Entities that are identified in our ER diagram

Entity	Keys	Attribute
Customer	Cust_ID, email_address, username	Phone no, address, password, full_name
Credit Card	CardNumber	ExpiryDate
Order	OrderID	Date, Status
Invoice	InvoiceNum	Status, Date
Payment	PaymentID	Amount, Date
OrderItem	SequenceNum(weak entity)	Quantity, unitprice, itemStatus
Shop	ShopID	S_Name
Product	P_Name	Color, Price, P_Description, Size
Photo	PhotoID	Content
Product Type	ProductTypeID	PT_Description
Shipment	ShipmentID	Date, TrackingNum

Appendix D

Name	Individual Contribution for Submission 2 (Lab 3)	Percentage of Contribution (100% in total)
Ang Guang Yao	Convert ER diagram to relation, identify functional dependencies, facilitate discussion, check if relation are in 3NF	20%
Chai Wen Xuan	Convert ER diagram to relation, idendity functional dependencies	20%
Reeves Chiu	Contributed in building the relation & facilitate the team	20%
Ingale Omkar	Updated ER diagram. Check if tables are in 3NF	20%
Ivan Pua	Convert ER Diagram to relations, indentify functional dependencies, check if tables are in 3NF or BCNF	20%

Relation	Chosen Primary Key	Other Keys	Foreign Table	Foreign key	Non-key Attribute	Relation schema	Functional Dependencies	3NF	Assumptions	Remarks
Customer	Cust_ID	email_address, username			Phone no, address, password, full_name	Customer(Cust_ID, email_address, username, Phone no, address, password, full_name)	Cust_ID -> email_address, username, address, Phone_no, password, full_name username -> Cust_ID, email_address, address, Phone_no, password, full_name email_address -> Cust_ID, username, address, Phone_no, password, full_name	Relation is in 3NF. LHS of all FDs contain a key		
CreditCard	CardNumber		Customer	Cust_ID	ExpiryDate	CreditCard(CardNumber, Cust_ID, ExpiryDate)	CardNumber -> Cust_ID, ExpiryDate	Relation is in 3NF. LHS of all FDs contain a key		
Order	OrderID		Customer	Cust_ID	Date, Status	Order(OrderID, Cust_ID, Date, Status)	OrderID -> Cust_ID, Date, Status	Relation is in 3NF. LHS of all FDs contain a key		
Invoice	InvoiceNum	OrderID	Order	OrderID	Status, Date	Invoice(InvoiceNum, OrderID, Status, Date)	InvoiceNum -> OrderID, Status,Date OrderID -> InvoiceNum	Relation is in 3NF. LHS of all FDs contain a key		
Payment	PaymentID		Invoice, CreditCard	InvoiceNum, CardNumber	Amount, Date	Payment(PaymentID, CardNumber, InvoiceNum, Amount, Date)	PaymentID -> CardNumber, InvoiceNum, Amount, Date	Relation is in 3NF. LHS of all FDs contain a key	We assume that each payment must only be for one and only one invoice.	
OrderItem	OrderID, SequenceNum		Order, Shipment, Product	OrderID, ShipmentID, P_Name	Quantity, unitprice, itemStatus	OrderItem(OrderID, SequenceNum, ShipmentID, Quantity, unitPrice, itemStatus,P_Name)	OrderID, SequenceNum -> ShipmentID, Quantity, unitprice, itemStatus, P_Name	Relation is in 3NF. LHS of all FDs contain a key	We assume each OrderItems will only be shipped in one shipment. For example, if an OrderItem contains 5 quantity of a particular product, all 5 item must be shipped in a single shipment	
Shop	ShopID				S_Name	Shop(ShopID, S_Name)	ShopID -> S_Name	Relation is in 3NF. LHS of all FDs contain a key		
Product	P_Name		Product Type	ProductTypeID	Color, Price, P_Description, Size	Product(P_Name, ProductTypeID, Color, Price, P_Description, Size)	P_Name -> Color, Price, P_Desription, Size, ProductTypeID	Relation is in 3NF. LHS of all FDs contain a key		
Photo	PhotoID		Product	P_Name	Content	Photo(PhotoID, P_Name, Content)	PhotoID ->P_Name, Content	Relation is in 3NF. LHS of all FDs contain a key	We assume no two products will use the same photo and each photo will only be associated with one and only 1 product.	
Product Type	ProductTypeID		Product Type	ParentID(ProductTypeID)	PT_Description	Product Type(ProductTypeID, ParentID, PT_Description)	ProductTypeID -> PT_Description, ParentID	Relation is in 3NF. LHS of all FDs contain a key	We assume that there is only 1 ProductType at the top of the hierarchy and all other ProductType falls below that ProductType.	
Shipment	ShipmentID				Date, TrackingNum	Shipment(ShipmentID, Date, TrackingNum)	ShipmentID -> Date, TrackingNum	Relation is in 3NF. LHS of all FDs contain a key		
Sells	ShopID, P_Name		Shop, Product	ShopID, P_Name		Sells(ShopID, P_Name)		Relation is in 3NF. LHS of all FDs contain a key	We assume each product can be sold on multiple different shops, and each product must be sold by at least 1 shop.	
RestictedTo	ShopID, ProductTypeID		Shop, Product Type	ShopID, ProductTypeID		RestrictedTo(ShopID, ProductTypeID)		Relation is in 3NF. LHS of all FDs contain a key		