



Bharatiya Vidya Bhavan's
SARDAR PATEL INSTITUTE OF TECHNOLOGY
(Autonomous Institute Affiliated to University of Mumbai)
Munshi Nagar, Andheri (W), Mumbai – 400 058.
Department of Computer Science and Engineering

Experiment	8
Aim	Implement user authentication and registration using database with flutter
Objective	<ul style="list-style-type: none">• Create Registration page• Create database• Store, fetch, delete values from database.• User Authentication from database
Name	Atharva Vasant Angre
UCID	2024510001
Class	FYMCA
Batch	A
Date of Submission	21.04.2025

Technology used	Flutter, Firbase
Task	Create a basic registration page and store data n database. Fetch and also delete few entries from database. You can use either firebase database or postgresql.
Code with proper label	<pre>Main.dart import 'package:flutter/material.dart'; import 'package:get/get.dart'; import 'package:firebase_core/firebase_core.dart'; import 'auth_controller.dart'; import 'login_page.dart'; import 'firebase_options.dart'; void main() async { WidgetsFlutterBinding.ensureInitialized(); await Firebase.initializeApp(options: DefaultFirebaseOptions.currentPlatform,); Get.put(AuthController()); runApp(const MyApp()); } class MyApp extends StatelessWidget { const MyApp({super.key}); @override Widget build(BuildContext context) { return GetMaterialApp(debugShowCheckedModeBanner: false, initialBinding: BindingsBuilder(() { Get.lazyPut<AuthController>(() => AuthController()); }), title: 'Auth App', theme: ThemeData(useMaterial3: true, colorSchemeSeed: Colors.deepPurple, fontFamily: 'Poppins',),); } }</pre>



```
home: const LoginPage(),
);
}
}

authController.dart
import 'package:cloud_firestore/cloud_firestore.dart';
import 'package:firebase_auth/firebase_auth.dart';
import 'package:get/get.dart';
import 'package:google_sign_in/google_sign_in.dart';
import 'package:lab_8/home_page.dart';
import 'package:shared_preferences/shared_preferences.dart';
import 'login_page.dart';

class AuthController extends GetxController {
  static AuthController get to => Get.find();

  final auth = FirebaseAuth.instance;
  final firestore = FirebaseFirestore.instance;
  late SharedPreferences _prefs;

  @override
  void onInit() {
    super.onInit();
    // Initialize SharedPreferences
    _initPrefs();
    // Listen to auth state changes
    auth.authStateChanges().listen((User? user) {
      if (user != null) {
        // User is signed in
        _saveLoginStatus(true);
        if (Get.currentRoute != '/home') {
          Get.offAll(() => const HomePage());
        }
      } else {
        // User is signed out
        _saveLoginStatus(false);
        if (Get.currentRoute != '/login') {
          Get.offAll(() => const LoginPage());
        }
      }
    });
  }

  Future<void> _initPrefs() async {
    try {
      _prefs = await SharedPreferences.getInstance();
      // Check if user is already logged in
      checkLoginStatus();
    } catch (e) {
      print("Error initializing SharedPreferences: $e");
    }
  }

  Future<void> checkLoginStatus() async {
    try {
      final isLoggedIn = _prefs.getBool('isLoggedIn') ?? false;
```



Bharatiya Vidya Bhavan's
SARDAR PATEL INSTITUTE OF TECHNOLOGY
(Autonomous Institute Affiliated to University of Mumbai)
Munshi Nagar, Andheri (W), Mumbai – 400 058.
Department of Computer Science and Engineering

```
if (isLoggedIn && auth.currentUser != null) {
  if (Get.currentRoute != '/home') {
    Get.offAll(() => const HomePage());
  }
} else {
  if (Get.currentRoute != '/login') {
    Get.offAll(() => const LoginPage());
  }
}
} catch (e) {
  print("Error checking login status: $e");
}
}

Future<void> _saveLoginStatus(bool status) async {
  try {
    await _prefs.setBool('isLoggedIn', status);
  } catch (e) {
    print("Error saving login status: $e");
  }
}

Future<void> signInWithGoogle() async {
  try {
    // Trigger the authentication flow
    final GoogleSignInAccount? googleUser = await GoogleSignIn().signIn();

    if (googleUser == null) {
      Get.snackbar("Cancelled", "Google sign-in cancelled");
      return;
    }

    // Obtain the auth details from the request
    final GoogleSignInAuthentication googleAuth = await
googleUser.authentication;

    // Create a new credential
    final credential = GoogleAuthProvider.credential(
      accessToken: googleAuth.accessToken,
      idToken: googleAuth.idToken,
    );

    // Sign in to Firebase with the Google [UserCredential]
    await auth.signInWithCredential(credential);
    await _saveLoginStatus(true);

    Get.snackbar("Success", "Logged in with Google!");
    Get.offAll(() => const HomePage());
  } catch (e) {
    print("signInWithGoogle: $e");
    Get.snackbar("Error", e.toString());
  }
}

void registerUser(String name, String email, String password) async {
  try {
    UserCredential userCred = await auth.createUserWithEmailAndPassword(
      email: email, password: password);
  }
```



Bharatiya Vidya Bhavan's
SARDAR PATEL INSTITUTE OF TECHNOLOGY
(Autonomous Institute Affiliated to University of Mumbai)
Munshi Nagar, Andheri (W), Mumbai – 400 058.
Department of Computer Science and Engineering

```
await firestore.collection("users").doc(userCred.user!.uid).set({
  "name": name,
  "email": email,
  "createdAt": DateTime.now(),
});

await _saveLoginStatus(true);

Get.snackbar("Success", "Account created successfully!");
Get.offAll(() => const HomePage());

} catch (e) {
  print("registerUser: $e");
  Get.snackbar("Error", e.toString());
}
}

void loginUser(String email, String password) async {
  try {
    await auth.signInWithEmailAndPassword(email: email, password:
password);
    await _saveLoginStatus(true);

    Get.snackbar("Success", "Login successful");
    Get.offAll(() => const HomePage());
  } catch (e) {
    print("loginUser: $e");
    Get.snackbar("Error", e.toString());
  }
}

void logout() async {
  try {
    await auth.signOut();
    await _saveLoginStatus(false);
    Get.offAll(() => const LoginPage());
  } catch (e) {
    print("logout: $e");
    Get.snackbar("Error", e.toString());
  }
}
}
```

```
registerPage.dart
import 'package:flutter/material.dart';
import 'package:get/get.dart';
import 'package:google_fonts/google_fonts.dart';
import 'package:flutter_animate/flutter_animate.dart';
import 'auth_controller.dart';
import 'login_page.dart';

class RegisterPage extends StatelessWidget {
  const RegisterPage({super.key});

  @override
  Widget build(BuildContext context) {
    final nameController = TextEditingController();
```



Bharatiya Vidya Bhavan's
SARDAR PATEL INSTITUTE OF TECHNOLOGY
(Autonomous Institute Affiliated to University of Mumbai)
Munshi Nagar, Andheri (W), Mumbai – 400 058.

Department of Computer Science and Engineering

```
final emailController = TextEditingController();  
final passwordController = TextEditingController();
```

```
return Scaffold(  
  body: SafeArea(  
    child: SingleChildScrollView(  
      child: Padding(  
        padding: const EdgeInsets.all(24.0),  
        child: Column(  
          crossAxisAlignment: CrossAxisAlignment.stretch,  
          children: [  
            const SizedBox(height: 40),  
            Text(  
              "Create Account",  
              style: GoogleFonts.poppins(  
                fontSize: 32,  
                fontWeight: FontWeight.bold,  
                color: Theme.of(context).primaryColor,  
              ),  
            ).animate().fadeIn().slideX(),  
            const SizedBox(height: 8),  
            Text(  
              "Sign up to get started",  
              style: GoogleFonts.poppins(  
                fontSize: 16,  
                color: Colors.grey[600],  
              ),  
            ).animate().fadeIn().slideX(),  
            const SizedBox(height: 40),  
            TextField(  
              controller: nameController,  
              decoration: InputDecoration(  
                labelText: "Full Name",  
                hintText: "Enter your full name",  
                prefixIcon: const Icon(Icons.person_outline),  
                border: OutlineInputBorder(  
                  borderRadius: BorderRadius.circular(12),  
                ),  
                enabledBorder: OutlineInputBorder(  
                  borderRadius: BorderRadius.circular(12),  
                  borderSide: BorderSide(color: Colors.grey.shade300),  
                ),  
              ),  
            ).animate().fadeIn().slideX(),  
            const SizedBox(height: 16),  
            TextField(  
              controller: emailController,  
              decoration: InputDecoration(  
                labelText: "Email",  
                hintText: "Enter your email",  
                prefixIcon: const Icon(Icons.email_outlined),  
                border: OutlineInputBorder(  
                  borderRadius: BorderRadius.circular(12),  
                ),  
                enabledBorder: OutlineInputBorder(  
                  borderRadius: BorderRadius.circular(12),  
                  borderSide: BorderSide(color: Colors.grey.shade300),  
                ),  
              ),  
            ),  
          ],  
        ),  
      ),  
    ),  
  ),  
);
```



Bharatiya Vidya Bhavan's
SARDAR PATEL INSTITUTE OF TECHNOLOGY
(Autonomous Institute Affiliated to University of Mumbai)
Munshi Nagar, Andheri (W), Mumbai – 400 058.
Department of Computer Science and Engineering

```
.animate().fadeIn().slideX(),
const SizedBox(height: 16),
TextField(
  controller: passwordController,
  obscureText: true,
  decoration: InputDecoration(
    labelText: "Password",
    hintText: "Enter your password",
    prefixIcon: const Icon(Icons.lock_outline),
    border: OutlineInputBorder(
      borderRadius: BorderRadius.circular(12),
    ),
    enabledBorder: OutlineInputBorder(
      borderRadius: BorderRadius.circular(12),
      borderSide: BorderSide(color: Colors.grey.shade300),
    ),
  ),
),
).animate().fadeIn().slideX(),
const SizedBox(height: 24),
ElevatedButton(
  onPressed: () {
    AuthController.to.registerUser(
      nameController.text.trim(),
      emailController.text.trim(),
      passwordController.text.trim(),
    );
  },
  style: ElevatedButton.styleFrom(
    padding: const EdgeInsets.symmetric(vertical: 16),
    shape: RoundedRectangleBorder(
      borderRadius: BorderRadius.circular(12),
    ),
  ),
  child: Text(
    "Create Account",
    style: GoogleFonts.poppins(
      fontSize: 16,
      fontWeight: FontWeight.w600,
    ),
  ),
),
).animate().fadeIn().slideX(),
const SizedBox(height: 16),
TextButton(
  onPressed: () => Get.back(),
  child: Text(
    "Already have an account? Sign In",
    style: GoogleFonts.poppins(
      color: Theme.of(context).primaryColor,
    ),
  ),
),
).animate().fadeIn().slideX(),
const SizedBox(height: 24),
Row(
  children: [
    Expanded(child: Divider(color: Colors.grey.shade300)),
    Padding(
      padding: const EdgeInsets.symmetric(horizontal: 16),
      child: Text(
        "OR",
```



Bharatiya Vidya Bhavan's
SARDAR PATEL INSTITUTE OF TECHNOLOGY
(Autonomous Institute Affiliated to University of Mumbai)
Munshi Nagar, Andheri (W), Mumbai – 400 058.
Department of Computer Science and Engineering

```
style: GoogleFonts.poppins(
  color: Colors.grey[600],
),
),
),
Expanded(child: Divider(color: Colors.grey.shade300)),
],
).animate().fadeIn(),
const SizedBox(height: 24),
OutlinedButton.icon(
  onPressed: () => AuthController.to.signInWithGoogle(),
  icon: Image.asset(
    "assets/images/google.png",
    height: 24,
  ),
  label: Text(
    "Sign up with Google",
    style: GoogleFonts.poppins(
      fontSize: 16,
      fontWeight: FontWeight.w500,
    ),
  ),
  style: OutlinedButton.styleFrom(
    padding: const EdgeInsets.symmetric(vertical: 16),
    shape: RoundedRectangleBorder(
      borderRadius: BorderRadius.circular(12),
    ),
    side: BorderSide(color: Colors.grey.shade300),
  ),
).animate().fadeIn().slideX(),
],
),
),
),
),
);
}
```

```
loginPage.dart
import 'package:flutter/material.dart';
import 'package:get/get.dart';
import 'package:google_fonts/google_fonts.dart';
import 'package:flutter_animate/flutter_animate.dart';
import 'auth_controller.dart';
import 'register_page.dart';
```

```
class LoginPage extends StatelessWidget {
  const LoginPage({super.key});
```

```
  @override
```

```
  Widget build(BuildContext context) {
    final emailController = TextEditingController();
    final passwordController = TextEditingController();
```

```
    return Scaffold(
      body: SafeArea(
```



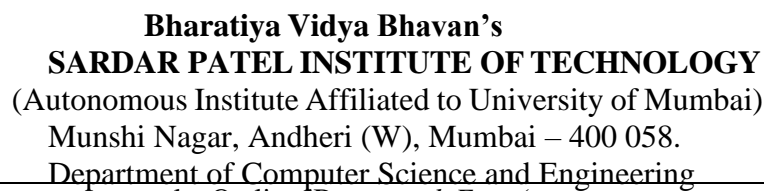
Bharatiya Vidya Bhavan's
SARDAR PATEL INSTITUTE OF TECHNOLOGY
(Autonomous Institute Affiliated to University of Mumbai)
Munshi Nagar, Andheri (W), Mumbai – 400 058.
Department of Computer Science and Engineering

	<pre>child: SingleChildScrollView(child: Padding(padding: const EdgeInsets.all(24.0), child: Column(crossAxisAlignment: CrossAxisAlignment.stretch, children: [const SizedBox(height: 40), Text("Welcome!", style: GoogleFonts.poppins(fontSize: 32, fontWeight: FontWeight.bold, color: Theme.of(context).primaryColor,),).animate().fadeIn().slideX(), const SizedBox(height: 8), Text("Sign in to continue", style: GoogleFonts.poppins(fontSize: 16, color: Colors.grey[600],),).animate().fadeIn().slideX(), const SizedBox(height: 40), TextField(controller: emailController, decoration: InputDecoration(labelText: "Email", hintText: "Enter your email", prefixIcon: const Icon(Icons.email_outlined), border: OutlineInputBorder(borderRadius: BorderRadius.circular(12),), enabledBorder: OutlineInputBorder(borderRadius: BorderRadius.circular(12), borderSide: BorderSide(color: Colors.grey.shade300),),),).animate().fadeIn().slideX(), const SizedBox(height: 16), TextField(controller: passwordController, obscureText: true, decoration: InputDecoration(labelText: "Password", hintText: "Enter your password", prefixIcon: const Icon(Icons.lock_outline), border: OutlineInputBorder(borderRadius: BorderRadius.circular(12),), enabledBorder: OutlineInputBorder(borderRadius: BorderRadius.circular(12), borderSide: BorderSide(color: Colors.grey.shade300),),),).animate().fadeIn().slideX(), const SizedBox(height: 24), ElevatedButton(onPressed: () {</pre>
--	---



Bharatiya Vidya Bhavan's
SARDAR PATEL INSTITUTE OF TECHNOLOGY
(Autonomous Institute Affiliated to University of Mumbai)
Munshi Nagar, Andheri (W), Mumbai – 400 058.
Department of Computer Science and Engineering

```
AuthController.to.loginUser(
    emailController.text.trim(),
    passwordController.text.trim(),
);
},
style: ElevatedButton.styleFrom(
    padding: const EdgeInsets.symmetric(vertical: 16),
    shape: RoundedRectangleBorder(
        borderRadius: BorderRadius.circular(12),
    ),
),
child: Text(
    "Sign In",
    style: GoogleFonts.poppins(
        fontSize: 16,
        fontWeight: FontWeight.w600,
    ),
),
).animate().fadeIn().slideX(),
const SizedBox(height: 16),
TextButton(
    onPressed: () => Get.to(() => const RegisterPage()),
    child: Text(
        "Don't have an account? Register",
        style: GoogleFonts.poppins(
            color: Theme.of(context).primaryColor,
        ),
    ),
),
).animate().fadeIn().slideX(),
const SizedBox(height: 24),
Row(
    children: [
        Expanded(child: Divider(color: Colors.grey.shade300)),
        Padding(
            padding: const EdgeInsets.symmetric(horizontal: 16),
            child: Text(
                "OR",
                style: GoogleFonts.poppins(
                    color: Colors.grey[600],
                ),
            ),
        ),
        Expanded(child: Divider(color: Colors.grey.shade300)),
    ],
).animate().fadeIn(),
const SizedBox(height: 24),
OutlinedButton.icon(
    onPressed: () => AuthController.to.signInWithGoogle(),
    icon: Image.asset(
        "assets/images/google.png",
        height: 24,
    ),
    label: Text(
        "Sign in with Google",
        style: GoogleFonts.poppins(
            fontSize: 16,
            fontWeight: FontWeight.w500,
        ),
    ),
),
```



```
homePage.dart
import 'package:flutter/material.dart';
import 'package:cloud_firestore/cloud_firestore.dart';
import 'package:firebase_auth/firebase_auth.dart';
import 'package:get/get.dart';
import 'package:google_fonts/google_fonts.dart';
import 'package:flutter_animate/flutter_animate.dart';
import 'auth_controller.dart';
```

```
@override
Widget build(BuildContext context) {
  final user = FirebaseAuth.instance.currentUser;
  if (user == null) {
    return const Scaffold(
      body: Center(
        child: Text('User not found'),
      ),
    );
  }
}
```

```
return Scaffold(
  appBar: AppBar(
    title: Text(
      'My Notes',
      style: GoogleFonts.poppins(
        fontSize: 24,
        fontWeight: FontWeight.w600,
      ),
    ),
    centerTitle: true,
    elevation: 0,
    actions: [
      IconButton(
        icon: const Icon(Icons.logout),
        onPressed: () => AuthController.to.logout(),
        tooltip: 'Logout',
      ),
    ],
  ),
);
```



Bharatiya Vidya Bhavan's
SARDAR PATEL INSTITUTE OF TECHNOLOGY
(Autonomous Institute Affiliated to University of Mumbai)
Munshi Nagar, Andheri (W), Mumbai – 400 058.
Department of Computer Science and Engineering

```
),
body: StreamBuilder<QuerySnapshot>(
  stream: FirebaseFirestore.instance
    .collection('notes')
    .where('userId', isEqualTo: user.uid)
    .snapshots(),
  builder: (context, snapshot) {
    if (snapshot.hasError) {
      return Center(child: Text('Error: ${snapshot.error}'));
    }

    if (snapshot.connectionState == ConnectionState.waiting) {
      return const Center(child: CircularProgressIndicator());
    }

    if (!snapshot.hasData || snapshot.data!.docs.isEmpty) {
      return Center(
        child: Text(
          'No notes yet',
          style: GoogleFonts.poppins(
            fontSize: 18,
            color: Colors.grey,
          ),
        ),
      );
    }

    return ListView.builder(
      padding: const EdgeInsets.all(16),
      itemCount: snapshot.data!.docs.length,
      itemBuilder: (context, index) {
        final doc = snapshot.data!.docs[index];
        final data = doc.data() as Map<String, dynamic>;

        return Card(
          margin: const EdgeInsets.only(bottom: 16),
          elevation: 2,
          child: ListTile(
            contentPadding: const EdgeInsets.all(16),
            title: Text(
              data['title'] ?? 'No Title',
              style: GoogleFonts.poppins(
                fontSize: 18,
                fontWeight: FontWeight.w600,
              ),
            ),
            subtitle: Text(
              data['content'] ?? 'No Content',
              style: GoogleFonts.poppins(
                fontSize: 14,
                color: Colors.grey[600],
              ),
            ),
            trailing: Row(
              mainAxisAlignment: MainAxisAlignment.min,
              children: [
                IconButton(
                  icon: const Icon(Icons.edit),
                  onPressed: () => _showEditDialog(context, doc),
                ),
              ],
            ),
          ),
        );
      },
    );
  },
);
```



Bharatiya Vidya Bhavan's
SARDAR PATEL INSTITUTE OF TECHNOLOGY
(Autonomous Institute Affiliated to University of Mumbai)
Munshi Nagar, Andheri (W), Mumbai – 400 058.
Department of Computer Science and Engineering

```
color: Colors.blue,
),
IconButton(
  icon: const Icon(Icons.delete),
  onPressed: () => _deleteNote(doc.id),
  color: Colors.red,
),
],
),
),
).animate().fadeIn().slideX();
},
);
},
),
floatingActionButton: FloatingActionButton(
  onPressed: () => _showAddDialog(context),
  child: const Icon(Icons.add),
).animate().scale(),
);
}

void _showAddDialog(BuildContext context) {
  final titleController = TextEditingController();
  final contentController = TextEditingController();
  final user = FirebaseAuth.instance.currentUser;

  showDialog(
    context: context,
    builder: (context) => AlertDialog(
      title: Text(
        'Add Note',
        style: GoogleFonts.poppins(fontWeight: FontWeight.w600),
      ),
      content: Column(
        mainAxisAlignment: MainAxisAlignment.min,
        children: [
          TextField(
            controller: titleController,
            decoration: const InputDecoration(
              labelText: 'Title',
              border: OutlineInputBorder(),
            ),
          ),
          const SizedBox(height: 16),
          TextField(
            controller: contentController,
            decoration: const InputDecoration(
              labelText: 'Content',
              border: OutlineInputBorder(),
            ),
            maxLines: 3,
          ),
        ],
      ),
      actions: [
        TextButton(
          onPressed: () => Navigator.pop(context),
          child: const Text('Cancel'),
        ),
      ],
    ),
  );
}
```



Bharatiya Vidya Bhavan's
SARDAR PATEL INSTITUTE OF TECHNOLOGY
(Autonomous Institute Affiliated to University of Mumbai)
Munshi Nagar, Andheri (W), Mumbai – 400 058.
Department of Computer Science and Engineering

```
),
ElevatedButton(
  onPressed: () {
    if (titleController.text.isNotEmpty && user != null) {
      FirebaseFirestore.instance.collection('notes').add({
        'title': titleController.text,
        'content': contentController.text,
        'userId': user.uid,
        'timestamp': FieldValue.serverTimestamp(),
      });
      Navigator.pop(context);
    }
  },
  child: const Text('Add'),
),
],
),
);
}

void _showEditDialog(BuildContext context, DocumentSnapshot doc) {
  final data = doc.data() as Map<String, dynamic>;
  final titleController = TextEditingController(text: data['title']);
  final contentController = TextEditingController(text: data['content']);
  final user = FirebaseAuth.instance.currentUser;

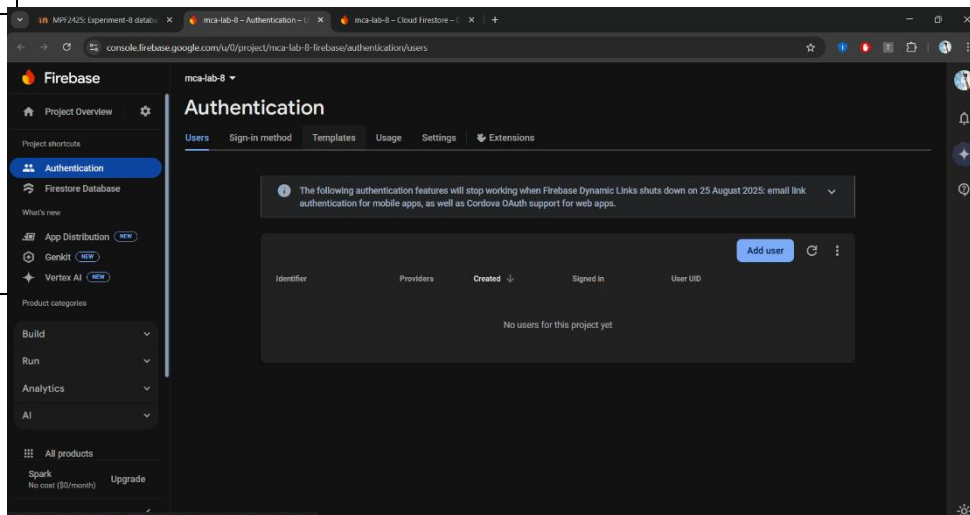
  showDialog(
    context: context,
    builder: (context) => AlertDialog(
      title: Text(
        'Edit Note',
        style: GoogleFonts.poppins(fontWeight: FontWeight.w600),
      ),
      content: Column(
        mainAxisAlignment: MainAxisAlignment.min,
        children: [
          TextField(
            controller: titleController,
            decoration: const InputDecoration(
              labelText: 'Title',
              border: OutlineInputBorder(),
            ),
          ),
          const SizedBox(height: 16),
          TextField(
            controller: contentController,
            decoration: const InputDecoration(
              labelText: 'Content',
              border: OutlineInputBorder(),
            ),
            maxLines: 3,
          ),
        ],
      ),
      actions: [
        TextButton(
          onPressed: () => Navigator.pop(context),
          child: const Text('Cancel'),
        ),
      ],
    ),
  );
}
```



Bharatiya Vidya Bhavan's
SARDAR PATEL INSTITUTE OF TECHNOLOGY
(Autonomous Institute Affiliated to University of Mumbai)
Munshi Nagar, Andheri (W), Mumbai – 400 058.
Department of Computer Science and Engineering

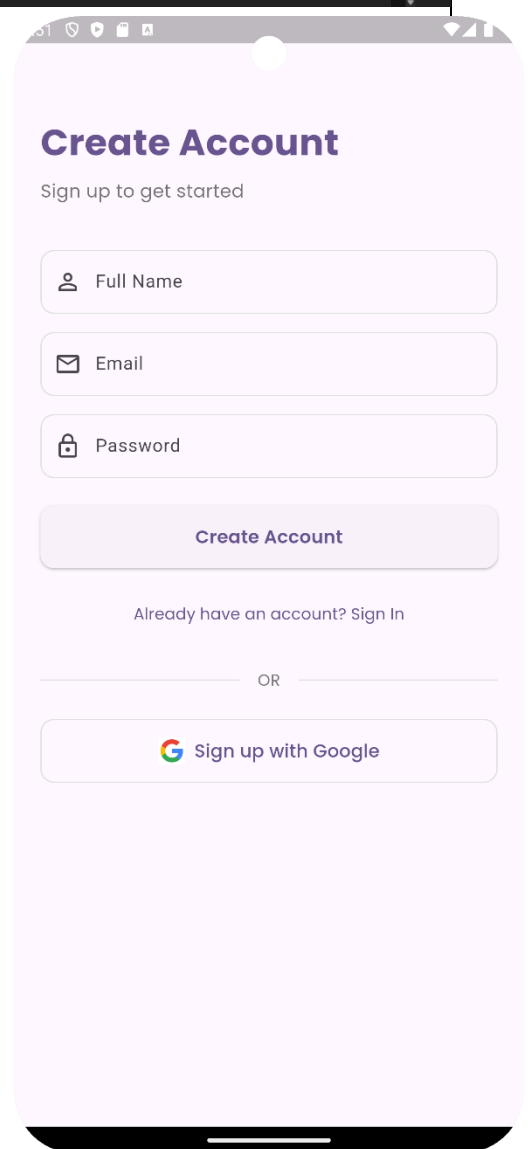
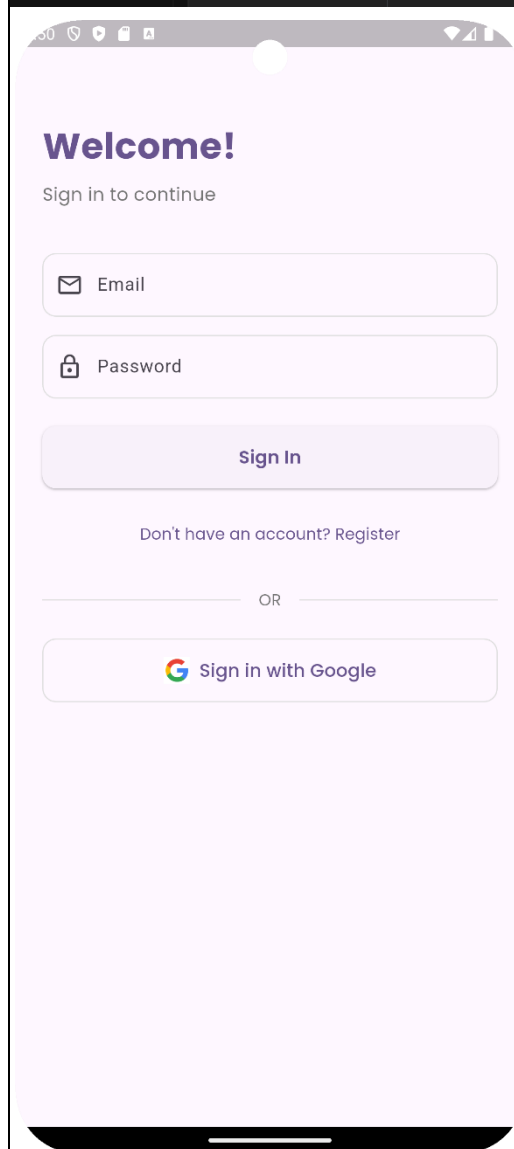
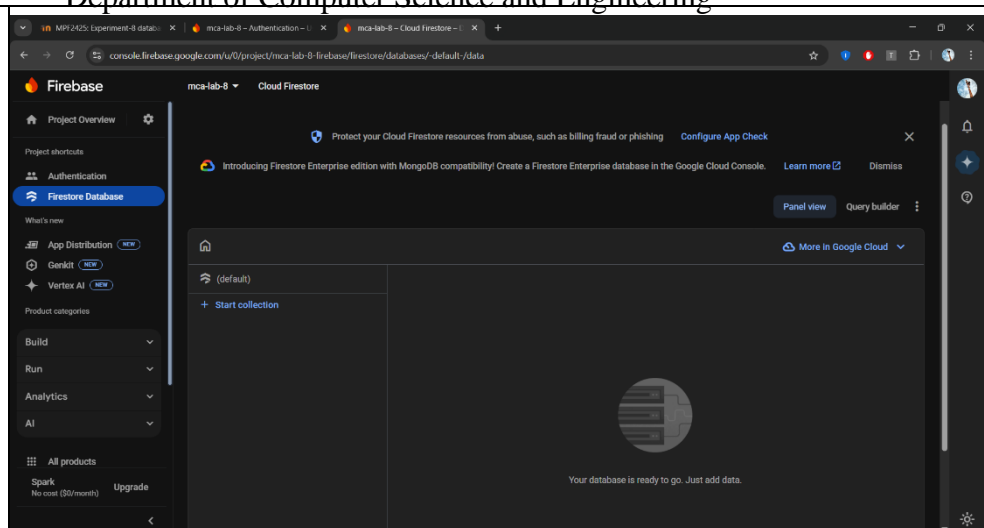
```
ElevatedButton(  
  onPressed: () {  
    if (titleController.text.isNotEmpty && user != null) {  
      FirebaseFirestore.instance.collection('notes').doc(doc.id).update({  
        'title': titleController.text,  
        'content': contentController.text,  
        'userId': user.uid,  
        'timestamp': FieldValue.serverTimestamp(),  
      });  
      Navigator.pop(context);  
    }  
  },  
  child: const Text('Update'),  
,  
),  
),  
);  
}  
  
void _deleteNote(String docId) {  
  showDialog(  
    context: Get.context!,  
    builder: (context) => AlertDialog(  
      title: Text(  
        'Delete Note',  
        style: GoogleFonts.poppins(fontWeight: FontWeight.w600),  
      ),  
      content: const Text('Are you sure you want to delete this note?'),  
      actions: [  
        TextButton(  
          onPressed: () => Navigator.pop(context),  
          child: const Text('Cancel'),  
        ),  
        ElevatedButton(  
          onPressed: () {  
            FirebaseFirestore.instance.collection('notes').doc(docId).delete();  
            Navigator.pop(context);  
          },  
          style: ElevatedButton.styleFrom(  
            backgroundColor: Colors.red,  
            foregroundColor: Colors.white,  
          ),  
          child: const Text('Delete'),  
        ),  
      ],  
    ),  
  );  
}
```

Screenshots



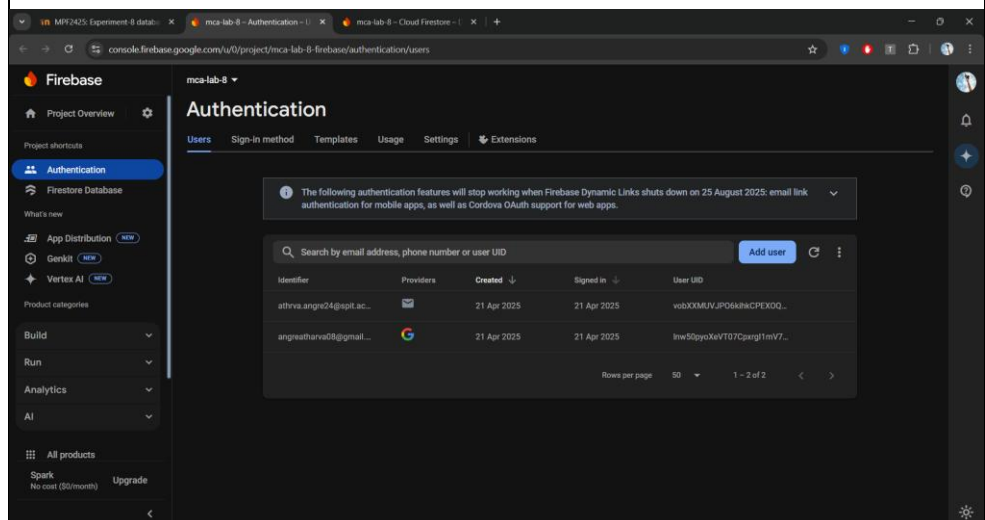
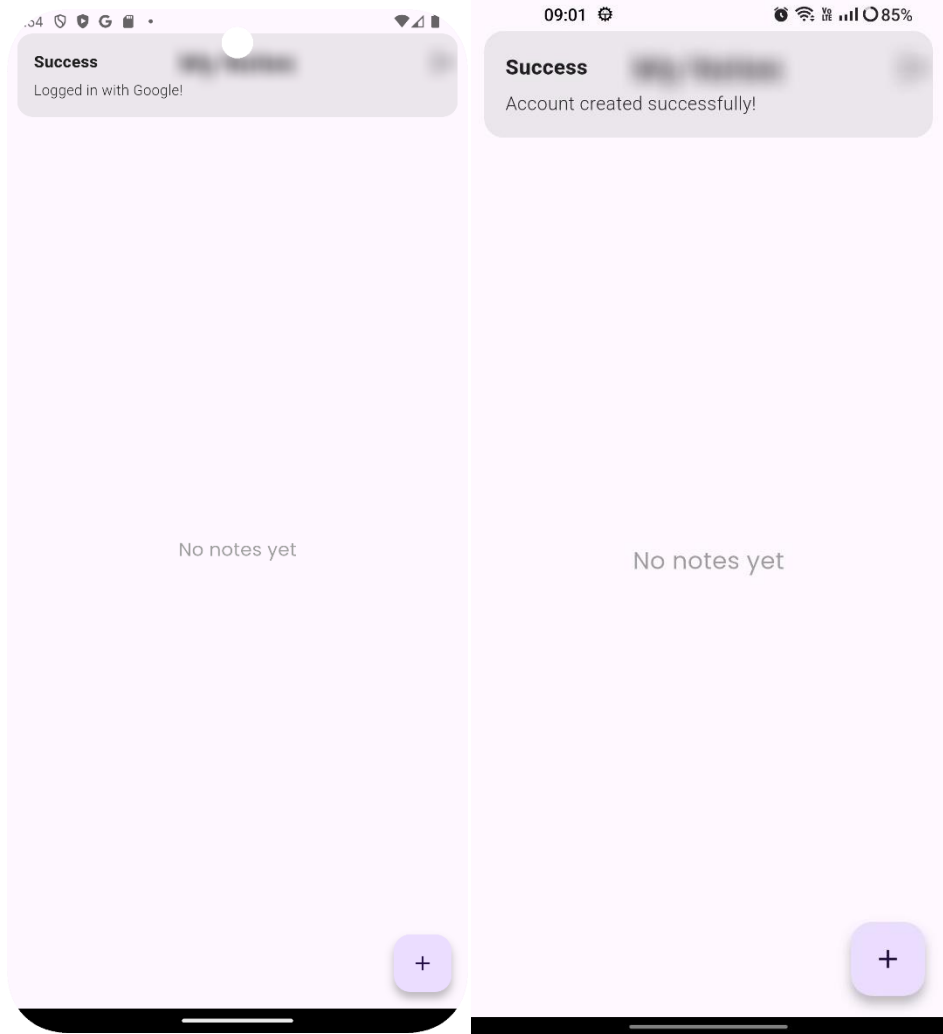


Bharatiya Vidya Bhavan's
SARDAR PATEL INSTITUTE OF TECHNOLOGY
(Autonomous Institute Affiliated to University of Mumbai)
Munshi Nagar, Andheri (W), Mumbai – 400 058.
Department of Computer Science and Engineering





Bharatiya Vidya Bhavan's
SARDAR PATEL INSTITUTE OF TECHNOLOGY
(Autonomous Institute Affiliated to University of Mumbai)
Munshi Nagar, Andheri (W), Mumbai – 400 058.
Department of Computer Science and Engineering





Bharatiya Vidya Bhavan's
SARDAR PATEL INSTITUTE OF TECHNOLOGY
(Autonomous Institute Affiliated to University of Mumbai)
Munshi Nagar, Andheri (W), Mumbai – 400 058.
Department of Computer Science and Engineering

09:02 85%

My Notes

Add Note

Title

MCA

Content

Assignments.
Projects.
Placement.

Cancel Add

+

09:06 84%

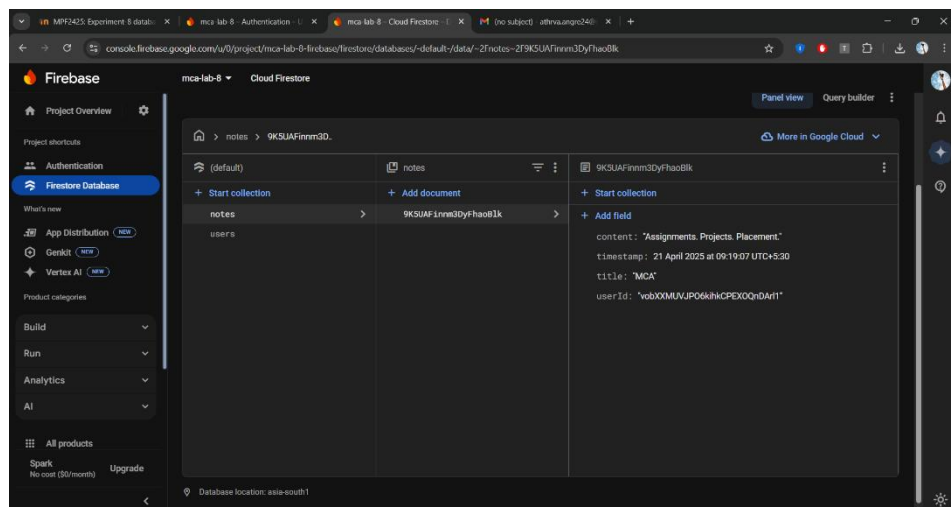
My Notes

MCA

Assignments.
Projects.
Placements.

✎ 🗑

+





Bharatiya Vidya Bhavan's
SARDAR PATEL INSTITUTE OF TECHNOLOGY
(Autonomous Institute Affiliated to University of Mumbai)
Munshi Nagar, Andheri (W), Mumbai – 400 058.
Department of Computer Science and Engineering

09:04 85%

My Notes

MCA

Assignments.
Projects.
Placement.

Edit Note

Title
MCA

Content
Projects.
Placement.
Lectures.

Cancel Update

+

09:04 84%

My Notes

MCA

Assignments.
Projects.
Placement.
Lectures.

+

MP92425: Experiment-8 datab... mca-lab-8 - Authentication - L... mca-lab-8 - Cloud Firestore - L... (no subject - athnva.angr24e) x +

console.firebase.google.com/u/0/project/mca-lab-8-firebase/firestore/databases/default/_/data/~2f9KSUAFInnm3DyFha0Bk

Firebase

mca-lab-8 Cloud Firestore

Project Overview

Project shortcuts

Authentication

Firestore Database

What's new

App Distribution

Genkit

Vertex AI

Product categories

Build

Run

Analytics

AI

All products

Spark

No cost (\$0/month) Upgrade

notes 9KSUAFInnm3DyFha0Bk

(default) notes

+ Start collection + Add document

notes 9KSUAFInnm3DyFha0Bk

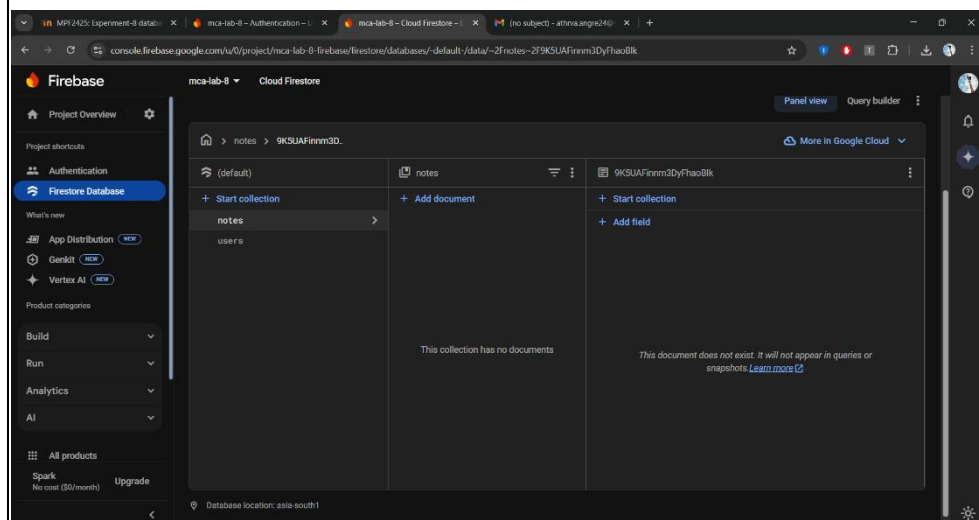
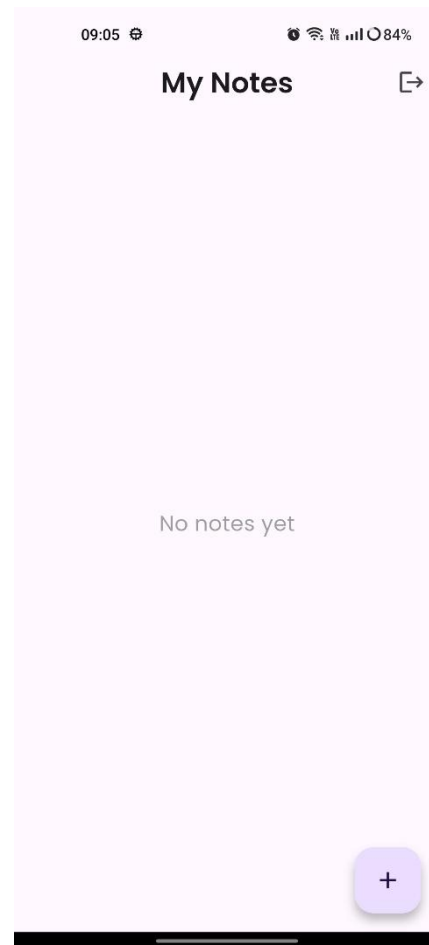
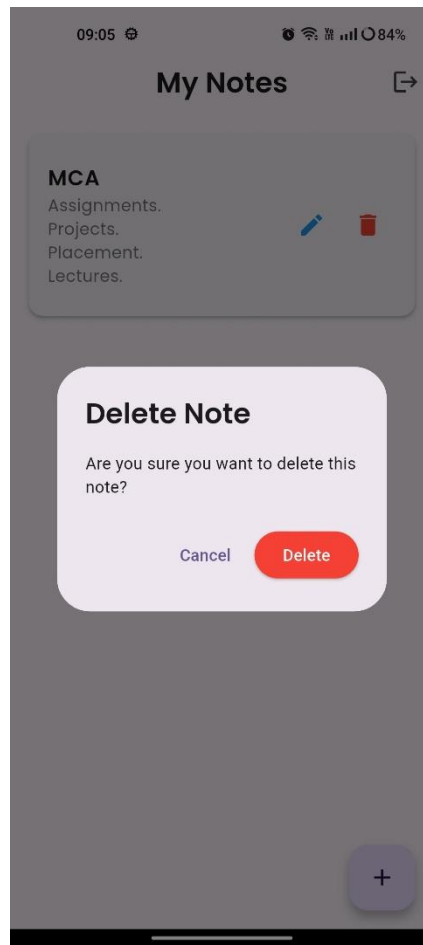
+ Start collection + Add field

content: "Assignments Projects. Placement. Lectures."
timestamp: 21 April 2025 at 09:19:07 UTC+5:30
title: "MCA"
userId: "rob00XMUVJP0G9hKCPExQ0nDA11"

Database location: asia-south1



Bharatiya Vidya Bhavan's
SARDAR PATEL INSTITUTE OF TECHNOLOGY
(Autonomous Institute Affiliated to University of Mumbai)
Munshi Nagar, Andheri (W), Mumbai – 400 058.
Department of Computer Science and Engineering





Bharatiya Vidya Bhavan's
SARDAR PATEL INSTITUTE OF TECHNOLOGY
(Autonomous Institute Affiliated to University of Mumbai)
Munshi Nagar, Andheri (W), Mumbai – 400 058.
Department of Computer Science and Engineering

Question and Answers	<p>Answer the following Questions:</p> <p>1. Write the connection steps, step-by-step for database connectivity.</p> <p>Create a Firebase project</p> <p>click Add project.</p> <p>Google Analytics if you like, and click Create project</p> <p>to the project overview.</p> <p>Enable Realtime Database</p> <ul style="list-style-type: none">• In the Firebase console sidebar, select Realtime Database, then click Create Database.• Choose Test mode (world-read/write) for initial development, pick a region, and click Enable <p>Register your Android app</p> <ul style="list-style-type: none">• In project overview, click Add app → Android.• Enter your Android package name (e.g., com.example.myapplication), provide an app nickname, and click Register app.• Download the generated google-services.json and place it in your Flutter project under android/app/ <p>(Optional) Register your iOS app</p> <ul style="list-style-type: none">• Back in the console, click Add app → iOS, enter your Bundle Identifier, and register.• Download GoogleService-Info.plist and add it to ios/Runner/ in Xcode <p>Install FlutterFire CLI and configure your app</p> <ul style="list-style-type: none">• Install the Firebase CLI if you haven't already:<ul style="list-style-type: none">◦ npm install -g firebase-tools◦ firebase login• Activate the FlutterFire CLI:<ul style="list-style-type: none">◦ dart pub global activate flutterfire_cli• From your Flutter project root, run:<ul style="list-style-type: none">◦ flutterfire configure <p>Select your Firebase project and platforms; this generates lib/firebase_options.dart.</p>
-----------------------------	---



Add FlutterFire plugins

- In your project directory, add the core and database plugins:
- flutter pub add firebase_core
- flutter pub add firebase_database

Re-run flutterfire configure to ensure any required Gradle plugins are added

Apply Android Gradle settings

- In android/build.gradle, under dependencies, add:
 - classpath 'com.google.gms:google-services:4.3.10'
- In android/app/build.gradle, at the bottom add:
 - apply plugin: 'com.google.gms.google-services'

Apply iOS CocoaPods settings

- Ensure your ios/Podfile targets at least iOS 10.0.
- Run:
 - cd ios
 - pod install

Initialize Firebase in Dart

- In lib/main.dart import and initialize Firebase before runApp:

```
import 'package:firebase_core/firebase_core.dart';
```

```
import 'firebase_options.dart';
```

```
void main() async {
```

```
  WidgetsFlutterBinding.ensureInitialized();
```

```
  await Firebase.initializeApp(
```

```
    options: DefaultFirebaseOptions.currentPlatform,
```

```
  );
```

```
  runApp(const MyApp());
```

```
}
```



Bharatiya Vidya Bhavan's
SARDAR PATEL INSTITUTE OF TECHNOLOGY
(Autonomous Institute Affiliated to University of Mumbai)
Munshi Nagar, Andheri (W), Mumbai – 400 058.
Department of Computer Science and Engineering

	<p>Verify the connection</p> <ul style="list-style-type: none">• Rebuild and run your app:<ul style="list-style-type: none">◦ flutter run• In the Firebase console's Realtime Database section, you should see reads/writes reflected in real time
Conclusion	<p>From this session, I learned how quickly you can get a Flutter app talking to Firebase without writing any backend code. I saw the power of the FlutterFire CLI in automating setup and configuration for Android. I discovered how easy it is to add and initialize the firebase_core and firebase_database packages to perform real-time CRUD operations. Overall, I realized that with just a few steps, Firebase takes care of data syncing, letting me focus on building user-facing features.</p>