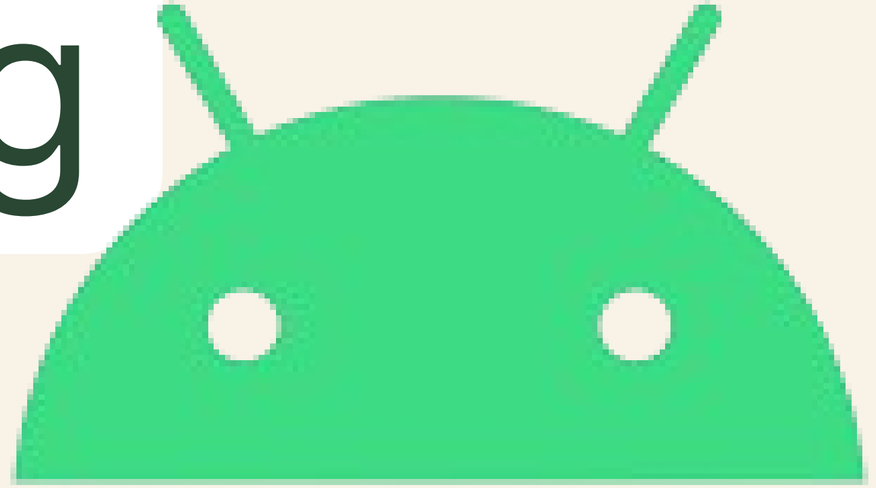
# Understanding Android Notification



android

## Using Android Studio

JULY 2024 SEMINAR

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01 - What are notifications?

02 - Parts of a notification

03 - High-Priority Notification

04 - Low-Priority Notification

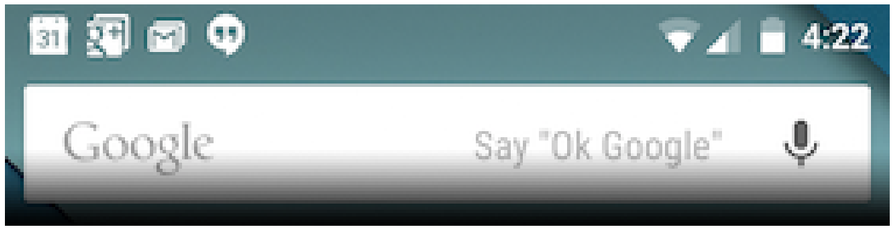
# 01 - What are Notifications ?

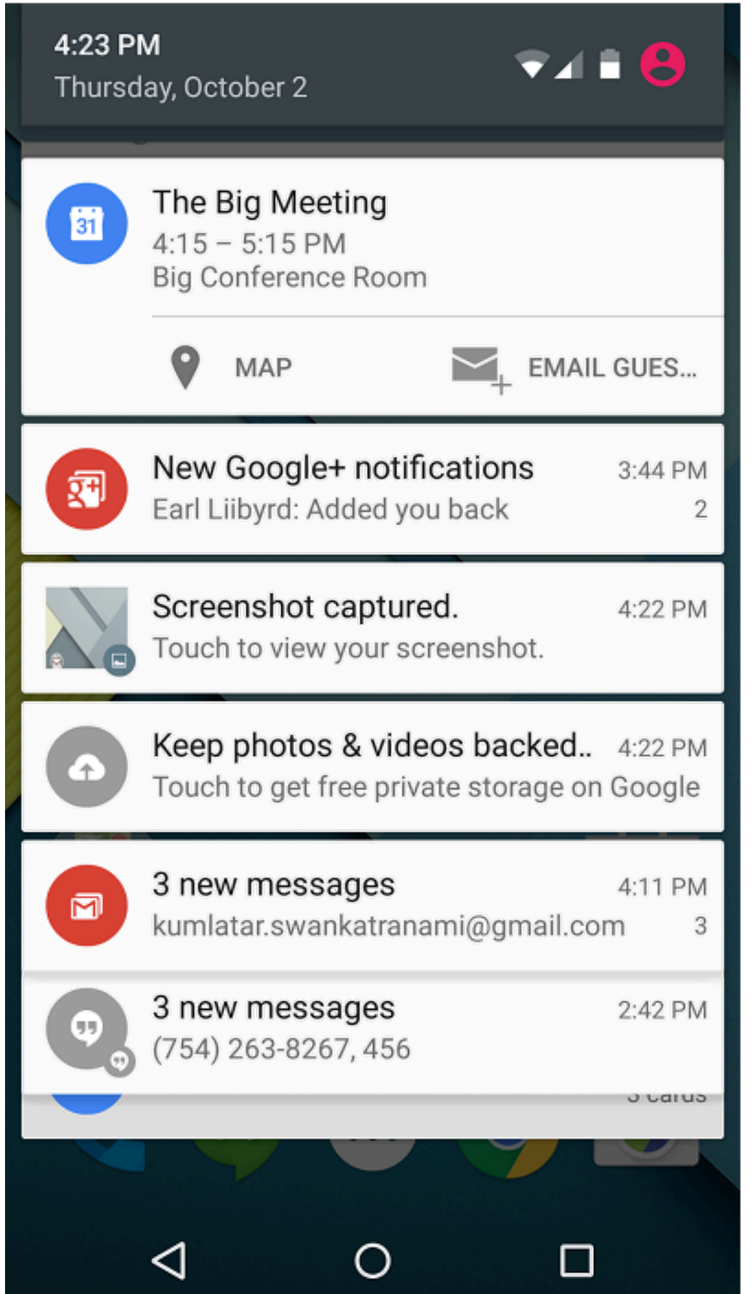
A notification is a message displayed outside your app's normal UI, appearing as an icon in the notification area.

To see details, the user opens the notification drawer, both of which are managed by the system and can be viewed anytime.

Notifications in the notification drawer.

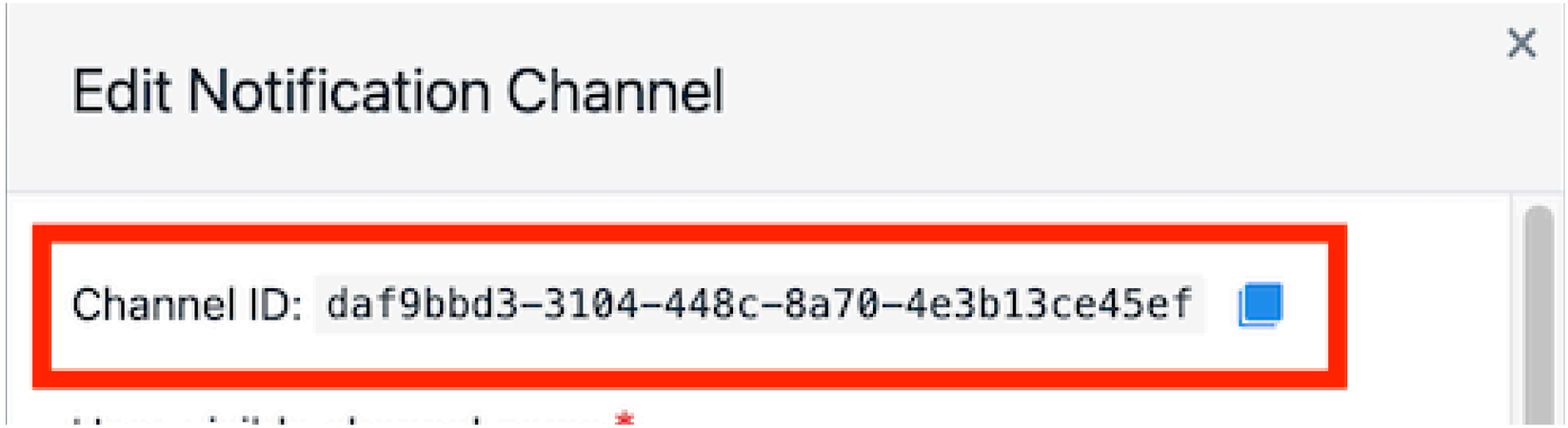
Notifications in the notification area.



Starting from version 8.0 (Oreo), Android starts grouping notifications into different channels.

Each channel will have a specific behavior and this behavior will be applied to all notifications of that channel. Each channel has an ID that represents it.



# 02 - Parts of a notification

Notifications are important because they provide timely information and updates to users without needing to open the app.

***For example***, *A calendar app might send a notification to remind users of an upcoming event or meeting.*

# 03 - High-Priority Notification

High priority notifications demand immediate user attention and appear prominently on the device.

***For example**, an alarm app sends a high priority notification to wake the user up at a set time.*

# MainActivity.java for high priority

```
// Define a method to send a notification on Channel 1
private void sendOnChannel1() {
    // Get the title and message from the EditText fields
    String title = editTextTitle.getText().toString();
    String message = editTextMessage.getText().toString();

    // Create a notification with the title, message, and other properties
    Notification notification = new NotificationCompat.Builder(this, NotificationApp.CHANNEL_1_ID)
            .setSmallIcon(R.drawable.baseline_access_alarms_24) // Set the small icon
            .setContentTitle(title) // Set the notification title
            .setContentText(message) // Set the notification message
            .setPriority(NotificationCompat.PRIORITY_HIGH) // Set the priority to high
            .setCategory(NotificationCompat.CATEGORY_MESSAGE) // Set the category to message
            .build();

    // Check if the app has permission to post notifications
    if (ActivityCompat.checkSelfPermission(this, android.Manifest.permission.POST_NOTIFICATIONS) != PackageManager.PERMISSION_GRANTED) {
        return; // Exit if permission is not granted
    }

    // Post the notification
    notificationManagerCompat.notify(1, notification);
}
```

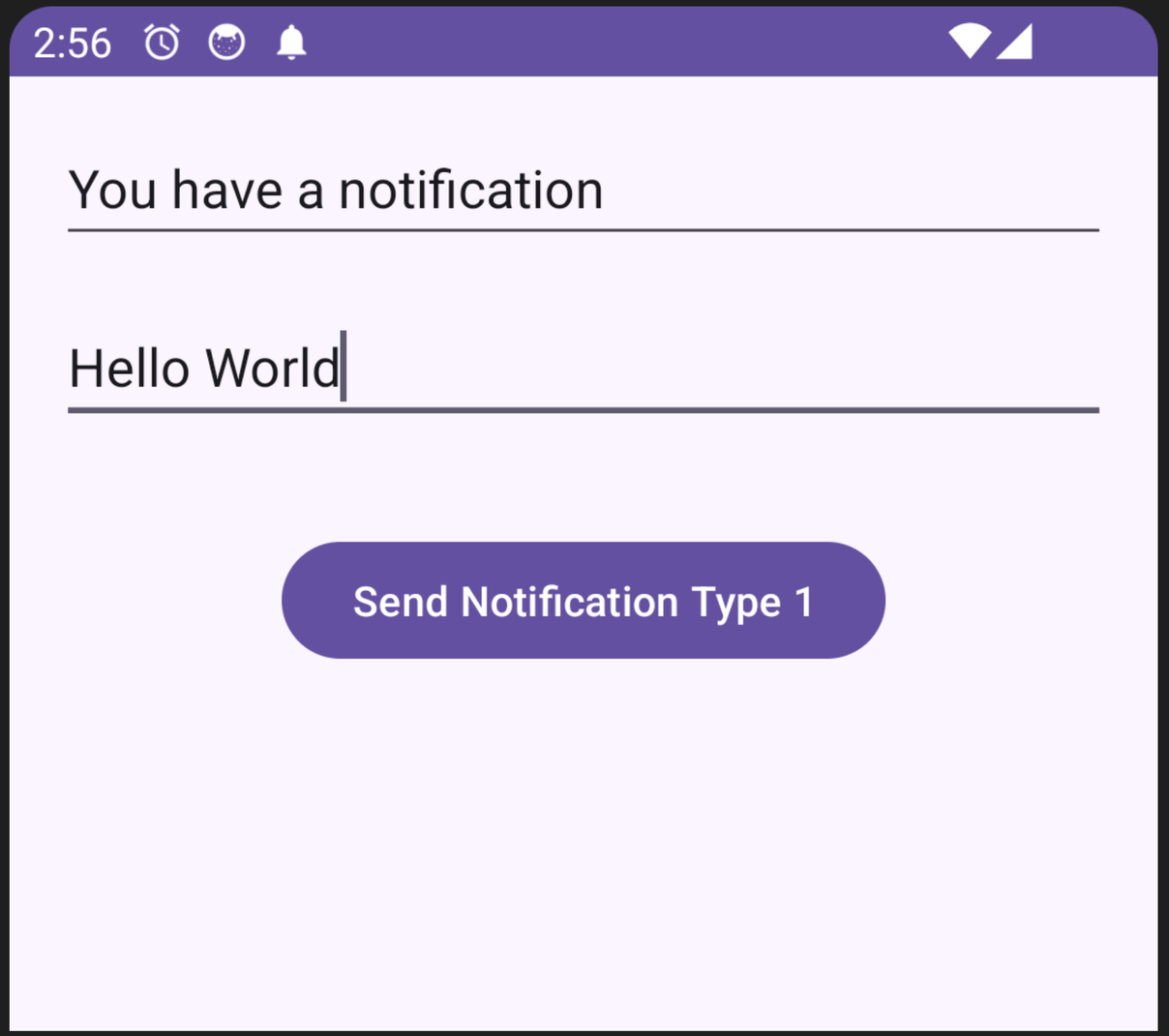
Notification App.java for high priority notification

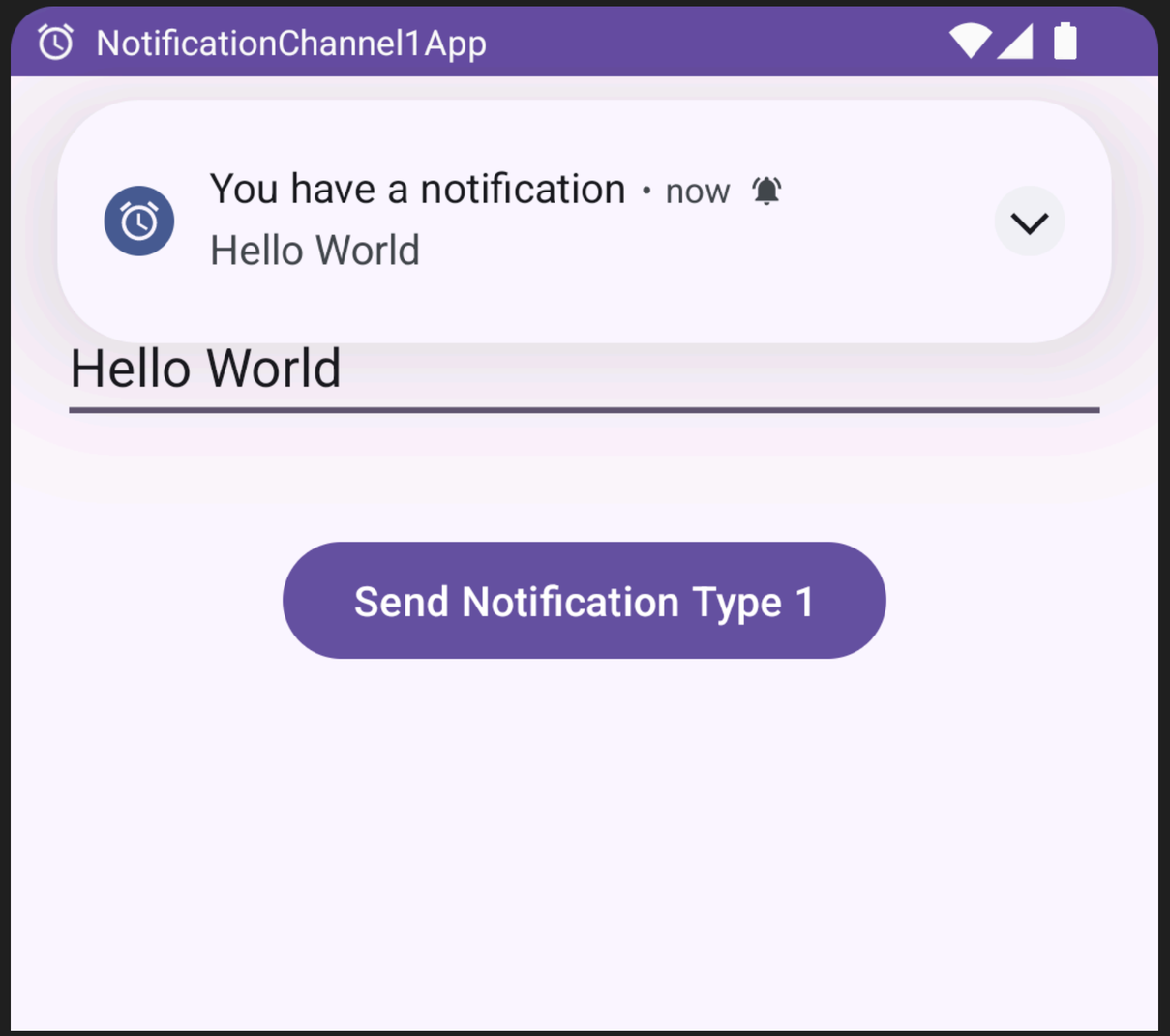
```java
// Define the application class
public class NotificationApp extends Application  {
    public static final String CHANNEL_1_ID = "channel1"; // Define the channel ID

    @Override
    public void onCreate() {
        super.onCreate();
        createNotificationChannels(); // Create the notification channels
    }

    // Method to create notification channels
    private void createNotificationChannels() {
        if(Build.VERSION.SDK_INT >= Build.VERSION_CODES.O) {
            // Create a high-importance notification channel
            NotificationChannel channel1 = new NotificationChannel(
                    CHANNEL_1_ID,
                    "Channel 1",
                    NotificationManager.IMPORTANCE_HIGH
            );
            channel1.setDescription("This is channel 1"); // Set the channel description

            // Register the channel with the system
            NotificationManager manager = getSystemService(NotificationManager.class);
            manager.createNotificationChannel(channel1);
        }
    }
}
```

```
<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <!-- Title input field -->
    <EditText
        android:id="@+id/editText_title"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_marginStart="16dp"
        android:layout_marginTop="16dp"
        android:layout_marginEnd="16dp"
        android:hint="Title"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <!-- Message input field -->
    <EditText
        android:id="@+id/editText_message"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_marginStart="16dp"
        android:layout_marginTop="16dp"
        android:layout_marginEnd="16dp"
        android:hint="Message"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/editText_title" />

    <!-- Button to send notification on Channel 1 -->
    <Button
        android:id="@+id/button1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="33dp"
        android:text="Send on Channel 1"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/editText_message" />
</androidx.constraintlayout.widget.ConstraintLayout>
---
```

# Activity.xml for high priority notification

# Screenshots for high priority notification



# 04 - Low-Priority Notification

Low priority notifications are less urgent and appear in a more discreet manner.

***For example**, an e-commerce app like Amazon might send a low priority notification about discounts or special offers that the user can view at their convenience.*

# MainActivity.java for low priority

```
// Define a method to send a notification on Channel 2
private void sendOnChannel2() {
    // Get the title and message from the EditText fields
    String title = editTextTitle.getText().toString();
    String message = editTextMessage.getText().toString();

    // Create a notification with the title, message, and other properties
    Notification notification = new NotificationCompat.Builder(this, NotificationApp.CHANNEL_2_ID)
            .setSmallIcon(R.drawable.baseline_notifications_24) // Set the small icon
            .setContentTitle(title) // Set the notification title
            .setContentText(message) // Set the notification message
            .setPriority(NotificationCompat.PRIORITY_LOW) // Set the priority to low
            .setCategory(NotificationCompat.CATEGORY_PROMO) // Set the category to promo
            .build();

    // Check if the app has permission to post notifications
    if (ActivityCompat.checkSelfPermission(this, android.Manifest.permission.POST_NOTIFICATIONS) != PackageManager.PERMISSION_GRANTED) {
        return; // Exit if permission is not granted
    }

    // Post the notification
    notificationManagerCompat.notify(2, notification);
}
```

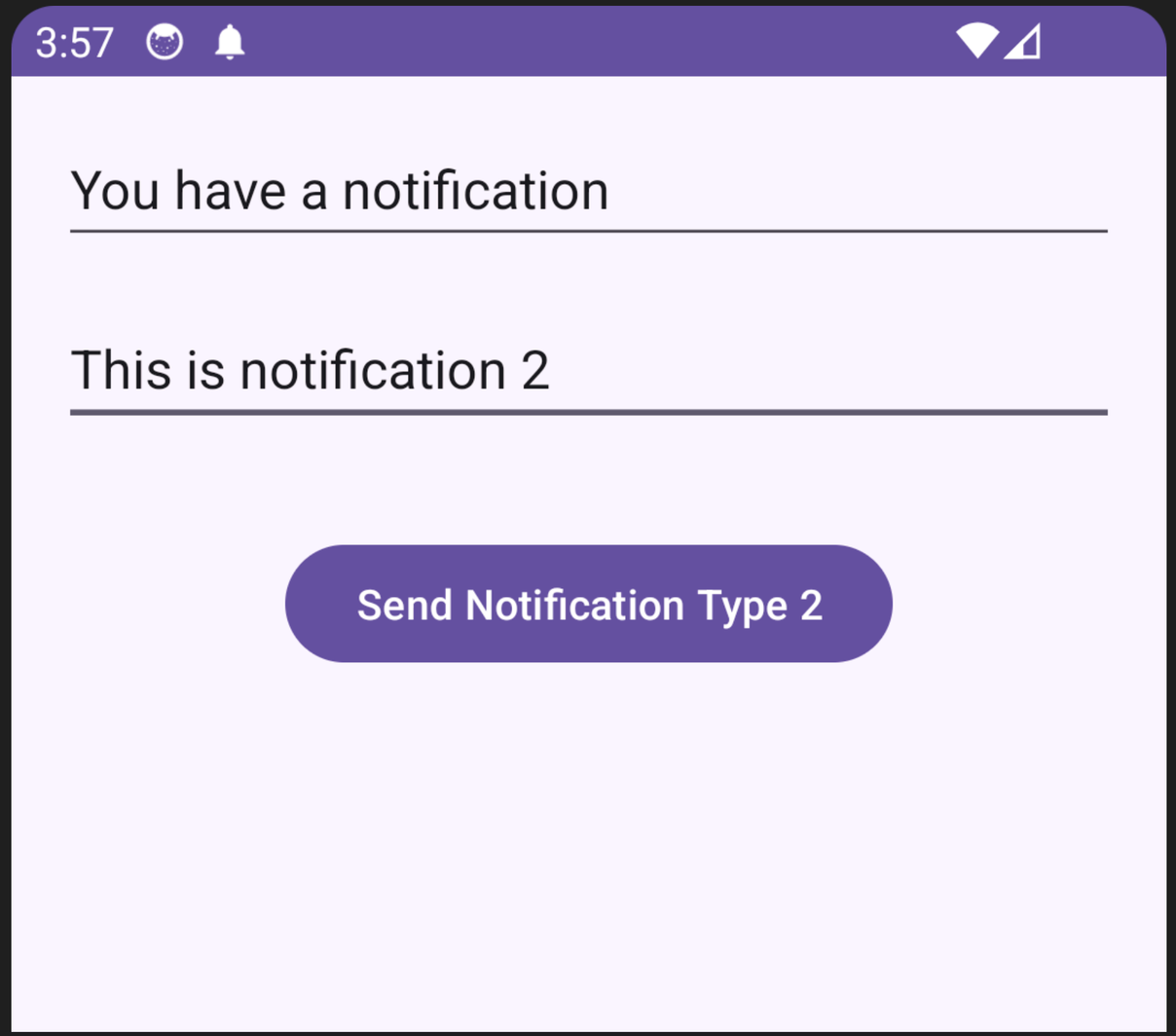
Notification App.java for low priority notification

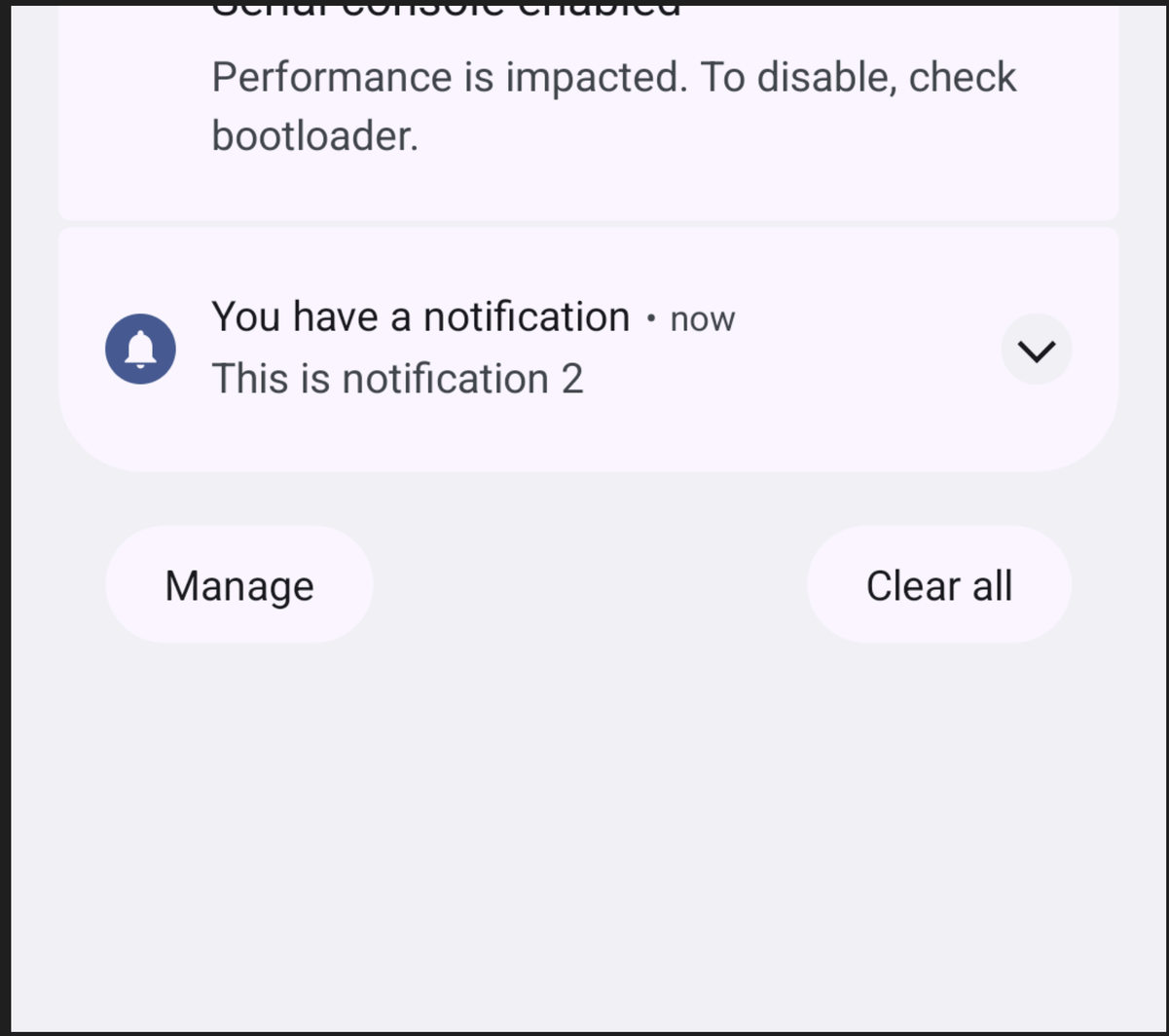
```java
// Define the application class
public class NotificationApp extends Application  {
    public static final String CHANNEL_2_ID = "channel2"; // Define the channel ID

    @Override
    public void onCreate() {
        super.onCreate();
        createNotificationChannels(); // Create the notification channels
    }

    // Method to create notification channels
    private void createNotificationChannels() {
        if(Build.VERSION.SDK_INT >= Build.VERSION_CODES.O) {
            // Create a low-importance notification channel
            NotificationChannel channel2 = new NotificationChannel(
                    CHANNEL_2_ID,
                    "Channel 2",
                    NotificationManager.IMPORTANCE_LOW
            );
            channel2.setDescription("This is channel 2"); // Set the channel description

            // Register the channel with the system
            NotificationManager manager = getSystemService(NotificationManager.class);
            manager.createNotificationChannel(channel2);
        }
    }
}
```

```
<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <!-- Title input field -->
    <EditText
        android:id="@+id/editText_title"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_marginStart="16dp"
        android:layout_marginTop="16dp"
        android:layout_marginEnd="16dp"
        android:hint="Title"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <!-- Message input field -->
    <EditText
        android:id="@+id/editText_message"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_marginStart="16dp"
        android:layout_marginTop="16dp"
        android:layout_marginEnd="16dp"
        android:hint="Message"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/editText_title" />

    <!-- Button to send notification on Channel 2 -->
    <Button
        android:id="@+id/button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="33dp"
        android:text="Send on Channel 2"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/editText_message" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

# Activity.xml for low priority notification

# Screenshots for low priority notification



Demonstration

Code Breakdown

real-time preview

# Thanks

Danke