

# FLUTTER PUSH NOTIFICATIONS

USING FIREBASE MESSAGING

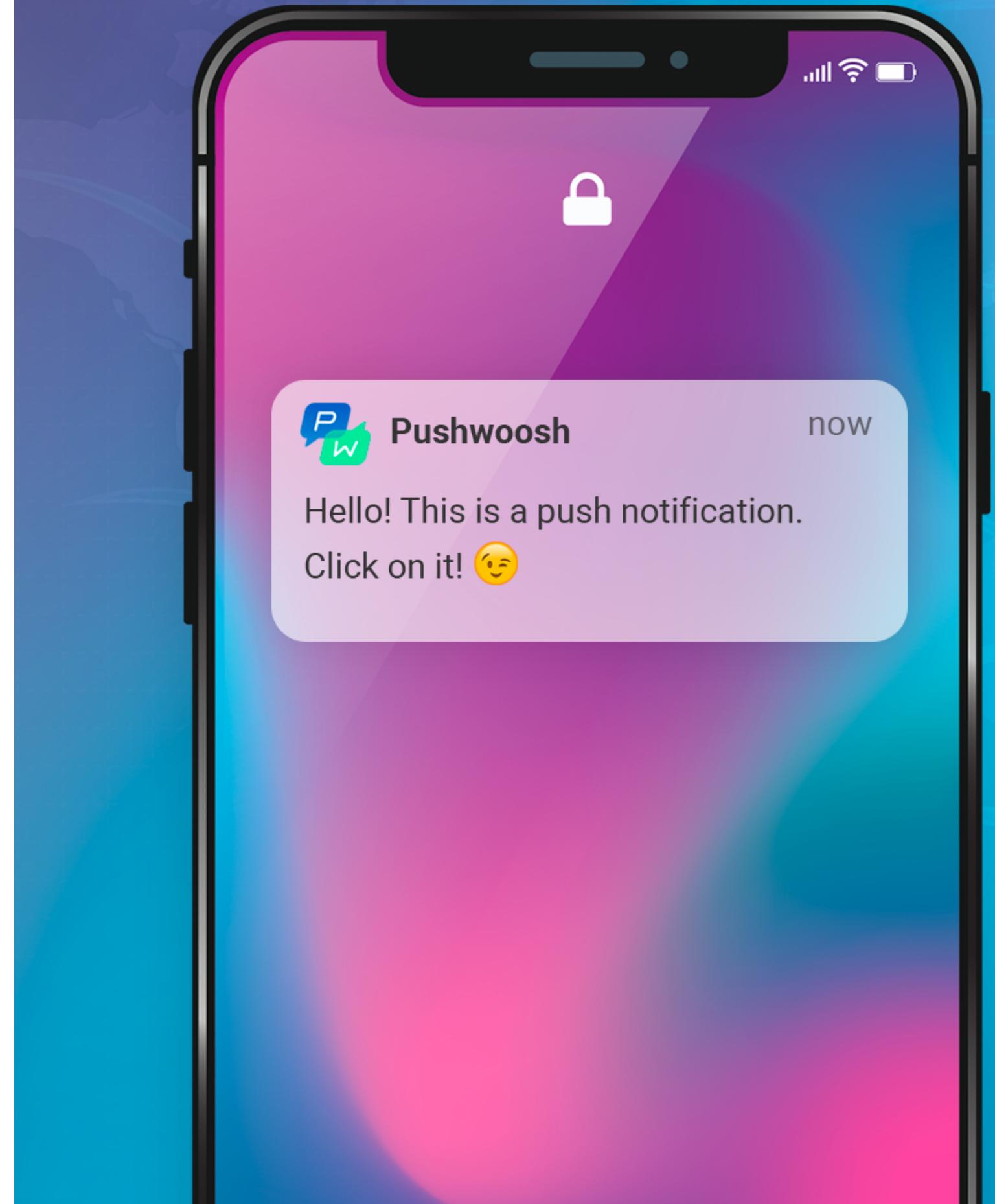


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# INTRODUCTION

PUSH NOTIFICATIONS ARE SMALL MESSAGES THAT POP UP ON A USER'S DEVICE. APP PUBLISHERS AND WEBSITE OWNERS CAN SEND THEM AT ANY TIME, AND USERS DON'T HAVE TO BE IN THE APP / ON THE WEBSITE TO RECEIVE THEM.



## PLUGINS REQUIRED

1

### **FIREBASE\_MESSAGING**

To use the methods provided to interact with Firebase Messaging service in cloud.

2

### **FLUTTER\_LOCAL\_NOTIFICATIONS**

To show notifications when data (message) is received in foreground.

3

### **FIREBASE\_CORE**

Main plugin which activates and responsible for handling all Firebase operations in the app.



# STEPS FOR BACKGROUND NOTIFICATIONS

- Create a new Flutter project
- Create a new Firebase project
- Configure Firebase with Project
- Add Flutter Notification Intent in Manifest
- Send Test Notification



Project Overview



Project shortcuts

Messaging

Product categories

Build



Release &amp; Monitor



Analytics



Engage



All products

Customize your nav!

# Push Notifications

Spark plan

3 apps



flutter\_push\_notifi...



flutter\_push\_notifi...



flutter\_push\_notifi...



## 1: NEW FIREBASE PROJECT (ANALYTICS ENABLED - OPTIONAL)

Code File Edit Selection View Go Run Terminal Window Help

pubspec.yaml — flutter\_push\_notifications

EXPLORER ... homepage.dart pubspec.yaml method\_channel\_firebase.dart

FLUTTER\_PUSH\_NOTIFICATIONS

- > debug
- ✓ main
- > java
- > kotlin
- > res
- AndroidManifest.xml
- > profile
- build.gradle
- {...} google-services.json
- > gradle
- .gitignore
- build.gradle
- flutter\_push\_notifications\_an...
- gradle.properties
- gradlew
- gradlew.bat
- local.properties
- settings.gradle
- > build
- > ios
- ✓ lib
- > pages
- discount\_page.dart
- error\_page.dart
- homepage.dart
- firebase\_options.dart
- main.dart

pubspec.yaml > {} flutter

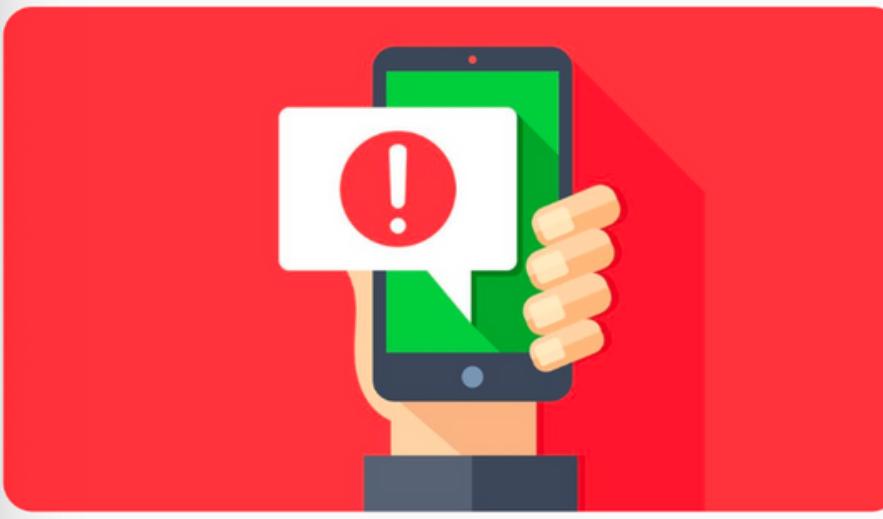
```
8 environment:  
9   sdk: "≥2.18.4 <3.0.0"  
10  
11 dependencies:  
12   flutter:  
13     sdk: flutter  
14  
15   cupertino_icons: ^1.0.2  
16   lint: ^1.10.0  
17  
18   firebase_messaging: ^14.0.4  
19   flutter_local_notifications: ^12.0.3  
20   firebase_core: ^2.1.1  
21   firebase_analytics: ^10.0.4  
22  
23 dev_dependencies:  
24   flutter_test:  
25     sdk: flutter  
26  
27   flutter_lints: ^2.0.0  
28  
29 flutter:  
30   uses-material-design: true
```

Filter (e.g. text, !exclude) Flutter (sdk gphone64 arm) Restarted application in 860ms.

8:57 Android Emulator - Pixel\_6\_API\_31:5554

Flutter Push Notifications

Waiting for message...



## 2: NEW FLUTTER PROJECT WITH FIREBASE INTEGRATION

Build



Release & Monitor



Analytics



Engage



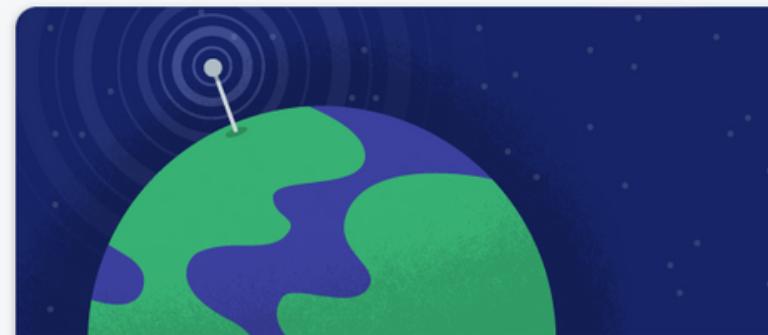
All products



Spark

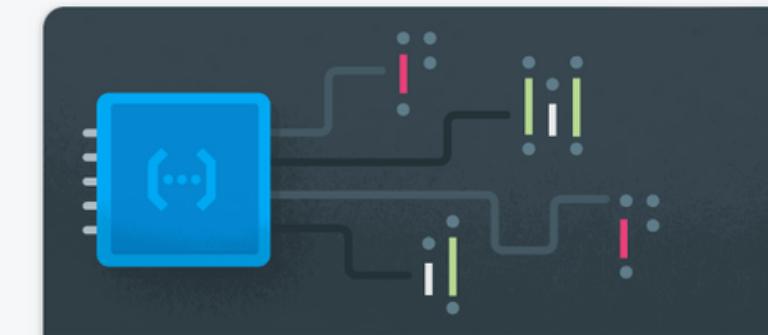
No-cost \$0/month

Upgrade



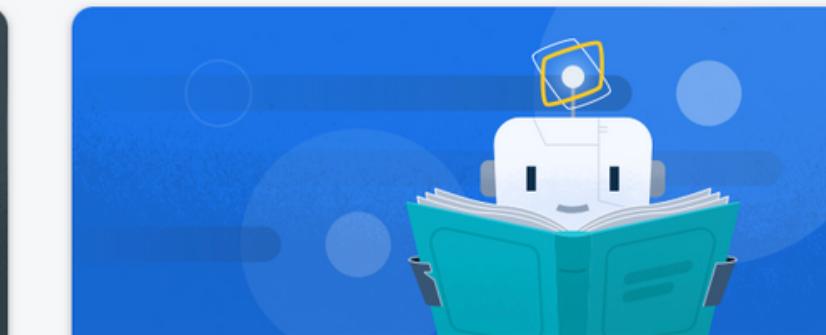
## Hosting

Deploy web apps in seconds



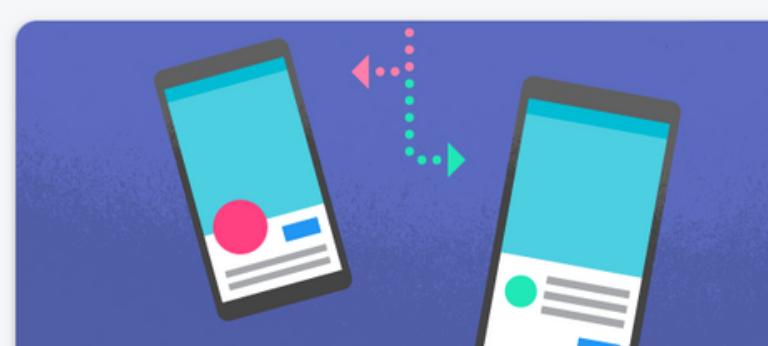
## Functions

Extend and connect Firebase features



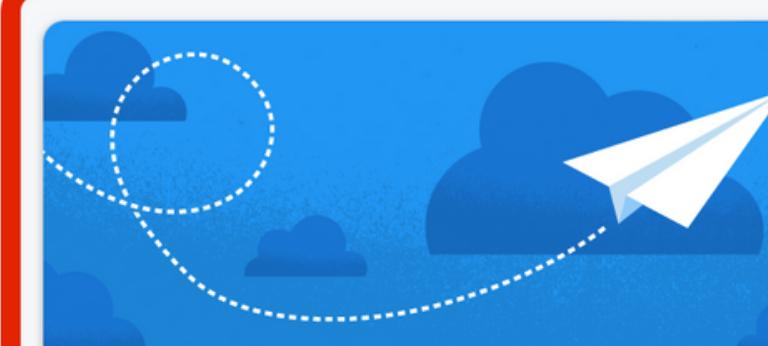
## Machine Learning

Solve common problems in your apps with machine learning



## Remote Config

Dynamically customize your app behavior using feature flags



## Cloud Messaging

Cross-platform push messaging infrastructure between your servers and user devices

**3: CHOOSE CLOUD MESSAGING FROM THE ALL PRODUCTS SCREEN**



# Messaging

Manage message campaigns using the new unified campaigns experience

[Create your first campaign](#)

[View FCM reporting dashboard →](#)



## 4: CREATE THE FIRST CAMPAIGN

Project shortcuts

Messaging

Product categories

Build

Release & Monitor

Analytics

Engage

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## Messaging

Manage new

Create

View

Learn



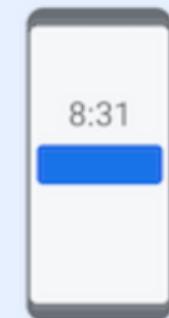
### Firebase Messaging Onboarding

Message type and platform



#### Firebase Notification messages

Send a notification message to instantly notify users of promotions or new features. **Users will receive notification messages even if they are outside of your app.**



#### Firebase In-App messages

Send an In-App message to get active users in your app to subscribe, watch a video, complete a level, or buy an item. **Users will only be able to receive in-app messages inside of your app.**



Cancel

Create

How does it work?

Messaging work?

## 5: USE FIREBASE NOTIFICATION MESSAGES

# COMPOSING A NOTIFICATION

Project shortcuts

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Build



Release &amp; Monitor



Analytics



Engage

 All productsSpark  
No-cost \$0/month

Upgrade

## 1 Notification

Notification title 

40% Mega Discount!

Notification text

Checkout our new deals and redeem your voucher!!!

Notification image (optional) <https://d1csarkz8obe9u.cloudfront.net/posterpreviews/...> Notification name (optional) 

Enter optional name

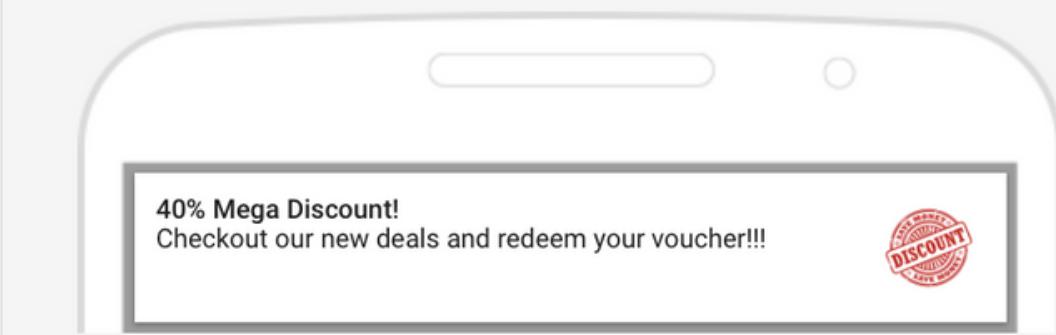
## Device preview

This preview provides a general idea of how your message will appear on a mobile device. Actual message rendering will vary depending on the device. Test with a real device for actual results.

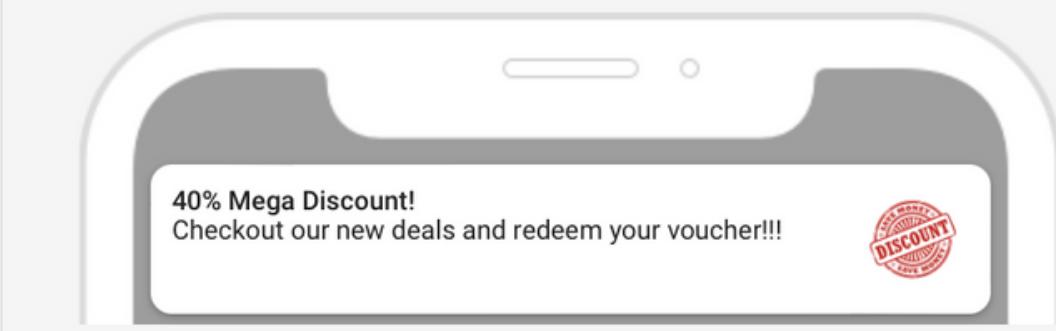
Send test message

Initial state

Expanded view



Android



Apple

Next

**1: ADD NOTIFICATION TITLE, DESCRIPTION, AND BASIC INFO, CLICK NEXT**



Project shortcuts

Messaging

Product categories

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Release &amp; Monitor



Analytics



Engage



All products

**Notification**  
Checkout our new deals and redeem your voucher!!!

**2 Target**

User segment Topic

Target user if...

App

flutter\_push\_notifications (android) (com.example.flutter\_push\_notifications)

iOS+ flutter\_push\_notifications (ios) (com.example.flutterPushNotifications)

</> flutter\_push\_notifications (web)

Next

**3 Scheduling**  
Send now

**4 Conversion events (optional)**

**5 Additional options (optional)**

## 2: SET THE TARGET APP WHICH WILL RECEIVE NOTIFICATION

5 Additional options (optional)

All fields optional

Android Notification Channel [?](#)

Custom data [?](#)

voucherID

2738942

redeemCode

324789237489-937-32

Key

Value

Sound

Disabled [▼](#)

Expires [?](#)

4 [▼](#)

Weeks [▼](#)

Save as draft

Review

Use additional data in notifications for voucher codes, the number of coins in a game that the user has been rewarded with.

**OPTIONAL: ADD DATA IN MAP FORM FOR FURTHER INFO TRANSFER**

Product categories

Build



Release &amp; Monitor



Analytics



Engage



All products

Spark  
No-cost \$0/month

Upgrade



Notification  
Checkout our new deals and redeem your voucher!!!

Target  
User segment matching one targeting criterion

**3 Scheduling**

Send to eligible users

Now

Next

**4 Conversion events (optional)**

**5 Additional options (optional)**

[Save as draft](#) [Review](#)

## 3: SCHEDULE, REVIEW, AND PUBLISH



Project Overview



Project shortcuts

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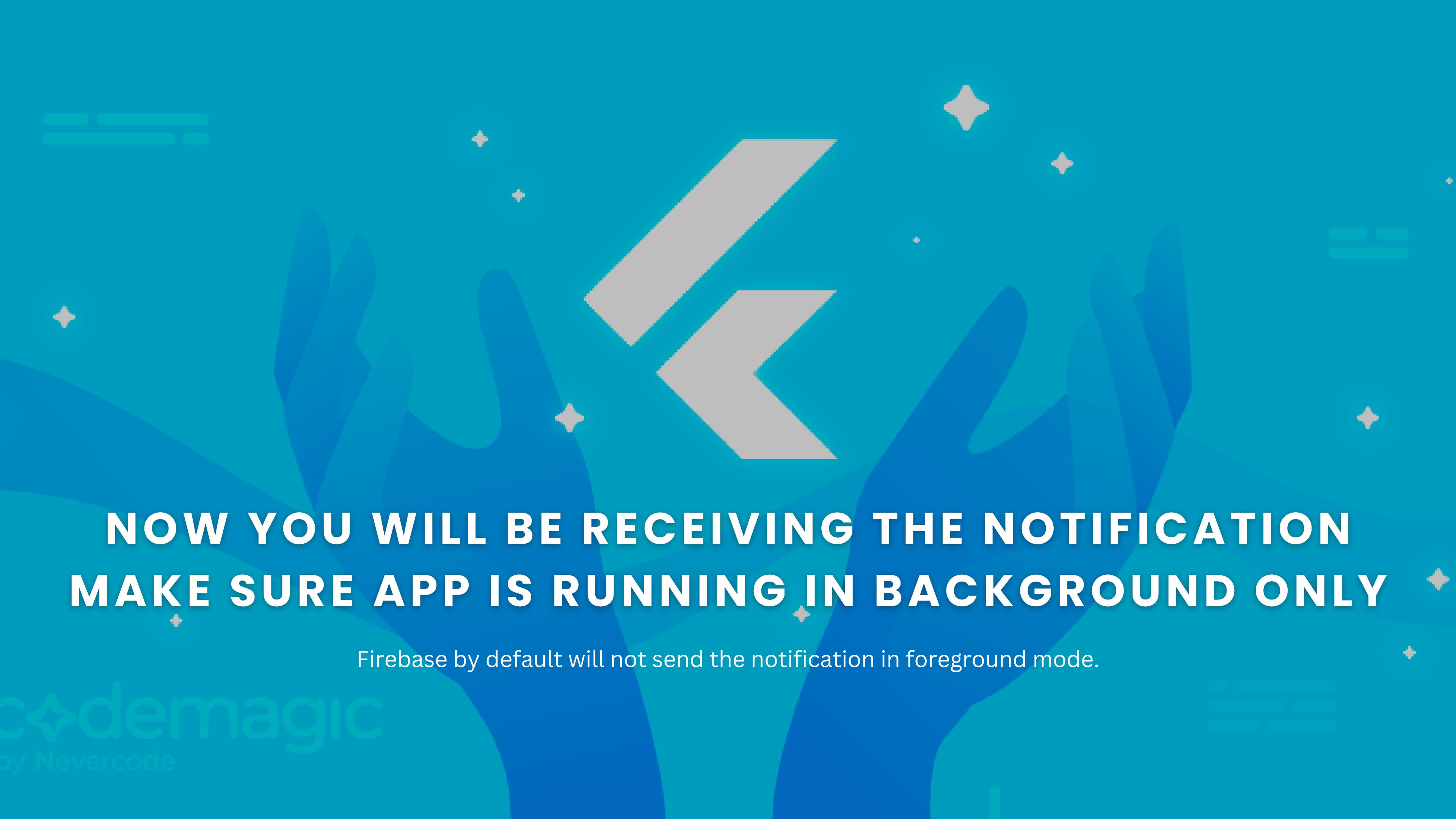
All products

# Messaging

[Show classic dashboard](#)[Campaigns](#)[Reports](#)[Filter campaigns](#)[Search by campaign name, description a...](#)[New experiment](#)[New campaign](#)

Campaign	Start	End	Status	Target	Last Updated	Sends / Impressions	Clicks / Opens
40% Mega Discount! Checkout our new deals and redeem your voucher!!!	Nov 6, 2022 10:25:49 PM	-	Active	_ANDROID_	Nov 6, 2022	<1000	0%
<a href="#">0/10 Recurring notifications</a> <small>?</small>							

# THE CAMPAIGN IS ACTIVE NOW!



# NOW YOU WILL BE RECEIVING THE NOTIFICATION MAKE SURE APP IS RUNNING IN BACKGROUND ONLY

Firebase by default will not send the notification in foreground mode.

# INTENT

Add this code in Android Manifest if you have any issues displaying notifications when app is in the background.

```
<INTENT-FILTER>
<ACTION ANDROID:NAME="FLUTTER_NOTIFICATION_CLICK" />
<CATEGORY ANDROID:NAME="ANDROID.INTENT.CATEGORY.DEFAULT"
          />
</INTENT-FILTER>
```





**YAYYYYY!!!**  
**WE'RE DONE WITH BACKGROUND**  
**NOTIFICATIONS.**



# HANDLING BACKGROUND NOTIFICATIONS

Initializing Firebase to use messaging services in order to receive messages sent by Firebase.

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

Performing some action when the notification gets tapped from notification tray.

```
// this is for when the app is in the background and notification is tapped
FirebaseMessaging.onMessageOpenedApp.listen((message) {
  initialMessage = message.notification!.title ?? 'No title';
  // accessing data if we added in optional step.
  print(message.data);
});
```

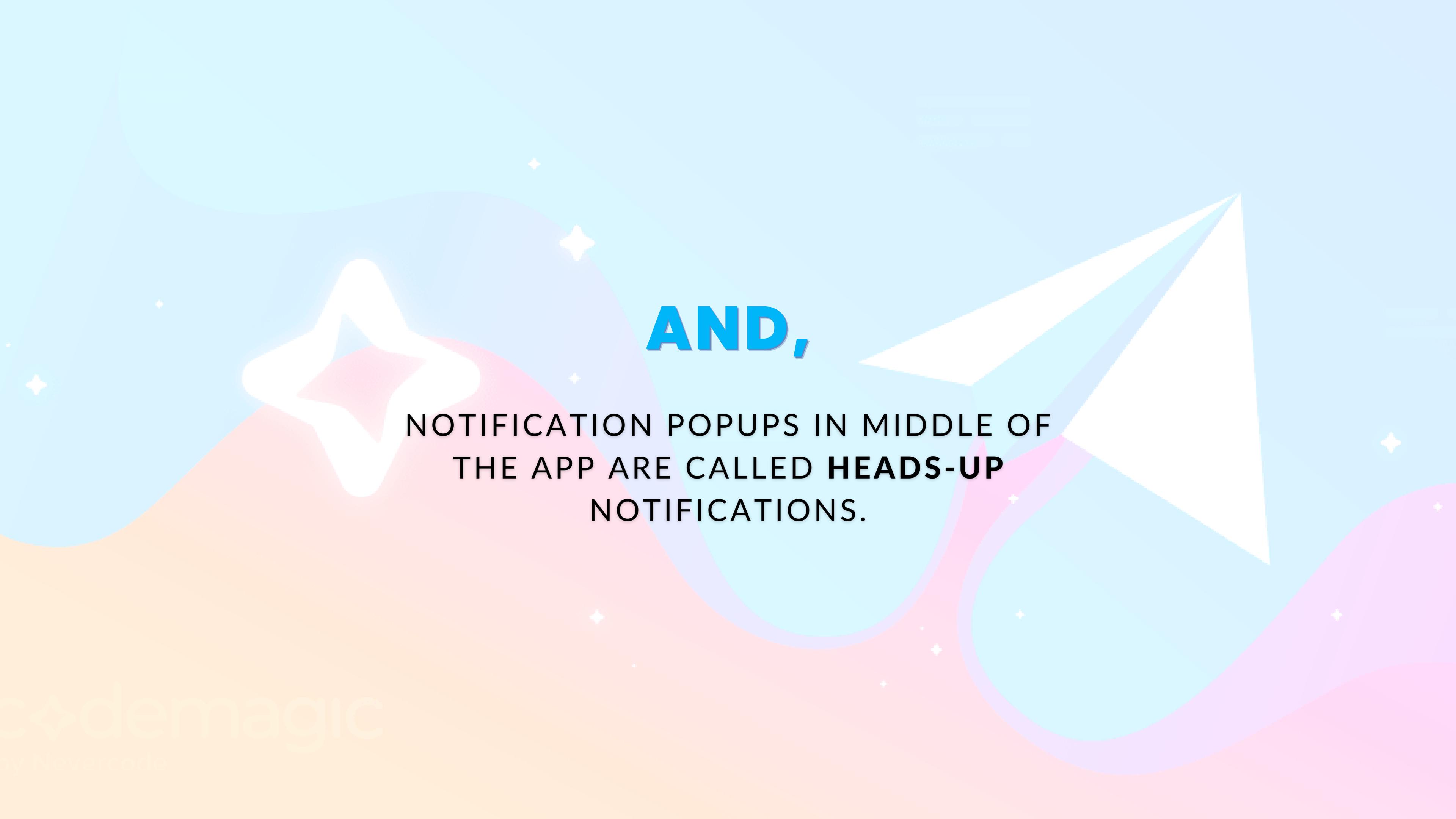
```
I/flutter (13541): {redeemCode: 324789237489-937-32, voucherID: 2738942}
```

\*The output is based on the data that we sent in previous step.

# HANDLING NOTIFICATIONS IN FOREGROUND

## **REMEMBER**

**FIREBASE CLOUD MESSAGING DOESN'T DISPLAY NOTIFICATIONS  
IN THE FOREGROUND BY DEFAULT.  
IT JUST SENDS MESSAGE INSTEAD.**



**AND,**

NOTIFICATION POPUPS IN MIDDLE OF  
THE APP ARE CALLED **HEADS-UP**  
NOTIFICATIONS.

**SO,**

- WE WILL BE USING THOSE MESSAGES SENT BY FIREBASE TO EXTRACT THEIR DATA AND DISPLAY IT LOCALLY
- WE WILL USE **FLUTTER\_LOCAL\_NOTIFICATIONS** PACKAGE



Using firebase messaging plugin to get initial message as the subscription  
only provides messages after changes.

```
● ● ●  
FirebaseMessaging.instance.getInitialMessage();  
// onMessage() returns a Stream, we will listen to that  
FirebaseMessaging.onMessage.listen(  
    remoteMessage) {  
    print(remoteMessage.notification!.title);  
});
```

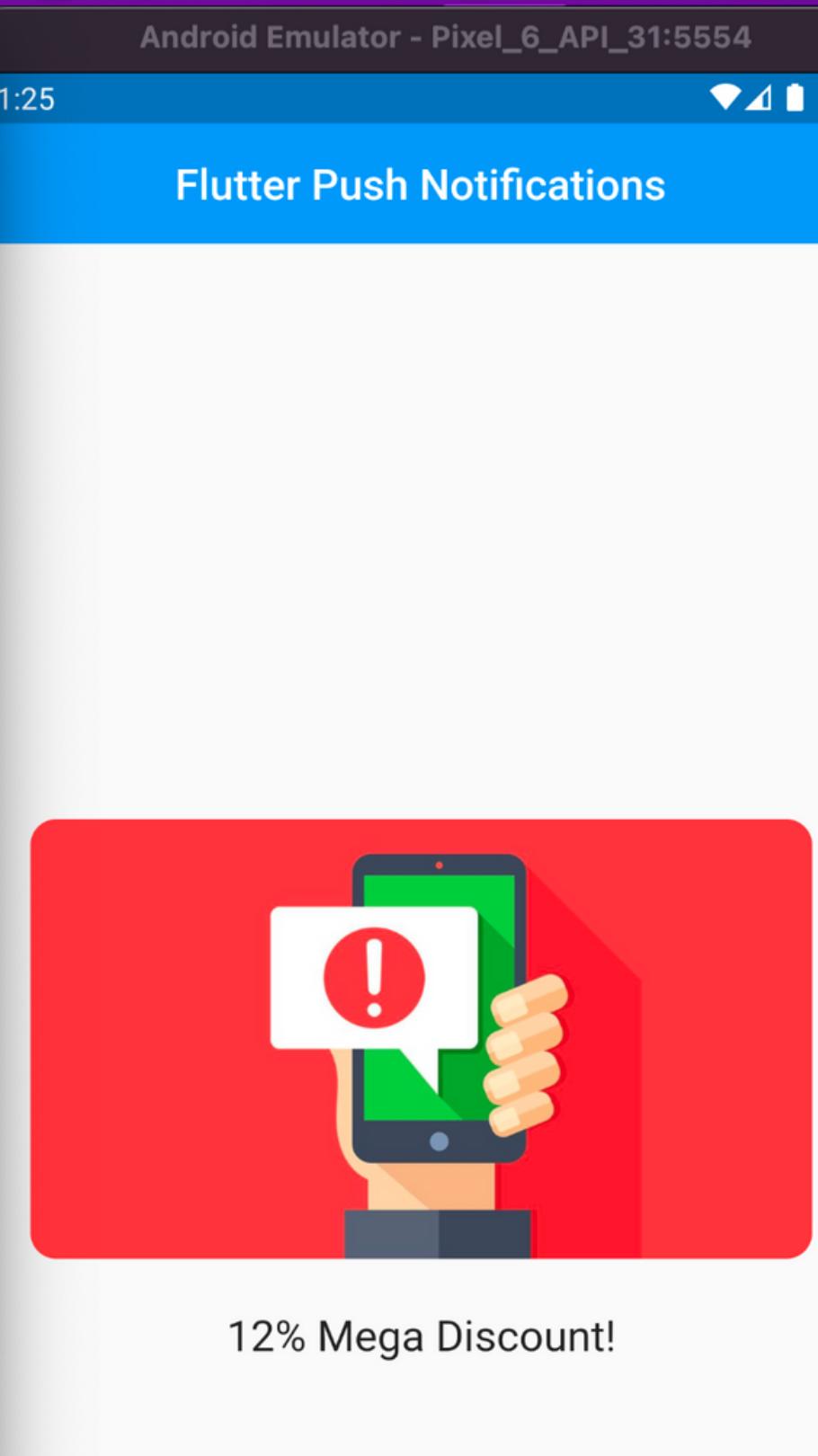
In an initState() method to subscribe to the message stream  
use the updated values in UI.

```
@override
void initState() {
    super.initState();
    FirebaseMessaging.instance.getInitialMessage();
    FirebaseMessaging.onMessage.listen((message) {
        setState(() {
            initialMessage = message.notification!.title ?? 'No title';
        });
        print(message.notification!.body);
    });
}
```

homepage.dart — flutter\_push\_notifications

lib > pages > homepage.dart > \_HomePageState > initState

```
12
13 class _HomePageState extends State<HomePage> {
14     String initialMessage = 'Waiting for message ... ';
15     @override
16     void initState() {
17         super.initState();
18         FirebaseMessaging.instance.getInitialMessage();
19         FirebaseMessaging.onMessage.listen((message) {
20             setState(() {
21                 initialMessage = message.notification!.title ?? 'No title';
22             });
23             print(message.data);
24         });
25
26         // this is for when the app is in the background and notification is tapped
27         FirebaseMessaging.onMessageOpenedApp.listen((message) {
28             setState(() {
29                 initialMessage = message.notification!.title ?? 'No title';
30             });
31             // accessing data if we added in optional step.
32             print(message.data);
33         });
34     }
35
36     @override
37     Widget build(BuildContext context) {
38         return Scaffold(
```



# **IN PREVIOUS SLIDE,**

THE TEXT BELOW THE IMAGE WILL BE UPDATED TO THE  
VALUE OF THE TITLE OF THE RECENTLY RECEIVED  
NOTIFICATION.

# Thank you!



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