

**TUGAS UNGUIDED
PEMROGRAMAN PERANGKAT BERGERAK**

**MODUL 11
FIREBASE NOTIFIKASI**



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**PROGRAM STUDI S1 SOFTWARE ENGINEERING
FAKULTAS INFORMATIKA
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Main.dart

```
import 'package:firebase_core/firebase_core.dart';
import 'package:firebase_messaging/firebase_messaging.dart';
import 'package:flutter/material.dart';
import 'package:flutter_local_notifications/flutter_local_notifications.dart';
import 'package:praktikum_11/my_notification_screen.dart';

Future<void> _firebaseMessagingBackgroundHandler(RemoteMessage message) async {
  await Firebase.initializeApp();
  print('Handling a background message: ${message.messageId}');
}

const AndroidNotificationChannel channel = AndroidNotificationChannel(
  'high_importance_channel', // ID Channel
  'High Importance Notifications', // Nama Channel
  description: 'This channel is used for important notifications.', // Deskripsi
  importance: Importance.high, // Prioritas
);

final FlutterLocalNotificationsPlugin flutterLocalNotificationsPlugin =
  FlutterLocalNotificationsPlugin();

void main() async {
  WidgetsFlutterBinding.ensureInitialized();
  await Firebase.initializeApp();

  FirebaseMessaging.onBackgroundMessage(_firebaseMessagingBackgroundHandler);

  await flutterLocalNotificationsPlugin
    .resolvePlatformSpecificImplementation<
      AndroidFlutterLocalNotificationsPlugin>()
    ?.createNotificationChannel(channel);

  await FirebaseMessaging.instance.setForegroundNotificationPresentationOptions(
    alert: true,
    badge: true,
    sound: true,
  );

  runApp(const MyApp());
}

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

  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      title: 'Flutter Demo',
      theme: ThemeData(
        colorScheme: ColorScheme.fromSeed(seedColor: Colors.deepPurple),
        useMaterial3: true,
      ), // ThemeData
      home: const MyHomePage(title: 'Flutter Demo Home Page'),
    ); // MaterialApp
  }
}

class MyHomePage extends StatefulWidget {
  const MyHomePage({super.key, required this.title});

  final String title;

  @override
  State<MyHomePage> createState() => _MyHomePageState();
}

class _MyHomePageState extends State<MyHomePage> {
  @override
  void initState() {
    super.initState();
    _initFCM();
  }
}
```

```

Future<void> _initFCM() async {
  FirebaseMessaging.instance.getInitialMessage().then((message) {
    if (message != null) {
      Navigator.push(
        context,
        MaterialPageRoute(
          builder: (context) => const MyNotificationScreen(),
        ), // MaterialPageRoute
      );
    }
  });

  FirebaseMessaging.onMessage.listen((RemoteMessage message) {
    RemoteNotification? notification = message.notification;
    AndroidNotification? android = message.notification?.android;

    if (notification != null && android != null) {
      flutterLocalNotificationsPlugin.show(
        notification.hashCode,
        notification.title,
        notification.body,
        NotificationDetails(
          android: AndroidNotificationDetails(
            channel.id,
            channel.name,
            channelDescription: channel.description,
            color: Colors.blue,
            icon: '@mipmap/ic_launcher',
          ), // AndroidNotificationDetails
        ), // NotificationDetails
      );
    }
  });
}

```

```

FirebaseMessaging.onMessageOpenedApp.listen((RemoteMessage message) {
  Navigator.push(
    context,
    MaterialPageRoute(
      builder: (context) => const MyNotificationScreen(),
    ), // MaterialPageRoute
  );
});
}

@override
Widget build(BuildContext context) {
  return Scaffold(
    appBar: AppBar(
      backgroundColor: Theme.of(context).colorScheme.inversePrimary,
      title: Text(widget.title),
    ), // AppBar
    body: Center(
      child: const Text('Flutter FCM Demo'),
    ), // Center
  ); // Scaffold
}

```

My_notification_screen.dart

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

class MyNotificationScreen extends StatefulWidget {
  const MyNotificationScreen({super.key});

  @override
  State<MyNotificationScreen> createState() => _MyNotificationScreenState();
}

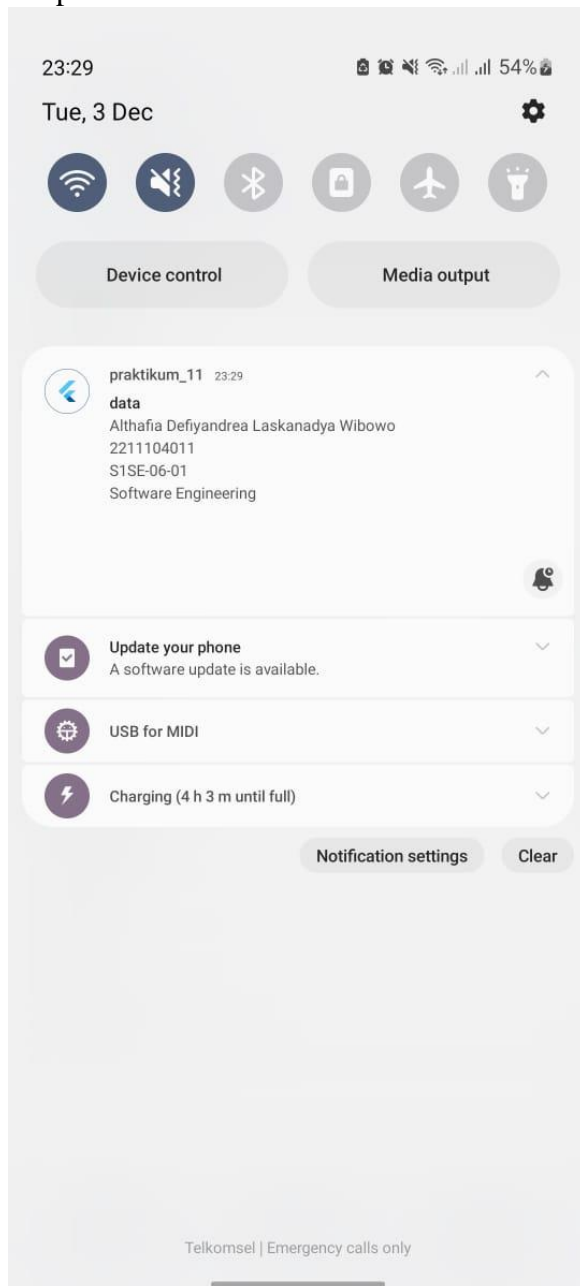
class _MyNotificationScreenState extends State<MyNotificationScreen> {
  String? nama;
  String? nim;
  String? kelas;
  String? prodi;

  @override
  void initState() {
    super.initState();
    _listenToNotificationData();
  }

  void _listenToNotificationData() {
    FirebaseMessaging.onMessageOpenedApp.listen((RemoteMessage message) {
      if (message.data.isNotEmpty) {
        setState(() {
          nama = message.data['nama'] ?? 'Nama tidak tersedia';
          nim = message.data['nim'] ?? 'NIM tidak tersedia';
          kelas = message.data['kelas'] ?? 'Kelas tidak tersedia';
          prodi = message.data['prodi'] ?? 'Prodi tidak tersedia';
        });
      }
    });
  }

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: const Text('Detail Notifikasi'),
        backgroundColor: Colors.amber,
        centerTitle: true,
      ), // AppBar
      body: Center(
        child: nama == null
          ? const Text('Belum ada notifikasi yang diterima.')
          : Column(
              mainAxisAlignment: MainAxisAlignment.center,
              children: [
                Text('Nama: $nama'),
                Text('NIM: $nim'),
                Text('Kelas: $kelas'),
                Text('Prodi: $prodi'),
              ],
            ), // Column
      ), // Center
    ); // Scaffold
  }
}
```

Output



Program di atas adalah aplikasi Flutter yang menggunakan Firebase Cloud Messaging (FCM) untuk menangani notifikasi real-time, baik di foreground maupun background. Aplikasi ini memungkinkan pengguna menerima notifikasi dengan konten khusus, seperti nama, NIM, kelas, dan prodi, yang ditampilkan di layar notifikasi detail. Firebase diinisialisasi dalam `main()` untuk memastikan aplikasi siap menerima notifikasi sejak awal. Notifikasi diatur untuk ditampilkan melalui `FlutterLocalNotificationsPlugin` dengan channel khusus yang diberi prioritas tinggi, sehingga penting bagi pengguna. Selain itu, aplikasi menangani notifikasi yang diterima saat aplikasi terbuka, di latar belakang, atau saat diluncurkan, memberikan pengalaman pengguna yang konsisten dan informatif.