

Firestore Doc: Agrisale MobileApp

Project Overview: Agrisale is a mobile app that connects farmers with buyers, providing a platform for farmers to sell their produce directly to consumers. The app uses Firestore as its backend infrastructure to manage user authentication, data storage, and real-time updates.

Firestore Services:

1. Firestore Authentication:

- Authentication method: Email, Password
- User roles: Farmer, Buyer

2. Firestore Realtime Database:

- Database structure:
 - users (node)
 - uid (key)
 - fullname
 - email
 - password
 - usertype (farmer, buyer)
 - products (node)
 - product_id (key)
 - name
 - description
 - price
 - quantity
 - farmer_id (foreign key referencing the user's node)
 - orders (node)
 - order_id (key)
 - buyer_id (foreign key referencing the user's node)
 - product_id (foreign key referencing the products node)
 - quantity
 - status (pending, accepted, delivered)

3. Firestore Storage:

- Storage bucket: agrisale.appspot.com
- Folder structure:
 - products (folder)
 - product_id (folder)
 - image1.jpg
 - image2.jpg

- users (folder)
 - uid (folder)
 - profile_picture.jpg

4. Firebase Cloud Functions:

- Function 1: `sendOrderNotification`
 - Trigger: `OnCreate` (orders node)
 - Code: Send a notification to the farmer when a new order is placed
- Function 2: `updateOrderStatus`
 - Trigger: `OnUpdate` (orders node)
 - Code: Update the order status when the farmer accepts or delivers the order

Security Rules:

1. Realtime Database:

- Only authenticated users can read and write data
- Farmers can only write data to their own products node
- Buyers can only read data from the products node

2. Storage:

- Only authenticated users can upload and download files
- Farmers can only upload files to their own products folder

Firebase SDKs:

1. Firebase Android SDK:

- Version: 20.0.1
- Used for authentication, real-time database, and storage

2. Firebase iOS SDK:

- Version: 7.0.0
- Used for authentication, real-time database, and storage

Additional Notes:

1. The app uses Firebase's built-in email/password authentication.
2. The app uses Firebase's real-time database to store user data, product data, and order data.

3. The app uses Firebase Storage to store product images and user profile pictures.
4. The app uses Firebase Cloud Functions to notify farmers when new orders are placed and to update the order status when the farmer accepts or delivers the order.