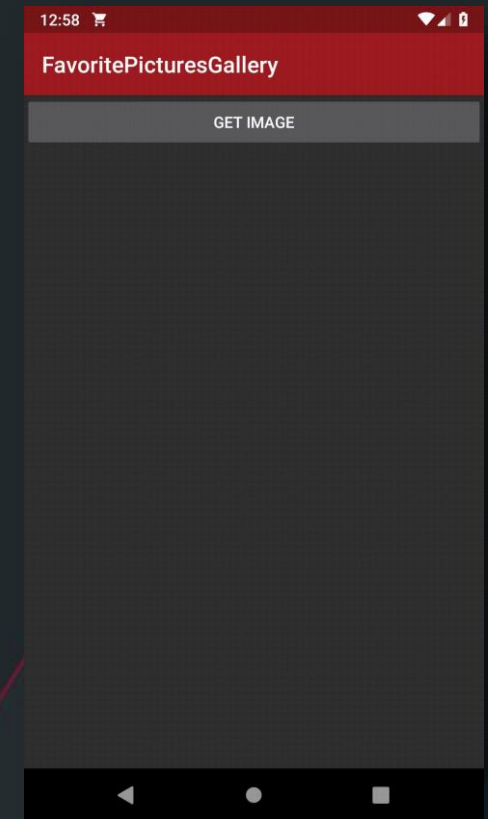# Intents

Upon completion of this module, a student will be able to

- understand what Intents are

- understand the difference between Explicit and Implicit Intents

- build an intent to launch another activity

- understand what a Pending Intent is and when they are used

- understand and explain how intent filters are used

- understand how to resolve an Intent

Project

- Task

  - For this project, you will be creating a multi page app using different types of intents.

- Repo

  - https://github.com/LambdaSchool/Android_Intents

- Submission

  - Compress the project directory into a zip archive and then send it to your PM in a DM.

A Student Can

understand what Intents are

Intents

- Messaging Object
- Starting an Activity
  - Move from one activity to another
- Starting a Service
  - Performs tasks in the background

- Delivering a Broadcast
  - Any app can receive a broadcast
  - Multiple apps can register for the same broadcast type

https://developer.android.com/guide/components/intents-filters

A Student Can

understand the difference between Explicit and Implicit Intents

Explicit vs Implicit Intents

- Explicit Intents
  - Specify which application and/or activity will satisfy the intent
- Implicit Intents
  - no specific component
- general action

A Student Can

build an intent to launch another activity

Building Intents

```
viewHolder.noteContent.setText(data.getContent());
viewHolder.parentView.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        Intent intent = new Intent(context, EditActivity.class);
        intent.putExtra(EditActivity.EDIT_NOTE_KEY, data);

        Bundle options = ActivityOptions.makeSceneTransitionAnimation(
                (Activity)context).toBundle();

        activity.startActivityForResult(intent,
                                        MainActivity.EDIT_REQUEST_CODE,
                                        options);

    }
});
```

- Component Name
  - Makes intent explicit
- Action
  - Generic Action to Perform
- Data
  - URI of data to be acted on
- Category
  - Optional, what kind of component should handle
- Extras
  - key value pairs
  - https://developer.android.com/guide/components/intents-common

A Student Can

understand what a Pending Intent is and when they are used

Pending Intent

```
Intent launchIntent = new Intent(context, CreateSetting.class);
PendingIntent pendingLaunchIntent = PendingIntent.getActivity(
                            context, // current context
                            Constants.LAUNCH_INTENT_REQUEST_CODE, // intent request code
                            launchIntent, // intent to be used
                            PendingIntent.FLAG_ONE_SHOT); // flags
```

- Allows another app or service to use the Intent

- Commonly used Situations

  - Notifications

  - App Widget (Home Screen)

  - Alarms

A Student Can

understand and explain how intent filters are used

Intent Filter

- Main Activity
  - action - MAIN
  - category - LAUNCHER
- Share Activity
  - first intent
    - action - SEND
    - data - plain text
  - second intent
    - action - SEND, SEND_MULTIPLE
    - data - panorama, image, video

```xml
<activity android:name="MainActivity">
    <!-- This activity is the main entry, should appear in app launcher -->
    <intent-filter>
        <action android:name="android.intent.action.MAIN" />
        <category android:name="android.intent.category.LAUNCHER" />
    </intent-filter>
</activity>

<activity android:name="ShareActivity">
    <!-- This activity handles "SEND" actions with text data -->
    <intent-filter>
        <action android:name="android.intent.action.SEND"/>
        <category android:name="android.intent.category.DEFAULT"/>
        <data android:mimeType="text/plain"/>
    </intent-filter>
    <!-- This activity also handles "SEND" and "SEND_MULTIPLE" with media data -->
    <intent-filter>
        <action android:name="android.intent.action.SEND"/>
        <action android:name="android.intent.action.SEND_MULTIPLE"/>
        <category android:name="android.intent.category.DEFAULT"/>
        <data android:mimeType="application/vnd.google.panorama360+jpg"/>
        <data android:mimeType="image/*"/>
        <data android:mimeType="video/*"/>
    </intent-filter>
</activity>
```

https://developer.android.com/guide/components/intents-filters#Receiving

A Student Can

understand how to resolve an Intent

Receiving a Broadcast

```java
Intent intent = getIntent();
String action = intent.getAction();
String type   = intent.getType();

if (Intent.ACTION_SEND.equals(action) && type != null) {
    if ("text/plain".equals(type)) {
        handleSendText(intent); // Handle text being sent
    } else if (type.startsWith("image/")) {
        handleSendImage(intent); // Handle single image being sent
    }
} else if (Intent.ACTION_SEND_MULTIPLE.equals(action) && type != null) {
    if (type.startsWith("image/")) {
        handleSendMultipleImages(intent); // Handle multiple images being sent
    }
} else {
    // Handle other intents, such as being started from the home screen
}

void handleSendText(Intent intent) {
    String sharedText = intent.getStringExtra(Intent.EXTRA_TEXT);
    if (sharedText != null) {
        // Update UI to reflect text being shared
    }
}

void handleSendImage(Intent intent) {
    Uri imageUri = (Uri) intent.getParcelableExtra(Intent.EXTRA_STREAM);
    if (imageUri != null) {
        // Update UI to reflect image being shared
    }
}

void handleSendMultipleImages(Intent intent) {
    ArrayList<Uri> imageUris = intent.getParcelableArrayListExtra(Intent.EXTRA_STREAM);
    if (imageUris != null) {
        // Update UI to reflect multiple images being shared
    }
}
```

- Get Intent

- Check Action

- Check Data

- Handle Intent

https://developer.android.com/guide/components/intents-filters#Receiving

Pending Intent

▶ Allows another app or service to

use the Intent

▶ Commonly used Situations

    ▶ Notifications

    ▶ App Widget (Home Screen)

    ▶ Alarms

Intent Resolution