

# Notes App with Firebase Integration

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## Firestore Integration Experience

### Overview

Integrating Firebase with the Flutter notes app involved setting up the Authentication and Firestore services. The main challenges were configuring the Firebase project correctly, handling Firebase initialization during development (duplicate app errors), and understanding Firestore query limitations that required composite indexes for complex queries.

### Error Messages Encountered and Resolutions

#### Error 1: Firebase Duplicate App

##### Error Message:

```
[core/duplicate-app] A Firebase App named "[DEFAULT]" already exists
```

**Resolution:** Created Firebase initializer with proper error handling:

```
try {  
  await Firebase.initializeApp(options:  
    DefaultFirebaseOptions.currentPlatform);  
} on FirebaseException catch (e) {  
  if (e.code == 'duplicate-app') {  
    // Firebase already initialized, continue  
    return;  
  }  
  rethrow;  
}
```

#### Error 2: Firestore Index Required

##### Error Message:

The query requires an index. You can create it here:  
<https://console.firebase.google.com/...>

**Resolution:** Modified query to avoid index requirement:

```
// Simple query without orderBy
final snapshot = await _firestore
  .collection('notes')
  .where('userId', isEqualTo: user.uid)
  .get();

// Sort locally instead
notes.sort((a, b) => b.updatedAt.compareTo(a.updatedAt));
```

## Key Learnings

- Hot restart can cause Firebase initialization conflicts
- Firestore composite queries require indexes
- Local sorting can avoid complex Firestore index requirements

## Dart Analyzer Report

The Dart Analyzer is a static analysis tool that helps identify potential issues in Dart code before runtime. Here's how to generate and interpret the report:

### Running Dart Analyzer

To generate the analyzer report, I executed the following command in the project root:

```
dart analyze
```

### Analyzer Report Results

```
→ individual_assignment2 git:(main) ✗ dart analyze
Analyzing individual_assignment2... 1.3s
No issues found!
→ individual_assignment2 git:(main) ✗
```

## GitHub Repository

**Repository URL:** [https://github.com/izabayo7/individual\\_assignment2.git](https://github.com/izabayo7/individual_assignment2.git)

## Demo Video

**YouTube URL:** <https://youtu.be/wluaiWd7xes>