Firebase Tutorial

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CSCI 310
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What is Firebase?

In essence:

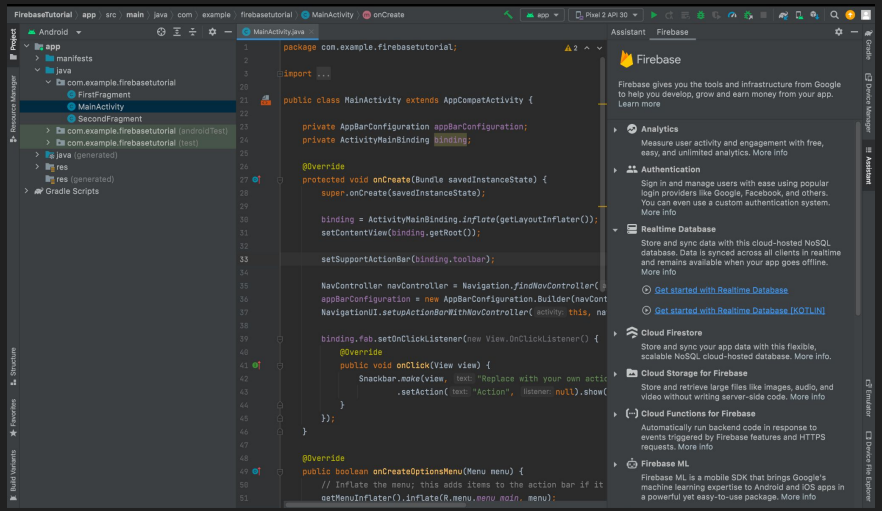
- A free mobile app development platform from Google
- We will specifically look at its cloud database solution, Realtime Database

What we will do:

- Create project on Firebase and integrate it to Android Studio
- Create Realtime Database inside our Firebase project
- Read and write to our Realtime Database
- Follow along here: https://github.com/briankim113/FirebaseTutorial
- Check out the official documentation here: https://firebase.google.com/docs/database/android/start

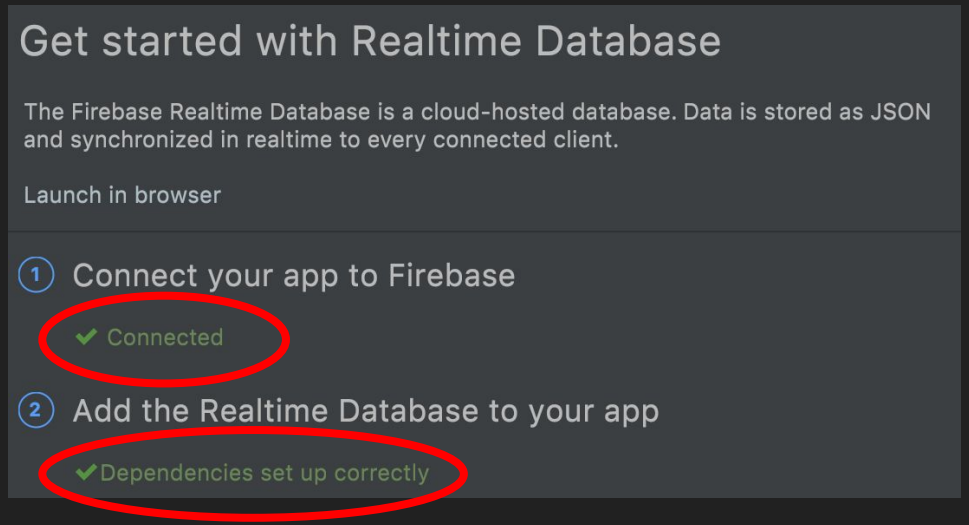
1. Open your project on Android Studio

- Click on Tools → Firebase
  - should open up the Firebase Assistant
- Click on “Get Started with Realtime Database”
- Click on “Connect to Firebase”
  - should open up Firebase Console (web)



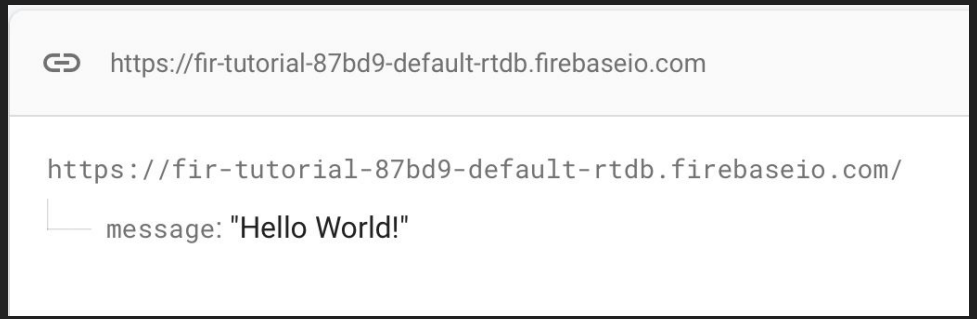
2. Create project on Firebase Console

- If you haven’t created your Firebase project, then you can create one now.
- If you have created one, then just select the right one.
- Back on the Android Studio, click “Add SDK dependencies”



3. “Hello World!”

- Back to our project on the Console
- Click on Build → Realtime Firebase → Create database
  - Click Test mode for now
- Empty database
  - Create a leaf node with key, value pair: (message, “Hello World!”)



4. Before we start… check your gradle

Project gradle

```
buildscript {
    dependencies {
        classpath 'com.google.gms:google-services:4.3.14'
    }
}
```

Module gradle

```
id 'com.google.gms.google-services'

implementation platform('com.google.firebase:firebase-bom:30.5.0')
implementation 'com.google.firebase:firebase-database'
```

These should have been done automatically

Now you can add in your Java files

```
import com.google.firebase.database.FirebaseDatabase;
import com.google.firebase.database.DatabaseReference;
import com.google.firebase.database.ValueEventListener;
import com.google.firebase.database.DataSnapshot;
import com.google.firebase.database.DatabaseError;
```

And more…

5. User input becomes data

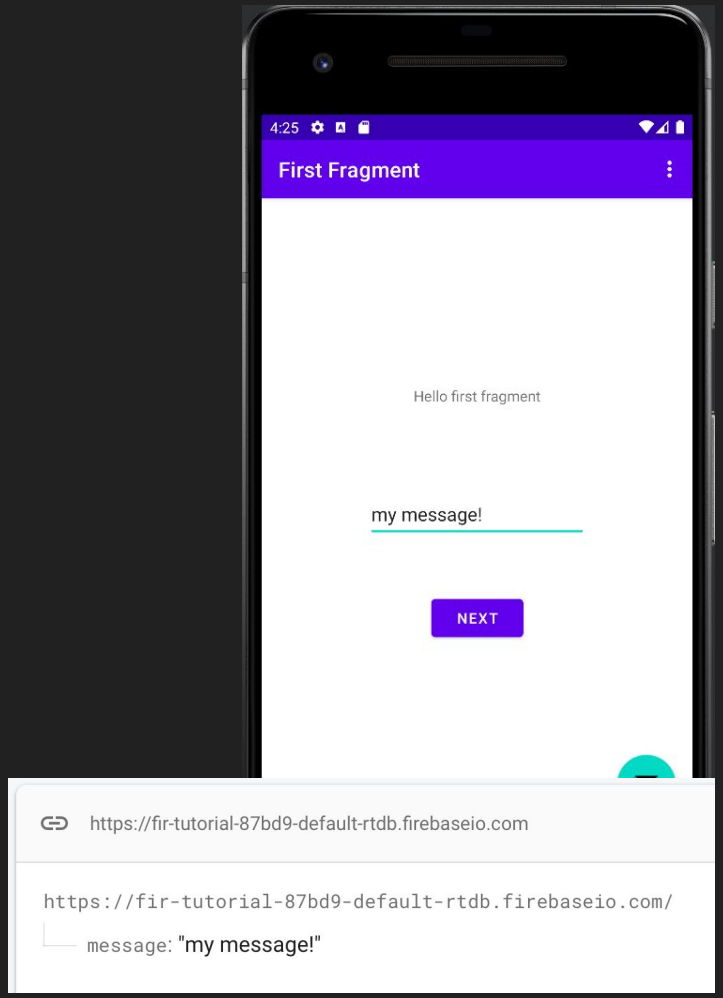
Inside FirstFragment.java:

```
FirebaseDatabase root;
DatabaseReference reference;
```

If we have a EditText called inputText…

```
public void onClick(View view) {
    root = FirebaseDatabase.getInstance();
    reference = root.getReference("message");
    reference.setValue(inputText.getText().toString());
}
```

The code above will save “my message!” when I click NEXT



6. Read info from database

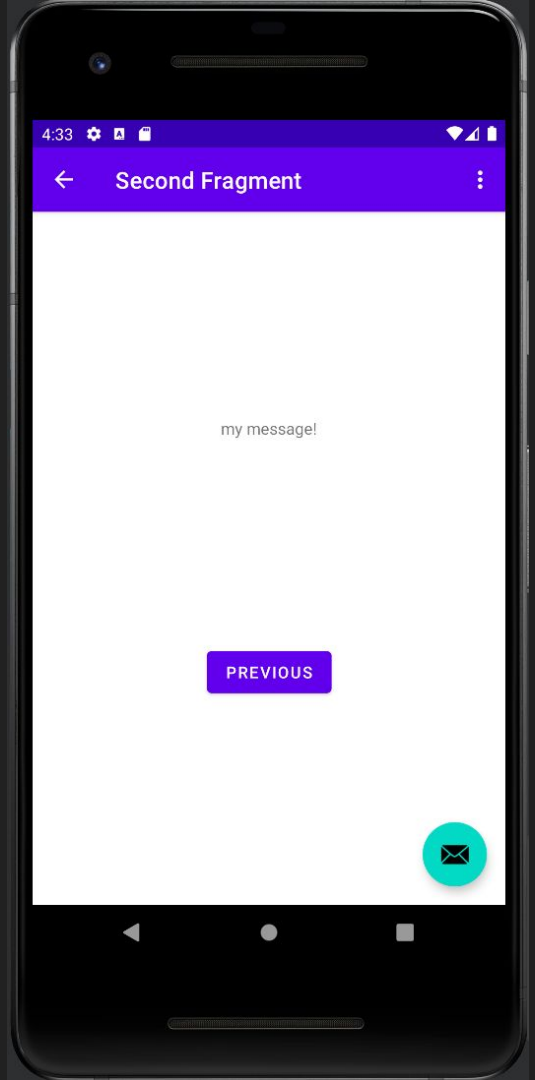
Inside SecondFragment.java:

- same setup regarding root and reference as slide before

If we have a TextView called textView…

```
// Read from the database
reference.addValueEventListener(new ValueEventListener() {
    @Override
    public void onDataChange(DataSnapshot dataSnapshot) {
        String value = dataSnapshot.getValue(String.class);
        textView.setText(value);
    }

    @Override
    public void onCancelled(DatabaseError error) {
        textView.setText("Error in retrieving your message!");
        Log.w("SecondFragment", "Failed to read value.", error.toException());
    }
});
```



What Next?

You can now create your own User class and create / fetch user information!

- More can be found here: https://firebase.google.com/docs/database/android/read-and-write