

Systems and Database Design

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1. Assumptions

Customer :

- 1) One customer can have more than one address.

Address:

- 2) Address must be mandatory prior adding items to the cart.

Ordered_Product :

- 3) Database doesn't allow multiple selections of the same item to be listed, but this is handled by increasing the corresponding quantity, through the quantity column.

Supplier :

- 4) Each product is provided by only one supplier.

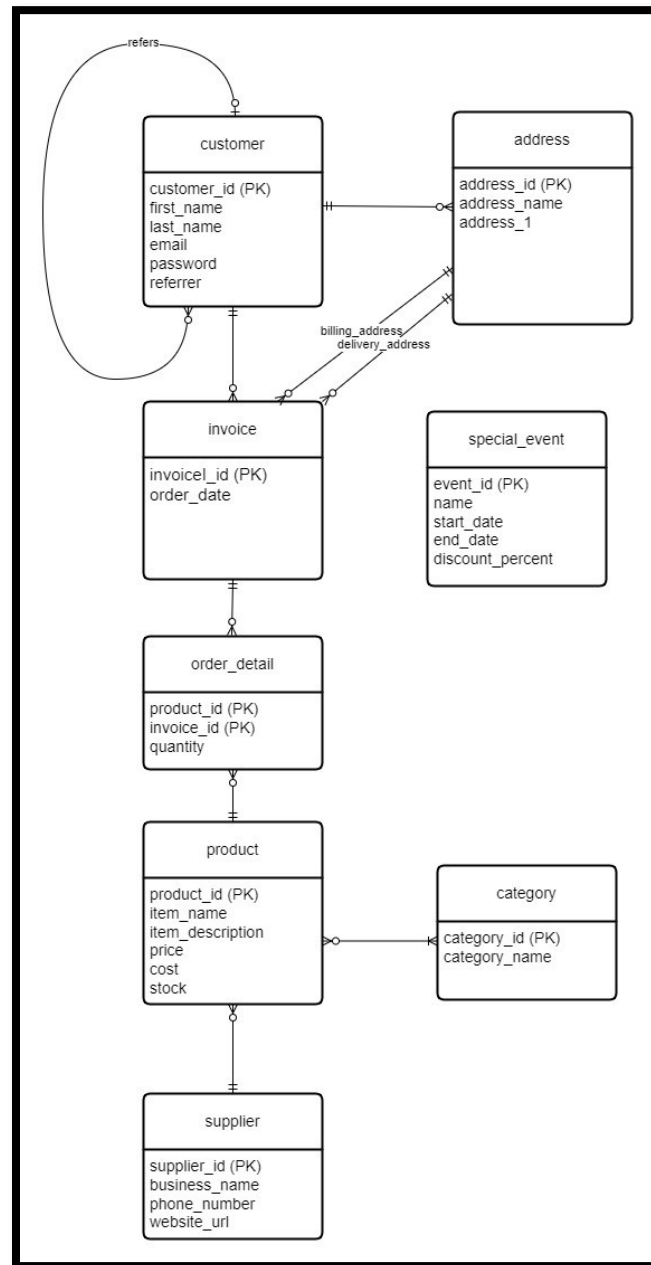
Category :

- 5) Product categories are made based on the existing stock only.

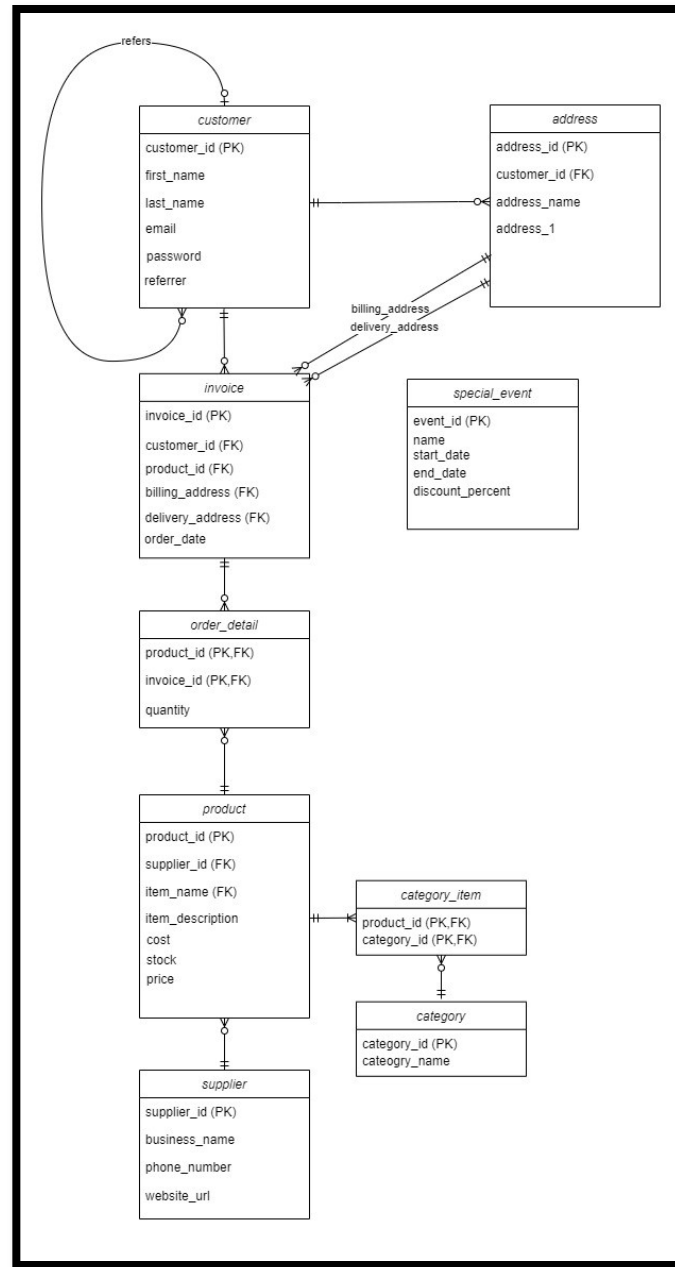
Special_Event :

- 6) Special Events occur one at a time, there are no events that overlap with another event.

2.Logical ER



3. Physical ER



Legend	
PK	Primary Key
FK	Foreign Key

4. Data Dictionary

“customer” table (stores details about customer)					
Column Name	Data Type	Length	Null	Constraints	Other
customer_id	INT		NOTNULL	PK	IDENTITY
first_name	VARCHAR	25	NOTNULL	UNIQUE	
last_name	VARCHAR	25	NOTNULL	UNIQUE	
email	VARCHAR	25	NOTNULL	UNIQUE	Must contain “@” symbol
password	VARCHAR	16	NOTNULL		
referrer	INT				Must be an already registered customer, hence linking to that same customer_id, cant link to itself

“address” table (stores details about customer address)					
Column Name	Data Type	Length	Null	Constraints	Other
address_id	INT		NOTNULL	PK	IDENTITY
customer_id	INT		NOTNULL	FK (Customer-CustomerID)	
address_name	VARCHAR	25	NOTNULL		
address_1	VARCHAR	25	NOTNULL	UNIQUE	

“invoice” table (stores details about order)					
Column Name	Data Type	Length	Null	Constraints	Other
invoice_id	INT		NOTNULL	PK	IDENTITY
product_id	INT		NOTNULL	FK (product – product_id)	
customer_id	INT		NOTNULL	FK (customer-customer_id)	
delivery_address	INT		NOTNULL	FK (address – address_id)	Can choose one address from address table
billing_address	INT		NOTNULL	FK (address – address_id)	
order_date	DATE		NOTNULL		Must be default to current date and current time

“special_event” table (stores details about special events)					
Column Name	Data Type	Length	Null	Constraints	Other
event_id	INT		NOTNULL	PK	IDENTITY
name	VARCHAR	20	NOTNULL	UNIQUE	
start_date	DATE		NOTNULL		
end_date	DATE		NOTNULL		
discount_percent	INT		NULL		Given in percentage

“order_detail” table (stores details about product quantity listing)					
Column Name	Data Type	Length	Null	Constraints	Other
product_id	INT		NOTNULL	FK (Item - ItemID)	ItemID & Invoice ID create the composite primary key
invoice_id	INT		NOTNULL	FK(Invoice - InvoiceID)	Invoice ID & ItemID create the composite primary key
quantity	INT		NOTNULL		

“product” table (stores details about product)					
Column Name	Data Type	Length	Null	Constraints	Other
product_id	INT		NOTNULL	PK	IDENTITY
supplier_id	INT		NOTNULL	FK(Category - CategoryID)	
item_name	VARCHAR	50	NULL	FK (Supplier – SupplierID)	Products only have one supplier
item_description	VARCHAR	150	NULL	UNIQUE	
price	DECIMAL	(10,2)	NULL	AUD	Must be greater than or equal to \$0.00
cost	CHAR	7	NULL	AUD	
stock	CHAR	7	NULL		

“category” table (stores details about product category)					
Column Name	Data Type	Length	Null	Constraints	Other
category_id	INT		NOTNULL	PK	IDENTITY
category_name	VARCAHR	25	NOTNULL	UNIQUE	

“supplier” table (stores details about supplier)					
Column Name	Data Type	Length	Null	Constraints	Other
supplier_id	INT		NOTNULL	PK	IDENTITY
business_name	VARCHAR	25	NULL	UNIQUE	
phone_number	VARCHAR	16	NULL	UNIQUE	
website_url	VARCHAR	50	NULL	UNIQUE	

“category_item” table (stores details about product quantity listing)					
Column Name	Data Type	Length	Null	Constraints	Other
product_id	INT		NOTNULL	FK (Item - ItemID)	ItemID & Invoice ID create the composite primary key
category_id	INT		NOTNULL	FK(Invoice - InvoiceID)	Invoice ID & ItemID create the composite primary key

Legend Data Type	
DATETIME	DateTime Format (dd/mm/yyyy hh:mm)
VARCHAR	Variable Character
CHAR	Character
INTEGER	Numeric / whole numbers only
CURRENCY	Standard money format (AUD)