Institut Teknologi Telkom Purwokerto

Fakultas Informatika IT Telkom Purwokerto

Tahun Ajar 2022/2023

PEMROGRAMAN PERANGKAT BERGERAK

Praktikum 8 :

Firebase Firestore
Create, Read

Pengembang Modul :
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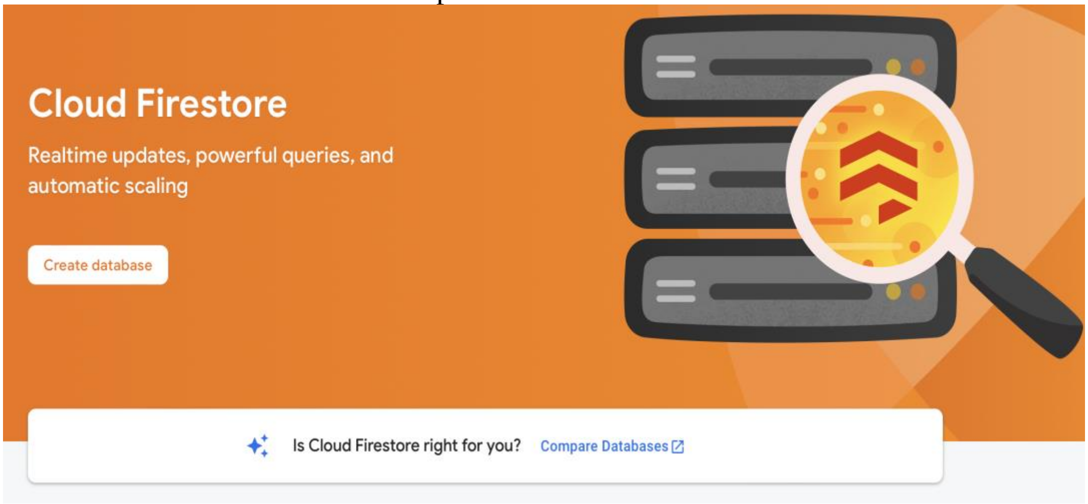
Praktikum ini masih melanjutkan praktikum sebelumnya sehingga masih menggunakan project flutter dan Firebase yang sama.

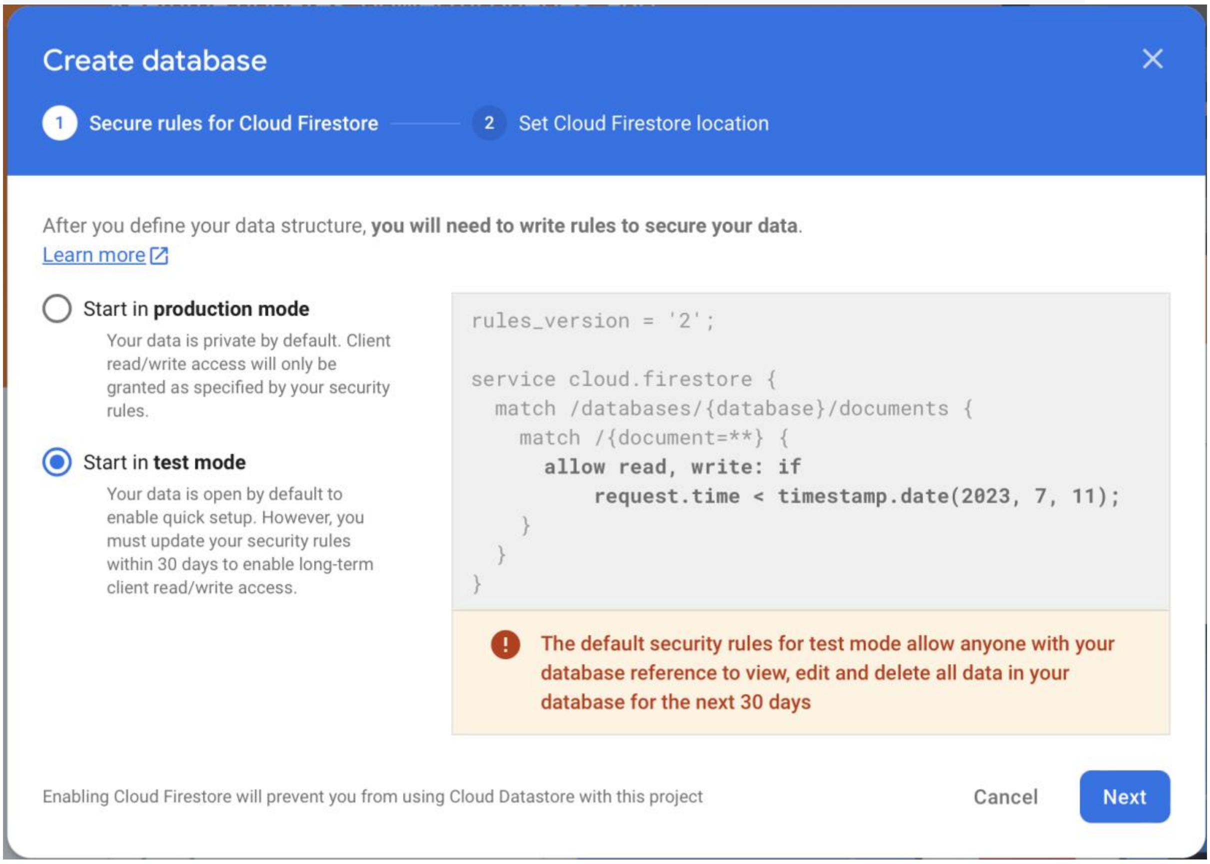
1. Buatlah database Cloud Firestore pada web Firebase.



Cloud Firestore

Realtime updates, powerful queries, and automatic scaling

Is Cloud Firestore right for you? Compare Databases



Create database

1 Secure rules for Cloud Firestore — 2 Set Cloud Firestore location

After you define your data structure, **you will need to write rules to secure your data**. Learn more

○ Start in **production mode**

Your data is private by default. Client read/write access will only be granted as specified by your security rules.

● Start in **test mode**

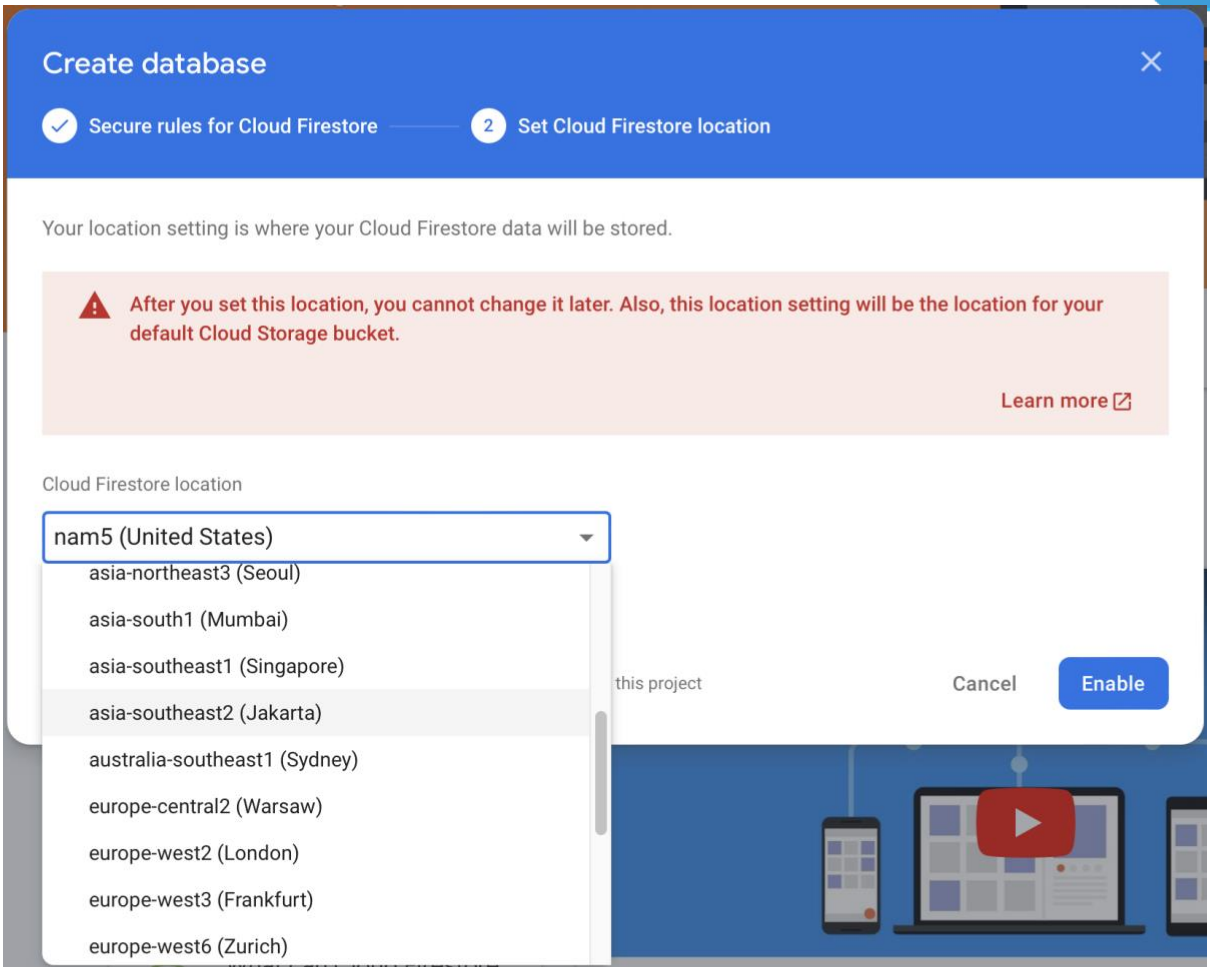
Your data is open by default to enable quick setup. However, you must update your security rules within 30 days to enable long-term client read/write access.

```
rules_version = '2';

service cloud.firestore {
  match /databases/{database}/documents {
    match /{document=**} {
      allow read, write: if
          request.time < timestamp.date(2023, 7, 11);
    }
  }
}
```

The default security rules for test mode allow anyone with your database reference to view, edit and delete all data in your database for the next 30 days

Enabling Cloud Firestore will prevent you from using Cloud Datastore with this project



Create database

✓ Secure rules for Cloud Firestore — 2 Set Cloud Firestore location

Your location setting is where your Cloud Firestore data will be stored.

After you set this location, you cannot change it later. Also, this location setting will be the location for your default Cloud Storage bucket.

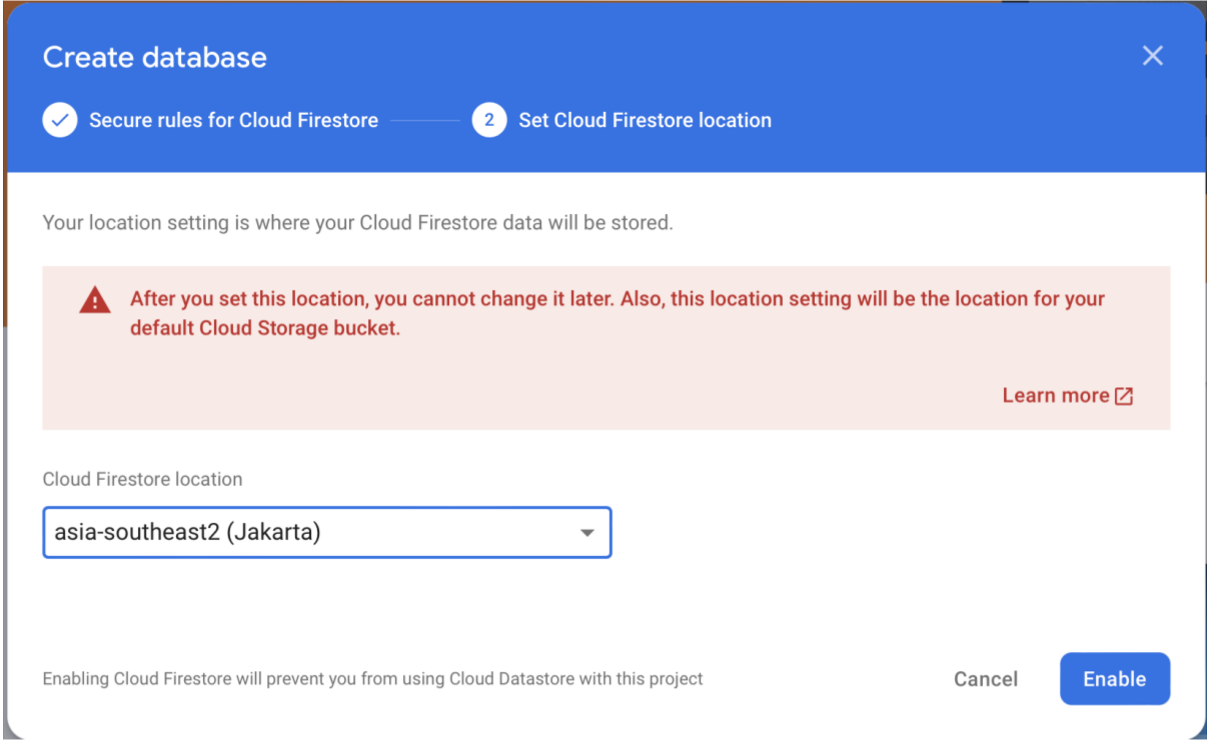
Learn more

Cloud Firestore location

nam5 (United States)

- asia-northeast3 (Seoul)
- asia-south1 (Mumbai)
- asia-southeast1 (Singapore)
- asia-southeast2 (Jakarta)
- australia-southeast1 (Sydney)
- europe-central2 (Warsaw)
- europe-west2 (London)
- europe-west3 (Frankfurt)
- europe-west6 (Zurich)

this project



Create database

✓ Secure rules for Cloud Firestore — 2 Set Cloud Firestore location

Your location setting is where your Cloud Firestore data will be stored.

After you set this location, you cannot change it later. Also, this location setting will be the location for your default Cloud Storage bucket.

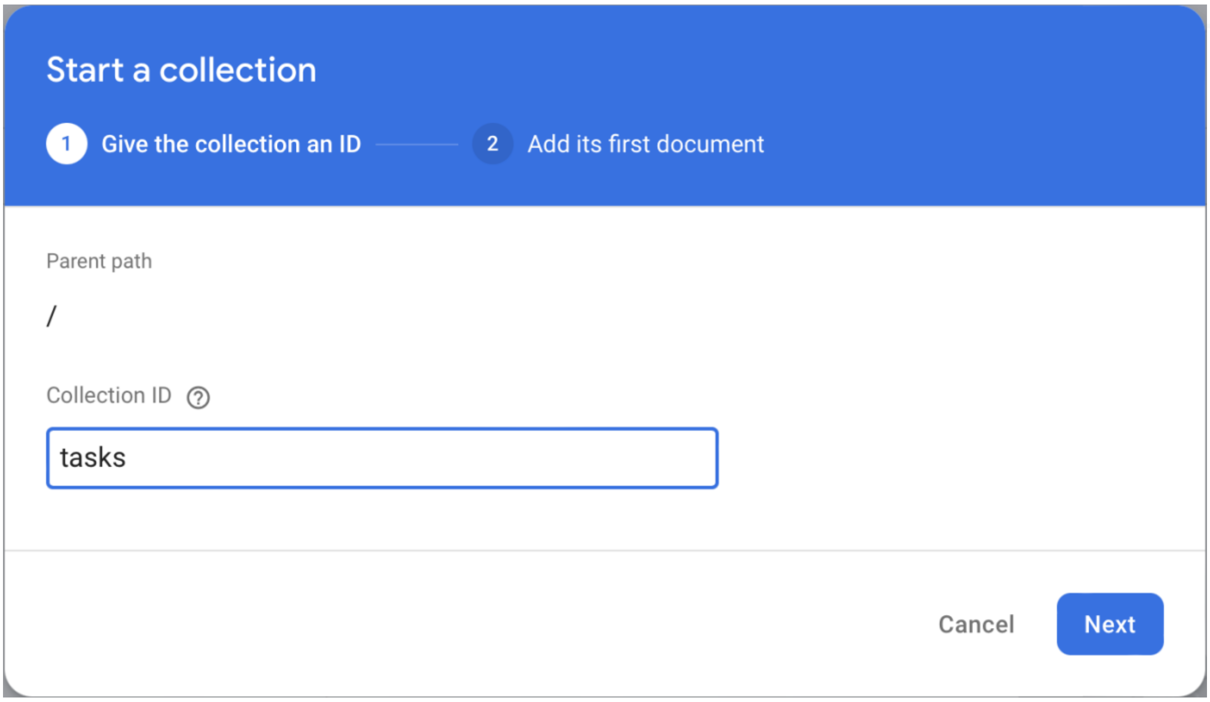
Learn more

Cloud Firestore location

asia-southeast2 (Jakarta)

Enabling Cloud Firestore will prevent you from using Cloud Datastore with this project

2. Buat collection bernama tasks.



Start a collection

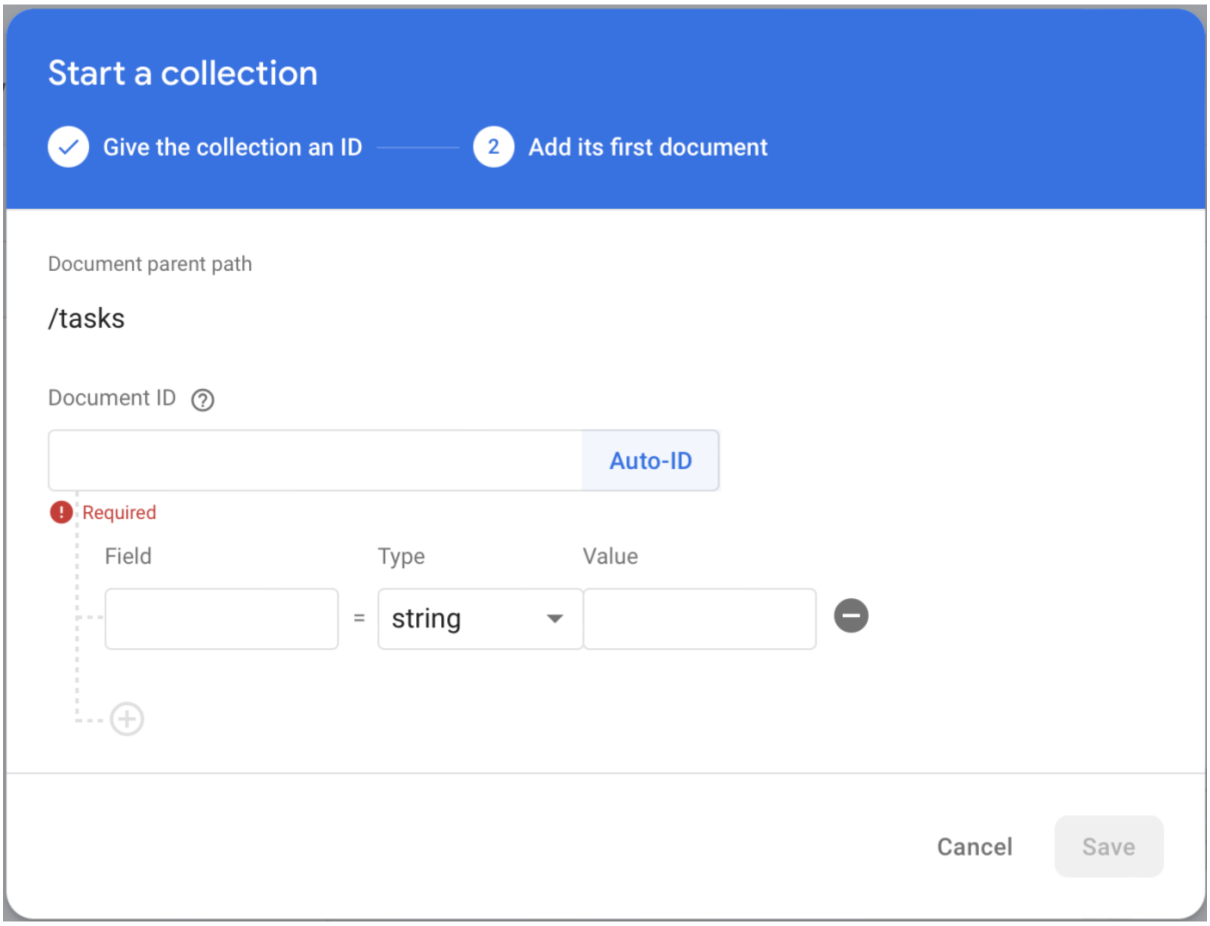
1 Give the collection an ID — 2 Add its first document

Parent path

/

Collection ID

tasks



Start a collection

✓ Give the collection an ID — 2 Add its first document

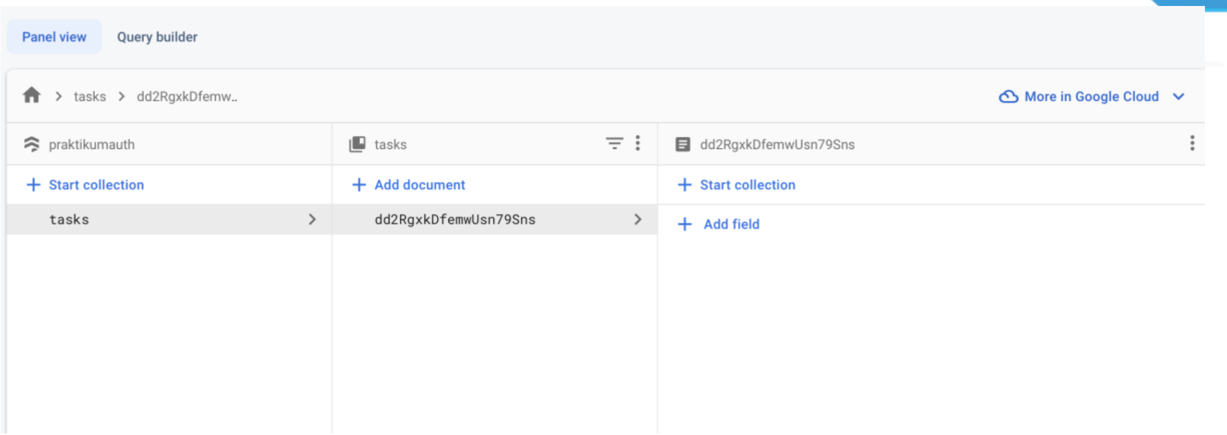
Document parent path

/tasks

Document ID

Required

Field	Type	Value
	string	



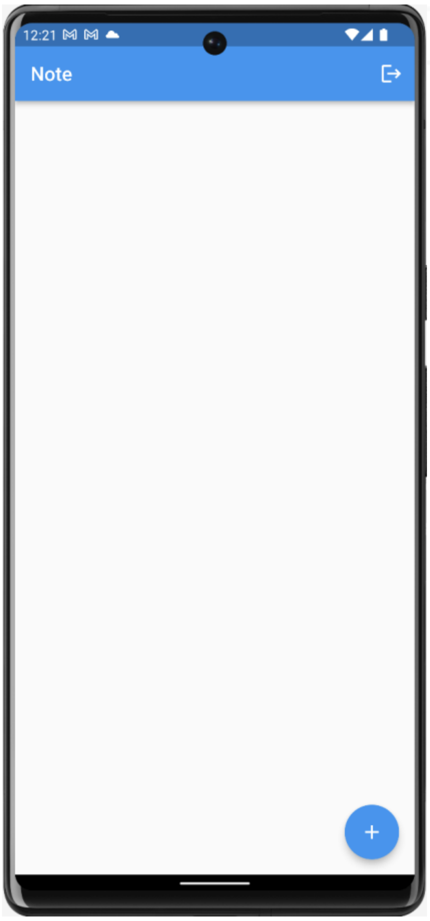
3. Ubah code pada home_screen.dart.

```
import 'package:flutter/material.dart';

class HomeScreen extends StatefulWidget {
  const HomeScreen({Key? key}) : super(key: key);

  @override
  State<HomeScreen> createState() => _HomeScreenState();
}

class _HomeScreenState extends State<HomeScreen> {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        automaticallyImplyLeading: false,
        title: const Text('Note'),
        actions: [
          IconButton(
            icon: const Icon(Icons.logout),
            onPressed: () {},
          )
        ],
      ),
      floatingActionButton: FloatingActionButton(
        onPressed: () {},
        child: const Icon(Icons.add),
      ),
    );
  }
}
```



4. Tambahkan fungsionalitas sign out.

```
appBar: AppBar(
  automaticallyImplyLeading: false,
  title: const Text('Home Screen'),
  actions: [
    IconButton(
      icon: const Icon(Icons.logout),
      onPressed: () async {
        GoogleSignIn().signOut();
        FirebaseAuth.instance
            .signOut()
            .then((value) => Navigator.pushAndRemoveUntil(
            context,
            MaterialPageRoute(
              builder: (context) => const LoginScreen(),
            ),
                (route) => false));
      },
    )
  ],
),
```

Create

Menambahkan data inputan user ke dalam database Firebase Firestore.

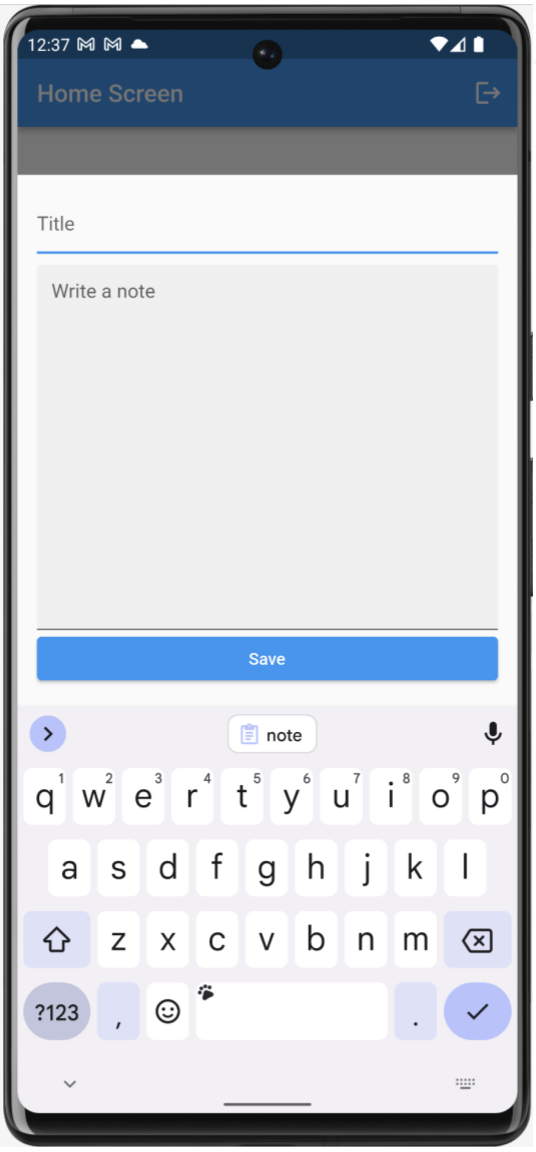
1. Buat Controller untuk inputan dari user.

```
class _HomeScreenState extends State<HomeScreen> {
  final _formKey = GlobalKey<FormState>();
  final TextEditingController titleController = TextEditingController();
  final TextEditingController noteController = TextEditingController();

  @override
  void dispose() {
    titleController.dispose();
    noteController.dispose();
    super.dispose();
  }
  @override
  Widget build(BuildContext context) {
```

2. Tambahkan code berikut pada FloatingActionButton agar ketika tombol diklik akan menampilkan modal bottom sheet.

```
floatingActionButton: FloatingActionButton(
    onPressed: () {
      showModalBottomSheet(
          context: context,
          isScrollControlled: true,
          builder: (context) {
            return Padding(
              padding: const EdgeInsets.all(16.0),
              child: Form(
                key: _formKey,
                child: Column(
                  mainAxisSize: MainAxisSize.min,
                  children: [
                    TextFormField(
                      controller: titleController,
                      decoration: const InputDecoration(hintText: 'Title')),
                    const SizedBox(height: 10.0),
                    SizedBox(
                      height: 300,
                      child: TextFormField(
                          controller: noteController,
                          maxLines: null, // Set this
                          expands: true, // and this
                          keyboardType: TextInputType.multiline,
                          decoration: const InputDecoration(
                              hintText: 'Write a note', filled: true))),
                    Padding(
                      padding: EdgeInsets.only(
                          bottom:
                              MediaQuery.of(context).viewInsets.bottom),
                      child: SizedBox(
                          width: MediaQuery.of(context).size.width,
                          child: ElevatedButton(
                              onPressed: () {},
                              child: const Text('Save'))))
                  ],
                ),
              ),
            );
          });
    },
    child: const Icon(Icons.add)),
```



3. Tambahkan plugin cloud firestore dengan command "flutter pub add cloud_firestore".

4. Buat objek FirebaseFirestore.

```
final _firestore = FirebaseFirestore.instance;

class HomeScreen extends StatefulWidget {
  const HomeScreen({Key? key}) : super(key: key);
```

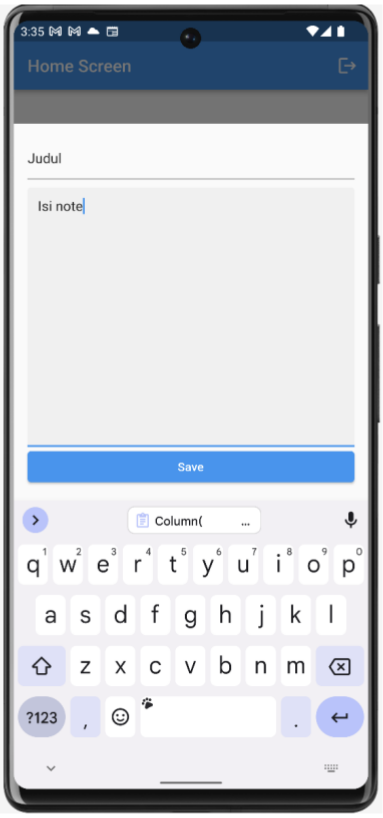
5. Pada android/app/build.gradle ubah minimal versi sdk dan tambahkan multiDex:

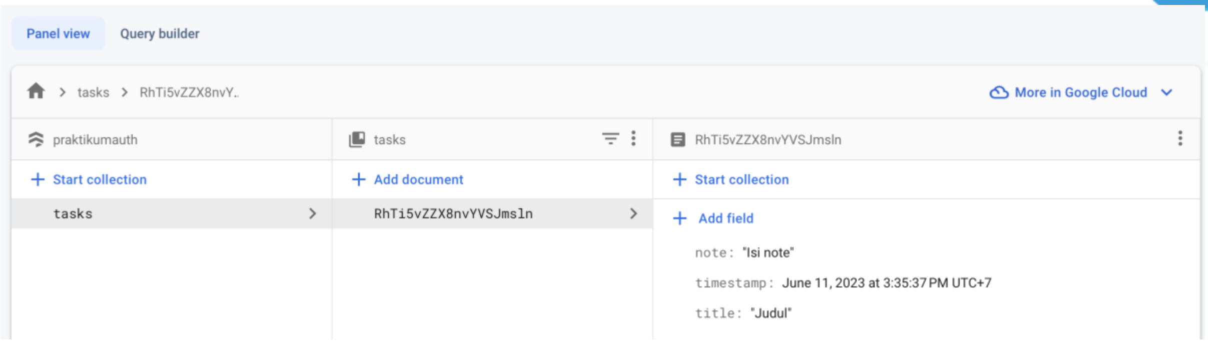
```
defaultConfig {
    applicationId "com.example.praktikum6_auth"
    minSdkVersion 19
    targetSdkVersion flutter.targetSdkVersion
    versionCode flutterVersionCode.toInteger()
    versionName flutterVersionName
    multiDexEnabled true
}
```

6. Agar ketika tombol save ditekan data ditambahkan/disimpan kedalam database firestore.

```
ElevatedButton(
    onPressed: () async {
      if (_formKey.currentState!.validate()) {
        try {
          DocumentReference docRef = await
_firestore.collection('tasks').add({
            'title': titleController.text,
            'note': noteController.text,
            'timestamp':
                FieldValue.serverTimestamp(),
          });
          ScaffoldMessenger.of(context)
              .showSnackBar(
            const SnackBar(
                content:
                    Text('Note ditambahkan')),
          );
          Navigator.pop(context);
        } catch (e) {
          ScaffoldMessenger.of(context)
              .showSnackBar(
            SnackBar(content: Text('$e')),
          );
        }
      }
    },
    child: const Text('Save'))
```

7. Coba tambahkan note.





note: "Isi note"
timestamp: June 11, 2023 at 3:35:37 PM UTC+7
title: "Judul"

Read

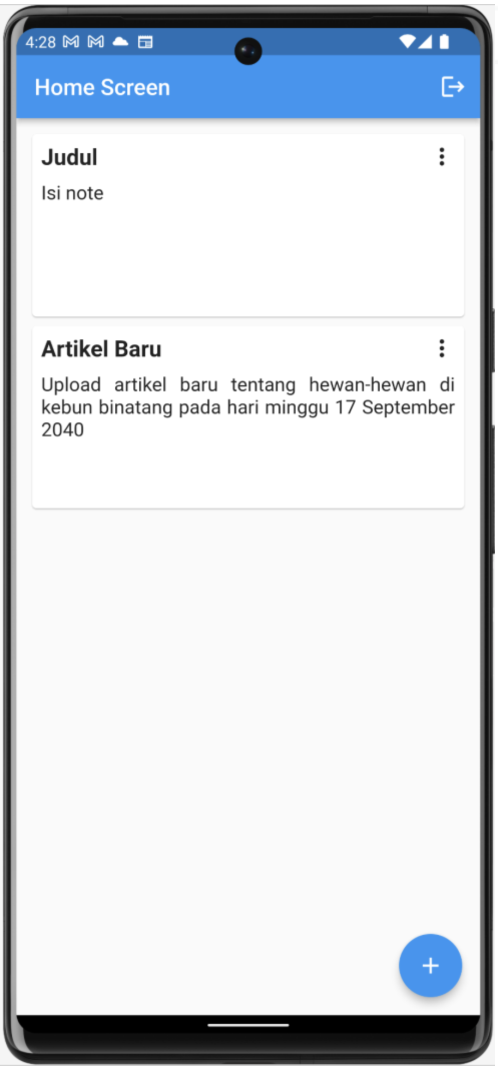
Mengambil dan menampilkan data dari Firebase Firestore.

1. Menampilkan data dari firestore menggunakan StreamBuilder.

```
appBar: AppBar(…),
body: StreamBuilder<QuerySnapshot>(
  stream:
_firestore.collection('tasks').orderBy('timestamp').snapshots(),
  builder: (context, snapshot) {
    if (!snapshot.hasData) {
      return const CircularProgressIndicator();
    }
    return Padding(
      padding: const EdgeInsets.all(10.0),
      child: ListView(
        children: snapshot.data!.docs.map((DocumentSnapshot
document) {
          Map<String, dynamic> data =
              document.data()! as Map<String, dynamic>;
          return Column(
            crossAxisAlignment: CrossAxisAlignment.start,
            children: [
              Text(
                data['title'],
                maxLines: 1,
                style: const TextStyle(
                    fontWeight: FontWeight.w700, fontSize: 20.0),
              ),
              Text(
                data['note'],
                maxLines: 6,
                style: const TextStyle(fontSize: 17.0),
              ),
            ],
          );
        }).toList(),
      ),
    );
  },
),
```

2. Buat Card agar tampilan lebih menarik

```
child: ListView(
  children: snapshot.data!.docs.map((DocumentSnapshot document) {
 Map<String, dynamic> data =
   document.data()! as Map<String, dynamic>;
 return SizedBox(
  height: 170.0,
  width: MediaQuery.of(context).size.width,
  child: Card(
   child: Padding(
    padding: const EdgeInsets.all(8.0),
    child: Column(
     crossAxisAlignment: CrossAxisAlignment.start,
     children: [
      Row(
       mainAxisAlignment: MainAxisAlignment.spaceBetween,
       children: [
        SizedBox(
         width: MediaQuery.of(context).size.width * 0.7,
         child: Text(data['title'],
           maxLines: 1,
           style: const TextStyle(
             fontWeight: FontWeight.w700,
             fontSize: 20.0)),
        ),
        GestureDetector(
          onTap: () {},
          child: Icon(Icons.more_vert_outlined))
       ],
      ),
      const SizedBox(height: 10.0),
      Text(data['note'],
        textAlign: TextAlign.justify,
        maxLines: 5,
        style: const TextStyle(fontSize: 17.0)),
     ],
    ),
   ),
  ),
 );
}).toList(),
```



4:28

Home Screen

Judul

Isi note

Artikel Baru

Upload artikel baru tentang hewan-hewan di kebun binatang pada hari minggu 17 September 2040