

The Entity-to-Entity relationships are described below using the Data Modelling Best Practices in [1]:

Entities	Relationship	Embed / Reference	Documents
Users - ShippingAddresses	1:0 or N, A user can have 0 or N shipping addresses. (N = few = 5).	Embed ShippingAddresses in Users .	Here, User is a document. ShippingAddress is a KV pair embedded in User .
Users - CartItems	1:0 or N, A user can have 0 (empty) or N cart items. (N = few = 20).	Embed CartItems in Users .	CartItem is a KV pair embedded in the User document.
Users - Orders	1:0 or N, A user can have 0 or N orders. (N = Many = 1000s).	Reference user_id of User in the Order document.	Both User and Order are documents.
Orders - OrderItems	1:1 or N, An order can have 1 or N order items. (N = few = 5).	Embed OrderItems in Orders . An Order can contain up to 5 OrderItems.	Order is a document. OrderItem is a KV pair embedded in Order .
* OrderItems - Products	1:1, Each order item can contain exactly 1 product item.	Reference product_id of Product in the respective OrderItem . This is to uniquely identify each OrderItem. This is also because a Product can be present in N orders (where N = millions) and each Product Document can't have millions of order_ids.	Product is a document. OrderItem is a KV pair embedded in Order . The product_id of the respective Product is referenced in OrderItem .
* OrderItems - ProductItems	1:1, Each order item has exactly 1 product item.	Reference ProductItem sku in the respective Orderitem to uniquely identify each OrderItem. This is also because a ProductItem can be present in N orders (where N = millions) and each ProductItem	ProductItem is a document. An OrderItem is a KV Pair embedded in Order . The sku of the respective ProductItem is referenced in the OrderItem .

		Document can't have millions of order_ids.	
Products - ProductImages	1:1 or N, A product can have 1 or N images.(N = few = 5)	Embed product_image_id of ProductImage in Product . A product can have upto 5 images.	Product is a document. ProductImage is a KV pair embedded in Product .
* Products - ProductItems	1: 0 or N, A product has 0 or N product items. (N = Many = 100s).	Reference product_id of Product in ProductItem . A Product can have 100s of ProductItems .	Both are documents. The product_id of Product is referenced in ProductItem .
* CartItems - ProductItems	1:1, A CartItem can have exactly 1 ProductItem.	Reference respective ProductItem sku in each CartItem . This is to uniquely identify each CartItem .	ProductItem is a document. CartItem is a KV pair referenced in User . Each CartItem has the sku of the respective ProductItem referenced in it.
* CartItems - Products	1:1, A CartItem can have exactly 1 Product.	Reference product_id of Product in each CartItem . This is to uniquely identify each CartItem .	Product is a document. Each CartItem has the product_id of the respective Product referenced in it.
Products - Reviews	1:N, A Product can have N Reviews. (N = Many = 1000s).	Reference Product in Review .	Product is a document. Review is a KV pair embedded in Product .

So, we have 4 documents: **Users**, **Products**, **ProductItems** and **Orders**.

The Entity-Relationships are declared to be syntactically correct and are approved.

REFERENCES

[1]

<https://www.mongodb.com/developer/products/mongodb/mongodb-schema-design-best-practices/>