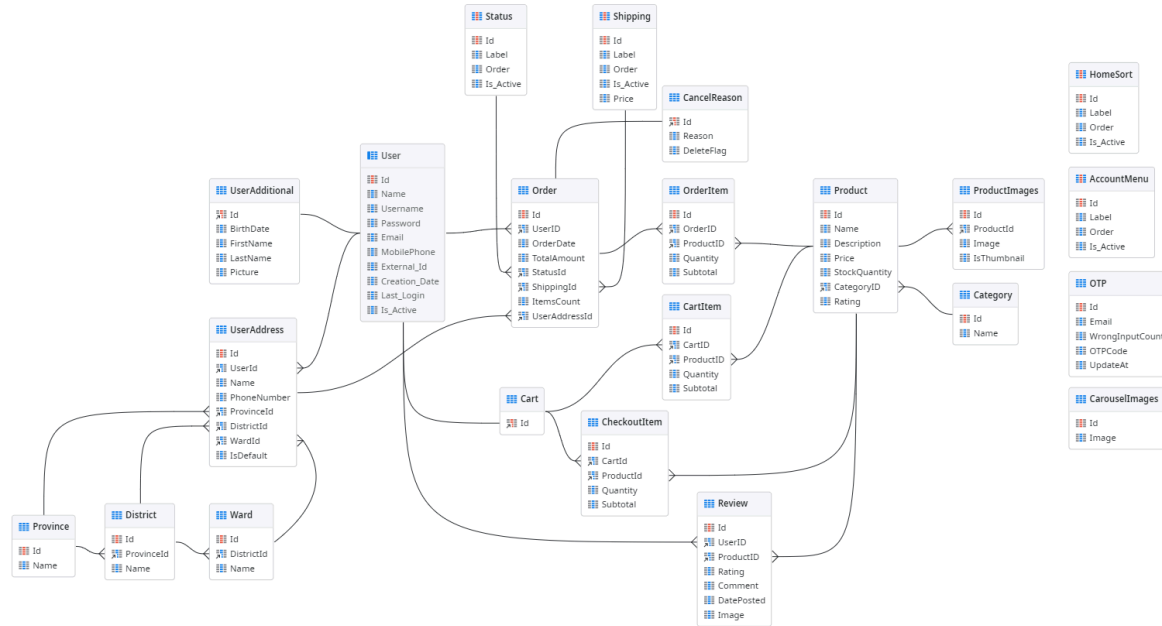
Figure 1: Entity Relationship Diagram

Entity List

No.	Entity Name	Entity Type	Description
1	User	Entity	End-user of the applications. Shared between eSpaces with the same user provider (defined in Service Studio).
2	UserAdditional	Entity	Stores additional user information like birthdate, picture, first name, and last name.
3	UserAddress	Entity	Stores users' shipping information and reference to Province, District, and Ward (Vietnamese geological address name).
4	Province	Entity	Stores records of Vietnamese provinces.
5	District	Entity	Stores records of Vietnamese districts and reference to Province.
6	Ward	Entity	Stores records of Vietnamese districts and reference to District.
7	Cart	Entity	Reference to UserId.
8	CartItem	Entity	Serves as a joining entity between Cart and Product entities.

9	CheckoutItem	Entity	Serves as a joining entity between Cart and Product entities.
10	Order	Entity	Stores general information about an order and the user's shipping information.
11	OrderItem	Entity	Serves as a joining entity between Order and Product entities.
12	CancelReason	Entity	Expands the Order entity, contains cancel reason if an Order has the "Cancel" status.
13	Shipping	Static Entity	Includes static records of shipping options for the service.
14	Status	Static Entity	Includes static records of an order status.
15	Review	Entity	Serves as a joining entity between User and Product entities.
16	Product	Entity	Contains information about the shop's products.
17	ProductImages	Entity	Includes images of the products. 1 product can have multiple images.
18	Category	Entity	Includes categories for easier sorting and searching products.
19	OTP	Entity	Holds one-time password information.
20	CarouselImages	Entity	Binary data for carousel images on the home page.
21	HomeSort	Static Entity	Records for the sorting drop-down on the products page.
22	AccountMenu	Static Entity	Records for displaying different tabs on the account page.

Entity Definitions

User

No.	Attribute	Data Type	Length	Is Mandatory	Notes
1	Id	Integer	-	Yes	Identifier, Autonumber
2	Name	Text	256	No	
3	Username	Text	250	No	
4	Password	Text	256	No	
5	Email	Email	250	No	
6	MobilePhone	Phone Number	20	No	

7	External_Id	Text	36	No	
8	Creation_Date	Date Time	-	Yes	
9	Last_Login	Date Time	-	No	
10	Is_Active	Boolean	-	Yes	

UserAdditional

No.	Attribute	Data Type	Length	Is Mandatory	Notes
1	Id	Integer	-	Yes	User Identifier, FK
2	Birthdate	Date	-	Yes	
3	FirstName	Text	50	Yes	
4	LastName	Text	50	Yes	
5	Picture	Binary	-	No	

UserAddress

No.	Attribute	Data Type	Length	Is Mandatory	Notes
1	Id	Long Integer	-	Yes	Identifier, Autonumber
2	UserId	Integer	-	No	User Identifier, FK
3	Name	Text	50	No	
4	PhoneNumber	Text	-	No	
5	ProvinceId	Long Integer			Province Identifier, FK
6	DistrictId	Long Integer	-	No	District Identifier, FK
7	WardId	Long Integer	-	No	Ward Identifier, FK
8	IsDefault	Text	-	No	

Province

No.	Attribute	Data Type	Length	Is Mandatory	Notes
1	Id	Long Integer	-	Yes	Identifier

2	Name	Text	50	Yes	

District

No.	Attribute	Data Type	Length	Is Mandatory	Notes
1	Id	Long Integer	-	Yes	Identifier
2	ProvinceId	Long Integer	-	Yes	Province Identifier, FK
2	Name	Text	50	Yes	

Ward

No.	Attribute	Data Type	Length	Is Mandatory	Notes
1	Id	Long Integer	-	Yes	Identifier
2	DistrictId	Long Integer	-	Yes	District Identifier, FK
2	Name	Text	50	Yes	

Cart

No.	Attribute	Data Type	Length	Is Mandatory	Notes
1	Id	Long Integer	-	Yes	User Identifier, FK

CartItem

No.	Attribute	Data Type	Length	Is Mandatory	Notes
1	Id	Long Integer	-	Yes	Identifier, Autonumber
2	CartId	Long Integer	-	Yes	Cart Identifier, FK
3	ProductId	Long Integer	-	Yes	Product Identifier, FK
4	Quantity	Integer	-	Yes	
5	Subtotal	Currency	-	Yes	

CheckoutItem

No.	Attribute	Data Type	Length	Is Mandatory	Notes
1	Id	Long Integer	-	Yes	Identifier, Autonumber
2	CartId	Long Integer	-	Yes	Cart Identifier, FK
3	ProductId	Long Integer	-	Yes	Product Identifier, FK
4	Quantity	Integer	-	Yes	
5	Subtotal	Currency	-	Yes	

Order

No.	Attribute	Data Type	Length	Is Mandatory	Notes
1	Id	Long Integer	-	Yes	Identifier, Autonumber
2	UserId	Integer	-	Yes	User Identifier, FK
3	OrderDate	Date Time	-	Yes	
4	TotalAmount	Currency	-	Yes	
5	StatusId	Long Integer	-	Yes	Status Identifier, FK
6	ShippingId	Long Integer	-	Yes	Shipping Identifier, FK
7	ItemsCount	Integer	-	Yes	
8	UserAddressId	Long Integer	-	Yes	UserAddress Identifier, FK

OrderItem

No.	Attribute	Data Type	Length	Is Mandatory	Notes
1	Id	Long Integer	-	Yes	Identifier, Autonumber
2	OrderId	Long Integer	-	Yes	Order Identifier, FK
3	ProductId	Long Integer	-	Yes	Product Identifier, FK
4	Quantity	Integer	-	Yes	
5	Subtotal	Currency	-	Yes	

CancelReason

No.	Attribute	Data Type	Length	Is Mandatory	Notes
1	Id	Long Integer	-	Yes	Identifier, Autonumber
2	Reason	Text	250	Yes	
3	DeleteFlag	Boolean	-	Yes	

Shipping

Id	Label	Order	Is_Active	Price
Express	Express delivery	1	True	2.00
Rush	Rush delivery	2	True	5.00
Economical	Economical delivery	3	True	1.00

Status

Id	Label	Order	Is_Active
Pending	Pending	1	True
Processing	Processing	2	True
Shipped	Shipped	3	True
Completed	Completed	4	True
Cancelled	Cancelled	5	True

Review

No.	Attribute	Data Type	Length	Is Mandatory	Notes
1	Id	Long Integer	-	Yes	Identifier, Autonumber
2	UserId	Integer	-	Yes	User Identifier, FK
3	ProductId	Long Integer	-	Yes	Product Identifier, FK
4	Rating	Decimal	37	Yes	

5	Comment	Text	200	No	
6	DatePosted	Date Time	-	Yes	
7	Image	Binary	-	No	

Product

No.	Attribute	Data Type	Length	Is Mandatory	Notes
1	Id	Long Integer	-	Yes	Identifier, Autonumber
2	Name	Text	50	Yes	
3	Description	Text	2000	Yes	
4	Price	Currency	-	Yes	
5	StockQuantity	Integer	-	Yes	
6	CategoryId	Long Integer	-	Yes	Category Identifier, FK
7	Rating	Decimal	37	No	

ProductImages

No.	Attribute	Data Type	Length	Is Mandatory	Notes
1	Id	Long Integer	-	Yes	Identifier, Autonumber
2	ProductId	Long Integer	-	Yes	Product Identifier, FK
3	Image	Binary	-	Yes	
4	IsThumbnail	Boolean	-	Yes	

Category

No.	Attribute	Data Type	Length	Is Mandatory	Notes
1	Id	Long Integer	-	Yes	Identifier, Autonumber
2	Name	Text	50	Yes	

OTP

No.	Attribute	Data Type	Length	Is Mandatory	Notes
1	Id	Long Integer	-	Yes	Identifier, Autonumber
2	Email	Email	250	Yes	
3	WrongInputCount	Integer	-	Yes	
4	OTPCode	Text	50	Yes	
5	UpdatedAt	Date Time	-	Yes	

CarouselImages

No.	Attribute	Data Type	Length	Is Mandatory	Notes
1	Id	Long Integer	-	Yes	Identifier, Autonumber
2	Image	Binary	-	Yes	

HomeSort

Id	Label	Order	Is_Active
Name	Name	1	True
PriceLowToHigh	Price - Low To High	2	True
PriceHighToLow	Price - High To Low	3	True
Rating	Rating	4	True

AccountMenu

Id	Label	Order	Is_Active
BasicDetails	Basic Details	1	True
Password	Password	2	True
Addresses	Addresses	3	True