



Storage: **Using Firebase Realtime DB**

Setting up Firebase

- **Install Firebase Libraries & Firebase Assistant:**
 - <https://developer.android.com/studio/write/firebase.html>
 - May not be necessary in current versions of Android Studio

- <https://github.com/firebase/FirebaseUI-Android>

Firestore Realtime Database

- **NoSQL database**
 - Basically a giant JSON tree
- **Automatically kept consistent between device & server**
 - Can access local version even if disconnected
- **Explicit writes**
- **Listen for current state & updates**
 - Sends all current state when you attach
 - Sends updates when they happen

Tools->Firebase

- **Click on Realtime Database: Save and Retrieve Data**
 - Provides “wizards” that set things up for you
- **Create an account**
 - Sets up Firebase project on Google’s servers
- **Connect your App to Firebase**
 - Modifies gradle files to include code & metadata
- **Get DB references**
- **Write data**
- **Attach listeners**

Connecting App to Firebase

- These should be done for you by the wizard.

- Add to the 'Project' gradle file:

```
dependencies {  
    classpath 'com.google.gms:google-services:3.0.0'  
}
```

- Add to 'App' gradle file:

```
compile 'com.google.firebase:firebase-core:10.2.1'  
compile 'com.google.firebase:firebase-database:10.2.1'  
compile 'com.google.android.gms:play-services-auth:10.2.1'
```

```
compile 'com.firebaseui:firebase-ui-database:1.2.0'  
    (if you want to use it; see next slide)
```

Firestore UI

- <https://www.learnhowtoprogram.com/android/data-persistence/firebase-recycleradapter>
- Provides special adapters for Firestore Realtime Database
- RecyclerView:

```
mRecyclerView = (RecyclerView) findViewById(R.id.view);
mRecyclerView.setHasFixedSize(true);
mRecyclerView.setLayoutManager(new
                                LinearLayoutManager(this));
FirestoreRecyclerAdapter<Type, ViewHolder> adapter =
    new FirestoreRecyclerAdapter<Type, ViewHolder>(Type.class,
                                                R.id.layout, ViewHolder.class, databaseRef){
        @Override
        protected void populateViewHolder(ViewHolder viewHolder,
                                             Type model, int position) {
            // do adapter things
        }
    };
```