### **EXPERIMENT NO: - 06**

Name:- Aryan Patankar Class:- D15A Roll:No: - 33

**<u>AIM: -</u>** To connect Flutter UI with Firebase database.

#### Theory: -

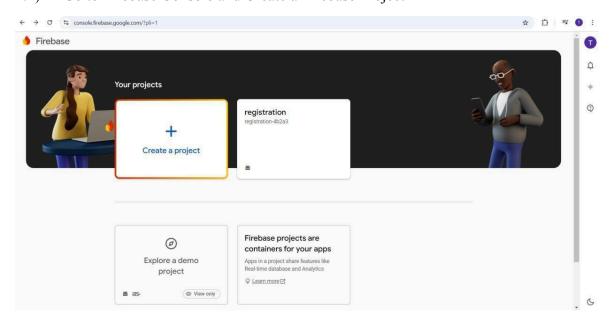
Flutter is an open-source UI toolkit developed by Google for building natively compiled applications for mobile, web, and desktop from a single codebase. Firebase, a Backend-as-a-Service (BaaS) platform, provides real-time database, authentication, and cloud storage services, making it a powerful backend solution for Flutter applications.

By integrating Firebase with Flutter, developers can store and retrieve data in real time, authenticate users, and manage cloud-based data efficiently. This is particularly useful for applications requiring dynamic content updates and user interactions.

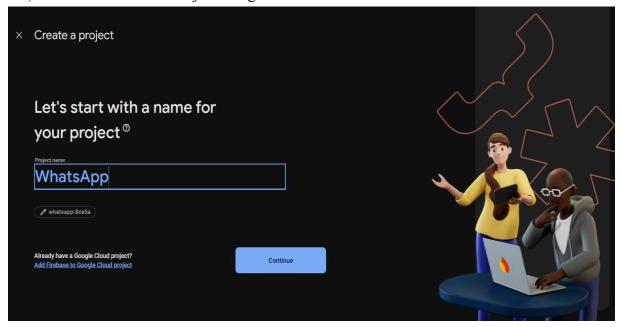
## **Steps to Connect Flutter UI with Firebase Database**

#### Step 1:

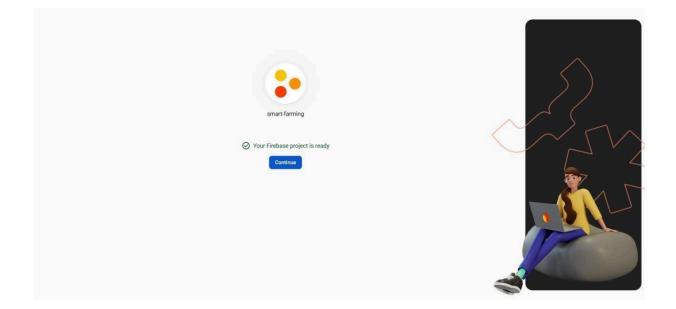
1.1) Go to Firebase Console and Create a Firebase Project



1.2) Click on Create a Project and give it a suitable name.

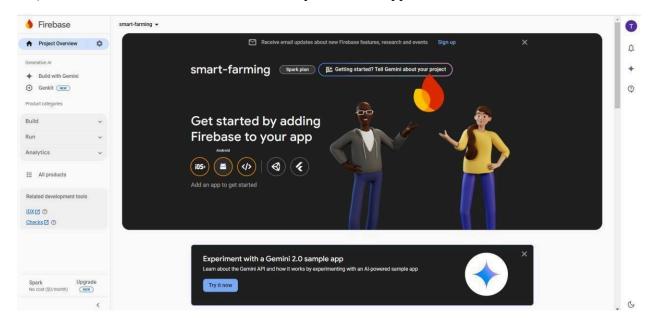


1.3) Enable Google Analytics (optional) & Click continue and complete the setup

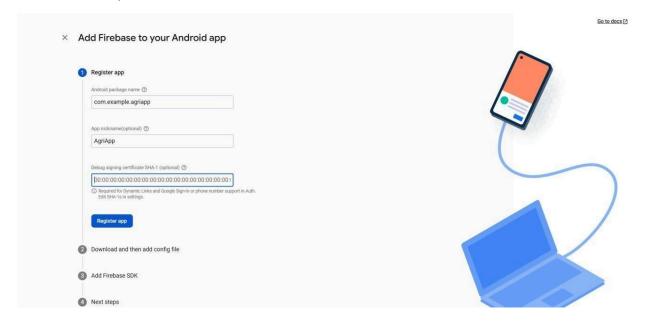


## **Step 2:- Add Firebase to Your Flutter App**

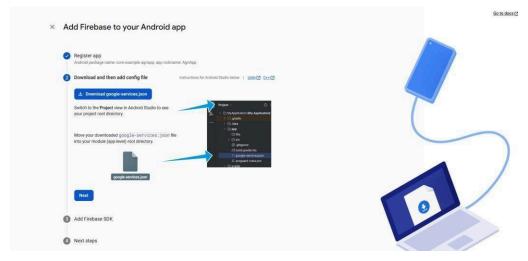
2.1) Click on Android/iOS/Web based on your Flutter application



2.2) Register your app with a unique package name (found in android/app/build.gradle for Android).



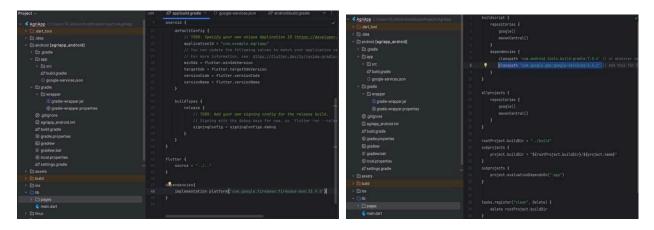
2.3) Download the google-services.json (for Android) & place the JSON file inside android/app/ directory.





2.4) Add Firebase SDK dependencies to android/build.gradle





## Step 3: - Add Firebase Authentication to Your App

3.1) Add Firebase Authentication Dependencies

```
dependencies:
    flutter:
        sdk: flutter
        firebase_core: ^3.11.0
        firebase_auth: ^5.4.2 # For authentication
        cloud_firestore: ^5.6.3 # For Firestore, if you need it
        firebase_messaging: ^15.2.2
        http: ^0.13.3
        image_picker: ^1.0.4
        tflite_flutter: ^0.11.0
        image: ^3.2.0
        url_launcher: ^6.1.14
```

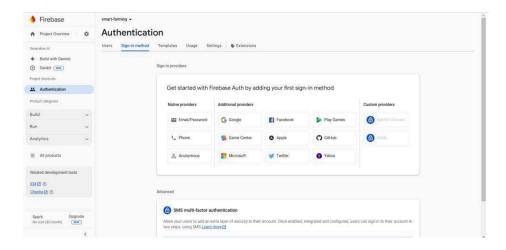
3.2) Enable Authentication in Firebase Console

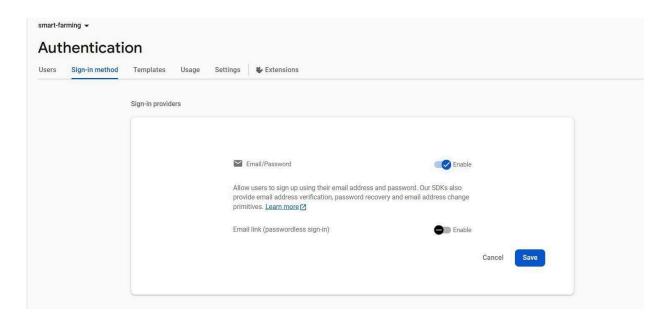
Go to Firebase Console  $\rightarrow$ 

Authentication.

Click on **Sign-in method** and enable **Email/Password** (or any other method like Google).

Click Save





3.3) Implement Authentication in Flutter Modify main.dart

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

void main() async {
   WidgetsFlutterBinding.ensureInitialized();
   await Firebase.initializeApp();
   runApp(MyApp());
}
```

#### **Step 4: -Configure Firebase Realtime Database**

- 4.1) Go to Firebase Console  $\rightarrow$  Realtime Database.
- 4.2) Click **Create Database** → Choose location → Set rules (for development, set read/write to true).
- 4.3) Click Publish.

## Code:-

Register_signup page	children: [
import 'package:flutter/material.dart';	Image.asset(
import	
'package:spotify_clone/features/auth/sc reens/sign_in_screen.dart';	'assets/images/spotify_logo.png', width: //235
import	500,
'package:spotify_clone/features/auth/sc	height: 150,
reens/register.dart';	),
	const SizedBox(height:
class RegisterScreen extends	32),
StatelessWidget {	const Text(
<pre>const RegisterScreen({Key? key}) :</pre>	'Enjoy Listening To
super(key: key);	Music',
	style: TextStyle(
@override	color: Colors.white,
Widget build(BuildContext context) {	fontSize: 24,
return Scaffold(	fontWeight:
backgroundColor: const	FontWeight.bold,
Color(0xFF1C1B1B),	),
body: SafeArea(	),
child: Column(	const SizedBox(height:
children:	16),
Padding(	const Text(
padding: const	'Spotify is a proprietary
EdgeInsets.all(16.0),	Swedish audio\nstreaming and media
child: Row(	services provider',
children: [	textAlign:
IconButton(	TextAlign.center,
icon: const	
	style: TextStyle(
Icon(Icons.arrow_back, color:	color: Colors.grey,
Colors.white),	fontSize: 16,
onPressed: () =>	),
Navigator.pop(context),	),
_),	const SizedBox(height:
<b>,</b>	32),
),	SizedBox(
),	width: double.infinity,
Expanded(	height: 56,
	child: ElevatedButton(
child: SingleChildScrollView(	onPressed: () {
child: Padding(	Navigator.push(
padding: const	context,
EdgeInsets.symmetric(horizontal:	MaterialPageRoute(
24.0),	builder: (context)
child: Column(	=>
crossAxisAlignment:	Register()), //
CrossAxisAlignment.center,	Navigate to ThirdScreen
· · · · · · · · · · · · · · · · · · ·	<u> </u>

```
style:
                                                                     // Handle register
ElevatedButton.styleFrom(
                 backgroundColor:
                                                                    },
const Color(0xFF42C83C),
                                                      ],
                 shape:
RoundedRectangleBorder(
                  borderRadius:
BorderRadius.circular(30),
                 ),
                ),
                child: const Text(
                 'Register',
                 style: TextStyle(
                  color: Colors.white,
                  fontSize: 16,
                  fontWeight:
FontWeight.bold,
                ),
              ),
                          ),
             const SizedBox(height:
16),
             TextButton(
              onPressed: () {
                Navigator.push(
                  context,
                  MaterialPageRoute(
                     builder: (context)
=>
SignInScreen()), // Navigate to
ThirdScreen
                // Handle sign in
              child: const Text(
                'Sign in',
                style: TextStyle(
                 color: Colors.white,
                 fontSize: 16,
```

Register.dart	height: 150,		
import 'package:flutter/material.dart';	),		
import	],		
'package:spotify_clone/features/auth/sc	) "		
reens/sign_in_screen.dart';	const SizedBox(height: 32),		
import	const Text(		
=	· · · · · · · · · · · · · · · · · · ·		
'package:spotify_clone/main.dart';	'Register',		
1 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	style: TextStyle(		
class Register extends StatefulWidget {	color: Colors.white,		
const Register({Key? key}):	fontSize: 28,		
super(key: key);	fontWeight:		
	FontWeight.bold,		
@override	).		
State <register> createState() =&gt;</register>	)"		
RegisterState();	const SizedBox(height: 8),		
	Row(		
}	· ·		
1 B 1 G 1	children: [		
class _RegisterState extends	const Text(		
State <register> {</register>	'If You Need Any Support		
bool _obscurePassword = true;	,		
	style: TextStyle(color:		
@override	Colors.grey),		
Widget build(BuildContext context) {	)		
return Scaffold(	TextButton(		
backgroundColor: const	onPressed: () {},		
Color(0xFF1C1B1B),	child: const Text(		
· / /	`		
body: SafeArea(	'Click Here',		
child: SingleChildScrollView(	style: TextStyle(color:		
child: Padding(	Colors.green),		
padding: const	borderRadius:		
EdgeInsets.all(24.0),	),		
child: Column(	),		
crossAxisAlignment:	],		
CrossAxisAlignment.start,	) "		
children: [	const SizedBox(height: 32),		
Row(	TextField(		
· ·	· ·		
children: [	style: const TextStyle(color:		
IconButton(	Colors.white),		
icon: const	decoration:		
	InputDecoration(		
Icon(Icons.arrow_back, color:	hintText: 'Full Name',		
Colors.white),	hintStyle: const		
onPressed: () =>	TextStyle(color: Colors.grey),		
Navigator.pop(context),	filled: true,		
)	fillColor:		
const SizedBox(width: 10),	Colors.grey.withOpacity(0.1),		
	border:		
Image.asset(			
	OutlineInputBorder(		
'assets/images/spotify_logo.png',	borderRadius:		

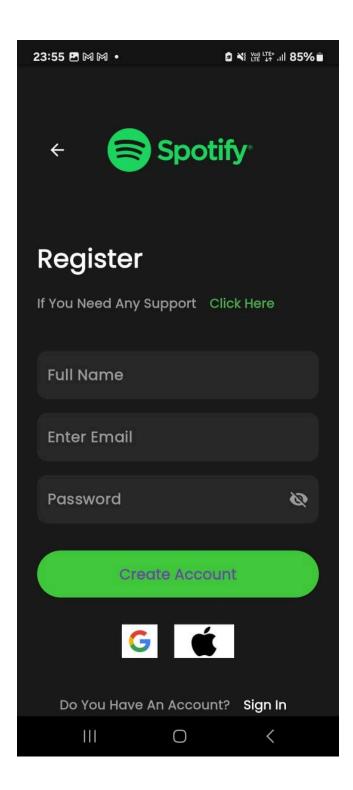
BorderRadius.circular(12),	icon: Icon(	
1 1 0:1	_obscurePassword	
borderSide:	? Icons.visibility_off	
BorderSide.none,	: Icons.visibility,	
),	color: Colors.grey,	
),	), P	
),	onPressed: () {	
const SizedBox(height: 16),	setState(() {	
TextField(	_obscurePassword =	
style: const TextStyle(color:	!_obscurePassword;	
Colors.white),	Row(	
decoration:	<b>})</b> ;	
InputDecoration(	},	
hintText: 'Enter Email',	),	
hintStyle: const	),	
TextStyle(color: Colors.grey), filled: true,	), const SizadDay(haight: 22)	
fillColor:	const SizedBox(height: 32),	
	SizedBox(	
Colors.grey.withOpacity(0.1),	width: double.infinity,	
border:	height: 56,	
OutlineInputBorder(	<pre>child: ElevatedButton(     onPressed: () {</pre>	
Dardar Dadius airaular (12)		
BorderRadius.circular(12), borderSide:	Navigator.push(	
	context,	
BorderSide.none,	MaterialPageRoute(	
),	builder: (context) =>	
),	const MainScreen()),	
const SizedBox(height: 16),	),	
TextField(	style:	
obscureText:	style: FlavatedButton styleFrom(	
obscurePassword,	ElevatedButton.styleFrom(	
style: const TextStyle(color:	backgroundColor: const	
Colors.white),	Color(0xFF42C83C), shape:	
decoration:	RoundedRectangleBorder(	
InputDecoration(	borderRadius:	
hintText: 'Password',	BorderRadius.circular(30),	
hintStyle: const	)	
TextStyle(color: Colors.grey),	),	
filled: true,	child: const Text(	
fillColor:	'Create Account',	
Colors.grey.withOpacity(0.1),	style: TextStyle(	
border:	fontSize: 16,	
OutlineInputBorder(	fontWeight:	
borderRadius:	FontWeight.bold,	
BorderRadius.circular(12),	i ont weight.ooid,	
borderSide:	),	
BorderSide.none,	),	
)	),	
suffixIcon: IconButton(	const SizedBox(height: 32),	
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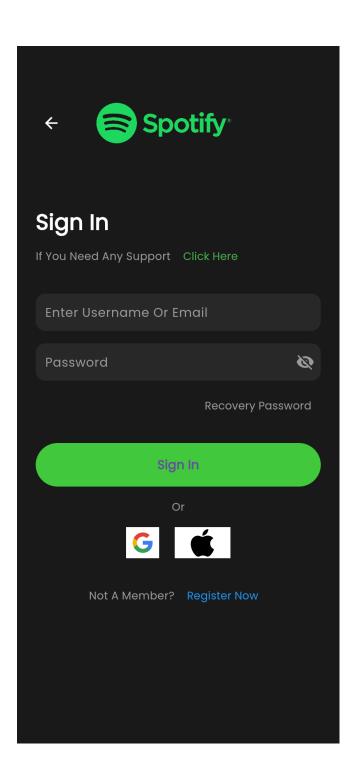
	}
mainAxisAlignment:	} }
MainAxisAlignment.center,	,
children: [	Register.dart
children. [	import 'package:flutter/material.dart';
Image.asset('assets/images/google logo	import package. Hutter/Hiaterial.dairt,
.png', height: 40),	'package:spotify clone/main.dart';
const SizedBox(width: 20),	package.spottry_clone/main.dart,
const Sizeabox (wiatin. 20),	import 'register.dart';
Image.asset('assets/images/apple logo.	import register.dart,
png', height: 40),	class SignInScreen extends
png, neight. 40),	StatefulWidget {
J,	const SignInScreen({Key? key}):
const SizedBox(height: 32),	super(key: key);
Row(	super(key. key),
mainAxisAlignment:	@override
MainAxisAlignment.center,	State <signinscreen> createState() =&gt;</signinscreen>
children: [	SignInScreenState();
const Text(	
'Do You Have An	<i>}</i>
Account?',	class SignInScreenState extends
style: TextStyle(color:	State SignInScreen> {
Colors.grey),	bool obscurePassword = true;
Colors.grey),	bool_obscurer assword - true,
TextButton(	@override
onPressed: () {	Widget build(BuildContext context) {
Navigator.push(	return Scaffold(
context,	backgroundColor: const
MaterialPageRoute(	Color(0xFF1C1B1B),
builder: (context) =>	body: SafeArea(
const SignInScreen()),	child: SingleChildScrollView(
	child: Padding(
);	padding: const
child: const Text(	EdgeInsets.all(24.0),
'Sign In',	child: Column(
style: TextStyle(color:	crossAxisAlignment:
Colors.white),	CrossAxisAlignment.start,
Colors.winte),	children:
Sign in screen.dart	Row(
Sign_in_serecii.dart	children: [
),	IconButton(
<i>)</i> , 1	Colors.green),
) 1,	)
<i>)</i> , 1	icon: const Icon(Icons.arrow back,
)	color: Colors.white),
)	onPressed: () =>
),	Navigator.pop(context),
)"	),
)· )·	const SizedBox(width: 12),
<i>)</i> ;	Const SizedDoA(width, 12),

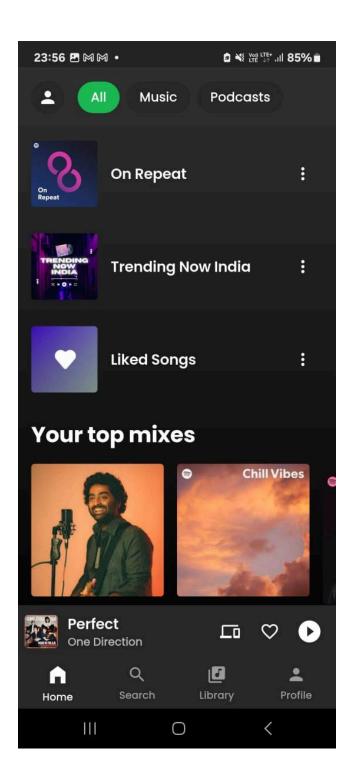
	Image.asset(		
'assets/images/spotify_logo.png',	OutlineInputBorder(		
height: 150,	borderRadius:		
),	BorderRadius.circular(12),		
],	borderSide:		
),	BorderSide.none,		
const SizedBox(height: 32),	),		
const Text(	),		
'Sign In',	).		
style: TextStyle(	const SizedBox(height: 16),		
color: Colors.white,	TextField(		
fontSize: 28,	obscureText:		
fontWeight:	obscurePassword,		
FontWeight.bold,	style: const TextStyle(color:		
),	Colors.white),		
)	decoration:		
const SizedBox(height: 8),	InputDecoration(		
Row(	hintText: 'Password',		
children: [	hintStyle: const		
const Text(	TextStyle(color: Colors.grey),		
'If You Need Any Support	filled: true,		
1 Tou reed rany Support	SizedBox(		
style: TextStyle(color:	width: double.infinity,		
Colors.grey),	border:		
Colors.grey),	OutlineInputBorder(		
TextButton(	borderRadius:		
onPressed: () {},			
child: const Text(	BorderRadius.circular(12), borderSide:		
'Click Here',			
· · · · · · · · · · · · · · · · · · ·	BorderSide.none,		
style: TextStyle(color:	suffixIcon: IconButton(		
fillColor: Colors gray with Openity (0.1)	icon: Icon(		
fillColor: Colors.grey.withOpacity(0.1),	· ·		
,	_obscurePassword		
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const SizedBox(height: 32),	), on Droggo de () (		
TextField(	onPressed: () {		
style: const TextStyle(color:	setState(() {		
Colors.white),	_obscurePassword =		
decoration:	!_obscurePassword;		
InputDecoration(	<b>})</b> ;		
hintText: 'Enter Username	},		
Or Email',	),		
hintStyle: const	),		
TextStyle(color: Colors.grey),	),		
filled: true,	const SizedBox(height: 16),		
fillColor:	Align(		
Colors.grey.withOpacity(0.1), border:	alignment:		

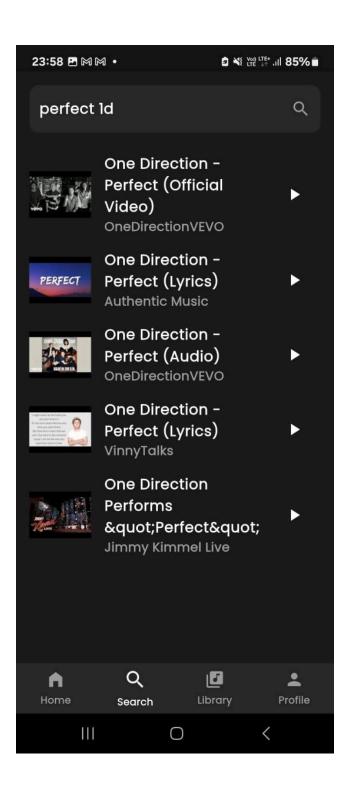
),	const Register()),
) ~	
),	builder: (context) =>
BorderRadius.circular(30),	MaterialPageRoute(
	· · · · · · · · · · · · · · · · · · ·
borderRadius:	context,
RoundedRectangleBorder(	Navigator.push(
shape:	onPressed: () {
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Color(0xFF42C83C),	TextButton(
backgroundColor: const	),
ElevatedButton.styleFrom(	Colors.grey),
3	, · · · · · · · · · · · · · · · · · · ·
style:	style: TextStyle(color:
},	'Not A Member? ',
);	const Text(
const maniscretii()),	_
const MainScreen()),	children:
builder: (context) =>	MainAxisAlignment.center,
MaterialPageRoute(	mainAxisAlignment:
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context,	Row(
Navigator.push(	const SizedBox(height: 32),
onPressed: () {	),
child: ElevatedButton(	],
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//	Image.asset('assets/images/apple_logo.
),	, , ,
	const SizedBox(width: 20),
const SizedBox(height: 32),	.png', height: 40),
),	Image.asset('assets/images/google_logo
),	
<i>)</i> ,	Ciliuleii. [
)	children:
Colors.grey),	MainAxisAlignment.center,
style: TextStyle(color:	mainAxisAlignment:
'Recovery Password',	Row(
child: const Text(	const SizedBox(height: 16),
	/s
onPressed: () {},	)
child: TextButton(	),
Alignment.centerRight,	),
	Colors.grey),
	style: TextStyle(color:
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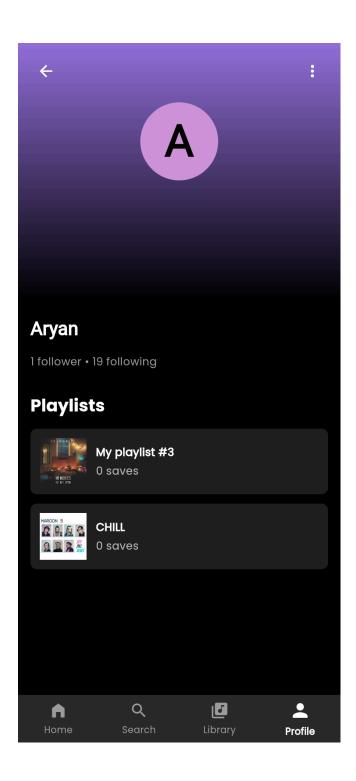
```
),
);
}
}
```











# User details get fetched from the database in the profile page.

