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**Program & Department: MEng Electrical & Computer Engineering**

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**Topic: Expense Tracker & Budget Planner**

I have built an Expense Tracker & Budget planner mobile application using Flutter. The functionality of the application are as follows,

**Sign Up/Sign In Screen**: This uses Firebase User Authentication and Authorization. The user has to provide email Id and password

**Dashboard**: Overview of recent transactions, existing balance.

**Analytics Screen**: A graphical representation of expenses for the entire month.

**Goals Screen**: Track and manage savings goals.

**User Profile Screen**: Manage Display Name, Profile picture, Phone Number information

'+' button on the Home screen i.e Dashboard navigates the user to Add Expenses/ Income screen where based on the user selection the input fields dynamically changes depending on Income/Expenses.

**Transaction Details Screen**: On clicking each of the Dashboard recent transactions the user will be navigated to Transaction Details screen where the user will be able to edit or delete the transaction.

For Web-enablement: I am using Firebase REST API for real-time database access and save user generated data with Firebase.

For storing profile images, I am using Storage in Firebase

## Firebase Authentication

# Authentication

Users    Sign-in method    Templates    Usage    Settings    🧩 Extensions

| 🔍 Search by email address, phone number, or user UID | | | | Add user  C  ⋮ |
|---|---|---|---|---|
| Identifier | Providers | Created ↓ | Signed In | User UID |
| testuser03@gmail.com | ✉ | Dec 15, 2023 | Dec 15, 2023 | FNIv9CLPUIeBNYUa1R2ExMx... |
| testuser2@gmail.com | ✉ | Dec 15, 2023 | Dec 15, 2023 | 82L4yWiIJpSZrhiPnd8mUEzD... |
| testuser@gmail.com | ✉ | Dec 3, 2023 | Dec 15, 2023 | bAWuIeItSqMw778jie7JXKWH... |

Rows per page:    50 ▾    1 – 3 of 3    ‹    ›

## Cloud Firestore (Database storage & REST API)

🏠 › expenseTracker..                                    ☁ More in Google Cloud ▾

| 📶 (default) | 📋 expenseTrackerUsers ≡ ⋮ | |
|---|---|---|
| + Start collection | + Add document | |
| expenseTrackerUsers  › | 2ITnK1FeLFWzRC0H1Z6QmhtFnwk2 | |
| | 2p0AFeaUilRgH0jtsOnDKSbipHD2 | |
| | 7JQgaburcBO2kVkDdZGnzsuPdL23 | |
| | 8aRNkMPDfQZ3T6jxkG5oUjUSet62 | |
| | FNlv9CLPUleBNYUa1R2ExMxZjj03 | |
| | HPXbPbmIKzTJCBVSUbCEX3XUN5x1 | |
| | IhWfkG7tXFdKRlUI8eDE0qaSJza2 | |
| | KpoMVrJcLJVO8Y1rKJ4yIISYKuj2 | |
| | OWWuhjWcJwbnV5sw3gKAkLcWTtr2 | |
| | SyzVjvGjvSVUBqDx3EDppwHCbz33 | |
| | Z9OvuCKOsRSyd6v7xvneJToGxjh1 | |
| | bAWuIeItSqMw778jie7JXKWHKox1 | |
| | eEiltJn6AHeaZVrrwT9PBwwivSs2 | |
| | fjzIEaGuaWaqOSr4m94VAiwsMxp1 | |

| 🛜 (default) | 🗐 expenseTrackerUsers ▽ ⋮ | 🗒 bAWuleltSqMw778jie7JXKWHKox1 ⋮ |
|---|---|---|
| + Start collection | + Add document | + Start collection |
| expenseTrackerUsers › | 2ITnK1FeLFWzRC0H1Z6QmhtFnwk2 | goals |
| | 2p0AFeaUilRgH0jtsOnDKSbipHD2 | transactions |
| | 7JQgaburcBO2kVkDdZGnzsuPdL23 | |
| | 8aRNkMPDfQZ3T6jxkG5oUjUSet62 | + Add field |
| | FNlv9CLPUleBNYUa1R2ExMxZjj03 | |
| | HPXbPbmIKzTJCBVSUbCEX3XUN5x1 | |
| | IhWfkG7tXFdKRlUI8eDE0qaSJza2 | |
| | KpoMVrJcLJVO8Y1rKJ4yIISYKuj2 | |
| | OWWuhjWcJwbnV5sw3gKAkLcWTtr2 | |
| | SyzVjvGjvSVUBqDx3EDppwHCbz33 | |
| | Z9OvuCKOsRSyd6v7xvneJToGxjh1 | This document does not exist, it will not appear in queries or snapshots. |
| | bAWuleltSqMw778jie7JXKWHKox1 › | Learn more 🗗 |
| | eEiltJn6AHeaZVrrwT9PBwwivSs2 | |
| | fjzIEaGuaWaqOSr4m94VAiwsMxp1 | |

| 🗒 bAWuleltSqMw778jie7JXKWHKox1 ⋮ | 🗐 transactions ▽ ⋮ | 🗒 LGwB8Wc8DsaNLTnpRYh1 ⋮ |
|---|---|---|
| + Start collection | + Add document | + Start collection |
| goals | LGwB8Wc8DsaNLTnpRYh1 › | + Add field |
| transactions › | PmvLwBSMoTNlIeOf1k73 | transactionAmount: -200 |
| | ylfXZGkaI7G9ggyJWDc0 | transactionCategory: "Meal" |
| + Add field | z6PJAusZ7WYgZ2QthIVO | transactionDate: December 15, 2023 at 12:00:00 AM UTC-5 |
| | | transactionTitle: "test" |
| This document does not exist, it will not appear in queries or snapshots. | | |
| Learn more 🗗 | | |

| 📄 bAWuleItSqMw778jie7JXKWHKox1 ⋮ | 📑 transactions ☰ ⋮ | 📄 PmvLwBSMoTNlIeOf1k73 ⋮ |
|---|---|---|
| ＋ Start collection | ＋ Add document | ＋ Start collection |
| goals | LGwB8Wc8DsaNLTnpRYh1 | ＋ Add field |
| transactions › | PmvLwBSMoTNlIeOf1k73 › | transactionAmount: 1000 |
| ＋ Add field | ylfXZGkaI7G9ggyJWDc0 | transactionCategory: "Income" |
|  | z6PJAusZ7WYgZ2QthIVO | transactionDate: December 15, 2023 at 2:17:34 PM UTC-5 |
|  |  | transactionTitle: "test" |

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Learn more ↗

📍 Database location: nam5

| 📄 bAWuleItSqMw778jie7JXKWHKox1 ⋮ | 📑 goals ☰ ⋮ | 📄 HNIZOEp85g0myH59GpBc ⋮ |
|---|---|---|
| ＋ Start collection | ＋ Add document | ＋ Start collection |
| goals › | HNIZOEp85g0myH59GpBc › | ＋ Add field |
| transactions | Wizz0ju7hXWjgFvTYjU6 | amountSaved: "1000" |
| ＋ Add field |  | category: "Education" |
|  |  | email: "testuser@gmail.com" |
|  |  | goalAmount: "5000" |
|  |  | targetDate: "30/12/2023" |
|  |  | title: "test goal" |

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Learn more ↗

📍 Database location: nam5

| 📄 bAWuleItSqMw778jie7JXKWHKox1 ⋮ | 📘 users ☰ ⋮ | 📄 bAWuleItSqMw778jie7JXKWHKox1 ⋮ |
|---|---|---|
| **+ Start collection** | **+ Add document** | **+ Start collection** |
| transactions | bAWuleItSqMw778jie7JXKWHKox1 › | **+ Add field** |
| users › | | displayName: "test user 2" |
| **+ Add field** | | email: "testuser@gmail.com" |
| | | phoneNumber: "" |
| | | profileImageUrl: "https://firebasestorage.googleapis.com/v0/b/flutter-expensetracker.appspot.com/o/profile_images%2FbAWuleItS alt=media&token=bfa876d3-08d1-4bdb-a62a-9b0e0afe45c2" |

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Learn more ↗

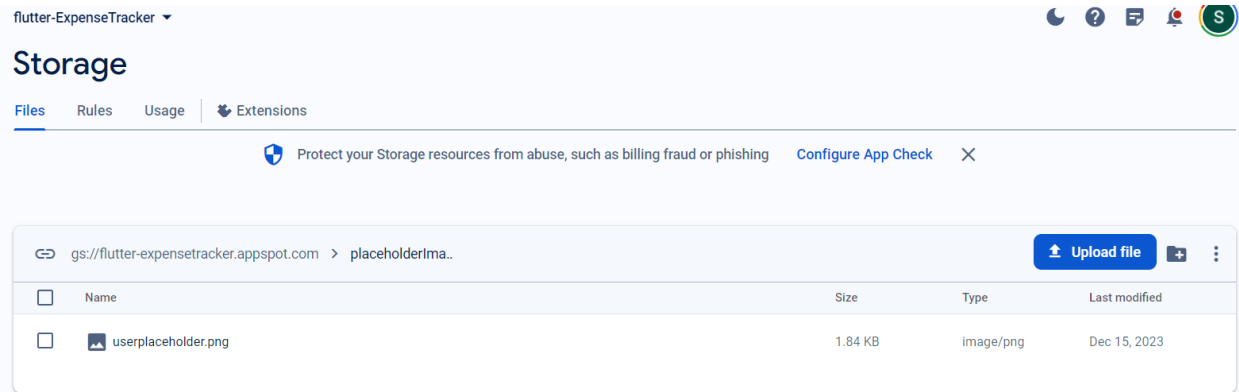# Storage (for storing profile images)

flutter-ExpenseTracker ⌄

## Storage

**Files**  Rules  Usage  | 🐝 Extensions

🛡 Protect your Storage resources from abuse, such as billing fraud or phishing    **Configure App Check**  ✕

🔗 gs://flutter-expensetracker.appspot.com › profile_images    ⬆ **Upload file**  📁  ⋮

| ☐ | Name | Size | Type | Last modified |
|---|---|---|---|---|
| ☐ | 📄 2p0AFeaUilRgH0jtsOnDKSbipHD2 | 71.51 KB | | Dec 15, 2023 |
| ☐ | 📄 Z9OvuCKOsRSyd6v7xvneJToGxjh1 | 73.51 KB | | Dec 15, 2023 |
| ☐ | 📄 bAWuleItSqMw778jie7JXKWHKox1 | 73.93 KB | | Dec 15, 2023 |
| ☐ | 📄 fjzIEaGuaWaqOSr4m94VAiwsMxp1 | 70.2 KB | | Dec 15, 2023 |

I had to include the below lines in android/app/build.gradle

```
multiDexEnabled true
```

```
dependencies {
    implementation 'com.android.support:multidex:1.0.3'
}
```