

Instructions for Lab 3

CSE 162 - Mobile Computing - Lab

android studio

Bumblebee // 2021.1.1

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Projects

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-  **BarcodeTest**
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-  **MediaRecorder**
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-  **CameraFragment**
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-  **videoTest**
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-  **L4P_29**
D:\Android\AndroidStudioProjects\L4P_29
-  **Lockfile**
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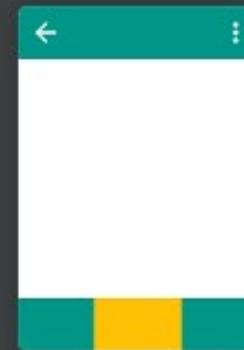
Templates

Phone and Tablet

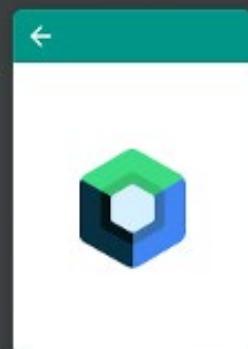
Wear OS

Android TV

Automotive



No Activity



Empty Compose Activity

Basic Activity

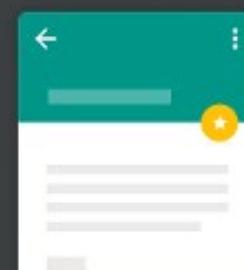
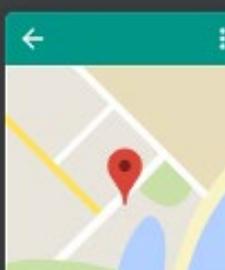


Empty Activity

Bottom Navigation Activity



Fullscreen Activity

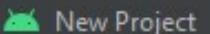


Previous

Next

Cancel

Finish



New Project



Empty Activity

Creates a new empty activity

Name

Lab3

Package name

com.yangqingsun.lab3

Save location

D:\AndroidStudioProjects\Lab3



Language

Java



Minimum SDK

API 23: Android 6.0 (Marshmallow)



Your app will run on approximately **94.1%** of devices.

[Help me choose](#)

Use legacy android.support libraries

Using legacy android.support libraries will prevent you from using
the latest Play Services and Jetpack libraries

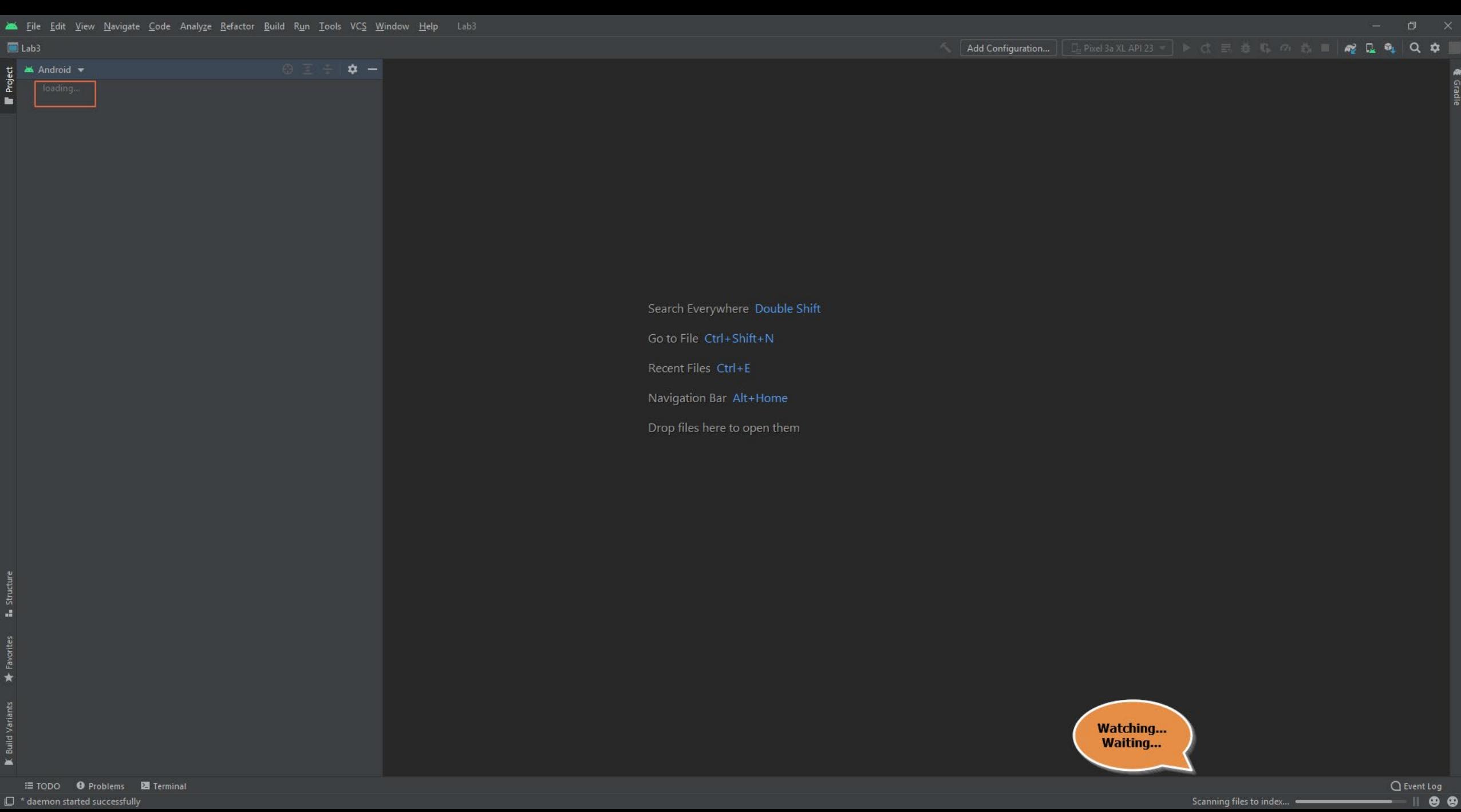


Previous

Next

Cancel

Finish



The screenshot shows the Android Studio interface with the following details:

- Top Bar:** File, Edit, View, Navigate, Code, Analyze, Refactor, Build, Run, Tools, VCS, Window, Help, Lab3 - MainActivity.java [Lab3.app]
- Toolbar:** Includes icons for Run, Stop, Build, Run, Logcat, Profiler, App Inspection, and others.
- Project Structure:** Shows the project tree under "app":
 - manifests
 - java
 - com.yangqingsun.lab3
 - MainActivity
 - com.yangqingsun.lab3 (androidTest)
 - com.yangqingsun.lab3 (test)
 - res
 - Gradle Scripts
- Code Editor:** Displays the MainActivity.java file content:

```
1 package com.yangqingsun.lab3;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     @Override
8     protected void onCreate(Bundle savedInstanceState) {
9         super.onCreate(savedInstanceState);
10        setContentView(R.layout.activity_main);
11    }
12 }
```
- Toolbars and Panels:** Syncing..., Device Manager, Emulator, Device File Explorer.
- Bottom Bar:** TODO, Problems, Terminal, Build, Logcat, Profiler, App Inspection, Event Log, Layout Inspector.
- Status Bar:** Project Lab3 is using the following JDK location when running Gradle: // C:/Program Files/Android/Android Studio/jre // Using different JDK locations on different processes might cause Gradle to spawn multiple daemons, for example, by executing Gradle tasks from a terminal while using Andr... (a minute ago)

The screenshot shows the Android Studio interface with the following details:

- Top Bar:** File, Edit, View, Navigate, Code, Analyze, Refactor, Build, Run, Tools, VCS, Window, Help, Lab3 - AndroidManifest.xml [Lab3.app]
- Toolbar:** Includes icons for Run, Stop, Refresh, and Device Manager.
- Project Tab:** Shows the project structure under "app".
 - manifests:** Contains `AndroidManifest.xml`.
 - Java:** Contains `MainActivity.java`.
 - res:** Contains `drawable`, `layout`, `mipmap`, `values`, `colors.xml`, and `strings.xml`.
- Code Editor:** Displays the `AndroidManifest.xml` file with the following XML content:

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.yangqingsun.lab3">

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="Lab3"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Lab3">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>

</manifest>
```
- Bottom Navigation:** Text (selected), Merged Manifest, TODO, Problems, Terminal, Build, Logcat, Profiler, App Inspection, Event Log, Layout Inspector.
- Bottom Status Bar:** Project Lab3 is using the following JDK location when running Gradle: // C:/Program Files/Android/Android Studio/jre // Using different JDK locations on different processes might cause Gradle to spawn multiple daemons, for example, by executing Gradle tasks from a terminal while using A... (3 minutes ago)

The screenshot shows the Android Studio interface with the following details:

- Top Bar:** File, Edit, View, Navigate, Code, Analyze, Refactor, Build, Run, Tools, VCS, Window, Help, Lab3 - AndroidManifest.xml [Lab3.app]
- Toolbar:** Includes icons for Run, Stop, Build, Clean, Sync, and others.
- Project Tab:** Shows the project structure under "app":
 - manifests: AndroidManifest.xml
 - java: com.yangqingsun.lab3 (MainActivity)
 - res: drawable, layout (activity_main.xml), mipmap, values (colors.xml, strings.xml), themes (2)
- Resource Manager:** Shows the current file is AndroidManifest.xml.
- Code Editor:** Displays the XML code for AndroidManifest.xml. The code includes permissions for external storage, video recording, audio recording, and camera, along with application and activity definitions. The application tag specifies a launcher icon and theme.

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    package="com.yangqingsun.lab3">

    <uses-permission android:name="android.permission.WRITE_EXTERNAL_STORAGE"
        tools:ignore="ScopedStorage" />

    <uses-permission android:name="android.permission.RECORD_VIDEO" />
    <uses-permission android:name="android.permission.RECORD_AUDIO" />

    <uses-permission android:name="android.permission.CAMERA" />

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Lab3">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
```
- Bottom Navigation:** Text (selected), Merged Manifest, TODO, Problems, Terminal, Build, Logcat, Profiler, App Inspection.
- Bottom Status Bar:** Project Lab3 is using the following JDK location when running Gradle: // C:/Program Files/Android/Android Studio/jre // Using different JDK locations on different processes might cause Gradle to spawn multiple daemons, for example, by executing Gradle tasks fr... (54 minutes ago) 1:1 (1143 chars, 31 line breaks) CRLF UTF-8 4 spaces.

The screenshot shows the Android Studio interface with the project 'Lab3' open. The left sidebar displays the project structure, and the main editor shows the `AndroidManifest.xml` file. A tooltip bubble in the upper right corner contains the text: "Get the permission for the camera." The code in the manifest includes several `<uses-permission>` tags for storage, video recording, audio recording, and camera permissions.

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    package="com.yangqingsun.lab3">

    <uses-permission android:name="android.permission.WRITE_EXTERNAL_STORAGE"
        tools:ignore="ScopedStorage" />

    <uses-permission android:name="android.permission.RECORD_VIDEO" />
    <uses-permission android:name="android.permission.RECORD_AUDIO" />

    <uses-permission android:name="android.permission.CAMERA" />

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Lab3">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

Get the permission for the camera.

The screenshot shows the Android Studio interface with the following details:

- Top Bar:** File, Edit, View, Navigate, Code, Analyze, Refactor, Build, Run, Tools, VCS, Window, Help, Lab3 - activity_main.xml [Lab3.app]
- Toolbar:** Includes icons for app, device selection (Pixel 3a XL API 23), run, stop, and others.
- Project Tab:** Shows the project structure under "app":
 - manifests: AndroidManifest.xml
 - java: com.yangqingsun.lab3 (MainActivity)
 - res: drawable, layout (activity_main.xml), mipmap, values (colors.xml, strings.xml), themes (2)
- Code Editor:** The active tab is "activity_main.xml". The XML code is as follows:

```
<?xml version="1.0" encoding="utf-8"?>
<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">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```
- Bottom Bar:** TODO, Problems, Terminal, Build, Logcat, Profiler, App Inspection, Event Log, Layout Inspector.
- Bottom Status Bar:** Project Lab3 is using the following JDK location when running Gradle: // C:/Program Files/Android/Android Studio/jre // Using different JDK locations on different processes might cause Gradle to spawn multiple daemons, for example, by executing Gradle tasks from a ... (1 hour ago) 18:53 (780 chars, 17 line breaks) LF UTF-8 4 spaces.

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help Lab3 - activity_main.xml [Lab3.app]

Lab3 app src main res layout activity_main.xml

Project

Resource Manager

Project

app

- manifests
- AndroidManifest.xml
- java

 - com.yangqingsun.lab3
 - MainActivity

- com.yangqingsun.lab3 (androidTest)
- com.yangqingsun.lab3 (test)

res

- drawable
- layout

 - activity_main.xml

- mipmap
- values

 - colors.xml
 - strings.xml

- themes (2)

Gradle Scripts

AndroidManifest.xml activity_main.xml MainActivity.java strings.xml

```
<?xml version="1.0" encoding="utf-8"?>
<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">

    <TextureView
        android:id="@+id/surface_view"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        tools:ignore="MissingConstraints" />

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="vertical"
        tools:ignore="MissingConstraints"
        tools:layout_editor_absoluteX="0dp"
        tools:layout_editor_absoluteY="0dp">

        <EditText
            android:id="@+id/video_name"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:hint="@string/text_hint"
            android:inputType="text" />

        <Button
            android:id="@+id/button_capture"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_gravity="bottom"
            android:onClick="onCaptureClick"
            android:text="@string/btnCapture" />

    </LinearLayout>
</androidx.constraintlayout.widget.ConstraintLayout>
```

Code Split Design

Layout Validation

Device Manager

Emulator Device File Explorer

Design

Design the interface for the camera.

TODO Problems Terminal Logcat Profiler App Inspection Event Log Layout Inspector

Project Lab3 is using the following JDK location when running Gradle: // C:/Program Files/Android/Android Studio/jre // Using different JDK locations on different processes might cause Gradle to spawn multiple daemons, for example, by executing Gradle tasks from a terminal while using Andro... (today 18:08) 41:1 LF UTF-8 4 spaces

The screenshot shows the Android Studio interface with the project 'Lab3' open. The left sidebar displays the project structure under the 'app' module, including 'AndroidManifest.xml', 'activity_main.xml', 'MainActivity.java', and various resource folders like 'drawable', 'layout', 'mipmap', and 'values'. The 'values' folder contains 'colors.xml' and 'strings.xml'. The right side of the screen shows the 'strings.xml' file in the editor, which contains the following XML code:

```
<resources>
    <string name="app_name">Lab3</string>
</resources>
```

The 'strings.xml' file is currently selected in the tab bar at the top. The bottom navigation bar includes tabs for 'TODO', 'Problems', 'Terminal', 'Build', 'Logcat', 'Profiler', 'App Inspection', 'Event Log', and 'Layout Inspector'. A status bar at the bottom provides information about the JDK location and the current time.

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help Lab3 - strings.xml [Lab3.app]

app src main res strings.xml

Project

Resource Manager

AndroidManifest.xml activity_main.xml MainActivity.java strings.xml

Edit translations for all locales in the translations editor.

Open editor Hide notification

Gradle Device Manager

Gradle Scripts

res drawable layout activity_main.xml mipmap values colors.xml strings.xml themes (2)

Add the strings.

```
<resources>
    <string name="app_name">Lab3 by Y. Sun</string>
    <string name="btnCapture">START</string>
    <string name="text_hint">Enter a video name</string>
```

Emulator Device File Explorer

TODO Problems Terminal Logcat Profiler App Inspection Event Log Layout Inspector

Project Lab3 is using the following JDK location when running Gradle: // C:/Program Files/Android/Android Studio/jre // Using different JDK locations on different processes might cause Gradle to spawn multiple daemons, for example, by executing Gradle tasks from a terminal while using Androi... (today 18:08) 6:1 LF UTF-8 4 spaces

The screenshot shows the Android Studio interface with the following details:

- Top Bar:** File, Edit, View, Navigate, Code, Analyze, Refactor, Build, Run, Tools, VCS, Window, Help, Lab3 - MainActivity.java [Lab3.app]
- Toolbar:** Includes icons for Run, Stop, Build, Run, Device Manager, and others.
- Project Structure:** Shows the project tree under "app".
 - manifests: AndroidManifest.xml
 - java: com.yangqingsun.lab3 (selected), MainActivity.java
 - res: drawable, layout (activity_main.xml), mipmap, values (colors.xml, strings.xml), themes (2)
- Code Editor:** Displays MainActivity.java with the following code:

```
package com.yangqingsun.lab3;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
}
```
- Bottom Navigation:** TODO, Problems, Terminal, Build, Logcat, Profiler, App Inspection, Event Log, Layout Inspector.
- Bottom Status Bar:** Project Lab3 is using the following JDK location when running Gradle: // C:/Program Files/Android/Android Studio/jre // Using different JDK locations on different processes might cause Gradle to spawn multiple daemons, for example, by executing Gradle tasks from a t... (today 18:08) 14:2 (333 chars, 13 line breaks) LF UTF-8 4 spaces.

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help Lab3 - MainActivity.java [Lab3.app]

Lab3 > app > src > main > java > com > yangqingsun > lab3 > MainActivity

Project Resource Manager Project Manager Favorites Build Variants Structure

AndroidManifest.xml activity_main.xml MainActivity.java strings.xml

1 package com.yangqingsun.lab3;

2

3 import androidx.appcompat.app.AppCompatActivity;

4

5 import android.annotation.SuppressLint;

6 import android.hardware.Camera;

7 import android.media.CamcorderProfile;

8 import android.media.MediaRecorder;

9 import android.os.Build;

10 import android.os.Bundle;

11 import android.os.Environment;

12 import android.text.Editable;

13 import android.util.Log;

14 import android.view.TextureView;

15 import android.view.View;

16 import android.widget.Button;

17 import android.widget.EditText;

18

19 import java.io.File;

20 import java.io.IOException;

21 import java.text.SimpleDateFormat;

22 import java.util.Date;

23 import java.util.List;

24 import java.util.Locale;

25

26 public class MainActivity extends AppCompatActivity {

27

28 private Camera mCamera;

29 private TextureView mPreview;

30 private MediaRecorder mMediaRecorder;

31 private File mOutputFile;

32

33 private boolean isRecording = false;

34 private static final String TAG = "Recorder";

35 private Button captureButton;

36

37 private EditText editText;

38

39 @Override

40 protected void onCreate(Bundle savedInstanceState) {

41 super.onCreate(savedInstanceState);

42 setContentView(R.layout.activity_main);

43 }

44 }

18 1 ▾ 1 ▾ ▾ Gradle Device Manager

Emulator Device File Explorer

TODO Problems Terminal Logcat Profiler App Inspection Event Log Layout Inspector

Project Lab3 is using the following JDK location when running Gradle: // C:/Program Files/Android/Android Studio/jre // Using different JDK locations on different processes might cause Gradle to spawn multiple daemons, for example, by executing Gradle tasks from a terminal while using Andr... (today 18:08) 229:1 LF UTF-8 4 spaces

MediaRecorder class is used to record audio and video.

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help Lab3 - MainActivity.java [Lab3.app]

Lab3 app src main java com.yangqingsun.lab3 MainActivity

Project

Resource Manager

Project

app manifests AndroidManifest.xml Java com.yangqingsun.lab3 MainActivity res drawable layout activity_main.xml layout_main.xml mipmap values colors.xml strings.xml themes (2) Gradle Scripts

AndroidManifest.xml activity_main.xml MainActivity.java strings.xml

private EditText editText;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity_main);

mPreview = findViewById(R.id.surface_view);

captureButton = findViewById(R.id.button_capture);

editText = findViewById(R.id.video_name);

String[] perms = {"android.permission.WRITE_EXTERNAL_STORAGE", "android.permission.RECORD_AUDIO", "android.permission.CAMERA"};

int permsRequestCode = 200;

if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.M) {

requestPermissions(perms, permsRequestCode);

}

public void onCaptureClick(View view) {

if (isRecording) {

// BEGIN_INCLUDE(stop_release_media_recorder)

// stop recording and release camera

try {

mMediaRecorder.setOnErrorListener(null);

mMediaRecorder.setOnInfoListener(null);

mMediaRecorder.setPreviewDisplay(null);

mMediaRecorder.stop(); // stop the recording

} catch (RuntimeException e) {

// RuntimeException is thrown when stop() is called immediately after start().

// In this case the output file is not properly constructed and should be deleted.

Log.d(TAG, msg: "RuntimeException: stop() is called immediately after start()");

//noinspection ResultOfMethodCallIgnored

mOutputFile.delete();

}

releaseMediaRecorder(); // release the MediaRecorder object

/* END_INCLUDE(stop_release_media_recorder) */

Get the permission.

These three lines of code are used to avoid MediaRecorder stopping failure.

Emulator Device File Explorer

TODO Problems Terminal Build Logcat Profiler App Inspection Event Log Layout Inspector

Project Lab3 is using the following JDK location when running Gradle: /C:/Program Files/Android/Android Studio/jre // Using different JDK locations on different processes might cause Gradle to spawn multiple daemons, for example, by executing Gradle tasks from a terminal while using Andr... (today 18:08) 229:1 LF UTF-8 4 spaces 😊

The screenshot shows the Android Studio interface with the project 'Lab3' open. The main editor window displays the Java code for `MainActivity.java`. The code handles camera and media recorder operations, including preparing the video recorder, starting recording, and releasing resources. The code uses annotations like `@Override` and `@SuppressLint`. The Project tool window on the left shows the app's structure, and the bottom navigation bar includes tabs for TODO, Problems, Terminal, Build, Logcat, Profiler, and App Inspection.

```
    }
    releaseMediaRecorder(); // release the MediaRecorder object
    //mMediaRecorder.release();
    mCamera.lock();          // take camera access back from MediaRecorder

    // inform the user that recording has stopped
    setCaptureButtonText("START");
    isRecording = false;
    releaseCamera();

} else {

    if (prepareVideoRecorder()) {
        // Camera is available and unlocked, MediaRecorder is prepared,
        // now you can start recording
        mMediaRecorder.start();
        setCaptureButtonText("STOP");
        isRecording = true;
    } else {
        // prepare didn't work, release the camera
        releaseMediaRecorder();
    }

    // END_INCLUDE(prepare_start_media_recorder)
}

private void setCaptureButtonText(String title) {
    captureButton.setText(title);
}

@Override
protected void onPause() {
    super.onPause();
    // if we are using MediaRecorder, release it first
    releaseMediaRecorder();
    // release the camera immediately on pause event
    releaseCamera();
}
```

The screenshot shows the Android Studio interface with the project 'Lab3' open. The main focus is on the Java file `MainActivity.java`, which contains code for handling camera and media recorder operations. The code includes methods for releasing the media recorder, releasing the camera, preparing a video recorder, and setting preview sizes. The AndroidManifest.xml, activity_main.xml, and strings.xml files are also visible in the editor tabs.

```
112     releaseMediaRecorder();
113     // release the camera immediately on pause event
114     releaseCamera();
115 }
116
117 private void releaseMediaRecorder() {
118     if (mMediaRecorder != null) {
119         // clear recorder configuration
120         mMediaRecorder.reset();
121         // release the recorder object
122         mMediaRecorder.release();
123         mMediaRecorder = null;
124         // Lock camera for later use i.e taking it back from MediaRecorder.
125         // MediaRecorder doesn't need it anymore and we will release it if the activity pauses.
126         mCamera.lock();
127     }
128 }
129
130 private void releaseCamera() {
131     if (mCamera != null) {
132         // release the camera for other applications
133         mCamera.release();
134         mCamera = null;
135     }
136 }
137
138 private boolean prepareVideoRecorder() {
139     // BEGIN_INCLUDE (configure_preview)
140     // ...
141     mCamera = CameraHelper.getDefaultCameraInstance();
142     mCamera = Camera.open();
143     Camera.Parameters parameters = mCamera.getParameters();
144
145     List<Camera.Size> mSupportedPreviewSizes = parameters.getSupportedPreviewSizes();
146
147     mCamera.setParameters(parameters);
148     try {
149         mCamera.setPreviewTexture(mPreview.getSurfaceTexture());
150     } catch (IOException e) {
151         Log.e(TAG, msg: "Surface texture is unavailable or unsuitable" + e.getMessage());
152         return false;
153     }
154 }
```

The Project, Resource Manager, Structure, Favorites, and Build Variants toolbars are visible on the left. The Device Manager, Emulator, and Device File Explorer are shown on the right. The bottom navigation bar includes TODO, Problems, Terminal, Build, Logcat, Profiler, App Inspection, Event Log, and Layout Inspector. A status bar at the bottom provides information about the JDK location and system details.

The screenshot shows the Android Studio interface with the following details:

- Top Bar:** File, Edit, View, Navigate, Code, Analyze, Refactor, Build, Run, Tools, VCS, Window, Help, Lab3 - MainActivity.java [Lab3.app]
- Toolbar:** Includes icons for Run, Stop, Refresh, and various developer tools.
- Project Structure:** Shows the project tree under "app".
 - manifests:** Contains AndroidManifest.xml.
 - java:** Contains com.yangqingsun.lab3 (selected) which includes MainActivity.java.
 - res:** Contains drawable, layout (activity_main.xml), mipmap, values (colors.xml, strings.xml), and themes (2).
- Code Editor:** Displays the MainActivity.java code. The code is a step-by-step guide for configuring a MediaRecorder:

```
151 Log.e(TAG, msg: "Surface texture is unavailable or unsuitable" + e.getMessage());
152 return false;
153 }
154
155 mMediaRecorder = new MediaRecorder();
156
157 // Step 1: Unlock and set camera to MediaRecorder
158 mCamera.unlock();
159 mMediaRecorder.setCamera(mCamera);
160
161 // Step 2: Set sources
162 mMediaRecorder.set AudioSource(MediaRecorder.AudioSource.MIC);
163 mMediaRecorder.set VideoSource(MediaRecorder.VideoSource.CAMERA);
164 // Use the same size for recording profile.
165 CamcorderProfile profile = CamcorderProfile.get(CamcorderProfile.Quality_HIGH);
166
167 mMediaRecorder.setMaxDuration(60000); // 60 seconds limitation
168 //mMediaRecorder.setMaxFileSize(5000000); // Approximately 5 megabytes
169
170 // Step 3: Set a CamcorderProfile (requires API Level 8 or higher)
171 mMediaRecorder.setProfile(profile);
172
173 // Step 4: Set output file
174 mOutputFile = getOutputMediaFile();
175 if (mOutputFile == null) {
176     return false;
177 }
178
179 mMediaRecorder.setOutputFile(mOutputFile.getAbsolutePath());
180 // END_INCLUDE (configure_media_recorder)
181
182 // Step 5: Prepare configured MediaRecorder
183 try {
184     mMediaRecorder.prepare();
185 } catch (IllegalStateException e) {
186     Log.d(TAG, msg: "IllegalStateException preparing MediaRecorder: " + e.getMessage());
187     releaseMediaRecorder();
188     return false;
189 } catch (IOException e) {
190     Log.d(TAG, msg: "IOException preparing MediaRecorder: " + e.getMessage());
191     releaseMediaRecorder();
192 }
```
- Bottom Bar:** TODO, Problems, Terminal, Build, Logcat, Profiler, App Inspection, Event Log, Layout Inspector.
- Bottom Status Bar:** Project Lab3 is using the following JDK location when running Gradle: // C:/Program Files/Android/Android Studio/jre // Using different JDK locations on different processes might cause Gradle to spawn multiple daemons, for example, by executing Gradle tasks from a terminal while using Andr... (today 18:08)

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help Lab3 - MainActivity.java [Lab3.app]

Lab3 > app > src > main > java > com > yangqingsun > lab3 > MainActivity

Project Manager

Resource Manager

Project

app

- manifests
- AndroidManifest.xml
- java

 - com.yangqingsun.lab3
 - MainActivity

- com.yangqingsun.lab3 (androidTest)
- com.yangqingsun.lab3 (test)

res

- drawable
- layout

 - activity_main.xml

- mipmap
- values

 - colors.xml
 - strings.xml

- themes (2)

Gradle Scripts

AndroidManifest.xml activity_main.xml MainActivity.java strings.xml

```
        Log.d(TAG, msg: "IOException preparing MediaRecorder: " + e.getMessage());
        releaseMediaRecorder();
        return false;
    }
    return true;
}

public File getOutputMediaFile(){
    // To be safe, you should check that the SDCard is mounted
    // using Environment.getExternalStorageState() before doing this.
    if (!Environment.getExternalStorageState().equalsIgnoreCase(Environment.MEDIA_MOUNTED)) {
        return null;
    }

    @SuppressLint("SdCardPath") File mediaStorageDir = new File( pathname:"/sdcard/Lab3_Recordings/");
    // This location works best if you want the created images to be shared
    // between applications and persist after your app has been uninstalled.

    // Create the storage directory if it does not exist
    if (! mediaStorageDir.exists()){
        if (! mediaStorageDir.mkdirs()){
            Log.d( tag: "Lab3_Recordings", msg: "failed to create directory");
            return null;
        }
    }

    // Create a media file name
    String timeStamp = new SimpleDateFormat( pattern: "yyyy-MM-dd_HHmss", Locale.US).format(new Date());
    File mediaFile;

    Editable video_name=editText.getText();

    mediaFile = new File(mediaStorageDir, child: video_name.toString()+"_"+timeStamp + ".mp4");
    return mediaFile;
}
```

Set the directory to save the video files.

Create a time stamp by using SimpleDateFormat class.

TODO Problems Terminal Build Logcat Profiler App Inspection Event Log Layout Inspector

Project Lab3 is using the following JDK location when running Gradle: /C:/Program Files/Android/Android Studio/jre // Using different JDK locations on different processes might cause Gradle to spawn multiple daemons, for example, by executing Gradle tasks from a terminal while using Andr... (today 18:08) 229:1 LF UTF-8 4 spaces

SimpleDateFormat

Date and Time Patterns

Letter	Date or Time Component	Presentation	Examples	Supported (API Levels)
G	Era designator	Text	AD	1+
y	Year	Year	1996; 96	1+
Y	Week year	Year	2009; 09	24+
M	Month in year (context sensitive)	Month	July; Jul; 07	1+
L	Month in year (standalone form)	Month	July; Jul; 07	TBD
w	Week in year	Number	27	1+
W	Week in month	Number	2	1+
D	Day in year	Number	189	1+
d	Day in month	Number	10	1+
F	Day of week in month	Number	2	1+
E	Day name in week	Text	Tuesday; Tue	1+
u	Day number of week (1 = Monday, ..., 7 = Sunday)	Number	1	24+
a	Am/pm marker	Text	PM	1+
H	Hour in day (0-23)	Number	0	1+
k	Hour in day (1-24)	Number	24	1+
K	Hour in am/pm (0-11)	Number	0	1+
h	Hour in am/pm (1-12)	Number	12	1+
m	Minute in hour	Number	30	1+
s	Second in minute	Number	55	1+
S	Millisecond	Number	978	1+
z	Time zone	General time zone	Pacific Standard Time; PST; GMT-08:00	1+
Z	Time zone	RFC 822 time zone	-800	1+
X	Time zone	ISO 8601 time zone	-08; -0800; -08:00	24+

The screenshot shows the Android Studio interface with the following details:

- Top Bar:** File, Edit, View, Navigate, Code, Analyze, Refactor, Build, Run, Tools, VCS, Window, Help, Lab3 - MainActivity.java [Lab3.app]
- Project Tree:** Shows the project structure under "app":
 - manifests: AndroidManifest.xml
 - java: com.yangqingsun.lab3 (selected), MainActivity.java
 - res: drawable, layout (activity_main.xml), mipmap, values (colors.xml, strings.xml), themes (2)
- Code Editor:** Displays the MainActivity.java code. The file starts with package com.yangqingsun.lab3; and imports various Android classes and utilities.
- Run Configuration:** Top right shows "Pixel 3a XL API 23" selected, with a red box highlighting the "Run 'app' Shift+F10" button.
- Bottom Navigation:** TODO, Problems, Terminal, Logcat, Profiler, App Inspection, Event Log, Layout Inspector.
- Status Bar:** Run selected configuration, 229:1 LF, UTF-8 4 spaces, Emulator, Device File Explorer.

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help Lab3 - MainActivity.java [Lab3.app]

Lab3 > app > src > main > java > com > yangqingsun > lab3 > MainActivity

Project Resource Manager

Emulator: Pixel 3a XL API 23

Gradle Device Manager

AndroidManifest.xml activity_main.xml MainActivity.java strings.xml

Emulator: Pixel 3a XL API 23

MainActivity.java

```
1 package com.yangqingsun.lab3;
2
3 import androidx.appcompat.app.AppCompatActivity;
4
5 import android.annotation.SuppressLint;
6 import android.hardware.Camera;
7 import android.media.CamcorderProfile;
8 import android.media.MediaRecorder;
9 import android.os.Build;
10 import android.os.Bundle;
11 import android.os.Environment;
12 import android.text.Editable;
13 import android.util.Log;
14 import android.view.TextureView;
15 import android.view.View;
16 import android.widget.Button;
17 import android.widget.EditText;
18
19 import java.io.File;
20 import java.io.IOException;
21 import java.text.SimpleDateFormat;
22 import java.util.Date;
23 import java.util.List;
24 import java.util.Locale;
25
26 public class MainActivity extends AppCompatActivity {
27
28     private Camera mCamera;
29     private TextureView mPreview;
30     private MediaRecorder mMediaRecorder;
31     private File mOutputFile;
32
33     private boolean isRecording = false;
34     private static final String TAG = "Recorder";
35     private Button captureButton;
36
37     private EditText editText;
38
39     @Override
40     protected void onCreate(Bundle savedInstanceState) {
41         super.onCreate(savedInstanceState);
42         setContentView(R.layout.activity_main);
43
44         mPreview = findViewById(R.id.preview);
45         mPreview.setDisplayOrientation(90);
46
47         mMediaRecorder = new MediaRecorder();
48         mMediaRecorder.setCamera(mCamera);
49         mMediaRecorder.setVideoSource(MediaRecorder.VideoSource.CAMERA);
50         mMediaRecorder.setAudioSource(MediaRecorder.AudioSource.MIC);
51         mMediaRecorder.setOutputFormat(MediaRecorder.OutputFormat.MPEG_4);
52         mMediaRecorder.setVideoEncoder(MediaRecorder.VideoEncoder.H264);
53         mMediaRecorder.setAudioEncoder(MediaRecorder.AudioEncoder.AAC);
54
55         mOutputFile = new File(Environment.getExternalStorageDirectory(), "output.mp4");
56
57         mMediaRecorder.setOutputFile(mOutputFile);
58
59         mMediaRecorder.setOnErrorListener(error -> {
60             Log.e(TAG, "Error occurred while recording video: " + error.getMessage());
61         });
62
63         mMediaRecorder.setOnInfoListener(info -> {
64             if (info.event == MediaRecorder.Event.ON_INFO) {
65                 Log.i(TAG, "Info: " + info.message);
66             }
67         });
68
69         captureButton = findViewById(R.id.capture_button);
70         captureButton.setOnClickListener(v -> {
71             if (isRecording) {
72                 mMediaRecorder.stop();
73                 isRecording = false;
74             } else {
75                 mMediaRecorder.start();
76                 isRecording = true;
77             }
78         });
79
80         editText = findViewById(R.id.edit_text);
81         editText.setText("Hello, World!");
82
83         mCamera = Camera.open();
84
85         mPreview.setVisibility(View.VISIBLE);
86
87         mMediaRecorder.setPreviewDisplay(mPreview.getSurfaceTexture());
88
89         mMediaRecorder.prepare();
90
91         mMediaRecorder.start();
92
93         Log.d(TAG, "Video recording started successfully!");
94     }
95 }
```

Gradle Scripts

Structure Favorites Build Variants

Emulator Device File Explorer

TODO Problems Terminal Logcat Profiler App Inspection

Executing tasks: :app:assembleDebug in project D:\AndroidStudioProjects\Lab3 (moments ago)

Event Log Layout Inspector

229:1 LF UTF-8 4 spaces

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help Lab3 - MainActivity.java [Lab3.app]

Lab3 > app > src > main > java > com > yangqingsun > lab3 > MainActivity

Project Resource Manager

AndroidManifest.xml activity_main.xml MainActivity.java strings.xml

Emulator: Pixel 3a XL API 23

Gradle Device Manager

76 }
77 releaseMediaRecorder(); // release the MediaRecorder object
78 //mMediaRecorder.release();
79 mCamera.lock(); // take camera access back from MediaRecorder
80
81 // inform the user that recording has stopped
82 setCaptureButtonText("START");
83 isRecording = false;
84 releaseCamera();
85
86 } else {
87
88 if (prepareVideoRecorder()) {
89 // Camera is available and unlocked, MediaRecorder is prepared,
90 // now you can start recording
91 mMediaRecorder.start();
92 setCaptureButtonText("STOP");
93 isRecording = true;
94 } else {
95 // prepare didn't work, release the camera
96 releaseMediaRecorder();
97
98 // END_INCLUDE(prepare_start_media_recorder)
99 }
100 }
101
102 private void setCaptureButtonText(String title) {
103 captureButton.setText(title);
104 }
105
106 @Override
107 protected void onPause() {
108 super.onPause();
109 // if we are using MediaRecorder, release it first
110 releaseMediaRecorder();
111 // release the camera immediately on pause event
112 releaseCamera();
113
114 }
115
116

7:32

Lab3 by Y. Sun

Enter a video name

START

Allow Lab3 by Y. Sun to access photos, media, and files on your device?

1 of 3 DENY ALLOW

Run TODO Problems Terminal Build Profiler App Inspection Event Log Layout Inspector

An unexpected packet was received before the handshake. (moments ago)

229:1 LF UTF-8 4 spaces

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help Lab3 - MainActivity.java [Lab3.app]

Lab3 > app > src > main > java > com > yangqingsun > lab3

Project Resource Manager

AndroidManifest.xml activity_main.xml MainActivity.java strings.xml

Emulator: Pixel 3a XL API 23

Hold Shift to control camera

7:32

Lab3 by Y. Sun

Enter a video name

START

Allow Lab3 by Y. Sun to record audio?

2 of 3 DENY ALLOW

Build Variants Favorites Structure

Run TODO Problems Terminal Build Logcat App Inspection

An unexpected packet was received before the handshake. (a minute ago)

Event Log Layout Inspector

229:1 LF UTF-8 4 spaces

```
    }
    releaseMediaRecorder(); // release the MediaRecorder object
    //mMediaRecorder.release();
    mCamera.lock();          // take camera access back from MediaRecorder

    // inform the user that recording has stopped
    setCaptureButtonText("START");
    isRecording = false;
    releaseCamera();

} else {

    if (prepareVideoRecorder()) {
        // Camera is available and unlocked, MediaRecorder is prepared,
        // now you can start recording
        mMediaRecorder.start();
        setCaptureButtonText("STOP");
        isRecording = true;
    } else {
        // prepare didn't work, release the camera
        releaseMediaRecorder();
    }

    // END_INCLUDE(prepare_start_media_recorder)
}

private void setCaptureButtonText(String title) {
    captureButton.setText(title);
}

@Override
protected void onPause() {
    super.onPause();
    // if we are using MediaRecorder, release it first
    releaseMediaRecorder();
    // release the camera immediately on pause event
    releaseCamera();
}
```

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help Lab3 - MainActivity.java [Lab3.app]

Lab3 > app > src > main > java > com > yangqingsun > lab3

Project Resource Manager

AndroidManifest.xml activity_main.xml MainActivity.java strings.xml

Emulator: Pixel 3a XL API 23

Hold Shift to control camera

7:32

Lab3 by Y. Sun

Enter a video name

START

Allow Lab3 by Y. Sun to take pictures and record video?

3 of 3 DENY ALLOW

Build Variants Favorites Structure

Run TODO Problems Terminal Build Logcat App Inspection

An unexpected packet was received before the handshake. (a minute ago)

Event Log Layout Inspector

229:1 LF UTF-8 4 spaces

```
    }
    releaseMediaRecorder(); // release the MediaRecorder object
    //mMediaRecorder.release();
    mCamera.lock(); // take camera access back from MediaRecorder

    // inform the user that recording has stopped
    setCaptureButtonText("START");
    isRecording = false;
    releaseCamera();

} else {

    if (prepareVideoRecorder()) {
        // Camera is available and unlocked, MediaRecorder is prepared,
        // now you can start recording
        mMediaRecorder.start();
        setCaptureButtonText("STOP");
        isRecording = true;
    } else {
        // prepare didn't work, release the camera
        releaseMediaRecorder();
    }

    // END_INCLUDE(prepare_start_media_recorder)
}

private void setCaptureButtonText(String title) {
    captureButton.setText(title);
}

@Override
protected void onPause() {
    super.onPause();
    // if we are using MediaRecorder, release it first
    releaseMediaRecorder();
    // release the camera immediately on pause event
    releaseCamera();
}
```

The screenshot shows the Android Studio interface with the following details:

- Project Structure:** The project is named "Lab3". The `MainActivity.java` file is selected in the Project tab.
- Code Editor:** The `MainActivity.java` file contains Java code for handling camera and media recorder operations. A callout bubble points to the line where a filename is entered: `test01`.

```
        if (prepareVideoRecorder()) {  
            // Camera is available and unlocked, MediaRecorder is prepared,  
            // now you can start recording  
            mMediaRecorder.start();  
            setCaptureButtonText("STOP");  
            isRecording = true;  
        } else {  
            // prepare didn't work, release the camera  
            releaseMediaRecorder();  
        }  
  
        // END_INCLUDE(prepare_start_media_recorder)  
    }  
  
    private void setCaptureButtonText(String title) {  
        captureButton.setText(title);  
    }  
  
    @Override  
    protected void onPause() {  
        super.onPause();  
        // if we are using MediaRecorder, release it first  
        releaseMediaRecorder();  
        // release the camera immediately on pause event  
        releaseCamera();  
    }  
}
```
- Emulator:** An emulator window titled "Pixel 3a XL API 23" shows the application "Lab3 by Y. Sun". The screen displays a purple header with the text "Lab3 by Y. Sun" and a white content area with a purple button labeled "START". The text "test01" is entered into a text input field below the button. A callout bubble points to the "START" button with the instruction: "And then start recording by pressing START button."
- Bottom Bar:** The bottom navigation bar includes icons for Run, TODO, Problems, Terminal, Build, Logcat, Profiler, and App Inspection. It also shows a message: "An unexpected packet was received before the handshake. (2 minutes ago)".
- Bottom Right:** The bottom right corner shows the device status bar with battery level, signal strength, and time (7:33).

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help Lab3 - MainActivity.java [Lab3.app]

Lab3 > app > src > main > java > com > yangqingsun > lab3

Project Resource Manager Favorites Build Variants Structure

AndroidManifest.xml activity_main.xml MainActivity.java strings.xml

Emulator: Pixel 3a XL API 23

Extended Controls

Enter a filename for video recording.

test01 STOP

STOP

76 }
77 releaseMediaRecorder(); // release the MediaRecorder object
78 //mMediaRecorder.release();
79 mCamera.lock(); // take camera access back from MediaRecorder
80
81 // inform the user that recording has stopped
82 setCaptureButtonText("START");
83 isRecording = false;
84 releaseCamera();
85
86 } else {
87
88 if (prepareVideoRecorder()) {
89 // Camera is available and unlocked, MediaRecorder is prepared,
90 // now you can start recording
91 mMediaRecorder.start();
92 setCaptureButtonText("STOP");
93 isRecording = true;
94 } else {
95 // prepare didn't work, release the camera
96 releaseMediaRecorder();
97 }
98
99 // END_INCLUDE(prepare_start_media_recorder)
100 }
101 }
102
103 private void setCaptureButtonText(String title) {
104 captureButton.setText(title);
105 }
106
107 @Override
108 protected void onPause() {
109 super.onPause();
110 // if we are using MediaRecorder, release it first
111 releaseMediaRecorder();
112 // release the camera immediately on pause event
113 releaseCamera();
114 }
115 }
116

Run TODO Problems Terminal Logcat Profiler App Inspection

Show extended controls

Event Log Layout Inspector

229:1 LF UTF-8 4 spaces

7:33

Device Manager

Emulator

Device File Explorer

 Location

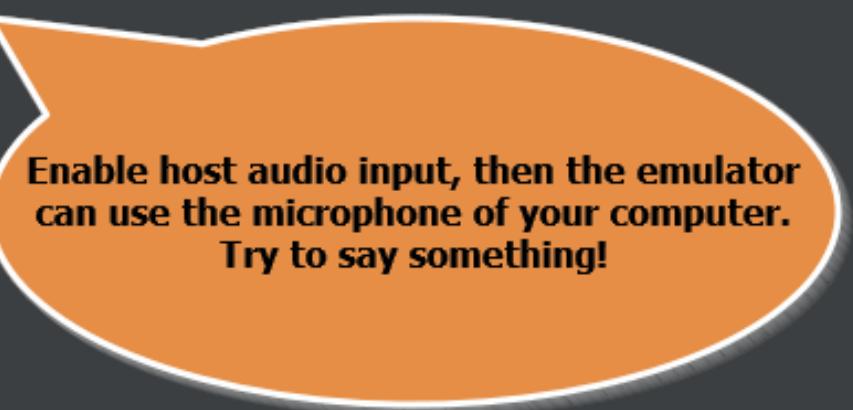
Virtual headset plug inserted

 Cellular Battery Camera Phone Directional pad Microphone Fingerprint Virtual sensors Bug report Record and Playback Settings Help

Virtual headset has microphone



Virtual microphone uses host audio input



**Enable host audio input, then the emulator
can use the microphone of your computer.
Try to say something!**

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help Lab3 - MainActivity.java [Lab3.app]

Lab3 > app > src > main > java > com > yangqingsun > lab3

Project Resource Manager

Emulator: Pixel 3a XL API 23

Gradle Device Manager

AndroidManifest.xml activity_main.xml MainActivity.java strings.xml

Emulator: Pixel 3a XL API 23

Hold Shift to control camera

7:34

Lab3 by Y. Sun

test01

STOP

Press STOP button.

76 }
77 releaseMediaRecorder(); // release the MediaRecorder object
78 //mMediaRecorder.release();
79 mCamera.lock(); // take camera access back from MediaRecorder
80
81 // inform the user that recording has stopped
82 setCaptureButtonText("START");
83 isRecording = false;
84 releaseCamera();
85
86 } else {
87
88 if (prepareVideoRecorder()) {
89 // Camera is available and unlocked, MediaRecorder is prepared,
90 // now you can start recording
91 mMediaRecorder.start();
92 setCaptureButtonText("STOP");
93 isRecording = true;
94 } else {
95 // prepare didn't work, release the camera
96 releaseMediaRecorder();
97 }
98
99 // END_INCLUDE(prepare_start_media_recorder)
100 }
101 }
102
103 private void setCaptureButtonText(String title) {
104 captureButton.setText(title);
105 }
106
107 @Override
108 protected void onPause() {
109 super.onPause();
110 // if we are using MediaRecorder, release it first
111 releaseMediaRecorder();
112 // release the camera immediately on pause event
113 releaseCamera();
114 }
115 }
116

Run TODO Problems Terminal Build Profiler App Inspection Event Log Layout Inspector

An unexpected packet was received before the handshake. (3 minutes ago)

229:1 LF UTF-8 4 spaces

Emulator Device File Explorer

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help Lab3 - MainActivity.java [Lab3.app]

Lab3 app src main java com.yangqingsun lab3

Project Resource Manager

AndroidManifest.xml activity_main.xml MainActivity.java strings.xml

Emulator: Pixel 3a XL API 23

76 }
77 releaseMediaRecorder(); // release the MediaRecorder object
78 //mMediaRecorder.release();
79 mCamera.lock(); // take camera access back from MediaRecorder
80
81 // inform the user that recording has stopped
82 setCaptureButtonText("START");
83 isRecording = false;
84 releaseCamera();
85
86 } else {
87
88 if (prepareVideoRecorder()) {
89 // Camera is available and unlocked, MediaRecorder is prepared,
90 // now you can start recording
91 mMediaRecorder.start();
92 setCaptureButtonText("STOP");
93 isRecording = true;
94 } else {
95 // prepare didn't work, release the camera
96 releaseMediaRecorder();
97 }
98
99 // END_INCLUDE(prepare_start_media_recorder)
100 }
101 }
102
103 private void setCaptureButtonText(String title) {
104 captureButton.setText(title);
105 }
106
107 @Override
108 protected void onPause() {
109 super.onPause();
110 // if we are using MediaRecorder, release it first
111 releaseMediaRecorder();
112 // release the camera immediately on pause event
113 releaseCamera();
114 }
115 }
116

7:34

Lab3 by Y. Sun

test01

START

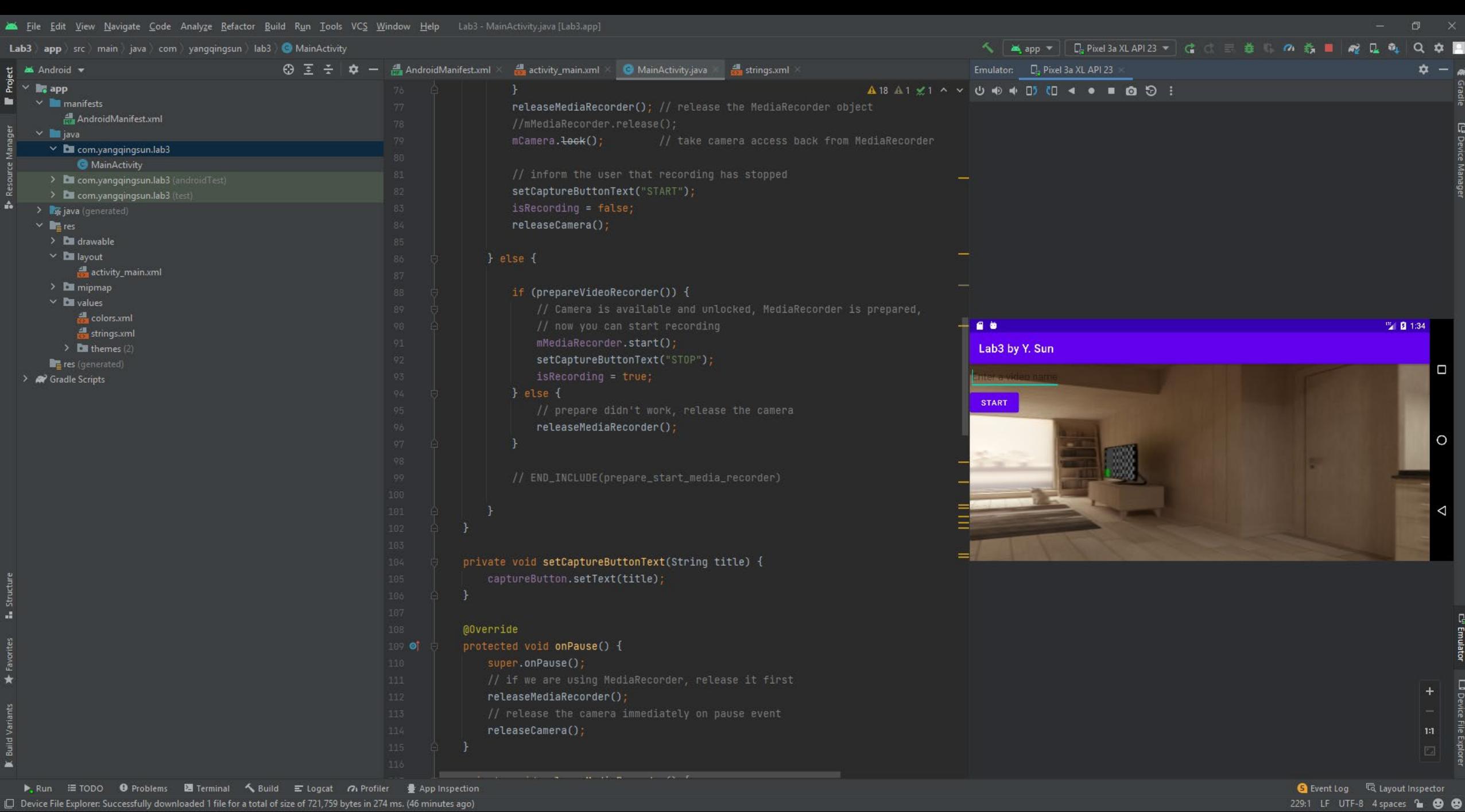
Open Device File Explorer.

Emulator Device File Explorer

Run TODO Problems Terminal Build Profiler App Inspection Event Log Layout Inspector

An unexpected packet was received before the handshake. (3 minutes ago)

229:1 LF UTF-8 4 spaces



File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help Lab3 - MainActivity.java [Lab3.app]

Lab3 > app > src > main > java > com > yangqingsun > lab3

Project Resource Manager Device File Explorer

AndroidManifest.xml activity_main.xml MainActivity.java strings.xml

Device File Explorer
Emulator Pixel_3a_XL_API_23 Android 6.0, API 23

Name Permissions Date Size

acct drwxr-x-x 2022-02-21 19:31

cache drwxrwx--- 2022-02-20 17:29

config dr-x----- 2022-02-21 19:31

d lrwxrwxrwx 2022-02-19:31

data drwxrwxr-x 2022-02-21 00:25

dev drwxr-xr-x 2022-02-21 19:31

etc lrwxrwxrwx 2022-02-21 19:31

mnt drwxr-xr-x 2022-02-21 19:31

oem drwxr-xr-x 1969-12-31 16:00

proc dr-xr-xr-x 2022-02-21 19:31

root lrwxrwxrwx 2017-02-22 08:53

sbin drwxr-x--- 1969-12-31 16:00

sdcard lrwxrwxrwx 2022-02-21 19:31

storage drwxr-xr-x 2022-02-21 19:31

sys dr-xr-xr-x 2022-02-21 19:31

system drwxr-xr-x 1969-12-31 16:00

vendor lrwxrwxrwx 2022-02-21 19:31

charger lrwxnwxnxw 1969-12-31 16:00

default.prop -rw-r--r-- 1969-12-31 16:00 549 B

file_contexts -rw-r--r-- 1969-12-31 16:00 14.5 KB

fstab.goldfish -rw-r----- 1969-12-31 16:00 943 B

fstab.ranchu -rv-r----- 1969-12-31 16:00 968 B

fstab.ranchu-encrypt -rv-r----- 1969-12-31 16:00 996 B

init -rvxrx--- 1969-12-31 16:00 1.3 MB

init.environ.rc -rvxr-x--- 1969-12-31 16:00 852 B

init.goldfish.rc -rvxr-x--- 1969-12-31 16:00 3.5 KB

init.ranchu-common.rc -rvxr-x--- 1969-12-31 16:00 3.1 KB

init.ranchu-encrypt.rc -rvxr-x--- 1969-12-31 16:00 74 B

init.ranchu.rc -rvxr-x--- 1969-12-31 16:00 65 B

init.rc -rvxr-x--- 1969-12-31 16:00 24.5 KB

init.trace.rc -rvxr-x--- 1969-12-31 16:00 1.9 KB

init.usb.rc -rvxr-x--- 1969-12-31 16:00 3.8 KB

init.zygote32.rc -rvxr-x--- 1969-12-31 16:00 301 B

property_contexts -rw-r--r-- 1969-12-31 16:00 3.4 KB

seapp_contexts -rw-r--r-- 1969-12-31 16:00 596 B

selinux_version -rw-r--r-- 1969-12-31 16:00 79 B

sepolicy -rw-r--r-- 1969-12-31 16:00 139.7 KB

service_contexts -rw-r--r-- 1969-12-31 16:00 9.5 KB

ueventd.goldfish.rc -rv-r--r-- 1969-12-31 16:00 323 B

ueventd.ranchu.rc -rv-r--r-- 1969-12-31 16:00 323 B

ueventd.rc -rv-r--r-- 1969-12-31 16:00 4.5 KB

Try to find your newly recorded video.

```
76 }  
77 releaseMediaRecorder(); // release the MediaRecorder object  
78 //mMediaRecorder.release();  
79 mCamera.lock(); // take camera access back from MediaRecorder  
80  
81 // inform the user that recording has stopped  
82 setCaptureButtonText("START");  
83 isRecording = false;  
84 releaseCamera();  
85  
86 } else {  
87  
88 if (prepareVideoRecorder()) {  
89 // Camera is available and unlocked, MediaRecorder  
90 // now you can start recording  
91 mMediaRecorder.start();  
92 setCaptureButtonText("STOP");  
93 isRecording = true;  
94 } else {  
95 // prepare didn't work, release the camera  
96 releaseMediaRecorder();  
97 }  
98  
99 // END_INCLUDE(prepare_start_media_recorder)  
100  
101 }  
102  
103 private void setCaptureButtonText(String title) {  
104 captureButton.setText(title);  
105 }  
106  
107 @Override  
108 protected void onPause() {  
109 super.onPause();  
110 // if we are using MediaRecorder, release it first  
111 releaseMediaRecorder();  
112 // release the camera immediately on pause event  
113 releaseCamera();  
114 }  
115  
116 }
```

Run TODO Problems Terminal Build Profiler App Inspection Event Log Layout Inspector

An unexpected packet was received before the handshake. (3 minutes ago)

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help Lab3 - MainActivity.java [Lab3.app]

Lab3 > app > src > main > java > com > yangqingsun > lab3

Project Resource Manager Device File Explorer Device Manager

AndroidManifest.xml activity_main.xml MainActivity.java strings.xml

Device File Explorer
Emulator Pixel_3a_XL_API_23 Android 6.0, API 23

Name Permissions Date Size

acct drwxr-xr-x 2022-02-21 19:31

cache drwxrwx--- 2022-02-20 17:29

config dr-x----- 2022-02-21 19:31

d drwxrwxrwx 2022-02-21 19:31

data drwxrwxr-x 2022-02-21 19:31

dev drwxr-xr-x 2022-02-21 19:31

etc drwxrwxrwx 2022-02-21 19:31

mnt drwxr-xr-x 2022-02-21 19:31

oem drwxr-xr-x 1969-12-31 16:00

proc dr-xr-xr-x 2022-02-21 19:31

root drwxr----- 2017-02-22 08:53

sbin drwxr-x--- 1969-12-31 16:00

sdcard drwxrwxrwx 2022-02-21 19:31

Alarms drwxrwxr-x 2022-02-21 00:25

Android drwxrwxr-x 2022-02-21 00:25

DCIM drwxrwxr-x 2022-02-21 00:25

Download drwxrwxr-x 2022-02-21 00:25

Lab3_Recordings drwxrwxr-x 2022-02-21 19:33

test01_2022-02-21_193324.mp4 -rw-rw--- 2022-02-21 19:34 1.1 MB

Movies drwxrwxr-x 2022-02-21 00:25

Music drwxrwxr-x 2022-02-21 00:25

Notifications drwxrwxr-x 2022-02-21 00:25

Pictures drwxrwxr-x 2022-02-21 02:10

Podcasts drwxrwxr-x 2022-02-21 00:25

Ringtones drwxrwxr-x 2022-02-21 00:25

storage drwxr-xr-x 2022-02-21 19:31

sys dr-xr-xr-x 2022-02-21 19:31

system drwxr-xr-x 1969-12-31 16:00

vendor drwxrwxrwx 2022-02-21 19:31

charger drwxrwxr-x 1969-12-31 16:00

default.prop -rw-r--r-- 1969-12-31 16:00 549 B

file_contexts -rw-r--r-- 1969-12-31 16:00 14.5 KB

fstab.goldfish -rw-r----- 1969-12-31 16:00 943 B

fstab.ranchu -rw-r----- 1969-12-31 16:00 968 B

fstab.ranchu-encrypt -rw-r----- 1969-12-31 16:00 996 B

init -rwxr-x--- 1969-12-31 16:00 1.3 MB

init.environ.rc -rwxr-x--- 1969-12-31 16:00 852 B

init.goldfish.rc -rwxr-x--- 1969-12-31 16:00 3.5 KB

init.ranchu-common.rc -rwxr-x--- 1969-12-31 16:00 3.1 KB

init.ranchu-encrypt.rc -rwxr-x--- 1969-12-31 16:00 74 B

init.ranchu.rc -rwxr-x--- 1969-12-31 16:00 65 B

init.rc -rwxr-x--- 1969-12-31 16:00 24.5 KB

init.ranchu-encrypt -rwxr-x--- 1969-12-31 16:00 1.0 KB

It's here.

Run TODO Problems Terminal Build Profiler App Inspection Event Log Layout Inspector

An unexpected packet was received before the handshake. (4 minutes ago)

229:1 LF UTF-8 4 spaces

This screenshot shows the Android Studio interface with the code editor displaying MainActivity.java. The code handles camera and media recording logic. A callout bubble points to the file 'test01_2022-02-21_193324.mp4' in the Device File Explorer, which is highlighted in blue. The file is located in the 'Lab3_Recordings' directory on the emulator's storage. The Device File Explorer also lists other system files like fstab and init scripts.

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help Lab3 - MainActivity.java [Lab3.app]

Lab3 > app > src > main > java > com > yangqingsun > lab3

Project Resource Manager Device File Explorer

Device Manager

AndroidManifest.xml activity_main.xml MainActivity.java strings.xml

Device File Explorer

Emulator Pixel_3a_XL_API_23 Android 6.0, API 23

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dev drwxr-xr-x 2022-02-21 19:31

etc lrwxrwxrwx 2022-02-21 19:31

mnt drwxr-xr-x 2022-02-21 19:31

oem drwxr-xr-x 1969-12-31 16:00

proc dr-xr-xr-x 2022-02-21 19:31

root drwx----- 2017-02-22 08:53

sbin drwxr-x--- 1969-12-31 16:00

sdcard lrwxrwxrwx 2022-02-21 19:31

Alarms drwxrwxr-x 2022-02-21 00:25

Android drwxrwxr-x 2022-02-21 00:25

DCIM drwxrwxr-x 2022-02-21 00:25

Download drwxrwxr-x 2022-02-21 00:25

Lab3_Recordings

test01 2022-02-21 10:22:24.mpg Open Save As... Ctrl+Shift+S 2022-02-21 19:34 1.1 MB

Movies drwxrwxr-x 2022-02-21 00:25

Music drwxrwxr-x 2022-02-21 00:25

Notifications drwxrwxr-x 2022-02-21 00:25

Pictures drwxrwxr-x 2022-02-21 02:10

Podcasts drwxrwxr-x 2022-02-21 00:25

Ringtones drwxrwxr-x 2022-02-21 00:25

storage drwxr-xr-x 2022-02-21 19:31

sys dr-xr-xr-x 2022-02-21 19:31

system drwxr-xr-x 1969-12-31 16:00

vendor lrwxrwxrwx 2022-02-21 19:31

charger lrwxrwxrwx 1969-12-31 16:00

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init.rc -rwxr-x--- 1969-12-31 16:00 24.5 KB

init.goldfish -rwxr-x--- 1969-12-31 16:00 1.0 KB

Try to save it to your computer.

Run TODO Problems Terminal Build Profiler App Inspection Event Log Layout Inspector

An unexpected packet was received before the handshake. (4 minutes ago)

229:1 LF UTF-8 4 spaces

 Save As

X



Hide path

C:\Users

Desktop Directory Ctrl+D

ndroidStudio2021.1\device-explorer\Pixel_3a_XL_API_23 [emulator-5554]\sdcard\Lab3_Recordings

You can select
Desktop to save.

- compiler
- version
- explorer
- emulator-5554
- Pixel_3a_XL_API_23 [emulator-5554]
 - sdcard
 - Lab3_Recordings
 - storage
 - external_BUILD_MOCKINGJAR
 - external_build_system
 - extResources
 - frameworks
 - gmaven.index
 - gradle.versions
 - httpFileSystem

Drag and drop a file into the space above to quickly locate it in the tree

File name: test01_2022-02-21_193324.mp4

OK

Cancel



Enjoy it.



test01_2022
-02-21_1933
24.mp4

