ThriftFinder Database Design Document

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1 Introduction

1.1 Purpose

This document outlines the database schema for **ThriftFinder**, a local thrifting marketplace app. The design ensures efficient data modeling for:

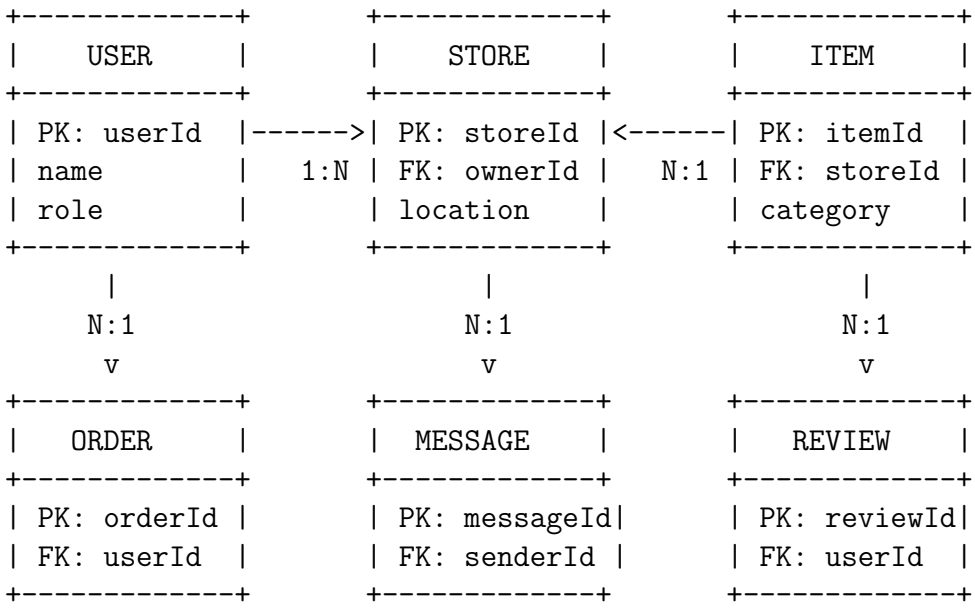
- **Shoppers**: Browse nearby thrift stores, filter items, and place orders
- **Shop Owners**: Manage inventory, communicate with buyers, and track sales

1.2 Database Choice

- **Firestore (NoSQL)**: Best for real-time updates (e.g., chat, inventory changes)
- **MongoDB**: Better for complex queries (e.g., analytics, geospatial searches)

2 Entity-Relationship Diagram (ERD)

2.1 Text-Based ERD



2.2 Key Relationships

Relationship	Type	Description
User → Store	1:N	One user (owner) can own many stores
Store → Item	1:N	One store can list many items
User → Order	1:N	One user can place many orders
Store → Order	1:N	One store can have many orders
User Message	M:N	Users/stores can send/receive messages
User/Store → Review	1:N	Users can review stores/items

3 Detailed Entity Breakdown

3.1 Users

Purpose: Stores shopper and shop owner accounts.

```
{
  "userId": "string (UUID)",
  "name": "string",
  "email": "string (unique)",
  "role": "'shopper' | 'shop_owner'",
  "location": { "lat": number, "lng": number },
  "favoriteStores": ["storeId1", "storeId2"]
}
```

3.2 Stores

Purpose: Thrift shop profiles.

```
{
  "storeId": "string (UUID)",
  "ownerId": "string (ref: users.userId)",
  "location": { "lat": number, "lng": number },
  "openingHours": [
    { "day": "Monday", "open": "9:00 AM", "close": "6:00 PM" }
  ]
}
```

4 Collections & Fields

Collection	Key Fields	Indexes
users	userId, role, location	location (geospatial)
stores	storeId, ownerId, location	ownerId, location
items	itemId, storeId, category	storeId, category

5 Sample Queries

5.1 Find Nearby Stores (5km Radius)

```
// MongoDB
db.stores.find({
  location: {
    $near: {
      $geometry: { type: "Point", coordinates: [userLng, userLat] },
      $maxDistance: 5000
    }
  }
});
```

6 Appendix

6.1 Tools for Visual ERD

- Lucidchart (`https://lucidchart.com`)
- draw.io (`https://draw.io`)
- QuickDBD (`https://quickdatabasediagrams.com`)