

Team 3: Database Design

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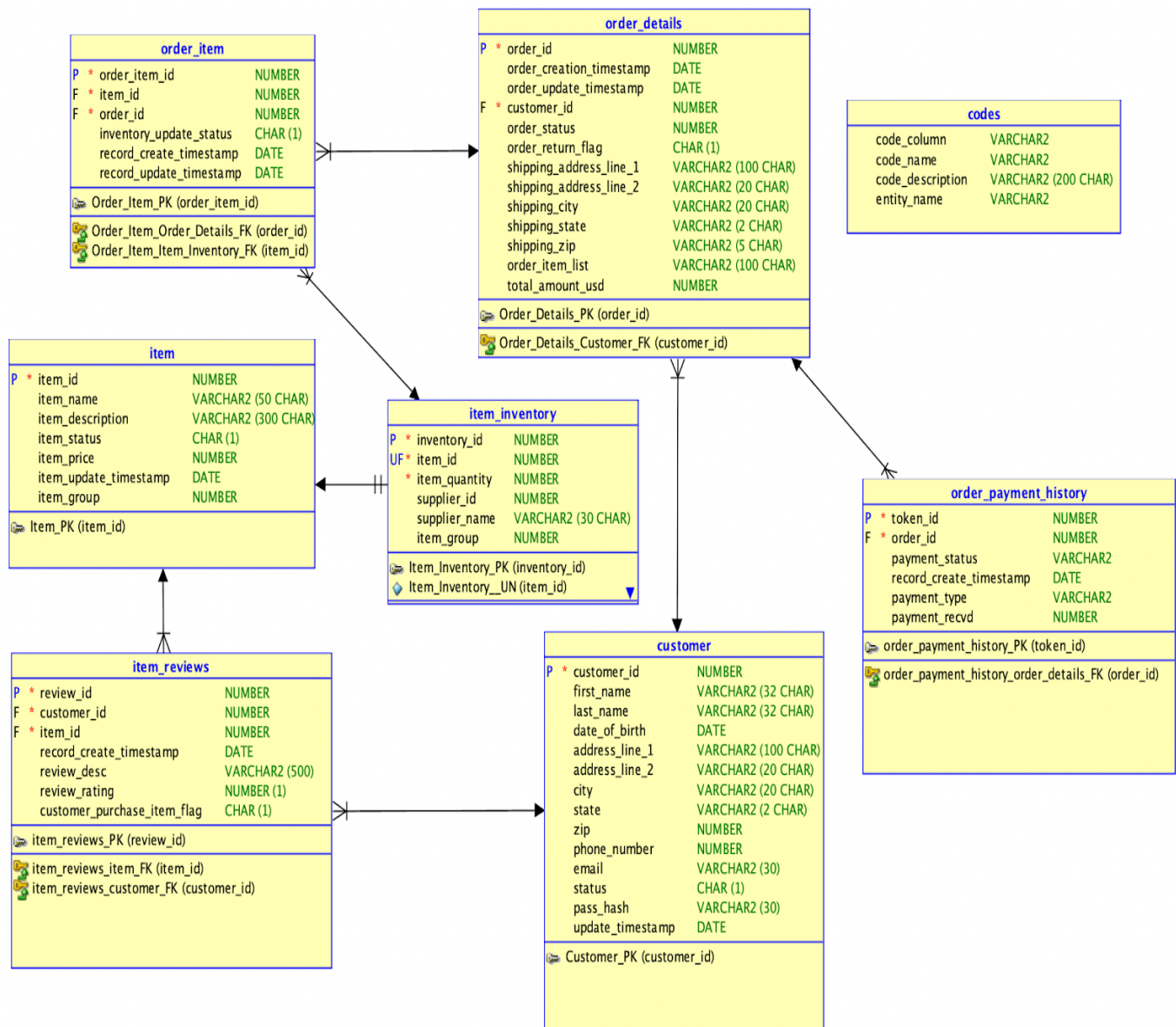
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Business Problem & Solution

In the retail industry, it is vital that companies are able to keep up with the supply and demand on products they are offering. Some companies may choose to keep track of this supply and demand through physical books and paperwork, and over time this can result in insufficient storage space, misplaced orders by human error, and overall customer dissatisfaction.

Our proposed solution demonstrates how a retail company that sells electronic items goes about digitally managing inventory based on orders that are fulfilled and returned. First and foremost, we allow customers to create accounts within our system that store data such as first name, last name, address, etc. This data is used when a customer creates an order with different items to ensure that the right orders are being associated with the right customers. In addition to this, when an order is placed, we will make sure that the correct amount of each item in the order is removed from the inventory. On the other hand, if a customer wants to return an item, we also have the capability to create a return order and readjust the inventory of the item.

Database Design Document

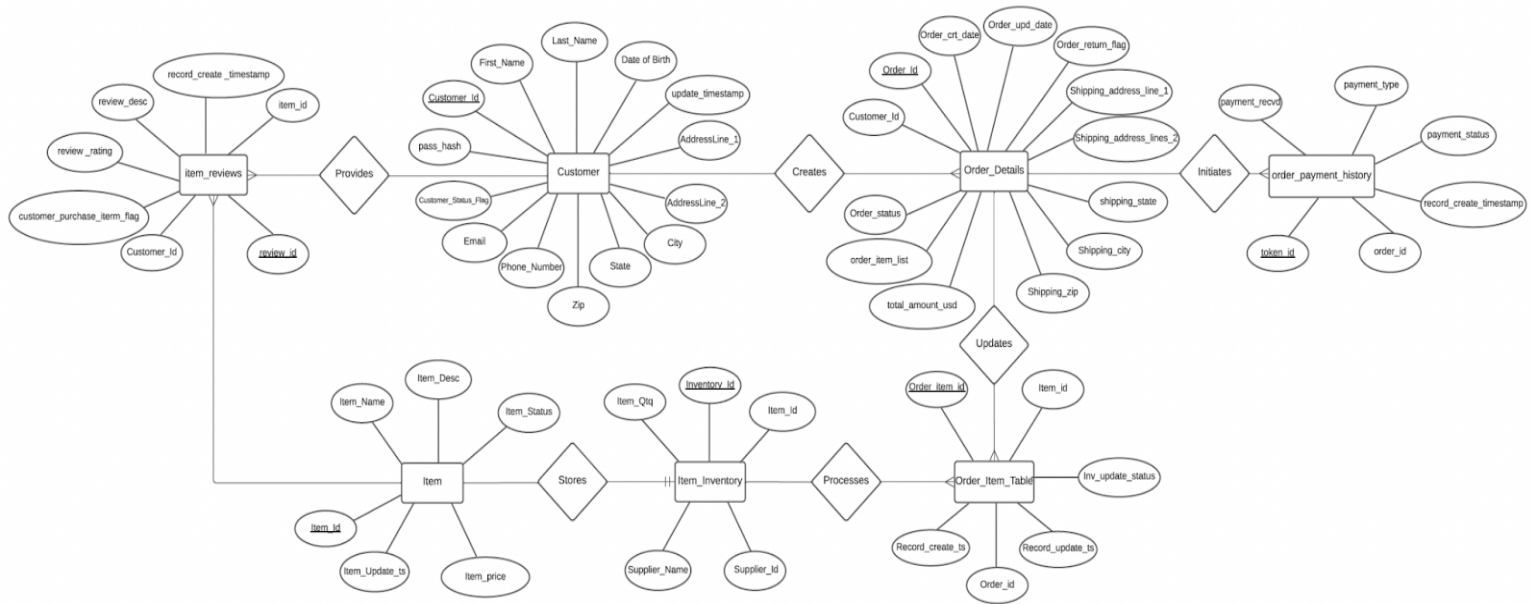


Our database design consists of 8 tables:

- **Customer table** - Consists of customer demographics and login information
- **Order Details table** - Consists of specific details of orders made by the customers
- **Order Item table** - Consists of status of item inventory and relationships between orders and items
- **Item Inventory table** - Consists of item quantities
- **Item table** - Consists of item information
- **Item Reviews table** - Consists of all customer reviews of a particular table
- **Order Payment History table** - Consists of all payments paid against the order
- **Codes table** - A legend to all codes used in various tables in our dataset

Entity Relationship Diagram - First Draft

ER Model for Order & Inventory Management



Entity and Attributes with Data Types

Item		
Attribute	Datatype	Description
item_id	NUMBER	This gives the ID of the item.
item-name	VARCHAR2	Used to specify name of the product
item_description	VARCHAR2	Used to give description of the product
item_status	CHAR(1)	This is a boolean which specifies if it is zero, it means item is out of stock and 1 means item is in stock.
item_price	NUMBER	Price of the product
item_update_timestamp	Date	This will be stored in date format
item_group	NUMBER	Stores which group the item belongs to

Item_Inventory		
Attribute	Datatype	Description
inventory_id	NUMBER	This is the primary key which specifies inventory ID
item_id	NUMBER	This gives the ID of the item.
item_quantity	NUMBER	This gives quantity of items required by the customer
supplier_id	NUMBER	This specifies ID of the supplier
supplier_name	VARCHAR2(30 CHAR)	This specifies ID of the supplier
item_group	NUMBER	Stores which group the item belongs to

Customer		
Attribute	Datatype	Description
customer_id	NUMBER	This specifies ID given to a customer. It is a primary key
first_name	VARCHAR2 (32 CHAR)	First name of customer
last_name	VARCHAR2 (32 CHAR)	Last name of customer
date_of_birth	DATE	This specifies date of birth of a customer.
address_line_1	VARCHAR2 (100 CHAR)	Address of the customer
address_line_2	VARCHAR2 (20 CHAR)	Address of the customer
city	VARCHAR2 (20 CHAR)	City in which customer lives
state	VARCHAR2 (2 CHAR)	State in which customer lives
zip	NUMBER	Zipcode of the address
phone_number	NUMBER	Phone number of the customer
email	VARCHAR2 (30)	Email ID of the customer
status	CHAR (1)	This specifies if the account holder is active or inactive
pass_hash	VARCHAR2(30)	Password is scrambled for security reasons.
update_timestamp	DATE	Give information regarding when was the account updated

Order_Item		
Attribute	Datatype	Description
order_item_id	NUMBER	This is the primary key of the table specifying
item_id	NUMBER	This given ID of an item
order_id	NUMBER	This given ID of an order
inventory_update_status	CHAR(1)	This gives status of inventory
record_create_timestamp	DATE	Information regarding when the record was created
record_update_timestamp	DATE	information regarding when the record was updated

Order_Details		
Attribute	Datatype	Description
order_id	NUMBER	This gives ID of a particular order. It is primary key of this table
order_creation_timestamp	DATE	This describes when the order was created
order_update_timestamp	DATE	This gives information about when order was updated
customer_id	NUMBER	This gives ID of a customer
order_status	NUMBER	This gives status of an order
order_return_flag	CHAR (1)	If the item is to be returned it will give 1 value, if not it will give 0 value.
shipping_address_line_1	VARCHAR2 (100 CHAR)	Address of where the item should be shipped
shipping_address_line_2	VARCHAR2 (20 CHAR)	Address of where the item should be shipped
shipping_city	VARCHAR2 (20 CHAR)	City in which item should be shipped
shipping_state	VARCHAR2 (2 CHAR)	State in which item should be shipped
shipping_zip	VARCHAR2 (5 CHAR)	Zipcode of shipping address
order_item_list	VARCHAR2 (100 CHAR)	List of items that should be ordered
total_amount_usd	DOUBLE	Total amount for order

Codes		
Attribute	Datatype	Description
code_column	NUMBER	Column Name of Code
code_name	VARCHAR2	How the code looks like in the table
code_description	VARCHAR2	Description of the code.
entity_name	VARCHAR2	Table where code can be found

Item_Reviews		
Attribute	Datatype	Description
review_id *	NUMBER	A primary key that records the ID for each review
customer_id	NUMBER	ID of customer who made the review
item_id	NUMBER	ID of item that was reviewed
record_create_timestamp	DATE	Time at which review was created
record_update_timestamp	DATE	Time at which review was updated
review_desc	VARCHAR2	Review Description
review_rating	NUMBER	Rating of item from 1-5
customer_purchase_item_flag	BOOL	0 if customer did not purchase, 1 if customer purchased the item

Order_Payment_History		
Attribute	Datatype	Description
token_id *	NUMBER	A primary key that records the ID for each payment
order_id	NUMBER	Order ID for which payment was made
payment_status	VARCHAR2	Stores the status of payment (Failed/Processed/Incomplete)
record_create_timestamp	DATE	Time at which payment record was created
payment_type	VARCHAR2	Credit/Debit/Cheque
Payment_Recvd	NUMBER	Amount received in USD