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## **Experiment no. 06**

**Aim:** To Set Up Firebase with Flutter for iOS and Android Apps

### **Theory:**

What is Firebase?

Firebase is a Backend-as-a-Service (BaaS) app development platform that provides hosted backend services such as a realtime database, cloud storage, authentication, crash reporting, machine learning, remote configuration, and hosting for your static files.

### **Prerequisites to set up Firebase with Flutter:**

- A Google account to use Firebase.
- Developing for iOS will require XCode.
- To download and install [Flutter](#).
- To download and install [Android Studio](#) and [Visual Studio Code](#).
- It is recommended to install plugins for your code editor:
  - [Flutter](#) and [Dart](#) plugins installed for Android Studio.
  - [Flutter](#) extension installed for Visual Studio Code.

## Implementation:

### Creating a New Flutter Project

This tutorial will require the creation of an example Flutter app.

Once you have your environment set up for Flutter, you can run the following to create a new application:

```
Flutter create MADExp4
```

[Copy](#)

Navigate to the new project directory:

```
cd MADExp4
```

Using `flutter create` will produce a demo application that will display the number of times a button is clicked.

Now that we've got a Flutter project up and running, we can add Firebase.

### Creating a New Firebase Project

First, log in with your Google account to manage your Firebase projects. From within the Firebase dashboard, select the Create new project button and give it a name:

 Create a project (Step 1 of 3)

## Let's start with a name for your project <sup>?</sup>

Project name

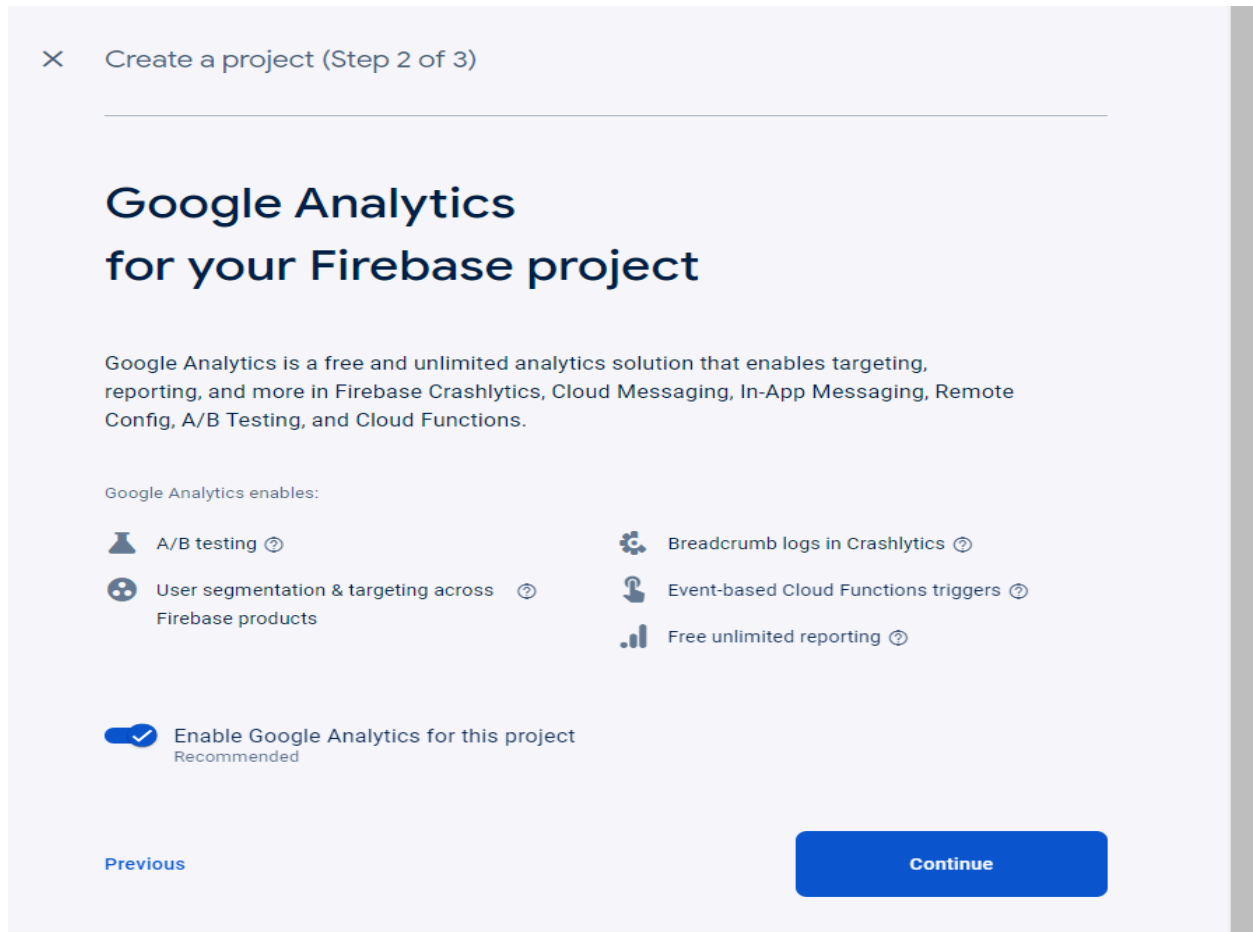
**MADExp4**

 madexp4-f9656

 Select parent resource

Continue

Next, we're given the option to enable Google Analytics. This tutorial will not require Google Analytics, but you can also choose to add it to your project.



After pressing Continue, your project will be created and resources will be provisioned. You will then be directed to the dashboard for the new project.

## Adding Android support

### Registering the App

In order to add Android support to our Flutter application, select the Android logo from the dashboard. This brings us to the following screen:

[illegible]

The most important thing here is to match up the Android package name that you choose here with the one inside of our application.

The structure consists of at least two segments. A common pattern is to use a domain name, a company name, and the application name:

com.example.exp6

Once you've decided on a name, open `android/app/build.gradle` in your code editor and update the `applicationId` to match the Android package name:

```
android/app/build.gradle
...
defaultConfig {
    // TODO: Specify your own unique Application ID
    (https://developer.android.com/studio/build/application-id.html).
    applicationId 'com.example.exp6'
    ... }
```



You can skip the app nickname and debug signing keys at this stage. Select Register app to continue.

## Downloading the Config File

The next step is to add the Firebase configuration file into our Flutter project. This is important as it contains the API keys and other critical information for Firebase to use.

Select Download `google-services.json` from this page:

**Add Firebase to your Android app**

✓ Register app  
Android package name: com.example.exp6, App nickname: Android App

**2 Download and then add config file** [Instructions for Android Studio below](#) | [Unity](#) [C++](#)

[Download google-services.json](#)

Switch to the **Project** view in Android Studio to see your project root directory.

Move your downloaded `google-services.json` file into your module (app-level) root directory.

`google-services.json`

[Next](#)

3 Add Firebase SDK

4 Next steps

Next, move the `google-services.json` file to the `android/app` directory within the Flutter project.

## Adding the Firebase SDK

We'll now need to update our Gradle configuration to include the Google Services plugin.

Open `android/build.gradle` in your code editor and modify it to include the following:

```

android/build.gradle
    buildscript {

        repositories {

            // Check that you have the following line (if not, add it):
            google() // Google's Maven repository
        }
        dependencies {
            ...
            // Add this line
            classpath 'com.google.gms:google-services:4.3.6'
        }
    }

```

```

allprojects {

    ...
    repositories {
        // Check that you have the following line (if not, add it):

        google() // Google's Maven repository
        ...
    }
}

```

Finally, update the app level file at `android/app/build.gradle` to include the following:

```

apply plugin: 'com.android.application'

// Add this line
apply plugin: 'com.google.gms.google-services'

dependencies {

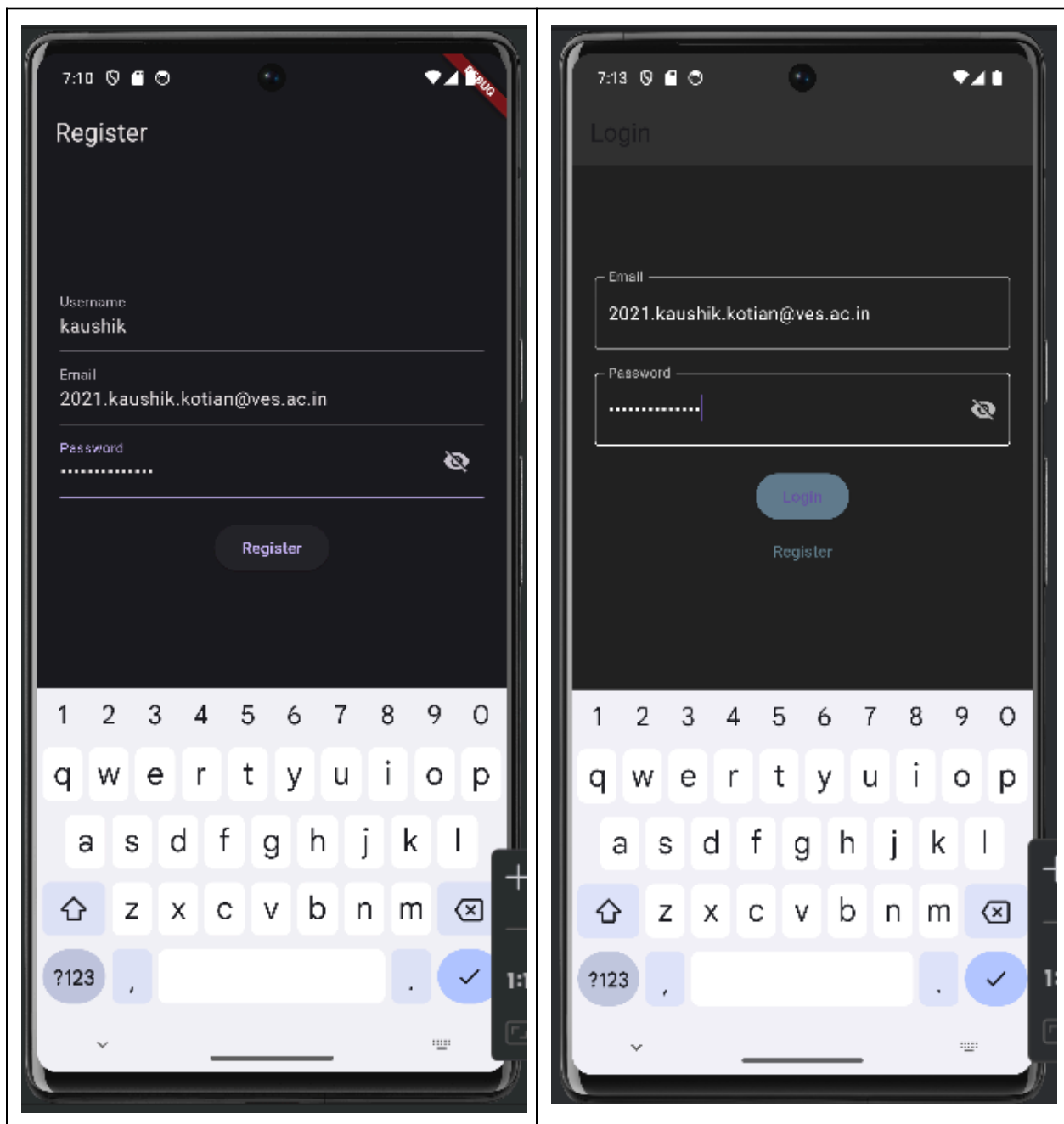
    // Import the Firebase BoM
    implementation platform('com.google.firebase:firebase-bom:28.0.0')

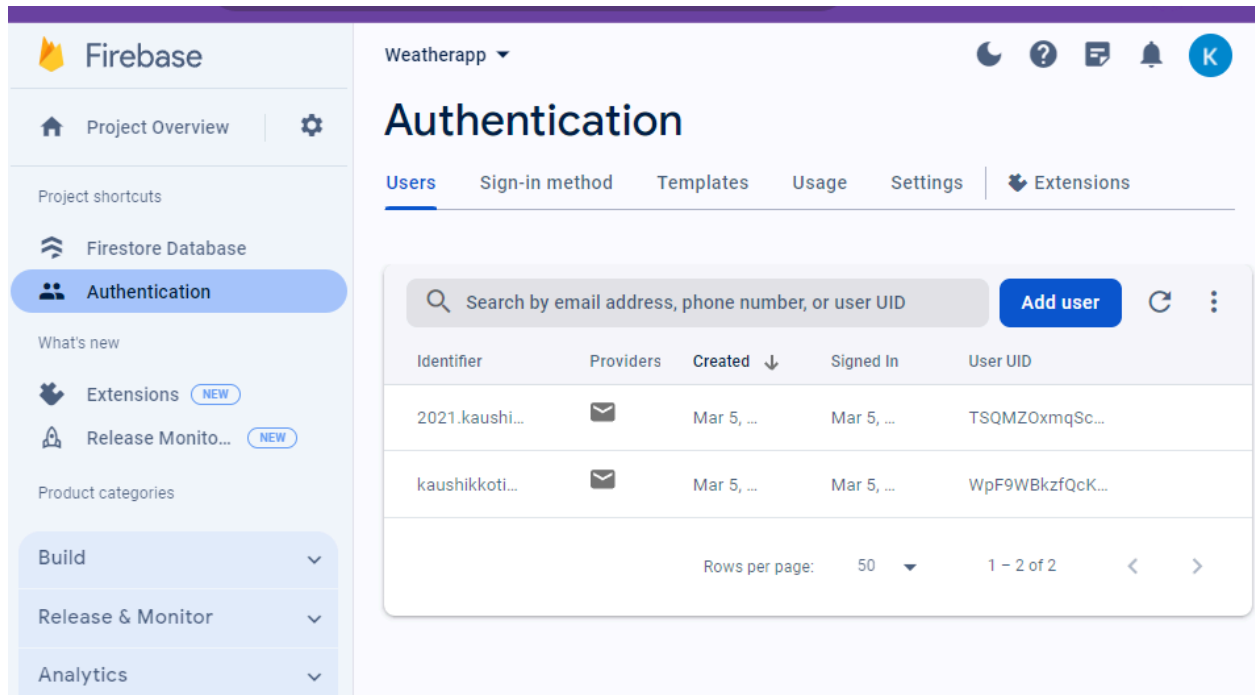
    // Add the dependencies for any other desired Firebase products
    // https://firebase.google.com/docs/android/setup#available-libraries }

```

With this update, we're essentially applying the Google Services plugin as well as looking at how other Flutter Firebase plugins can be activated such as Analytics.

From here, run your application on an Android device or simulator. If everything has worked correctly, you should get the following message in the dashboard:





## Conclusion:

We have learned how to set up and ready our Flutter applications to be used with Firebase.

Flutter has official support for Firebase with the [FlutterFire](#) set of libraries.