##### **Task 3: Schema Design and Optimization**

* Choose between **embedded** and **referenced** schema designs for each collection and explain why.

**Embedded Schema**

Embedded schema design is usually placed directly within a document, take for instance in the customer's document, we can embed the address address by creating another key value document within the customer collection Example

{

"\_id": ObjectId("..."),

"customer\_id": 1,

"name": "Alice",

"email": "alice@example.com",

**"address": {**

**"street": "123 Maple Street",**

**"city": "Springfield",**

**"state": "IL"**

**}**

}

Its advantage is its faster read operation, as all customers' information is in a single document. The disadvantage is frequently changing addresses, which leads to a larger document size and less efficient updates.

**Referenced Schema**

The addresses are kept in a separate collection and referenced in the customer collection like a foreign key in a relational database. This way we reduce data redundancy and allow for easier updates

**The optimal choice for each collection**

Customer collection: Embedded

Product collection: Referenced

Orders Collection: Referenced

Order items collection: Referenced

* **I used Referenced for all my collections**