

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\res\layout\activity_main.xml [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > res > layout > activity_main.xml

[app] C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic\app\src\main\java\edu\udayton\alohamusic\MainActivity.java

1:Project

Resource Manager

2:Structure

3:Favorites

Build Variants

Layout Captures

Design Text

Gradle

Activity Main Layout (activity_main.xml)

Component Tree

- LinearLayout (vertical)
 - ukeleleImageView
 - btnUkelele- "@string/btnUkel..."
 - drumsImageView
 - btnDrums- "@string/btnDrum..."

Attributes

btnDrums

- keepScreenOn
- layerType
- layout_gravity
 - center_horizontal
 - bottom
 - clip_horizontal
 - center
 - clip_vertical
 - start
 - right
 - center_horizontal
- fill
- fill_horizontal
- top
- left
- center_vertical
- fill_vertical
- end
- layout_height
- layout_margin
 - [?, ?, @dimen/topMargin20, ?, ?]
 - layout_margin
 - layout_marginLeft
 - layout_marginTop
 - layout_marginRight
 - layout_marginBottom
 - layout_weight
 - layout_width
 - lineSpacingExtra
 - lineSpacingMultiplier
 - lines
 - linksClickable
 - longClickable
 - marqueeRepeatLimit

Pixel 28 AppTheme Default (en-us) 32% 28% 32%

PLAY UKELELE SONG

PLAY DRUMS SONG

PLAY DRUMS SONG

PLAY UKELELE SONG

In Part 3 of this lesson, we completed the layout for the MainActivity.

In this part of Lesson 8, we add the Java code for MainActivity incrementally, testing the app with the emulator as we make each major modification.

Gradle build finished in 12 s 292 ms (30 minutes ago)

Event Log

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\res\layout\activity_main.xml [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > res > layout > activity_main.xml

[app] C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic\app\src\main\java\edu\udayton\alohamusic\MainActivity.java

1:Project

Resource Manager

2:Structure

3:Favorites

Build Variants

Layout Captures

Design Text

TODO Terminal Build Logcat Profiler Run

Gradle build finished in 12 s 292 ms (30 minutes ago)

Palette

Common Text Buttons Widgets Layouts Containers Google Legacy

Switch to MainActivity's Java code

activity_splash.xml activity_main.xml MainActivity.java SplashActivity.java

28 AppTheme Default (en-us)

Attributes

btnDrums

keepScreenOn

layerType

layout_gravity

center_horizontal

bottom

clip_horizontal

center

clip_vertical

start

right

center_horizontal

fill

fill_horizontal

top

left

center_vertical

fill_vertical

end

layout_height

layout_margin

layout_marginLeft

layout_marginTop

layout_marginRight

layout_marginBottom

layout_weight

layout_width

lineSpacingExtra

lineSpacingMultiplier

lines

linksClickable

longClickable

marqueeRepeatLimit

Gradle

Device File Explorer

The screenshot shows the Android Studio interface for the 'activity_main.xml' layout file. A yellow callout box with the text 'Switch to MainActivity's Java code' points to the tab bar at the top, specifically the 'MainActivity.java' tab. The layout itself contains several UI elements: two 'ImageView' components showing a person playing a ukulele and a person playing steel drums; two 'Button' components labeled 'PLAY UKELELE SONG' and 'PLAY DRUMS SONG'; and two 'Text' components labeled 'ImageView' and 'PLAY DRUMS SONG'. The 'Attributes' panel on the right shows properties for a 'Button' component named 'btnDrums', including 'center_horizontal' checked. The 'Component Tree' panel on the left lists the layout structure: a vertical 'LinearLayout' containing 'ukeleleImageView', 'btnUkelele', 'drumsImageView', and 'btnDrums'. The bottom navigation bar includes tabs for 'Design' and 'Text'.

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project Gradle

Resource Manager

1: Favorites

2: Favorites

Build Variants

Layout Captures

2: Structure

Gradle Scripts

activity_splash.xml activity_main.xml MainActivity.java SplashActivity.java

```
1 package edu.udayton.alohamusic;
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    } // end onCreate method
12 } // end MainActivity class
```

Add line comments as the closing tags for both the onCreate method and the MainActivity class

TODO Terminal Build Logcat Profiler Run

Gradle build finished in 12 s 292 ms (30 minutes ago)

13:28 CRLF UTF-8 4 spaces



1 package edu.udayton.alohamusic;

2

3 import ...

4

5 public class MainActivity extends AppCompatActivity {

6

7 }

8 ↑ As shown on pages 238 - 239 of
9 Android Boot Camp, we add the data
10 fields for the MainActivity class.
11 @Override
12 protected void onCreate(Bundle savedInstanceState) {
13 super.onCreate(savedInstanceState);
14 setContentView(R.layout.activity_main);
15 } // end onCreate()
16 } // end MainActivity

Resource Manager

1:Project

2:Structure

3:Favorites

Build Variants

Layout Captures

MainActivity

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...\\app\\src\\main\\java\\edu\\udayton\\alohamusic\\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project Resource Manager 2:Structure 3:Favorites 4:Build Variants 5:Layout Captures 6:Layout Editor

Android + - Settings Gradle

activity_splash.xml activity_main.xml MainActivity.java SplashActivity.java

1 package edu.udayton.alohamusic;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7 [] Type 'private But' here ...
8 @Override
9 protected void onCreate(Bundle savedInstanceState) {
10 super.onCreate(savedInstanceState);
11 setContentView(R.layout.activity_main);
12 } // end onCreate method
13 } // end MainActivity class
14
15
16

MainActivity

TODO Terminal Build Logcat Profiler Run Event Log

Gradle build finished in 12 s 292 ms (31 minutes ago) 8:5 CRLF UTF-8 4 spaces

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project Gradle

Resource Manager Generated Java res Gradle Scripts

2: Favorites Build Variants Layout Captures

MainActivity.java

```
1 package edu.udayton.alohamusic;
2
3 import ...
4
5
6 public class MainActivity extends AppCompatActivity {
7
8     private Button button;
9
10    @Override
11    protected void onCreate(Bundle savedInstanceState) {
12        super.onCreate(savedInstanceState);
13        setContentView(R.layout.activity_main);
14
15        button = findViewById(R.id.button);
16    }
17}
```

... and select the android.widget.Button class from the code completion menu

TODO Terminal Build Logcat Profiler Run Event Log

Gradle build finished in 12 s 292 ms (31 minutes ago) 8:16 CRLF UTF-8 4 spaces

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project Resource Manager 2:Structure 3:Favorites 4:Build Variants 5:Layout Captures 6:Layout Editor 7:Structure 8:Build Variants 9:Layout Captures 10:Layout Editor 11:Resource Manager 12:Gradle Scripts

activity_splash.xml activity_main.xml MainActivity.java SplashActivity.java

```
1 package edu.udayton.alohamusic;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private Button btnUkelele, btnDrums;
8
9     @Override
10    protected void onCreate(Bundle savedInstanceState) {
11        super.onCreate(savedInstanceState);
12        setContentView(R.layout.activity_main);
13
14    } // end onCreate method
15
16} // end MainActivity class
```

Complete this declaration statement for the Button UI component references

MainActivity

TODO Terminal Build Logcat Profiler Run

Gradle build finished in 12 s 292 ms (32 minutes ago)

9:41 CRLF UTF-8 4 spaces

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project 2:Resource Manager 3:MainActivity 4:activity_main.xml 5:activity_main.xml 6:MainActivity.java 7:SplashActivity.java

```
1 package edu.udayton.alohamusic;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private Button btnUkelele, btnDrums;
8
9     @Override
10    protected void onCreate(Bundle savedInstanceState) {
11        super.onCreate(savedInstanceState);
12        setContentView(R.layout.activity_main);
13    } // end onCreate method
14 } // end MainActivity class
```

For the MediaPlayer data fields,
type 'private MediaPl' here ...

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

Android app src main java edu udayton alohamusic MainActivity

activity_splash.xml activity_main.xml MainActivity.java SplashActivity.java

1:Project 2:Resource Manager 3:Gradle

app manifests java edu.udayton.alohamusic MainActivity SplashActivity edu.udayton.alohamusic (androidTest) edu.udayton.alohamusic (test) generatedJava res Gradle Scripts

1:Structure 2:Favorites 3:Build Variants 4:Layout Captures 5:TODO 6:Terminal 7:Build 8:Logcat 9:Profiler 10:Run 11:Event Log

MainActivity

```
1 package edu.udayton.alohamusic;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private Button btnUkelele, btnDrums;
8
9     private MediaPlayer mediaPlayer;
10    private MediaController mediaController;
11
12    protected void onCreate(Bundle savedInstanceState) {
13        super.onCreate(savedInstanceState);
14        setContentView(R.layout.activity_main);
15    }
16
17 } // end onCreate method
18 } // end MainActivity class
19
```

... and select this android.media.MediaPlayer class from the code completion menu

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project Resource Manager 2:Structure 3:Favorites 4:Build Variants 5:Layout Captures 6:Layout Editor 7:Toolbars 8:Device File Explorer

```
1 package edu.udayton.alohamusic;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private Button btnUkelele, btnDrums;
8
9     private MediaPlayer mpUkelele, mpDrums;
10
11    @Override
12    protected void onCreate(Bundle savedInstanceState) {
13        super.onCreate(savedInstanceState);
14        setContentView(R.layout.activity_main);
15    } // end onCreate method
16
17 } // end MainActivity class
```

Complete this declaration statement
for the MediaPlayer data fields

TODO Terminal Build Logcat Profiler Run Event Log

Gradle build finished in 12 s 292 ms (32 minutes ago) 12:44 CRLF UTF-8 4 spaces

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...\\app\\src\\main\\java\\edu\\udayton\\alohamusic\\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project Gradle

Resource Manager

1: Favorites

2: Favorites

Build Variants

Layout Captures

MainActivity

activity_splash.xml activity_main.xml MainActivity.java SplashActivity.java

```
1 package edu.udayton.alohamusic;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private Button btnUkelele, btnDrums;
8
9     private MediaPlayer mpUkelele, mpDrums;
10
11    private int playing; // A yellow callout box with an arrow points to this line
12
13    @Override
14    protected void onCreate(Bundle savedInstanceState) {
15        super.onCreate(savedInstanceState);
16        setContentView(R.layout.activity_main);
17    } // end onCreate method
18
19 } // end MainActivity class
```

As described on pages 246-247, the playing variable represents the playing state of the app; i.e., whether or not a song is playing: 0 indicates no song is playing, 1 indicates a song is playing.

Device File Explorer

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project Resource Manager 2:Structure 3:Favorites 4:Build Variants 5:Layout Captures 6:Layout Editor 7:Toolbars 8:File Explorer 9:Device File Explorer

```
1 package edu.udayton.alohamusic;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private Button btnUkelele, btnDrums;
8
9     private MediaPlayer mpUkelele, mpDrums;
10
11    private int playing;
12
13    private static final int NOT_PLAYING = 0, PLAYING = 1;
14
15    @Override
16    protected void onCreate(Bundle savedInstanceState) {
17        super.onCreate(savedInstanceState);
18        setContentView(R.layout.activity_main);
19    } // end onCreate method
20} // end MainActivity class
```

We add these named constants so that we can more easily remember that 0 means no song is playing and 1 means a song is playing.

MainActivity

TODO Terminal Build Logcat Profiler Run Event Log

Gradle build finished in 12 s 292 ms (33 minutes ago) 16:59 CRLF UTF-8 4 spaces

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project Resource Manager 2:Structure 3:Favorites 4:Build Variants 5:Layout Captures 6:Layout Explorer 7:Device File Explorer

Android Gradle

activity_splash.xml activity_main.xml MainActivity.java SplashActivity.java

1 package edu.udayton.alohamusic;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7 private Button btnUkelele, btnDrums;
8
9 private MediaPlayer mpUkelele, mpDrums;
10
11 private int playing;
12
13 private static final int NOT_PLAYING = 0, PLAYING = 1;
14
15
16 @Override
17 protected void onCreate(Bundle savedInstanceState) {
18 super.onCreate(savedInstanceState);
19 setContentView(R.layout.activity_main);
20
21 // set UI component references
22
23 btnUkelele = (Button) findViewById(R.id.btnUkelele);
24 btnDrums = (Button) findViewById(R.id.btnDrums);
25
26 } // end onCreate method
27 } // end MainActivity class

Add the code to set the Button references to the Button UI components

MainActivity > onCreate()

Todo Terminal Build Logcat Profiler Run Event Log

Gradle build finished in 12 s 292 ms (34 minutes ago) 26:56 CRLF UTF-8 4 spaces

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project Resource Manager 2:Structure 3:Favorites 4:Build Variants 5:Layout Captures 6:Layout Explorer 7:Device File Explorer

Android Java XML

MainActivity.java

```
1 package edu.udayton.alohamusic;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private Button btnUkelele, btnDrums;
8
9     private MediaPlayer mpUkelele, mpDrums;
10
11    private int playing;
12
13    private static final int NOT_PLAYING = 0, PLAYING = 1;
14
15
16    @Override
17    protected void onCreate(Bundle savedInstanceState) {
18        super.onCreate(savedInstanceState);
19        setContentView(R.layout.activity_main);
20
21        // set UI component references
22
23        btnUkelele = (Button)findViewById(R.id.btnUkelele);
24        btnDrums = (Button)findViewById(R.id.btnDrums);
25
26    } // end onCreate method
27
28
29    // click listener for btnUkelele button
30
31
32    }
33} // end MainActivity class
```

MainActivity

As described in the textbook, we've declared the Button references and MediaPlayer as data fields to maximize their scope in the MainActivity class.

We declare the Button click listeners the same way (ref: Figure 6-21 on page 241 and Figure 6-22 on page 242 of Android Boot Camp).

TODO Terminal Build Logcat Profiler Run

Gradle build finished in 12 s 292 ms (34 minutes ago)

32:5 CRLF UTF-8 4 spaces

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project 2:Resource Manager 3:Gradle Scripts 4:Layout Captures 5:Favorites 6:Build Variants

MainActivity.java

```
1 package edu.udayton.alohamusic;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private Button btnUkelele, btnDrums;
8
9     private MediaPlayer mpUkelele, mpDrums;
10
11    private int playing;
12
13    private static final int NOT_PLAYING = 0, PLAYING = 1;
14
15
16    @Override
17    protected void onCreate(Bundle savedInstanceState) {
18        super.onCreate(savedInstanceState);
19        setContentView(R.layout.activity_main);
20
21        // set UI component references
22
23        btnUkelele = (Button)findViewById(R.id.btnUkelele);
24        btnDrums = (Button)findViewById(R.id.btnDrums);
25
26    } // end onCreate method
27
28    // click listener for btnUkelele button
29
30    Type 'Button.' here ...
31
32    } // end MainActivity class
33
34
35
```

MainActivity

TODO Terminal Build Logcat Profiler Run Event Log

Gradle build finished in 12 s 292 ms (35 minutes ago) 32:5 CRLF UTF-8 4 spaces

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project Resource Manager 2:Structure Favorites Build Variants Layout Captures

activity_splash.xml activity_main.xml MainActivity.java SplashActivity.java

Android Gradle

app manifests java edu.udayton.alohamusic MainActivity SplashActivity edu.udayton.alohamusic (androidTest) edu.udayton.alohamusic (test) generatedJava res Gradle Scripts

```
1 package edu.udayton.alohamusic;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private Button btnUkelele, btnDrums;
8
9     private MediaPlayer mpUkelele, mpDrums;
10
11    private int playing;
12
13    private static final int NOT_PLAYING = 0, PLAYING = 1;
14
15    @Override
16    protected void onCreate(Bundle savedInstanceState) {
17        super.onCreate(savedInstanceState);
18        setContentView(R.layout.activity_main);
19
20        // set UI component references
21
22        btnUkelele = (Button)findViewById(R.id.btnUkelele);
23        btnDrums = (Button)findViewById(R.id.btnDrums);
24
25    } // end onCreate method
26
27    // click listener for btnUkelele button
28
29    Button.|
```

... and select the interface android.view.View.OnClickListener from the code completion menu

TODO Terminal Build Logcat Profiler Run Event Log

Gradle build finished in 12 s 292 ms (35 minutes ago) 32:12 CRLF UTF-8 4 spaces

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...\\app\\src\\main\\java\\edu\\udayton\\alohamusic\\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project 2:Resource Manager 3:Favorites 4:Layout Captures 5:Build Variants 6:Build Scripts

activity_splash.xml activity_main.xml MainActivity.java SplashActivity.java

```
1 package edu.udayton.alohamusic;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private Button btnUkelele, btnDrums;
8
9     private MediaPlayer mpUkelele, mpDrums;
10
11    private int playing;
12
13    private static final int NOT_PLAYING = 0, PLAYING = 1;
14
15
16    @Override
17    protected void onCreate(Bundle savedInstanceState) {
18        super.onCreate(savedInstanceState);
19        setContentView(R.layout.activity_main);
20
21        // set UI component references
22
23        btnUkelele = (Button)findViewById(R.id.btnUkelele);
24        btnDrums = (Button)findViewById(R.id.btnDrums);
25
26    } // end onCreate method
27
28    // click listener for btnUkelele button
29
30    Button.OnClickListener btnUkeleleListener;
31
32    } // end MainActivity class
33
34 }
```

After typing in this data field name,
type '= new Button.' here ...

MainActivity

TODO Terminal Build Logcat Profiler Run Event Log

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project Resource Manager 2:Structure 3:Favorites 4:Build Variants 5:Layout Captures 6:Layout Explorer 7:Tool Windows 8:Device File Explorer

activity_splash.xml activity_main.xml MainActivity.java SplashActivity.java

Android Gradle

app manifests java edu.udayton.alohamusic MainActivity SplashActivity edu.udayton.alohamusic (androidTest) edu.udayton.alohamusic (test) generatedJava res Gradle Scripts

MainActivity

```
1 package edu.udayton.alohamusic;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private Button btnUkelele, btnDrums;
8
9     private MediaPlayer mpUkelele, mpDrums;
10
11    private int playing;
12
13    private static final int NOT_PLAYING = 0, PLAYING = 1;
14
15
16    @Override
17    protected void onCreate(Bundle savedInstanceState) {
18        super.onCreate(savedInstanceState);
19        setContentView(R.layout.activity_main);
20
21        // set UI component references
22
23        btnUkelele = (Button)findViewById(R.id.btnUkelele);
24        btnDrums = (Button)findViewById(R.id.btnDrums);
25
26    } // end onCreate method
27
28
29    // click listener for btnUkelele button
30
31    Button.OnClickListener btnUkeleleListener = new Button.OnClickListener() {
32        public void onClick(View v) {
33            if (playing == NOT_PLAYING) {
34                mpUkelele.start();
35                playing = PLAYING;
36            }
37            else {
38                mpUkelele.pause();
39                playing = NOT_PLAYING;
40            }
41        }
42    }; // end inner class
43
44    // click listener for btnDrums button
45
46    Button.OnClickListener btnDrumsListener = new Button.OnClickListener() {
47        public void onClick(View v) {
48            if (playing == NOT_PLAYING) {
49                mpDrums.start();
50                playing = PLAYING;
51            }
52            else {
53                mpDrums.pause();
54                playing = NOT_PLAYING;
55            }
56        }
57    }; // end inner class
58
59
60    // close class
61}
```

... and again select the android.view.View.OnClickListener interface from the code completion menu

Press Ctrl+Shift+Space to show only variants that are suitable by type

TODO Terminal Build Logcat Profiler Run Event Log

expected. Identifier expected.

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project 1:Resource Manager 1:Gradle

Activity_Splash.xml Activity_Main.xml MainActivity.java SplashActivity.java

Android

app manifests java edu.udayton.alohamusic MainActivity SplashActivity edu.udayton.alohamusic (androidTest) edu.udayton.alohamusic (test) generatedJava res Gradle Scripts

MainActivity.java

```
1 package edu.udayton.alohamusic;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private Button btnUkelele, btnDrums;
8
9     private MediaPlayer mpUkelele, mpDrums;
10
11    private int playing;
12
13    private static final int NOT_PLAYING = 0, PLAYING = 1;
14
15
16    @Override
17    protected void onCreate(Bundle savedInstanceState) {
18        super.onCreate(savedInstanceState);
19        setContentView(R.layout.activity_main);
20
21        // set UI component references
22
23        btnUkelele = (Button)findViewById(R.id.btnUkelele);
24        btnDrums = (Button)findViewById(R.id.btnDrums);
25
26    } // end onCreate method
27
28    // click listener for btnUkelele button
29
30    Button.OnClickListener btnUkeleleListener = new Button.OnClickListener()
31    {
32        @Override
33        public void onClick(View v) {
34            if(playing == NOT_PLAYING)
35            {
36                // start playing
37            }
38        }
39    }; // end MainActivity class
```

Add the block delimiters and ending semi-colon for the new listener

TODO Terminal Build Logcat Profiler Run Event Log

Gradle build finished in 12 s 292 ms (36 minutes ago) 35:7 CRLF UTF-8 4 spaces

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project Resource Manager 2:Structure 3:Favorites 4:Build Variants 5:Layout Captures 6:Layout Explorer 7:File Explorer 8:Device File Explorer

Android Java XML

MainActivity.java

```
1 package edu.udayton.alohamusic;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private Button btnUkelele, btnDrums;
8
9     private MediaPlayer mpUkelele, mpDrums;
10
11    private int playing;
12
13    private static final int NOT_PLAYING = 0, PLAYING = 1;
14
15
16    @Override
17    protected void onCreate(Bundle savedInstanceState) {
18        super.onCreate(savedInstanceState);
19        setContentView(R.layout.activity_main);
20
21        // set UI component references
22
23        btnUkelele = (Button)findViewById(R.id.btnUkelele);
24        btnDrums = (Button)findViewById(R.id.btnDrums);
25
26    } // end onCreate method
27
28
29    // click listener for btnUkelele button
30
31    Button.OnClickListener btnUkeleleListener = new Button.OnClickListener()
32    {
33
34    };
35
36
37} // end MainActivity class
38
```

Click and place the I-beam cursor anywhere in the red-underlined interface name

MainActivity > btnUkeleleListener > new OnClickListener

Todo Terminal Build Logcat Profiler Run Event Log

Class 'Anonymous class derived from OnClickListener' must either be declared abstract or implement abstract method 'onClick(View)' in 'OnClickListener'

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project 2:Resource Manager 3:Gradle Scripts 4:Layout Captures 5:Favorites 6:Build Variants 7:Z:Structure 8:Device File Explorer

```
1 package edu.udayton.alohamusic;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private Button btnUkelele, btnDrums;
8
9     private MediaPlayer mpUkelele, mpDrums;
10
11    private int playing;
12
13    private static final int NOT_PLAYING = 0, PLAYING = 1;
14
15
16    @Override
17    protected void onCreate(Bundle savedInstanceState) {
18        super.onCreate(savedInstanceState);
19        setContentView(R.layout.activity_main);
20
21        // set UI component references
22
23        btnUkelele = (Button)findViewById(R.id.btnUkelele);
24        btnDrums = (Button)findViewById(R.id.btnDrums);
25
26    } // end onCreate method
27
28
29    // click listener for btnUkelele button
30    Button.OnClickListener btnUkeleleListener = new Button.OnClickListener()
31    {
32        ...
33    };
34
35
36
37} // end MainActivity class
38
```

Click the red lightbulb that appears

MainActivity > btnUkeleleListener > new OnClickListener

TODO Terminal Build Logcat Profiler Run Event Log

Class 'Anonymous class derived from OnClickListener' must either be declared abstract or implement abstract method 'onClick(View)' in 'OnClickListener'

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic>MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1-Project Resource Manager 2-Structure Favorites Build Variants Layout Captures 3-Logcat 4-Run

Android activity_splash.xml activity_main.xml MainActivity.java SplashActivity.java

1 Project app manifests java edu.udayton.alohamusic MainActivity SplashActivity edu.udayton.alohamusic (androidTest) edu.udayton.alohamusic (test) generatedJava res Gradle Scripts

```
1 package edu.udayton.alohamusic;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private Button btnUkelele, btnDrums;
8
9     private MediaPlayer mpUkelele, mpDrums;
10
11    private int playing;
12
13    private static final int NOT_PLAYING = 0, PLAYING = 1;
14
15    @Override
16    protected void onCreate(Bundle savedInstanceState) {
17        super.onCreate(savedInstanceState);
18        setContentView(R.layout.activity_main);
19
20        // set UI component references
21
22        btnUkelele = (Button)findViewById(R.id.btnUkelele);
23        btnDrums = (Button)findViewById(R.id.btnDrums);
24
25    } // end onCreate method
26
27    // click listener for btnUkelele button
28    Button.OnClickListener btnUkeleleListener = new Button.OnClickListener() {
29
30        @Override
31        public void onClick(View v) {
32            if (playing == NOT_PLAYING) {
33                mpUkelele.start();
34                playing = PLAYING;
35            } else {
36                mpUkelele.pause();
37                playing = NOT_PLAYING;
38            }
39        }
40    };
41
42
43    @Override
44    public void onBackPressed() {
45        if (playing == PLAYING) {
46            mpUkelele.pause();
47            playing = NOT_PLAYING;
48        }
49        super.onBackPressed();
50    }
51
52
53    // click listener for btnDrums button
54    Button.OnClickListener btnDrumsListener = new Button.OnClickListener() {
55
56        @Override
57        public void onClick(View v) {
58            if (playing == NOT_PLAYING) {
59                mpDrums.start();
60                playing = PLAYING;
61            } else {
62                mpDrums.pause();
63                playing = NOT_PLAYING;
64            }
65        }
66    };
67
68
69    @Override
70    protected void onDestroy() {
71        super.onDestroy();
72        mpUkelele.release();
73        mpDrums.release();
74    }
75
76
77    // Animate button colors when they are pressed
78    private void animateButtons(boolean pressed) {
79        if (pressed) {
80            btnUkelele.setAlpha(0.5f);
81            btnDrums.setAlpha(0.5f);
82        } else {
83            btnUkelele.setAlpha(1.0f);
84            btnDrums.setAlpha(1.0f);
85        }
86    }
87
88
89    // Set up button listeners
90    btnUkelele.setOnClickListener(btnUkeleleListener);
91    btnDrums.setOnClickListener(btnDrumsListener);
92
93
94    // Set up media players
95    mpUkelele = MediaPlayer.create(this, R.raw.ukelele);
96    mpDrums = MediaPlayer.create(this, R.raw.drums);
97
98    // Set up volume slider
99    SeekBar volumeSlider = (SeekBar)findViewById(R.id.volumeSlider);
100    volumeSlider.setOnSeekBarChangeListener(volumeListener);
101
102    // Set up volume slider
103    volumeSlider.setOnSeekBarChangeListener(volumeListener);
104
105    // Set up volume slider
106    volumeSlider.setOnSeekBarChangeListener(volumeListener);
107
108    // Set up volume slider
109    volumeSlider.setOnSeekBarChangeListener(volumeListener);
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111    // Set up volume slider
112    volumeSlider.setOnSeekBarChangeListener(volumeListener);
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114    // Set up volume slider
115    volumeSlider.setOnSeekBarChangeListener(volumeListener);
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118    volumeSlider.setOnSeekBarChangeListener(volumeListener);
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120    // Set up volume slider
121    volumeSlider.setOnSeekBarChangeListener(volumeListener);
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123    // Set up volume slider
124    volumeSlider.setOnSeekBarChangeListener(volumeListener);
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126    // Set up volume slider
127    volumeSlider.setOnSeekBarChangeListener(volumeListener);
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129    // Set up volume slider
130    volumeSlider.setOnSeekBarChangeListener(volumeListener);
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132    // Set up volume slider
133    volumeSlider.setOnSeekBarChangeListener(volumeListener);
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135    // Set up volume slider
136    volumeSlider.setOnSeekBarChangeListener(volumeListener);
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138    // Set up volume slider
139    volumeSlider.setOnSeekBarChangeListener(volumeListener);
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141    // Set up volume slider
142    volumeSlider.setOnSeekBarChangeListener(volumeListener);
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148    volumeSlider.setOnSeekBarChangeListener(volumeListener);
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150    // Set up volume slider
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153    // Set up volume slider
154    volumeSlider.setOnSeekBarChangeListener(volumeListener);
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157    volumeSlider.setOnSeekBarChangeListener(volumeListener);
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160    volumeSlider.setOnSeekBarChangeListener(volumeListener);
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162    // Set up volume slider
163    volumeSlider.setOnSeekBarChangeListener(volumeListener);
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165    // Set up volume slider
166    volumeSlider.setOnSeekBarChangeListener(volumeListener);
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168    // Set up volume slider
169    volumeSlider.setOnSeekBarChangeListener(volumeListener);
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171    // Set up volume slider
172    volumeSlider.setOnSeekBarChangeListener(volumeListener);
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174    // Set up volume slider
175    volumeSlider.setOnSeekBarChangeListener(volumeListener);
176
177    // Set up volume slider
178    volumeSlider.setOnSeekBarChangeListener(volumeListener);
179
180    // Set up volume slider
181    volumeSlider.setOnSeekBarChangeListener(volumeListener);
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183    // Set up volume slider
184    volumeSlider.setOnSeekBarChangeListener(volumeListener);
185
186    // Set up volume slider
187    volumeSlider.setOnSeekBarChangeListener(volumeListener);
188
189    // Set up volume slider
190    volumeSlider.setOnSeekBarChangeListener(volumeListener);
191
192    // Set up volume slider
193    volumeSlider.setOnSeekBarChangeListener(volumeListener);
194
195    // Set up volume slider
196    volumeSlider.setOnSeekBarChangeListener(volumeListener);
197
198    // Set up volume slider
199    volumeSlider.setOnSeekBarChangeListener(volumeListener);
200
201    // Set up volume slider
202    volumeSlider.setOnSeekBarChangeListener(volumeListener);
203
204    // Set up volume slider
205    volumeSlider.setOnSeekBarChangeListener(volumeListener);
206
207    // Set up volume slider
208    volumeSlider.setOnSeekBarChangeListener(volumeListener);
209
210    // Set up volume slider
211    volumeSlider.setOnSeekBarChangeListener(volumeListener);
212
213    // Set up volume slider
214    volumeSlider.setOnSeekBarChangeListener(volumeListener);
215
216    // Set up volume slider
217    volumeSlider.setOnSeekBarChangeListener(volumeListener);
218
219    // Set up volume slider
220    volumeSlider.setOnSeekBarChangeListener(volumeListener);
221
222    // Set up volume slider
223    volumeSlider.setOnSeekBarChangeListener(volumeListener);
224
225    // Set up volume slider
226    volumeSlider.setOnSeekBarChangeListener(volumeListener);
227
228    // Set up volume slider
229    volumeSlider.setOnSeekBarChangeListener(volumeListener);
230
231    // Set up volume slider
232    volumeSlider.setOnSeekBarChangeListener(volumeListener);
233
234    // Set up volume slider
235    volumeSlider.setOnSeekBarChangeListener(volumeListener);
236
237    // Set up volume slider
238    volumeSlider.setOnSeekBarChangeListener(volumeListener);
239
240    // Set up volume slider
241    volumeSlider.setOnSeekBarChangeListener(volumeListener);
242
243    // Set up volume slider
244    volumeSlider.setOnSeekBarChangeListener(volumeListener);
245
246    // Set up volume slider
247    volumeSlider.setOnSeekBarChangeListener(volumeListener);
248
249    // Set up volume slider
250    volumeSlider.setOnSeekBarChangeListener(volumeListener);
251
252    // Set up volume slider
253    volumeSlider.setOnSeekBarChangeListener(volumeListener);
254
255    // Set up volume slider
256    volumeSlider.setOnSeekBarChangeListener(volumeListener);
257
258    // Set up volume slider
259    volumeSlider.setOnSeekBarChangeListener(volumeListener);
260
261    // Set up volume slider
262    volumeSlider.setOnSeekBarChangeListener(volumeListener);
263
264    // Set up volume slider
265    volumeSlider.setOnSeekBarChangeListener(volumeListener);
266
267    // Set up volume slider
268    volumeSlider.setOnSeekBarChangeListener(volumeListener);
269
270    // Set up volume slider
271    volumeSlider.setOnSeekBarChangeListener(volumeListener);
272
273    // Set up volume slider
274    volumeSlider.setOnSeekBarChangeListener(volumeListener);
275
276    // Set up volume slider
277    volumeSlider.setOnSeekBarChangeListener(volumeListener);
278
279    // Set up volume slider
280    volumeSlider.setOnSeekBarChangeListener(volumeListener);
281
282    // Set up volume slider
283    volumeSlider.setOnSeekBarChangeListener(volumeListener);
284
285    // Set up volume slider
286    volumeSlider.setOnSeekBarChangeListener(volumeListener);
287
288    // Set up volume slider
289    volumeSlider.setOnSeekBarChangeListener(volumeListener);
290
291    // Set up volume slider
292    volumeSlider.setOnSeekBarChangeListener(volumeListener);
293
294    // Set up volume slider
295    volumeSlider.setOnSeekBarChangeListener(volumeListener);
296
297    // Set up volume slider
298    volumeSlider.setOnSeekBarChangeListener(volumeListener);
299
299 }
```

Implement methods

Select 'Implement methods' from this menu

Remember: if the lightbulb fails to appear, hitting Alt+Enter on the keyboard brings up this menu as well.

AlohaMusic [C:\Users\Nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project Resource Manager 2:Structure Favorites Build Variants Layout Captures 3:Layout Explorer 4:File Explorer 5:Android 6:Manifests 7:Java 8:Generated Java 9:Res 10:Gradle Scripts

MainActivity.java

```
1 package edu.udayton.alohamusic;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private Button btnUkelele, btnDrums;
8
9     private MediaPlayer mpUkelele, mpDrums;
10
11    private int playing;
12
13    private static final int NOT_PLAYING = 0;
14
15    @Override
16    protected void onCreate(Bundle savedInstanceState) {
17        super.onCreate(savedInstanceState);
18        setContentView(R.layout.activity_main);
19
20        // set UI component references
21
22        btnUkelele = (Button)findViewById(R.id.btnUkelele);
23        btnDrums = (Button)findViewById(R.id.btnDrums);
24
25    } // end onCreate method
26
27    // click listener for btnUkelele button
28
29    Button.OnClickListener btnUkeleleListener;
30
31    {
32        btnUkelele.setOnClickListener(btnUkeleleListener);
33    }
34
35    };
36
37} // end MainActivity class
38
```

Select Methods to Implement

android.view.View.OnClickListener
onClick(v:View):void

Click OK to add the onClick handler

Copy JavaDoc
 Insert @Override

OK Cancel

MainActivity > btnUkeleleListener > new OnClickListener

Todo Terminal Build Logcat Profiler Run Event Log

Class 'Anonymous class derived from OnClickListener' must either be declared abstract or implement abstract method 'onClick(View)' in 'OnClickListener'

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...\\app\\src\\main\\java\\edu\\udayton\\alohamusic\\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project 2:Structure 3:Favorites 4:Build Variants 5:Layout Captures 6:Layout Explorer

Resource Manager

Gradle Scripts

activity_splash.xml activity_main.xml MainActivity.java SplashActivity.java

```
1 package edu.udayton.alohamusic;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private Button btnUkelele, btnDrums;
8
9     private MediaPlayer mpUkelele, mpDrums;
10
11    private int playing;
12
13    private static final int NOT_PLAYING = 0, PLAYING = 1;
14
15    @Override
16    protected void onCreate(Bundle savedInstanceState) {
17        super.onCreate(savedInstanceState);
18        setContentView(R.layout.activity_main);
19
20        // set UI component references
21
22        btnUkelele = (Button)findViewById(R.id.btnUkelele);
23        btnDrums = (Button)findViewById(R.id.btnDrums);
24
25    } // end onCreate method
26
27    // click listener for btnUkelele button
28
29    Button.OnClickListener btnUkeleleListener = new Button.OnClickListener()
30    {
31
32        @Override
33        public void onClick(View v) {
34
35            } // end onClick handler
36        };
37    } // end MainActivity class
38
39    Add the semi-colon at the end of buListener's
40    declarationinitialization statement
41
42 } // end MainActivity class
43
```

MainActivity > btnUkeleleListener > new OnClickListener

Todo Terminal Build Logcat Profiler Run Event Log

Gradle build finished in 12 s 292 ms (36 minutes ago) 39:33 CRLF UTF-8 4 spaces

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...\\app\\src\\main\\java\\edu\\udayton\\alohamusic\\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project

Resource Manager

2:Structure

3:Favorites

Build Variants

Layout Captures

MainActivity

activity_splash.xml activity_main.xml MainActivity.java SplashActivity.java

```
private MediaPlayer mpUkelele, mpDrums;  
private int playing;  
private static final int NOT_PLAYING = 0, PLAYING = 1;  
  
@Override  
protected void onCreate(Bundle savedInstanceState) {  
    super.onCreate(savedInstanceState);  
    setContentView(R.layout.activity_main);  
  
    // set UI component references  
  
    btnUkelele = (Button)findViewById(R.id.btnUkelele);  
    btnDrums = (Button)findViewById(R.id.btnDrums);  
}  
// end onCreate method  
  
// click listener for btnUkelele button  
  
Button.OnClickListener btnUkeleleListener = new Button.OnClickListener()  
{  
  
    @Override  
    public void onClick(View v) {  
  
    } // end onClick handler  
};  
  
// click listener for btnDrums button  
  
Button.OnClickListener btnDrumsListener = new Button.OnClickListener()  
{  
  
    @Override  
    public void onClick(View v) {  
  
    } // end onClick handler  
};  
} // end MainActivity class
```

In the same way, add this declaration/initialization for the click listener for the drums Button

Device File Explorer

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...\\app\\src\\main\\java\\edu\\udayton\\alohamusic\\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project

Resource Manager

Gradle Scripts

2:Structure

2:Favorites

Build Variants

Layout Captures

MainActivity.java

```
private static final int NOT_PLAYING = 0, PLAYING = 1;

@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);

    // set UI component references

    btnUkelele = (Button)findViewById(R.id.btnUkelele);
    btnDrums = (Button)findViewById(R.id.btnDrums);

    // set click listeners for UI buttons

    btnUkelele.setOnClickListener(btnUkeleleListener);
    btnDrums.setOnClickListener(btnDrumsListener);

} // end onCreate method

// click listener for btnUkelele button

Button.OnClickListener btnUkeleleListener = new Button.OnClickListener()
{
    @Override
    public void onClick(View v) {

    } // end onClick handler
};

// click listener for btnDrums button

Button.OnClickListener btnDrumsListener = new Button.OnClickListener()
{
    @Override
    public void onClick(View v) {

    } // end onClick handler
};

} // end MainActivity class
```

In the onCreate method, add this code to set the click listeners for both the btnUkelele and btnDrums Button references

MainActivity > onCreate()

TODO Terminal Build Logcat Profiler Run

Gradle build finished in 12 s 292 ms (38 minutes ago)

32:55 CRLF UTF-8 4 spaces

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project Resource Manager Favorites Build Variants Layout Captures 2: Favorites Device File Explorer

```
private static final int NOT_PLAYING = 0, PLAYING = 1;  
protected void onCreate(Bundle savedInstanceState) {  
    super.onCreate(savedInstanceState);  
    setContentView(R.layout.activity_main);  
  
    // set UI component references  
  
    btnUkelele = (Button)findViewById(R.id.btnUkelele);  
    btnDrums = (Button)findViewById(R.id.btnDrums);  
  
    // set click listeners for UI buttons  
  
    btnUkelele.setOnClickListener(btnUkeleleListener);  
    btnDrums.setOnClickListener(btnDrumsListener);  
  
    // create the MediaPlayer  
    mpUkelele = new MediaPlayer();  
    mpDrums = new MediaPlayer();  
  
    // set volume for MediaPlayer  
    mpUkelele.setVolume(100, 100);  
    mpDrums.setVolume(100, 100);  
  
    // set audio track for MediaPlayer  
    mpUkelele.setAudioStreamType(AudioManager.STREAM_MUSIC);  
    mpDrums.setAudioStreamType(AudioManager.STREAM_MUSIC);  
  
    // start MediaPlayer  
    mpUkelele.start();  
    mpDrums.start();  
  
} // end onCreate method  
  
// click listener for btnUkelele button  
  
Button.OnClickListener btnUkeleleListener = new Button.OnClickListener()  
{  
  
    @Override  
    public void onClick(View v) {  
        mpUkelele.start();  
    } // end onClick handler  
};  
  
// click listener for btnDrums button  
  
Button.OnClickListener btnDrumsListener = new Button.OnClickListener()  
{  
  
    @Override  
    public void onClick(View v) {  
        mpDrums.start();  
    } // end onClick handler  
};  
  
} // end MainActivity class
```

MainActivity > onCreate()

TODO Terminal Build Logcat Profiler Run Gradle build finished in 12 s 292 ms (38 minutes ago) 36:9 CRLF UTF-8 4 spaces Event Log

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project

Resource Manager

2:Structure

Favorites

Build Variants

Layout Captures

Device File Explorer

Android

app

manifests

java

edu.udayton.alohamusic

- MainActivity
- SplashActivity

edu.udayton.alohamusic (androidTest)

edu.udayton.alohamusic (test)

generatedJava

res

Gradle Scripts

activity_splash.xml activity_main.xml MainActivity.java SplashActivity.java

```
private static final int NOT_PLAYING = 0, PLAYING = 1;

@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);

    // set UI component references

    btnUkelele = (Button)findViewById(R.id.btnUkelele);
    btnDrums = (Button)findViewById(R.id.btnDrums);

    // set click listeners for UI buttons

    btnUkelele.setOnClickListener(btnUkeleleListener);
    btnDrums.setOnClickListener(btnDrumsListener);

    // create the MediaPlayer

    mpUkelele = new Media
        ↗ MediaPlayer (android.media)
    } // end onCreate()
    // click listener for btnUkelele button
    Button.OnClickListener btnUkeleleListener = new Button.OnClickListener()
    {
        @Override
        public void onClick(View v) {
            // start playing the ukelele
            mpUkelele.start();
        }
    }; // end onClick handler
} // end MainActivity class
```

... and select this android.media.MediaPlayer class from the code completion menu

Press Ctrl+Shift+Space to show only variants that are suitable by type

MainActivity > onCreate()

TODO Terminal Build Logcat Profiler Run Event Log

Gradle build finished in 12 s 292 ms (39 minutes ago) 36:30 CRLF UTF-8 4 spaces

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project Resource Manager 2:Structure 3:Favorites 4:Build Variants 5:Layout Captures 6:Layout Explorer

Android Gradle

activity_splash.xml activity_main.xml MainActivity.java SplashActivity.java

app
 manifests
 java
 edu.udayton.alohamusic
 MainActivity
 SplashActivity
 edu.udayton.alohamusic (androidTest)
 edu.udayton.alohamusic (test)
 generatedJava
 res
Gradle Scripts

MainActivity.java

```
17     private static final int NOT_PLAYING = 0, PLAYING = 1;
18
19     @Override
20     protected void onCreate(Bundle savedInstanceState) {
21         super.onCreate(savedInstanceState);
22         setContentView(R.layout.activity_main);
23
24         // set UI component references
25
26         btnUkelele = (Button)findViewById(R.id.btnUkelele);
27         btnDrums = (Button)findViewById(R.id.btnDrums);
28
29         // set click listeners for UI buttons
30
31         btnUkelele.setOnClickListener(btnUkeleleListener);
32         btnDrums.setOnClickListener(btnDrumsListener);
33
34         // create the MediaPlayer
35
36         mpUkelele = new MediaPlayer();
37         mpUkelele = MediaPlayer.create(this, R.raw.ukulele); ← On the following line, add this statement for the mpUkelele data field
38     } // end onCreate method
39
40     // click listener for btnUkelele button
41
42     Button.OnClickListener btnUkeleleListener = new Button.OnClickListener()
43     {
44
45         @Override
46         public void onClick(View v) {
47
48             } // end onClick handler
49         };
50
51     // click listener for btnDrums button
52
53     Button.OnClickListener btnDrumsListener = new Button.OnClickListener()
54     {
55
56         @Override
57         public void onClick(View v) {
58
59             } // end onClick handler
60         };
61
62     } // end MainActivity class
63
64 }
```

MainActivity > onCreate()

TODO Terminal Build Logcat Profiler Run Event Log

Gradle build finished in 12 s 292 ms (39 minutes ago) 37:61 CRLF ÷ UTF-8 ÷ 4 spaces ÷

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...\\app\\src\\main\\java\\edu\\udayton\\alohamusic\\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project Resource Manager 2:Structure 3:Favorites 4:Build Variants 5:Layout Captures 6:Layout Explorer 7:Device File Explorer

```
25
26     btnUkelele = (Button) findViewById(R.id.btnUkelele);
27     btnDrums = (Button) findViewById(R.id.btnDrums);
28
29     // set click listeners for UI buttons
30
31     btnUkelele.setOnClickListener(btnUkeleleListener);
32     btnDrums.setOnClickListener(btnDrumsListener);
33
34     // create the MediaPlayer
35
36     mpUkelele = new MediaPlayer();
37     mpUkelele = MediaPlayer.create(this, R.raw.ukulele);
38
39     mpDrums = new MediaPlayer();
40     mpDrums = MediaPlayer.create(this, R.raw.drums); ← In the same way, add
41
42 } // end onCreate method
43
44 // click listener for btnUkelele button
45
46 Button.OnClickListener btnUkeleleListener = new Button.OnClickListener()
47 {
48
49     @Override
50     public void onClick(View v) {
51
52         } // end onClick handler
53     };
54
55 // click listener for btnDrums button
56
57 Button.OnClickListener btnDrumsListener = new Button.OnClickListener()
58 {
59
60     @Override
61     public void onClick(View v) {
62
63         } // end onClick handler
64     };
65
66 } // end MainActivity class
67
```

MainActivity > onCreate()

TODO Terminal Build Logcat Profiler Run Event Log

Gradle build finished in 12 s 292 ms (40 minutes ago) 40:57 CRLF UTF-8 4 spaces

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...\\app\\src\\main\\java\\edu\\udayton\\alohamusic\\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

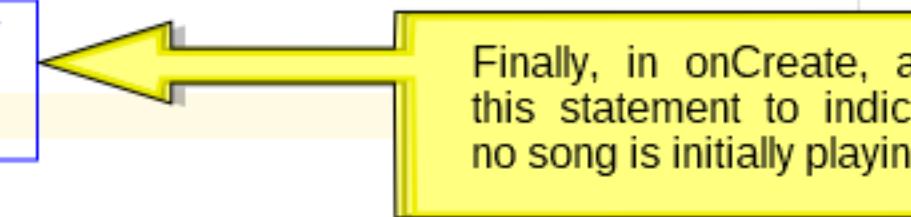
1:Project Resource Manager 2:Structure 3:Favorites 4:Build Variants 5:Layout Captures 6:Layout Explorer

Android Gradle

```
29     // set click listeners for UI buttons
30
31     btnUkelele.setOnClickListener(btnUkeleleListener);
32     btnDrums.setOnClickListener(btnDrumsListener);
33
34     // create the MediaPlayer
35
36     mpUkelele = new MediaPlayer();
37     mpUkelele = MediaPlayer.create(this, R.raw.ukulele);
38
39     mpDrums = new MediaPlayer();
40     mpDrums = MediaPlayer.create(this, R.raw.drums);
41
42     // initialize the playing state to not playing
43
44     playing = NOT_PLAYING;
45
46 } // end onCreate method
47
48 // click listener for btnUkelele button
49
50 Button.OnClickListener btnUkeleleListener = new Button.OnClickListener()
51 {
52
53     @Override
54     public void onClick(View v) {
55
56         } // end onClick handler
57     };
58
59 // click listener for btnDrums button
60
61 Button.OnClickListener btnDrumsListener = new Button.OnClickListener()
62 {
63
64     @Override
65     public void onClick(View v) {
66
67         } // end onClick handler
68     };
69
70 } // end MainActivity class
71
```

MainActivity > onCreate()

Finally, in onCreate, add this statement to indicate no song is initially playing



Device File Explorer

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project Resource Manager 2:Structure 3:Favorites 4:Build Variants 5:Layout Captures 6:Layout Explorer

Android Gradle

```
activity_splash.xml activity_main.xml MainActivity.java SplashActivity.java
```

43 playing = NOT_PLAYING;

44 } // end onCreate method

45 // click listener for btnUkelele button

46 Button.OnClickListener btnUkeleleListener = new Button.OnClickListener()

47 {

48 @Override

49 public void onClick(View v)

50 {

51 // determine mpUkelele's action based on the playing state

52 switch (playing)

53 {

54 case NOT_PLAYING:

55 mpUkelele.start();

56 playing = PLAYING;

57 break;

58 case PLAYING:

59 mpUkelele.pause();

60 playing = NOT_PLAYING;

61 break;

62 }

63 } // end switch

64 }

65 } // end onClick handler

66 };

67 // click listener for btnDrums button

68 Button.OnClickListener btnDrumsListener = new Button.OnClickListener()

69 {

70 @Override

71 public void onClick(View v) {

72 }

73 } // end onClick handler

74 };

75 }

76 } // end MainActivity class

77 }

78 }

79 }

80 }

81 }

82 }

83 }

84 }

85 }

Add this code to the btnUkelele's click handler, described on page 248 of Android Boot Camp.

MainActivity > btnUkeleleListener > new OnClickListener > onClick()

TODO Terminal Build Logcat Profiler Run Event Log

Gradle build finished in 12 s 292 ms (42 minutes ago) 68:28 CRLF UTF-8 4 spaces

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project 2:Resource Manager 3:Gradle Scripts

```
57
58     switch (playing)
59     {
60         case NOT_PLAYING:
61             mpUkelele.start();
62             playing = PLAYING;
63             break;
64         case PLAYING:
65             mpUkelele.pause();
66             playing = NOT_PLAYING;
67             break;
68     } // end switch
69
70     } // end onClick handler
71 };
72
73 // click listener for btnDrums button
74
75 Button.OnClickListener btnDrumsListener = new Button.OnClickListener()
76 {
77
78     @Override
79     public void onClick(View v)
80     {
81         // determine mpDrums's action based on the playing state
82
83         switch (playing)
84         {
85             case NOT_PLAYING:
86                 mpDrums.start();
87                 playing = PLAYING;
88                 break;
89             case PLAYING:
90                 mpDrums.pause();
91                 playing = NOT_PLAYING;
92                 break;
93         } // end switch
94
95     } // end onClick handler
96 };
97
98 } // end MainActivity class
99 
```

Add this code to the btnDrums's click handler, described on page 248 of Android Boot Camp.

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

Re-build the project Make Project (Ctrl+F9)

1:Project AlohaMusic alohamusic MainActivity

Android

app manifests java edu.udayton.alohamusic MainActivity SplashActivity

Resource Manager

generatedJava res Gradle Scripts

2:Structure Favorites

Build Variants Layout Captures

MainActivity.java

```
switch (playing)
{
    case NOT_PLAYING:
        mpUkelele.start();
        playing = PLAYING;
        break;
    case PLAYING:
        mpUkelele.pause();
        playing = NOT_PLAYING;
        break;
} // end switch

} // end onClick handler

// click listener for btnDrums button

Button.OnClickListener btnDrumsListener = new Button.OnClickListener()
{

    @Override
    public void onClick(View v)
    {
        // determine mpDrums's action based on the playing state

        switch (playing)
        {
            case NOT_PLAYING:
                mpDrums.start();
                playing = PLAYING;
                break;
            case PLAYING:
                mpDrums.pause();
                playing = NOT_PLAYING;
                break;
        } // end switch

    } // end onClick handler
};

} // end MainActivity class
```

MainActivity > btnDrumsListener > new OnClickListener > onClick()

TODO Terminal Build Logcat Profiler Run

Gradle build finished in 12 s 292 ms (43 minutes ago) 93:28 CRLF UTF-8 4 spaces

Device File Explorer Event Log

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...\\app\\src\\main\\java\\edu\\udayton\\alohamusic\\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

Stop the running app in the emulator

Stop 'app' (Ctrl+F2)

AlohaMusic > app > src > main > java > edu > alohamusic > MainActivity.java

MainActivity.java

```
switch (playing)
{
    case NOT_PLAYING:
        mpUkelele.start();
        playing = PLAYING;
        break;
    case PLAYING:
        mpUkelele.pause();
        playing = NOT_PLAYING;
        break;
} // end switch

} // end onClick handler

};

// click listener for btnDrums button

Button.OnClickListener btnDrumsListener = new Button.OnClickListener()
{

    @Override
    public void onClick(View v)
    {
        // determine mpDrums's action based on the playing state

        switch (playing)
        {
            case NOT_PLAYING:
                mpDrums.start();
                playing = PLAYING;
                break;
            case PLAYING:
                mpDrums.pause();
                playing = NOT_PLAYING;
                break;
        } // end switch

    } // end onClick handler
};

} // end MainActivity class
```

MainActivity > btnDrumsListener > new OnClickListener > onClick()

TODO Terminal Build Logcat Profiler Run Stop process 93:28 CRLF UTF-8 4 spaces Event Log

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...\\app\\src\\main\\java\\edu\\udayton\\alohamusic\\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

Re-run the app ...

AlohaMusic > app > src > Run 'app' (Shift+F10)

MainActivity

Android

1:Project

Resource Manager

2:Structure

Favorites

Build Variants

Layout Captures

2: Favorites

Device File Explorer

MainActivity.java

```
switch (playing)
{
    case NOT_PLAYING:
        mpUkelele.start();
        playing = PLAYING;
        break;
    case PLAYING:
        mpUkelele.pause();
        playing = NOT_PLAYING;
        break;
} // end switch

} // end onClick handler

// click listener for btnDrums button

Button.OnClickListener btnDrumsListener = new Button.OnClickListener()
{

    @Override
    public void onClick(View v)
    {
        // determine mpDrums's action based on the playing state

        switch (playing)
        {
            case NOT_PLAYING:
                mpDrums.start();
                playing = PLAYING;
                break;
            case PLAYING:
                mpDrums.pause();
                playing = NOT_PLAYING;
                break;
        } // end switch

    } // end onClick handler
}

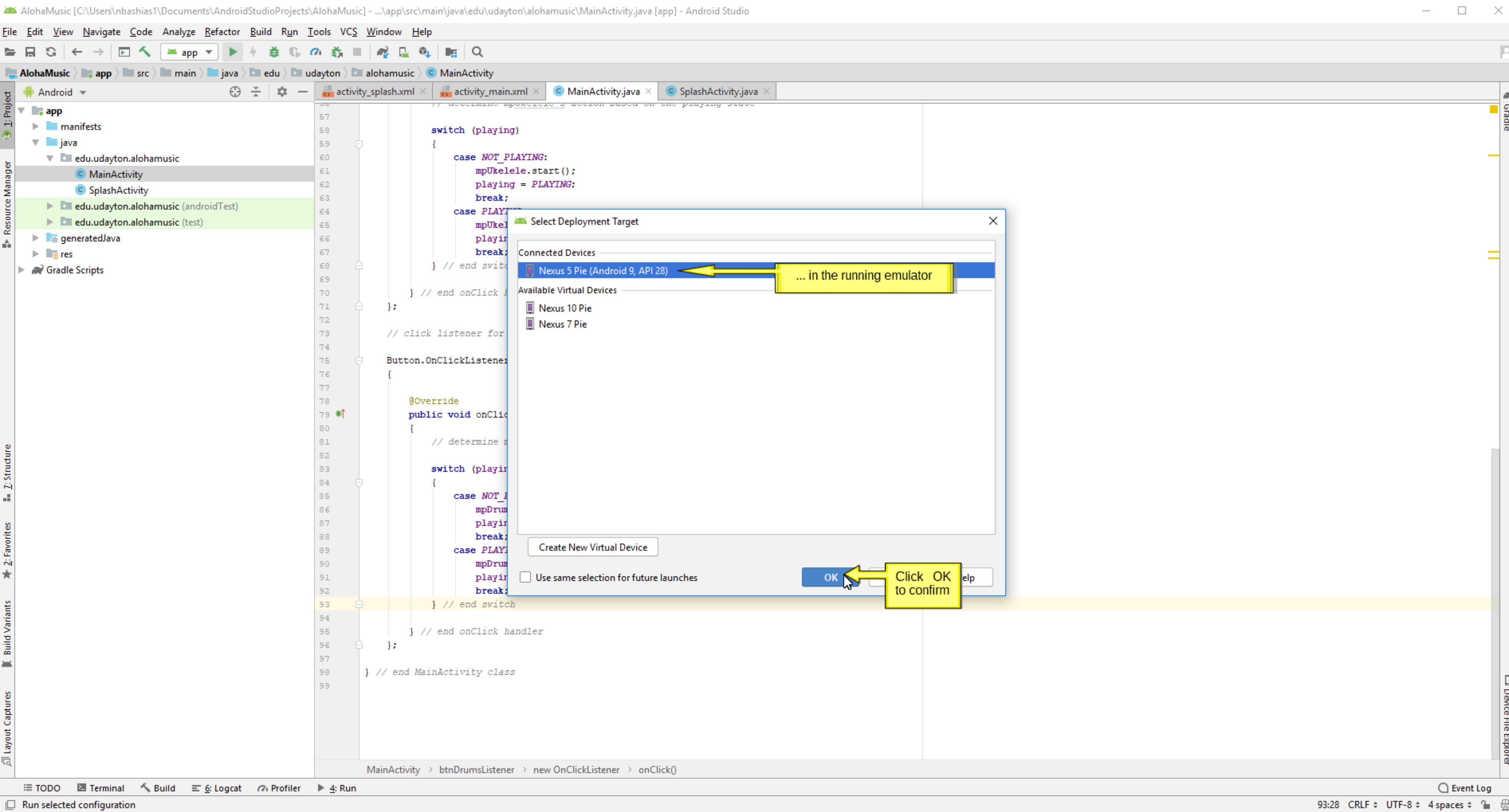
} // end MainActivity class
```

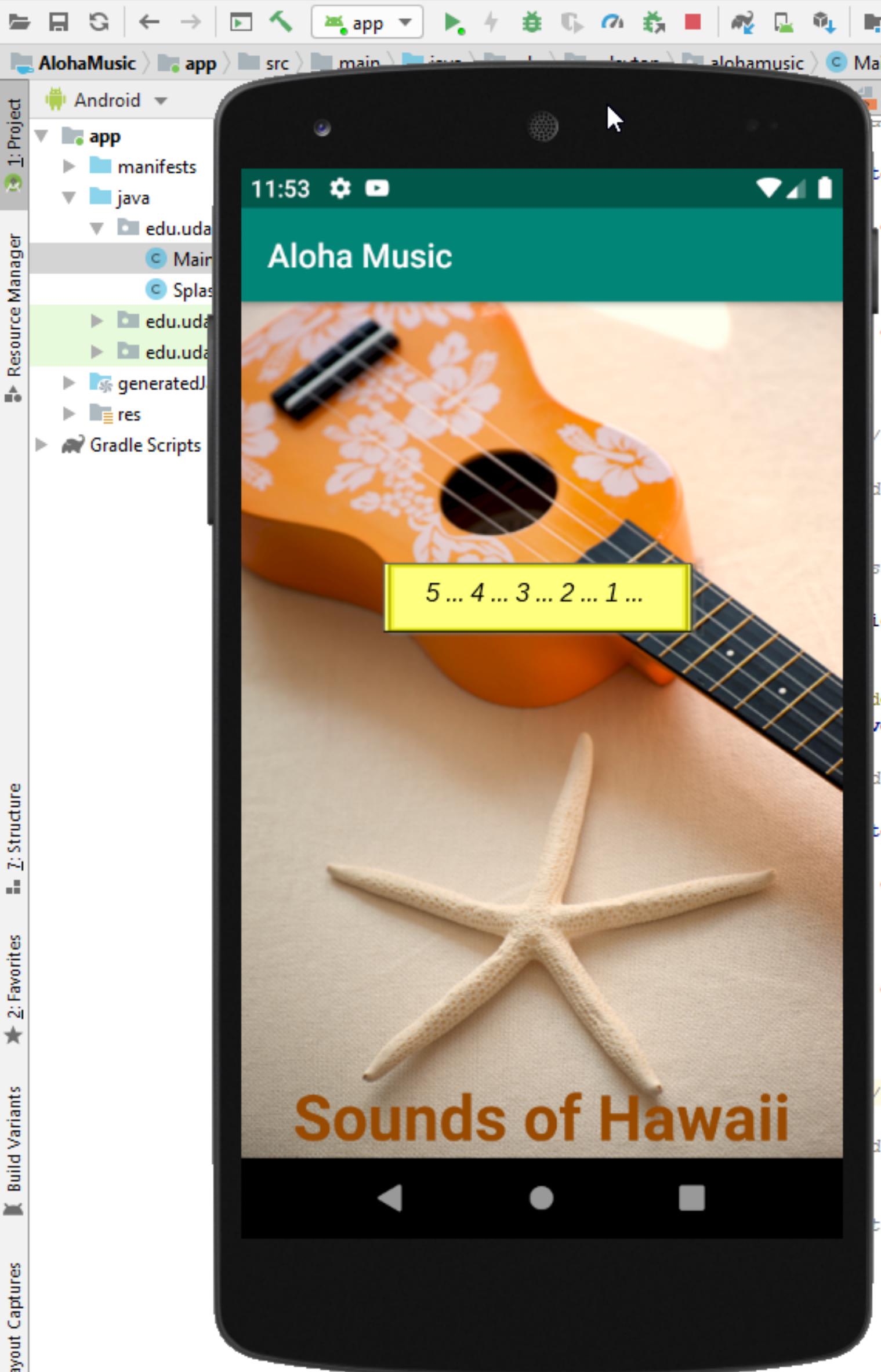
MainActivity > btnDrumsListener > new OnClickListener > onClick()

TODO Terminal Build Logcat Profiler Run

Run selected configuration

93:28 CRLF UTF-8 4 spaces





```
activity_main.xml x MainActivity.java x SplashActivity.java x

    if (playing == NOT_PLAYING) {
        mpDrums.start();
        playing = PLAYING;
    } else if (playing == PLAYING) {
        mpDrums.pause();
        playing = NOT_PLAYING;
    }
    // end switch

    // onClick handler
}

// Activity class
```

MainActivity > btnDrumsListener > new OnClickListener > onClick()

The screenshot displays the main activity of the 'Aloha Music' application. The interface includes:

- A title bar at the top with the text "Aloha Music".
- A header section showing a photo of a man playing a ukulele.
- A large button labeled "PLAY UKELELE SONG" with a photo of a man playing steel drums below it.
- A large button labeled "PLAY DRUMS SONG" with a photo of a man playing a ukulele below it.
- A black navigation bar at the bottom with standard Android navigation icons.

A yellow callout box with a black border and arrow points to the "PLAY UKELELE SONG" button, containing the text: "Click this button to hear the Ukelele song".

The code editor on the right shows the Java code for the `MainActivity` class, specifically the logic for the "PLAY DRUMS SONG" button:

```
btnDrums.setOnClickListener = new Button.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        switch (playing) {  
            case NOT_PLAYING:  
                mpDrums.start();  
                playing = PLAYING;  
                break;  
            case PLAYING:  
                mpDrums.pause();  
                playing = NOT_PLAYING;  
                break;  
        }  
    }  
};
```

MainActivity > btnDrums.setOnClickListener > new OnClickListener > onClick()



AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity.java

```
11:54 alohamusic
```

```
MainActivity.java
```

```
SplashActivity.java
```

```
g)
```

```
PLAYING:
```

```
ele.start();
```

```
g = PLAYING;
```

```
NOT_PLAYING:
```

```
ele.pause();
```

```
g = NOT_PLAYING;
```

```
h
```

```
andler
```

```
btnDrums button
```

```
btnDrumsListener = new Button.OnClickListener()
```

```
    @Override
```

```
    public void onClick(View v)
```

```
        mpDrums's action based on the playing state
```

```
        ...
```

```
        g)
```

```
    case NOT_PLAYING:
```

```
        mpDrums.start();
```

```
        playing = PLAYING;
```

```
        break;
```

```
    case PLAYING:
```

```
        mpDrums.pause();
```

```
        playing = NOT_PLAYING;
```

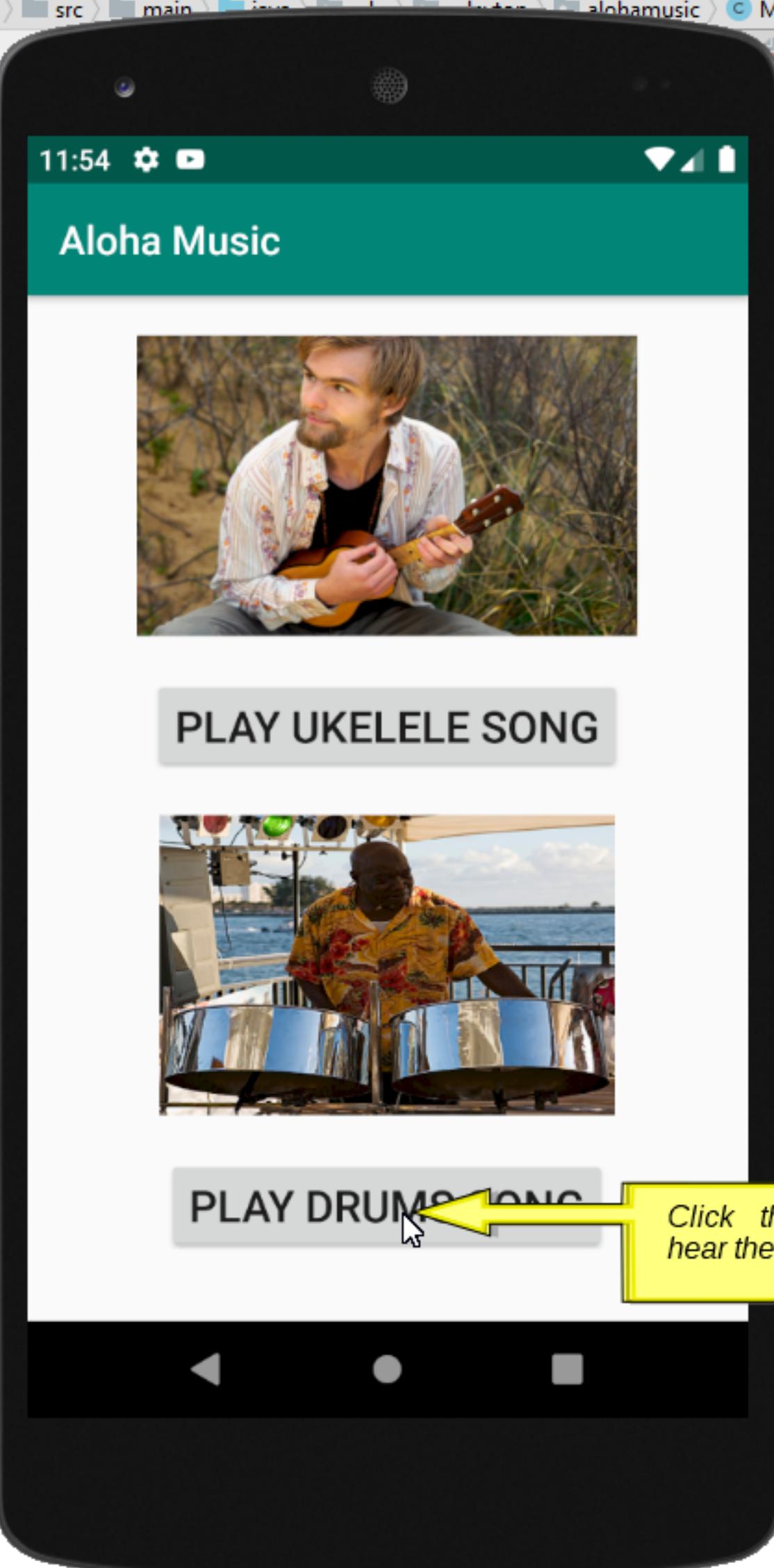
```
        break;
```

```
    // end switch
```

```
    } // end onClick handler
```

```
    // end Activity class
```

MainActivity > btnDrumsListener > new OnClickListener > onClick()



Aloha Music

PLAY UKELELE SONG

PLAY DRUMS SONG

Click this button to hear the Drums song

```
g)

PLAYING:
ele.start();
g = PLAYING;

NOT_PLAYING:
ele.pause();
g = NOT_PLAYING;

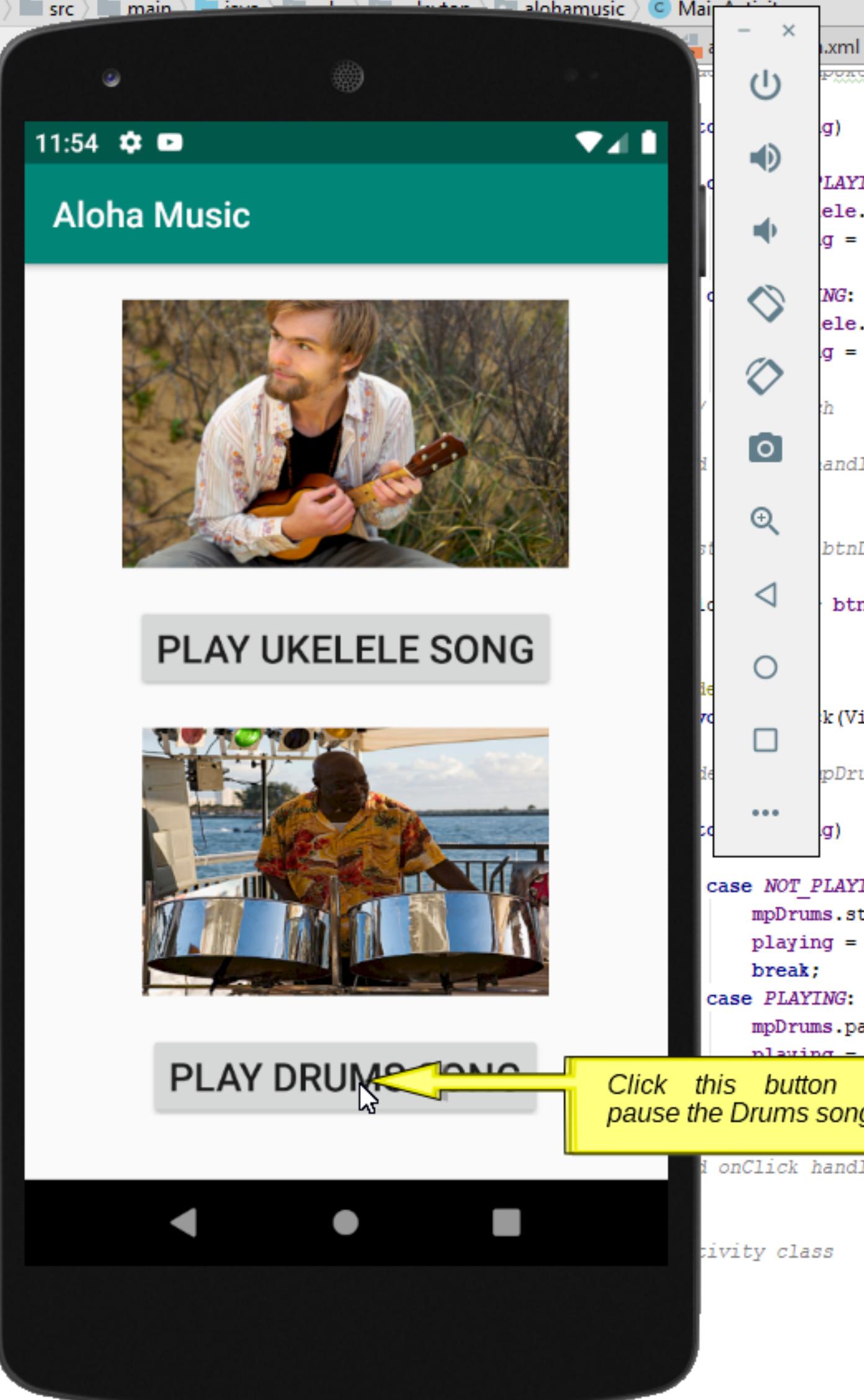
btnDrums button

btnDrumsListener = new Button.OnClickListener()

    @Override
    public void onClick(View v)
        // Implement mpDrums's action based on the playing state
        ...
    }
}

case NOT_PLAYING:
    mpDrums.start();
    playing = PLAYING;
    break;
case PLAYING:
    mpDrums.pause();
    playing = NOT_PLAYING;
}
```

MainActivity > btnDrumsListener > new OnClickListener > onClick()



AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity.java

```
g)
```

```
PLAYING:
```

```
ele.start();
```

```
g = PLAYING;
```

```
NOT_PLAYING:
```

```
ele.pause();
```

```
g = NOT_PLAYING;
```

```
h
```

```
andler
```

```
btnDrums button
```

```
btnDrumsListener = new Button.OnClickListener()
```

```
    @Override
```

```
    public void onClick(View v)
```

```
        // Implement mpDrums's action based on the playing state
```

```
        ...
```

```
    }
```

```
    case NOT_PLAYING:
```

```
        mpDrums.start();
```

```
        playing = PLAYING;
```

```
        break;
```

```
    case PLAYING:
```

```
        mpDrums.pause();
```

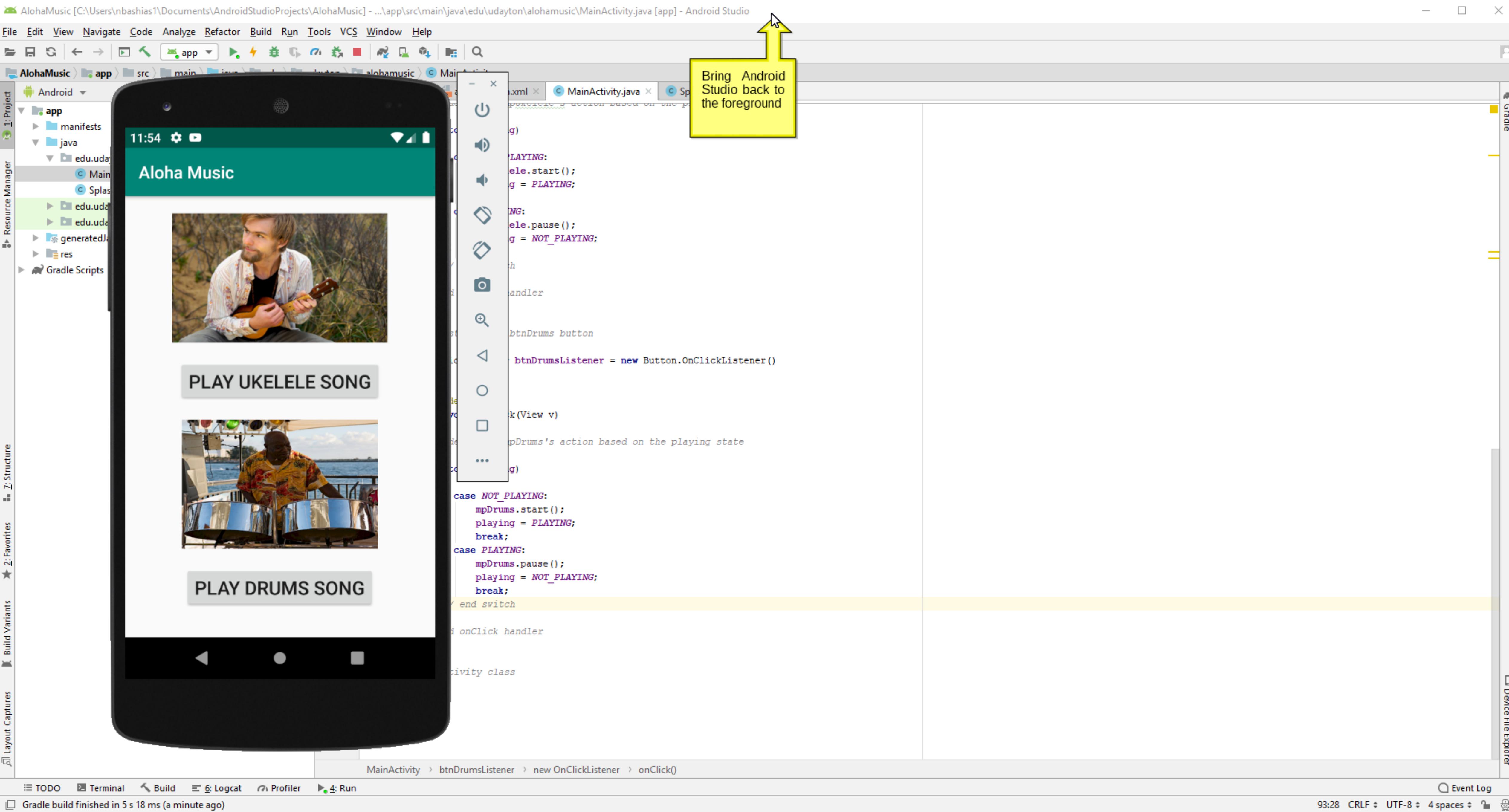
```
        playing = NOT_PLAYING;
```

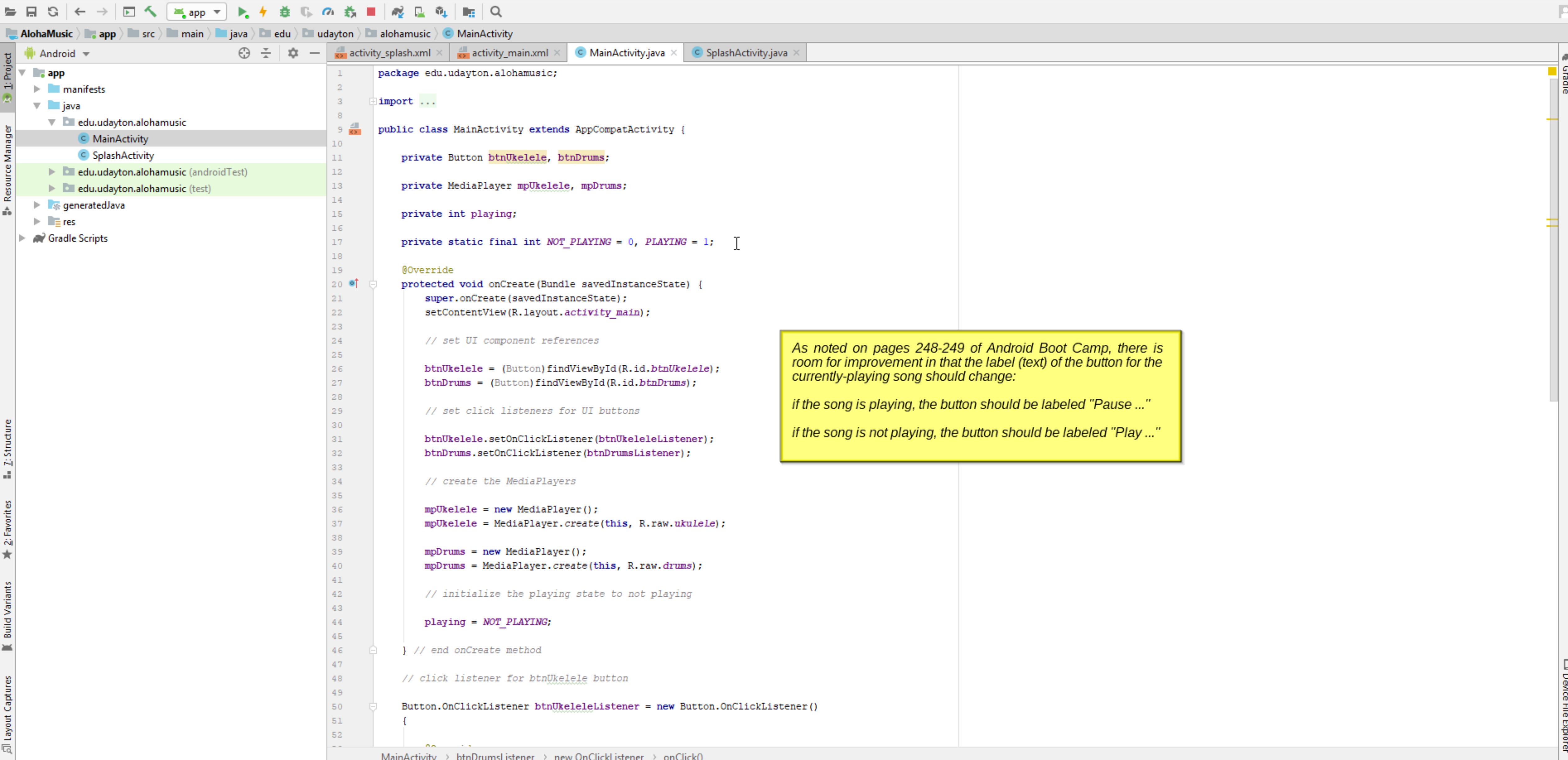
```
    }
```

```
    onCompletion(mpDrums);
```

```
    activity class
```

MainActivity > btnDrumsListener > new OnClickListener > onClick()





AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project Resource Manager 2:Structure 3:Favorites 4:Build Variants 5:Layout Captures 6:Layout Explorer 7:Device File Explorer

Android activity_splash.xml activity_main.xml MainActivity.java SplashActivity.java

1 package edu.udayton.alohamusic;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7 private Button btnUkelele, btnDrums;
8
9 private MediaPlayer mpUkelele, mpDrums;
10
11 private int playing;
12
13 private static final int NOT_PLAYING = 0, PLAYING = 1;
14
15
16 private static final String UKELELE_PLAYING = "Pause Ukelele Song",
17 UKELELE_PAUSED = "Play Ukelele Song",
18 DRUMS_PLAYING = "Pause Drums Song",
19 DRUMS_PAUSED = "Play Drums Song";
20
21
22
23
24 @Override
25 protected void onCreate(Bundle savedInstanceState) {
26 super.onCreate(savedInstanceState);
27 setContentView(R.layout.activity_main);
28
29 // set UI component references
30
31 btnUkelele = (Button) findViewById(R.id.btnUkelele);
32 btnDrums = (Button) findViewById(R.id.btnDrums);
33
34 // set click listeners for UI buttons
35
36 btnUkelele.setOnClickListener(btnUkeleleListener);
37 btnDrums.setOnClickListener(btnDrumsListener);
38
39 // create the MediaPlayers
40
41 mpUkelele = new MediaPlayer();
42 mpUkelele = MediaPlayer.create(this, R.raw.ukulele);
43
44 mpDrums = new MediaPlayer();
45 mpDrums = MediaPlayer.create(this, R.raw.drums);
46
47 // initialize the playing state to not playing
48
49 playing = NOT_PLAYING;
50
51 } // end onCreate method
52

MainActivity

Let's start the modification by declaring named constants for both Buttons' label text (playing or not playing)

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project Resource Manager 2:Structure 3:Favorites 4:Build Variants 5:Layout Captures 6:Layout Explorer

Android Gradle

```
activity_splash.xml activity_main.xml MainActivity.java SplashActivity.java
```

Java Editor

Project

app

- manifests
- java
 - edu.udayton.alohamusic
 - MainActivity
 - SplashActivity
 - edu.udayton.alohamusic (androidTest)
 - edu.udayton.alohamusic (test)
- generatedJava
- res

Gradle Scripts

Code Editor

```
49
50
51     } // end onCreate method
52
53     // click listener for btnUkelele button
54
55     Button.OnClickListener btnUkeleleListener = new Button.OnClickListener()
56
57     {
58         @Override
59         public void onClick(View v)
60         {
61             // determine mpUkelele's action based on the playing state
62
63             switch (playing)
64             {
65                 case NOT_PLAYING:
66                     mpUkelele.start();
67                     playing = PLAYING;
68
69                     btnUkelele.setText(UKELELE_PLAYING);
70
71                     break;
72                 case PLAYING:
73                     mpUkelele.pause();
74                     playing = NOT_PLAYING;
75
76                     btnUkelele.setText(UKELELE_PAUSED);
77
78                     break;
79             } // end switch
80
81         } // end onClick handler
82     };
83
84     // click listener for btnDrums button
85
86     Button.OnClickListener btnDrumsListener = new Button.OnClickListener()
87
88     {
89         @Override
90         public void onClick(View v)
91         {
92             // determine mpDrums's action based on the playing state
93
94             switch (playing)
95             {
96                 case NOT_PLAYING:
97                     mpDrums.start();
```

We then use these named constants with calls to the btnUkelele's setText method as shown here

MainActivity > btnUkeleleListener > new OnClickListener > onClick()

TODO Terminal Build Logcat Profiler Run Event Log

Gradle build finished in 5 s 18 ms (3 minutes ago) 76:56 CRLF ÷ UTF-8 ÷ 4 spaces ÷

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project

Resource Manager

Gradle Scripts

2:Structure

3:Favorites

Build Variants

Layout Captures

4:Layout Explorer

5:Tool Windows

6:Logcat

7:Run

8:TODO

9:Terminal

10:Build

11:Event Log

12:Device File Explorer

13:Main Activity

14:activity_main.xml

15:activity_main.xml

16:MainActivity.java

17:SplashActivity.java

18:app

19:manifests

20:java

21:edu.udayton.alohamusic

22:MainActivity

23:SplashActivity

24:edu.udayton.alohamusic (androidTest)

25:edu.udayton.alohamusic (test)

26:generatedJava

27:res

28:Gradle Scripts

29:Imported

30:playing = NOT_PLAYING;

31:btnUkelele.setText(UKELELE_PAUSED);

32:break;

33:} // end switch

34:} // end onClick handler

35:};

36:// click listener for btnDrums button

37:

38:Button.OnClickListener btnDrumsListener = new Button.OnClickListener()

39:{

40:@Override

41:public void onClick(View v)

42:{

43>// determine mpDrums's action based on the playing state

44:

45:switch (playing)

46:{

47:case NOT_PLAYING:

48:mpDrums.start();

49:playing = PLAYING;

50:

51:btnDrums.setText(DRUMS_PLAYING);

52:

53:break;

54:case PLAYING:

55:mpDrums.pause();

56:playing = NOT_PLAYING;

57:

58:btnDrums.setText(DRUMS_PAUSED);

59:

60:break;

61:} // end switch

62:};

63:} // end onClick handler

64:};

65:} // end MainActivity class

66:}

67:}

68:}

69:}

70:}

71:}

72:}

73:}

74:}

75:}

76:}

77:}

78:}

79:}

80:}

81:}

82:}

83:}

84:}

85:}

86:}

87:}

88:}

89:}

90:}

91:}

92:}

93:}

94:}

95:}

96:}

97:}

98:}

99:}

100:}

101:}

102:}

103:}

104:}

105:}

106:}

107:}

108:}

109:}

110:}

111:}

112:}

113:}

114:}

115:}

116:}

We use these named constants with calls to the btnDrums's setText method as shown here

MainActivity > btnDrumsListener > new OnClickListener > onClick()

Gradle build finished in 5 s 18 ms (4 minutes ago)

107:52 CRLF ÷ UTF-8 ÷ 4 spaces ÷

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

Re-build the project

Make Project (Ctrl+F9)

AlohaMusic alohamusic MainActivity

1:Project

Resource Manager

Gradle Scripts

2:Structure

Favorites

Build Variants

Layout Captures

TODO Terminal Build Logcat Profiler Run

MainActivity > btnDrumsListener > new OnClickListener > onClick()

Gradle build finished in 5 s 18 ms (4 minutes ago) 107:52 CRLF UTF-8 4 spaces

```
73 import androidx.appcompat.app.AppCompatActivity;
74     playing = NOT_PLAYING;
75
76     btnUkelele.setText(UKELELE_PAUSED);
77
78     break;
79 } // end switch
80
81 } // end onClick handler
82
83 // click listener for btnDrums button
84
85 Button.OnClickListener btnDrumsListener = new Button.OnClickListener()
86 {
87
88     @Override
89     public void onClick(View v)
90     {
91
92         // determine mpDrums's action based on the playing state
93
94         switch (playing)
95         {
96             case NOT_PLAYING:
97                 mpDrums.start();
98                 playing = PLAYING;
99
100                btnDrums.setText(DRUMS_PLAYING);
101
102                break;
103            case PLAYING:
104                mpDrums.pause();
105                playing = NOT_PLAYING;
106
107                btnDrums.setText(DRUMS_PAUSED);
108
109                break;
110        } // end switch
111
112    } // end onClick handler
113
114 }
115
116 } // end MainActivity class
```

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

Stop the running app in the emulator

Stop 'app' (Ctrl+F2)

AlohaMusic > app > src > main > java > edu > MainActivity.java

activity_main.xml > MainActivity.java > SplashActivity.java

1:Project

Resource Manager

Gradle Scripts

2:Structure

3:Favorites

Build Variants

Layout Captures

MainActivity.java

```
73 import androidx.appcompat.app.AppCompatActivity;
74 import android.os.Bundle;
75 import android.view.View;
76 import android.widget.Button;
77 import android.widget.TextView;
78 import android.widget.Toast;
79 import java.util.Random;
80
81 public class MainActivity extends AppCompatActivity {
82     private Random mpDrums;
83     private Random mpUkelele;
84     private TextView btnUkelele;
85     private TextView btnDrums;
86     private Button.OnClickListener btnDrumsListener = new Button.OnClickListener()
87     {
88
89         @Override
90         public void onClick(View v)
91         {
92             // determine mpDrums's action based on the playing state
93
94             switch (playing)
95             {
96                 case NOT_PLAYING:
97                     mpDrums.start();
98                     playing = PLAYING;
99
100                    btnDrums.setText(DRUMS_PLAYING);
101
102                    break;
103
104                 case PLAYING:
105                     mpDrums.pause();
106                     playing = NOT_PLAYING;
107
108                     btnDrums.setText(DRUMS_PAUSED);
109
110                    break;
111             } // end switch
112
113         } // end onClick handler
114
115     } // end MainActivity class
116 }
```

MainActivity > btnDrumsListener > new OnClickListener > onClick()

TODO Terminal Build Logcat Profiler Run Event Log

Stop process

107:52 CRLF UTF-8 4 spaces

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

Re-run the app ...

AlohaMusic > app > src > m n Run 'app' (Shift+F10)

MainActivity

Android

1:Project

app

manifests

java

edu.udayton.alohamusic

MainActivity

SplashActivity

edu.udayton.alohamusic (androidTest)

edu.udayton.alohamusic (test)

generatedJava

res

Gradle Scripts

Resource Manager

2:Structure

Favorites

Build Variants

Layout Captures

Device File Explorer

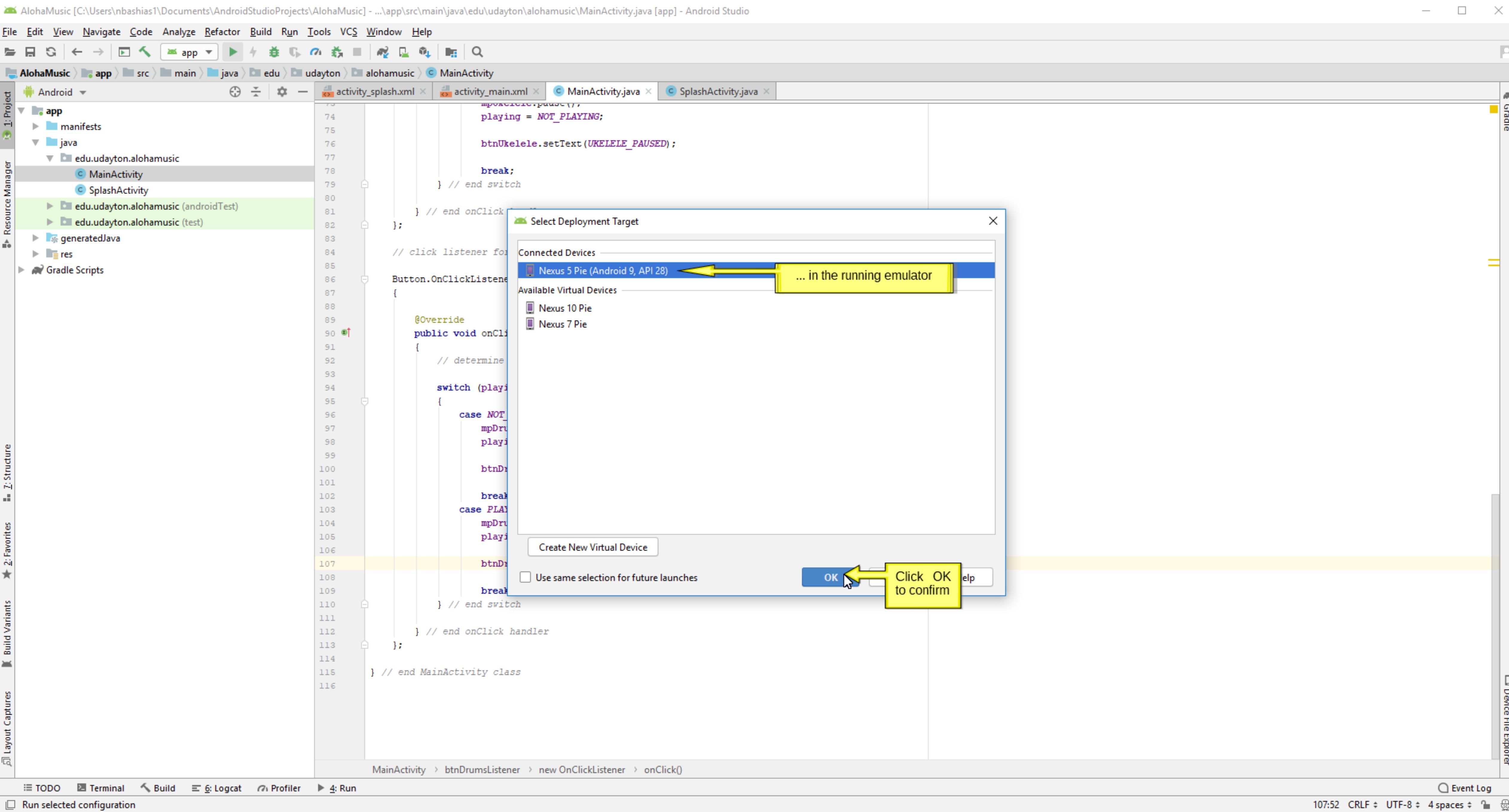
```
73 import androidx.appcompat.app.AppCompatActivity;
74     playing = NOT_PLAYING;
75
76     btnUkelele.setText(UKELELE_PAUSED);
77
78         break;
79     } // end switch
80
81 } // end onClick handler
82
83
84 // click listener for btnDrums button
85
86 Button.OnClickListener btnDrumsListener = new Button.OnClickListener()
87 {
88
89     @Override
90     public void onClick(View v)
91     {
92
93         // determine mpDrums's action based on the playing state
94
95         switch (playing)
96         {
97             case NOT_PLAYING:
98                 mpDrums.start();
99                 playing = PLAYING;
100
101                 btnDrums.setText(DRUMS_PLAYING);
102
103                 break;
104             case PLAYING:
105                 mpDrums.pause();
106                 playing = NOT_PLAYING;
107
108                 btnDrums.setText(DRUMS_PAUSED);
109
110                 break;
111         } // end switch
112
113     } // end onClick handler
114
115 } // end MainActivity class
116
```

MainActivity > btnDrumsListener > new OnClickListener > onClick()

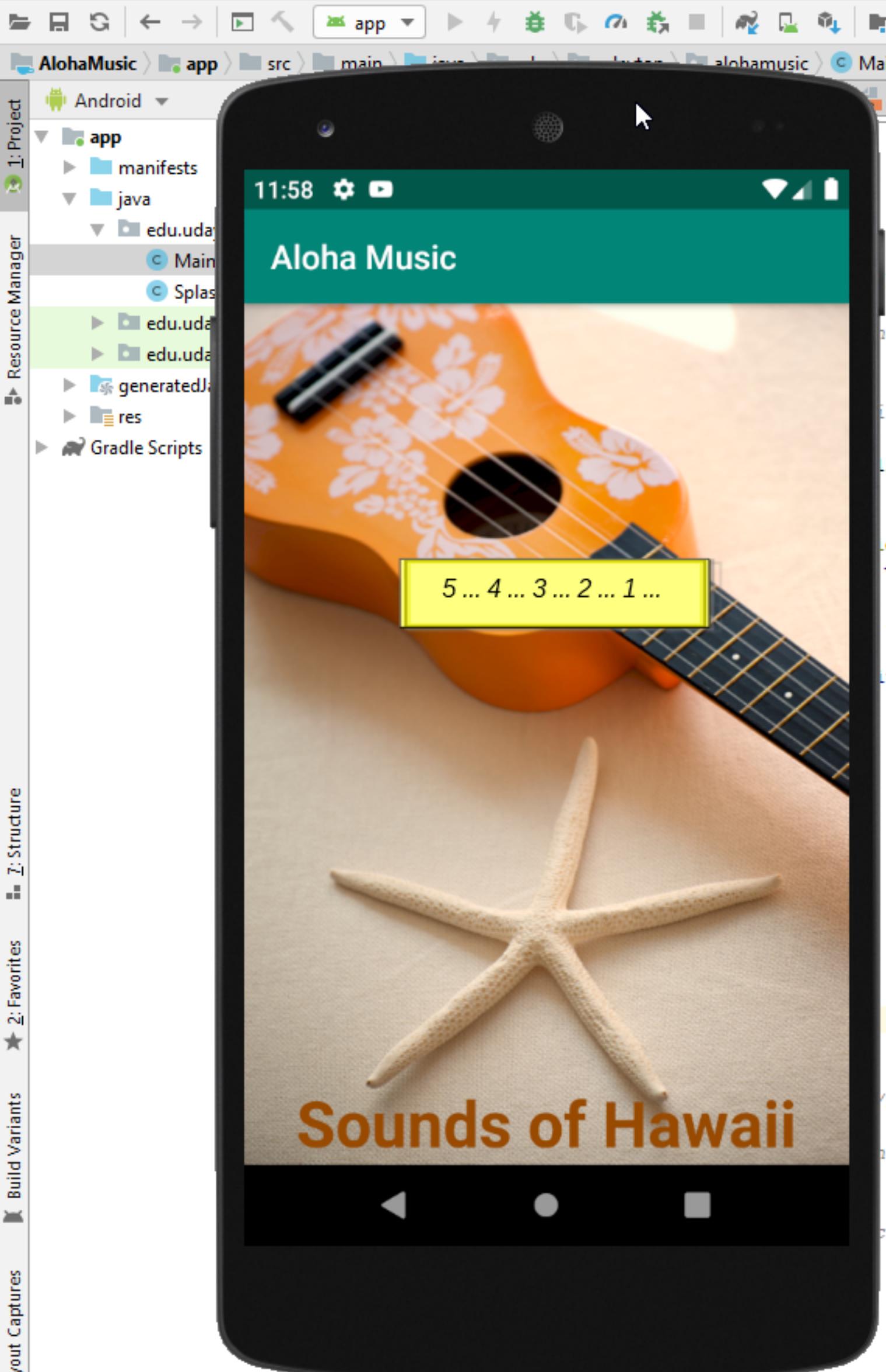
TODO Terminal Build Logcat Profiler Run

Run selected configuration

107:52 CRLF UTF-8 4 spaces



File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help



```
activity_main.xml x MainActivity.java x SplashActivity.java x
```

```
    if (playing == NOT_PLAYING) {  
        mpUkulele.start();  
        playing = PLAYING;  
    } else if (playing == PLAYING) {  
        mpUkulele.pause();  
        playing = NOT_PLAYING;  
    }  
    ukele.setText(UKELELE_PAUSED);  
}  
  
private void handleDrumsClick() {  
    if (playing == NOT_PLAYING) {  
        mpDrums.start();  
        playing = PLAYING;  
    } else if (playing == PLAYING) {  
        mpDrums.pause();  
        playing = NOT_PLAYING;  
    }  
    drums.setText(DRUMS_PAUSED);  
}  
  
private void handleUkuleleClick() {  
    if (playing == NOT_PLAYING) {  
        mpUkulele.start();  
        playing = PLAYING;  
    } else if (playing == PLAYING) {  
        mpUkulele.pause();  
        playing = NOT_PLAYING;  
    }  
    ukele.setText(UKELELE_PAUSED);  
}
```

MainActivity > btnDrumsListener > new OnClickListener > onClick()

TODO Terminal Build Logcat Profiler Run

Gradle build finished in 1 s 109 ms (moments ago)

107:52 CRLF ÷ UTF-8 ÷ 4 spaces ÷

Event Log

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help



MainActivity.java

```
private Handler handler;
private MediaPlayer mpDrums;
private MediaPlayer mpUkulele;
private String playingState = NOT_PLAYING;
private TextView ukelele;
private TextView drums;
private Button btnDrums;
private Button btnUkulele;
```

Method: onClick()

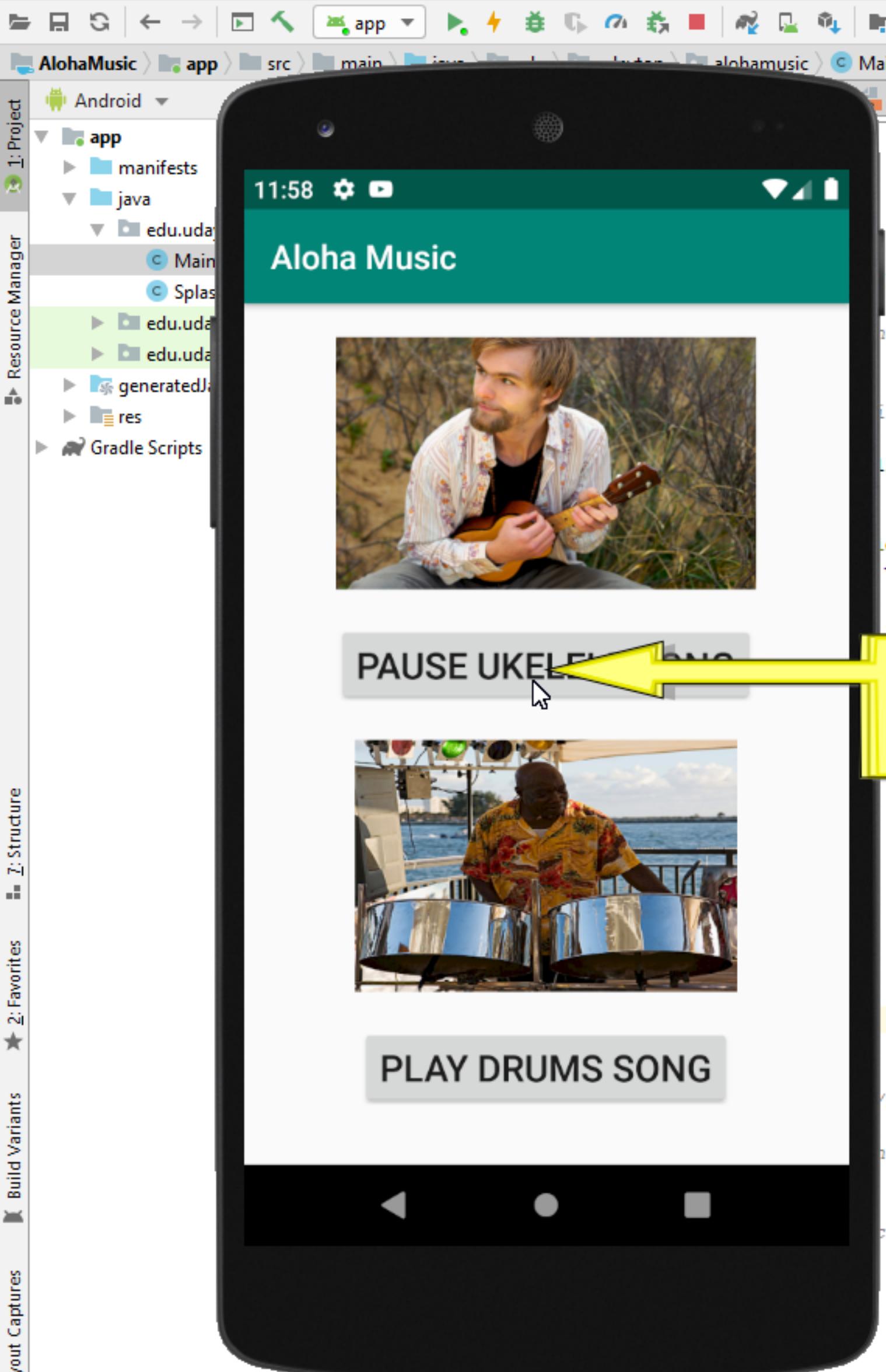
```
    @Override
    public void onClick(View v) {
        switch (v.getId()) {
            case R.id.btnDrums:
                if (playingState == NOT_PLAYING) {
                    mpDrums.start();
                    playingState = PLAYING;
                    drums.setText(DRUMS_PLAYING);
                } else {
                    mpDrums.pause();
                    playingState = NOT_PLAYING;
                    drums.setText(DRUMS_PAUSED);
                }
                break;
            case R.id.btnUkulele:
                if (playingState == NOT_PLAYING) {
                    mpUkulele.start();
                    playingState = PLAYING;
                    ukelele.setText(UKELELE_PLAYING);
                } else {
                    mpUkulele.pause();
                    playingState = NOT_PLAYING;
                    ukelele.setText(UKELELE_PAUSED);
                }
                break;
        }
    }
}
```

TODO Terminal Build Logcat Profiler Run

Gradle build finished in 1 s 109 ms (moments ago)

107:52 CRLF UTF-8 4 spaces

Event Log



```
activity_main.xml x MainActivity.java x SplashActivity.java x
```

```
    state = NOT_PLAYING;
```

```
    ukelele.setText(UKELELE_PAUSED);
```

```
    ;
```

```
    handler
```

```
    i
```

```
    mpDrums button
```

```
    r btnDrumsListener = new Button.OnClickListener()
```

```
        ck(View v)
```

```
        mpDrums's action based on the playing state
```

While this song is playing, the button indicates that we can pause it.

Click the button again to pause the song.

```
    state = PLAYING;
```

```
    ...
```

```
    uums.setText(DRUMS_PLAYING);
```

```
    break;
```

```
case PLAYING:
```

```
    mpDrums.pause();
```

```
    playing = NOT_PLAYING;
```

```
    btnDrums.setText(DRUMS_PAUSED);
```

```
    break;
```

```
// end switch
```

```
    and onClick handler
```

```
activity class
```

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help



MainActivity.java

```
xml x MainActivity.java x SplashActivity.java x
...
    ng = NOT_PLAYING;

    elele.setText(UKELELE_PAUSED);
    ;
    ch
    handler
    i
    btnDrums button
    r btnDrumsListener = new Button.OnClickListener()

    ck(View v)
        mpDrums's action based on the playing state
        ng)

        PLAYING:
        ms.start();
        ng = PLAYING;
        ...
        ums.setText(DRUMS_PLAYING);

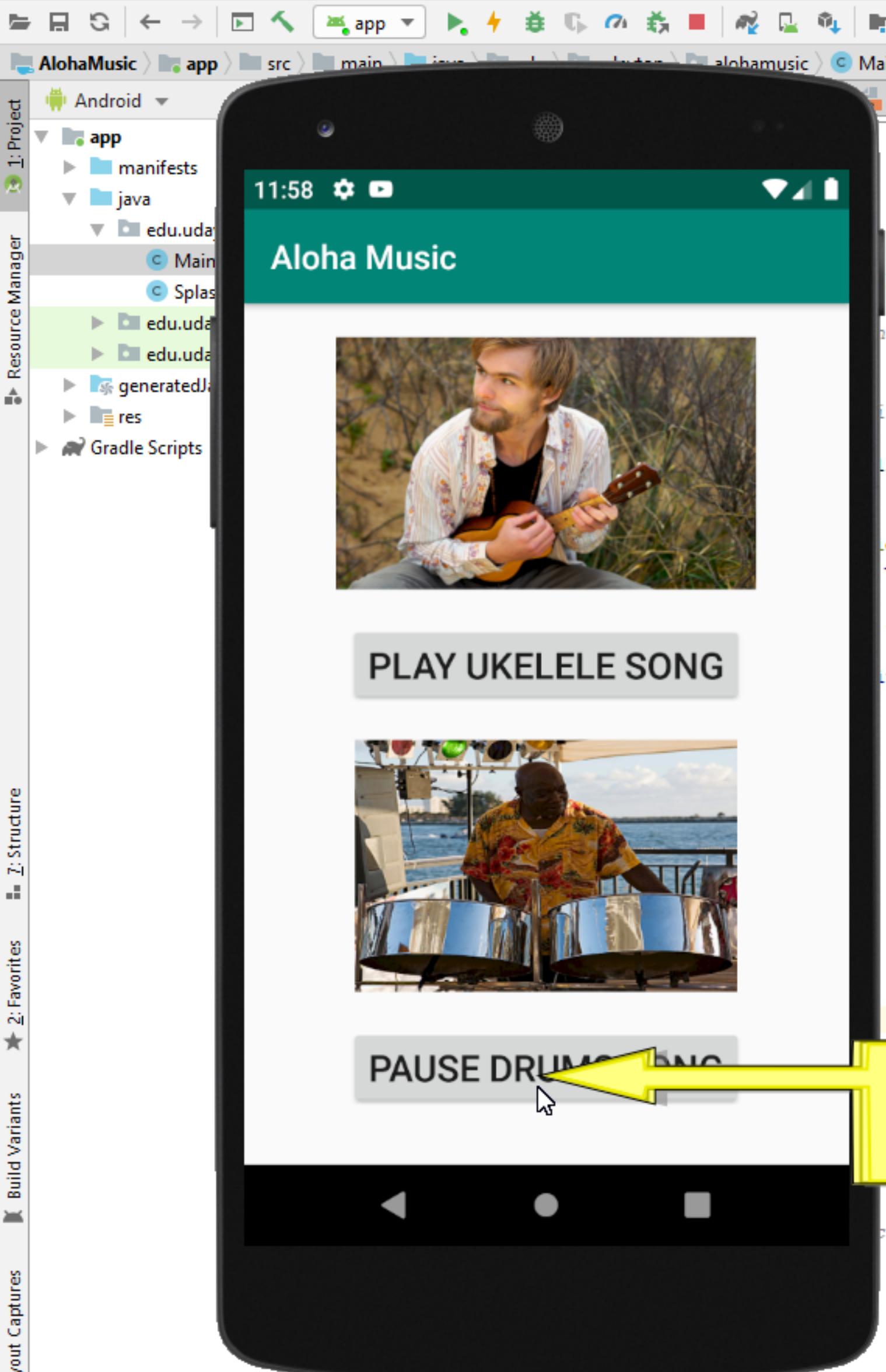
        break;
    case PLAYING:
        mpDrums.pause();
        playing = NOT_PLAYING;

        btnDrums.setText(DRUMS_PAUSED);
```

MainActivity > btnDrumsListener > new OnClickListener > onClick()

TODO Terminal Build Logcat Profiler Run

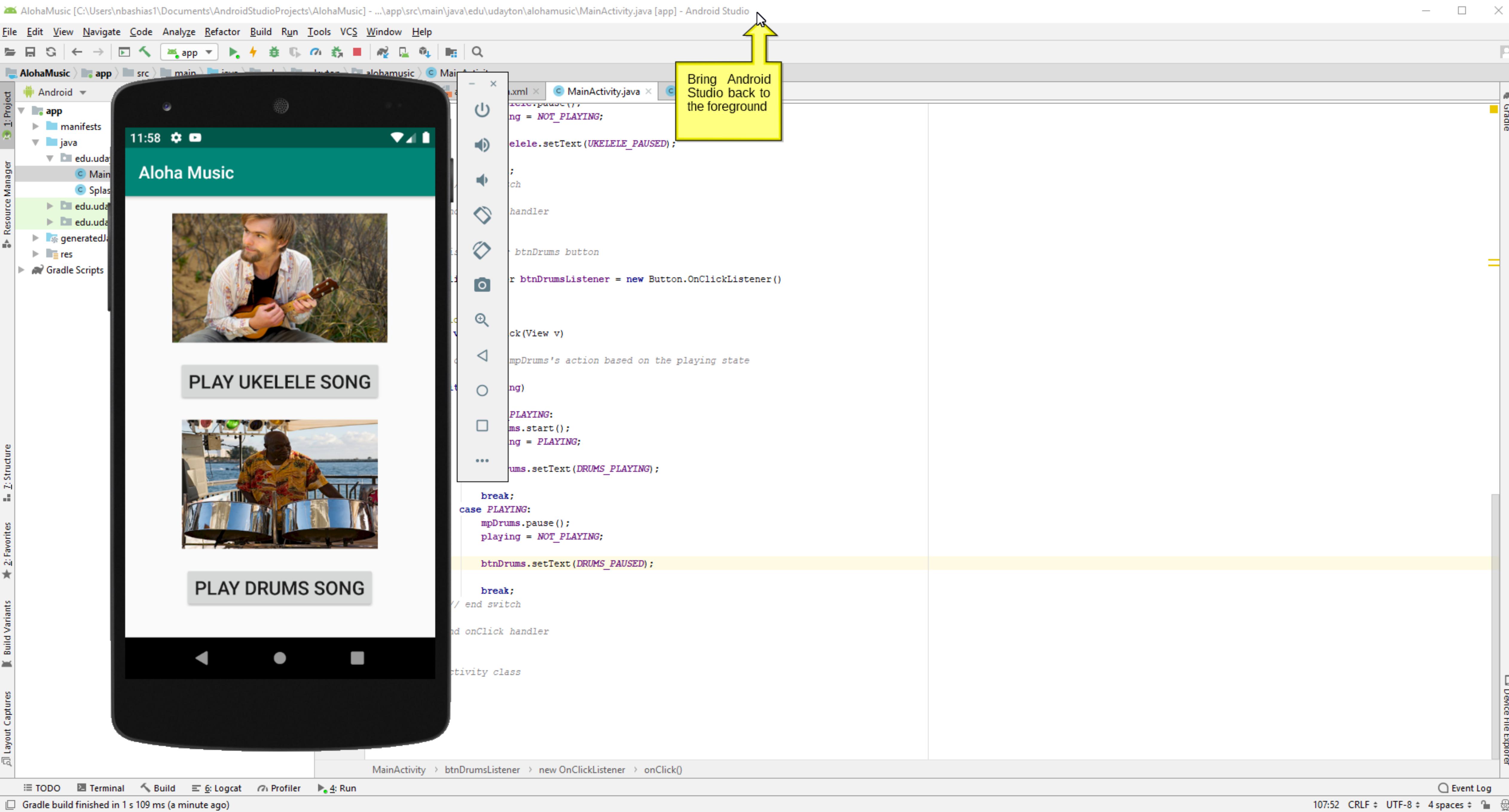
Event Log



```
activity class
```

```
    case NOT_PLAYING:  
        mpUkelele.start();  
        playing = PLAYING;  
        ukelele.setText(UKELELE_PLAYING);  
    break;  
    case PLAYING:  
        mpUkelele.pause();  
        playing = NOT_PLAYING;  
        ukelele.setText(UKELELE_PAUSED);  
    break;
```

MainActivity > btnDrumsListener > new OnClickListener > onClick()



AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project 1:Resource Manager 1:Gradle

Android

activity_splash.xml activity_main.xml MainActivity.java SplashActivity.java

app manifests java edu.udayton.alohamusic MainActivity SplashActivity edu.udayton.alohamusic (androidTest) edu.udayton.alohamusic (test) generatedJava res Gradle Scripts

```
1 package edu.udayton.alohamusic;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     private Button btnUkelele, btnDrums;
8
9     private MediaPlayer mpUkelele, mpDrums;
10
11    private int playing;
12
13    private static final int NOT_PLAYING = 0, PLAYING = 1;
14
15    private static final String UKELELE_PLAYING = "Pause Ukelele Song",
16                            UKELELE_PAUSED = "Play Ukelele Song",
17                            DRUMS_PLAYING = "Pause Drums Song",
18                            DRUMS_PAUSED = "Play Drums Song";
19
20
21
22
23
24    @Override
25    protected void onCreate(Bundle savedInstanceState) {
26        super.onCreate(savedInstanceState);
27        setContentView(R.layout.activity_main);
28
29        // set UI component references
30
31        btnUkelele = (Button)findViewById(R.id.btnUkelele);
32        btnDrums = (Button)findViewById(R.id.btnDrums);
33
34        // set click listeners for UI buttons
35
36        btnUkelele.setOnClickListener(btnUkeleleListener);
37        btnDrums.setOnClickListener(btnDrumsListener);
38
39        // create the MediaPlayers
40
41        mpUkelele = new MediaPlayer();
42        mpUkelele = MediaPlayer.create(this, R.raw.ukulele);
43
44        mpDrums = new MediaPlayer();
45        mpDrums = MediaPlayer.create(this, R.raw.drums);
46
47        // initialize the playing state to not playing
48
49        playing = NOT_PLAYING;
50
51    } // end onCreate method
52
```

MainActivity > btnDrumsListener > new OnClickListener > onClick()

OK, one more improvement.

While either song is playing, both buttons are visible (and accessible).
This makes it possible to play both songs at once (not good).

As shown here, and as described on pages 250-251 of *Android Boot Camp*, we can avoid this while a song is playing by hiding the button of the other song.

Device File Explorer

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

Android

1:Project

Resource Manager

Gradle

2:Structure

2:Favorites

Build Variants

Layout Captures

MainActivity.java

SplashActivity.java

```
public void onClick(View v)
{
    // determine mpUkelele's action based on the playing state

    switch (playing)
    {
        case NOT_PLAYING:
            mpUkelele.start();
            playing = PLAYING;

            btnUkelele.setText(UKELELE_PLAYING);

        case PLAYING:
            btnDrums.setVisibility(0);
            break;
        case PAUSED:
            mpDrums.pause();
            playing = PAUSED;

            btnDrums.setText(DRUMS_PAUSED);
    } // end switch

} // end onClick handler
};

// click listener for btnDrums button

Button.OnClickListener btnDrumsListener = new Button.OnClickListener()
{
    @Override
    public void onClick(View v)
    {
        // determine mpDrums's action based on the playing state

        switch (playing)
        {
            case NOT_PLAYING:
                mpDrums.start();
                playing = PLAYING;

                btnDrums.setText(DRUMS_PLAYING);

            case PLAYING:
                mpDrums.pause();
                playing = PAUSED;

                btnDrums.setText(DRUMS_PAUSED);
        } // end switch
    }
};
```

activity_splash.xml activity_main.xml

59 ↑ 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 ↑ 93 94 95 96 97 98 99 100 101 102 103 104 105 106

MainActivity > btnUkeleleListener > new OnClickListener > onClick()

1. Add this call to btnDrums's setVisibility method in btnUkelele's onClick handler here

2. Then, place the I-beam cursor in the method call's argument list, PAUSED); type 'View.INVISIBLE' ...

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project

Resource Manager

Gradle Scripts

2:Structure

2:Favorites

Build Variants

Layout Captures

MainActivity.java

```
public void onClick(View v)
{
    // determine mpUkelele's action based on the playing state

    switch (playing)
    {
        case NOT_PLAYING:
            mpUkelele.start();
            playing = PLAYING;

            btnUkelele.setText(UKELELE_PLAYING);

            btnDrums.setVisibility(View.INVISIBLE);
            break;
        case PLAYING:
            mpUkelele.pause();
            playing = NOT_PLAYING;

            btnUkelele.setText(UKELELE_PAUSED);

            break;
    } // end switch
} // end onClick handler
};

// click listener for btnDrums button

Button.OnClickListener btnDrumsListener = new Button.OnClickListener()
{

    @Override
    public void onClick(View v)
    {
        // determine mpDrums's action based on the playing state

        switch (playing)
        {
            case NOT_PLAYING:
                mpDrums.start();
                playing = PLAYING;

                btnDrums.setText(DRUMS_PLAYING);

                break;
            case PLAYING:
                mpDrums.pause();
                playing = NOT_PLAYING;

                btnDrums.setText(DRUMS_PAUSED);
        }
    }
}
```

activity_main.xml

activity_main.xml

MainActivity.java

SplashActivity.java

... and select this INVISIBLE named constant from the code completion menu

INVISIBLE (= 0x00000004)

IMPORTANT_FOR_ACCESSIBILITY_NO (= 0x00000002)

IMPORTANT_FOR_ACCESSIBILITY_NO_HIDE_DESCENDANTS

IMPORTANT_FOR_AUTOFILL_NO (= 0x2)

IMPORTANT_FOR_AUTOFILL_NO_EXCLUDE_DESCENDANTS (= 0x8)

AUTOFILL_FLAG_INCLUDE_NOT_IMPORTANT_VIEWS (= 0x1)

LAYOUT_DIRECTION_INHERIT (= LayoutDirection.INHERIT)

SCROLL_INDICATOR_BOTTOM (= PFLAG3_SCROLL_INDICATO ...)

SCROLL_INDICATOR_END (= PFLAG3_SCROLL_INDICATO ...)

SCROLL_INDICATOR_LEFT (= PFLAG3_SCROLL_INDICATO ...)

SCROLL_INDICATOR_RIGHT (= PFLAG3_SCROLL_INDICATO ...)

SCROLL_INDICATOR_TOP (= PFLAG3_SCROLL_INDICATO ...)

Device File Explorer

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project 2:Gradle

Resource Manager

Gradle Scripts

2:Structure

2:Favorites

Build Variants

Layout Captures

MainActivity.java

```
public void onClick(View v)
{
    // determine mpUkelele's action based on the playing state

    switch (playing)
    {
        case NOT_PLAYING:
            mpUkelele.start();
            playing = PLAYING;

            btnUkelele.setText(UKELELE_PLAYING);

            btnDrums.setVisibility(View.INVISIBLE);

            break;
        case PLAYING:
            mpUkelele.pause();
            playing = NOT_PLAYING;

            btnUkelele.setText(UKELELE_PAUSED);

            btnDrums.setVisibility(); Add this second call to  
btnDrums's setVisibility method in  
btnUkelele's onClick handler here
            break;
    } // end switch
} // end onClick

// click listener
Button.OnClickListener btnDrumsListener = new Button.OnClickListener()
{
    @Override
    public void onClick(View v)
    {
        // determine mpDrums's action based on the playing state

        switch (playing)
        {
            case NOT_PLAYING:
                mpDrums.start();
                playing = PLAYING;

                btnDrums.setText(DRUMS_PLAYING);

                break;
        }
    }
}
```

MainActivity > btnUkeleleListener > new OnClickListener > onClick()

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project

Resource Manager

Gradle

Activity_Splash.xml Activity_Main.xml MainActivity.java SplashActivity.java

Android

app manifests java edu.udayton.alohamusic MainActivity SplashActivity edu.udayton.alohamusic (androidTest) edu.udayton.alohamusic (test) generatedJava res Gradle Scripts

2:Structure

3:Favorites

Build Variants

Layout Captures

MainActivity

```
public void onClick(View v)
{
    // determine mpUkelele's action based on the playing state

    switch (playing)
    {
        case NOT_PLAYING:
            mpUkelele.start();
            playing = PLAYING;

            btnUkelele.setText(UKELELE_PLAYING);

            btnDrums.setVisibility(View.INVISIBLE);

            break;
        case PLAYING:
            mpUkelele.pause();
            playing = NOT_PLAYING;

            btnUkelele.setText(UKELELE_PAUSED);

            btnDrums.setVisibility(View.VISIBLE);
            break;
    } // end switch
} // end onClick handler
};

// click listener for btnDrums button

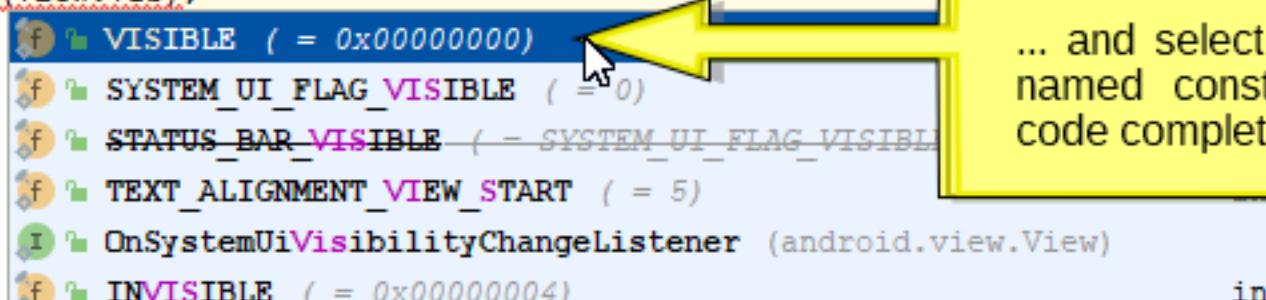
Button.OnClickListener btnDrumsListener = new Button.OnClickListener()
{
    @Override
    public void onClick(View v)
    {
        // determine mpDrums's action based on the playing state

        switch (playing)
        {
            case NOT_PLAYING:
                mpDrums.start();
                playing = PLAYING;

                btnDrums.setText(DRUMS_PLAYING);

                break;
        }
    }
};
```

... and select this VISIBLE named constant from the code completion menu

int 

Device File Explorer

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity

1:Project 2:Structure 3:Favorites 4:Build Variants 5:Layout Captures 6:Layout Editor 7:Resource Manager 8:Gradle Scripts

```
77
78     btnUkelele.setText(UKELELE_PAUSED);
79
80     btnDrums.setVisibility(View.VISIBLE);
81
82     break;
83 } // end switch
84
85 } // end onClick handler
86
87
88 // click listener for btnDrums button
89
90 Button.OnClickListener btnDrumsListener = new Button.OnClickListener()
91 {
92
93     @Override
94     public void onClick(View v)
95     {
96         // determine mpDrums's action based on the playing state
97
98         switch (playing)
99         {
100             case NOT_PLAYING:
101                 mpDrums.start();
102                 playing = PLAYING;
103
104                 btnDrums.setText(DRUMS_PLAYING);
105
106                 btnUkelele.setVisibility(View.INVISIBLE);
107
108                 break;
109             case PLAYING:
110                 mpDrums.pause();
111                 playing = NOT_PLAYING;
112
113                 btnDrums.setText(DRUMS_PAUSED);
114
115                 btnUkelele.setVisibility(View.VISIBLE);
116
117                 break;
118         } // end switch
119
120     } // end onClick handler
121
122 }
123 } // end MainActivity class
```

In the same way, add these two calls to btnUkelele's setVisibility method in btnDrums's click handler

MainActivity > btnDrumsListener > new OnClickListener > onClick()

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

Re-build the project

Make Project (Ctrl+F9)

AlohaMusic alohamusic MainActivity

1:Project

Resource Manager

Gradle Scripts

2:Structure

2:Favorites

Build Variants

Layout Captures

MainActivity.java

```
77
78     btnUkelele.setText(UKELELE_PAUSED);
79
80     btnDrums.setVisibility(View.VISIBLE);
81
82     break;
83 } // end switch
84
85 } // end onClick handler
86
87 // click listener for btnDrums button
88
89 Button.OnClickListener btnDrumsListener = new Button.OnClickListener()
90 {
91
92     @Override
93     public void onClick(View v)
94     {
95
96         // determine mpDrums's action based on the playing state
97
98         switch (playing)
99         {
100             case NOT_PLAYING:
101                 mpDrums.start();
102                 playing = PLAYING;
103
104                 btnDrums.setText(DRUMS_PLAYING);
105
106                 btnUkelele.setVisibility(View.INVISIBLE);
107
108                 break;
109             case PLAYING:
110                 mpDrums.pause();
111                 playing = NOT_PLAYING;
112
113                 btnDrums.setText(DRUMS_PAUSED);
114
115                 btnUkelele.setVisibility(View.VISIBLE);
116
117                 break;
118         } // end switch
119
120     } // end onClick handler
121
122 }
123 // end MainActivity class
124
```

MainActivity > btnDrumsListener > new OnClickListener > onClick()

TODO Terminal Build Logcat Profiler Run Event Log

Gradle build finished in 1 s 109 ms (4 minutes ago) 115:60 CRLF UTF-8 4 spaces

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

Stop the running app in the emulator

Stop 'app' (Ctrl+F2)

AlohaMusic > app > src > main > java > edu > MainActivity.java

MainActivity.java

```
77     btnUkelele.setText(UKELELE_PAUSED);
78
79     btnDrums.setVisibility(View.VISIBLE);
80
81     break;
82 } // end switch
83
84 } // end onClick handler
85
86
87 // click listener for btnDrums button
88
89 Button.OnClickListener btnDrumsListener = new Button.OnClickListener()
90 {
91
92     @Override
93     public void onClick(View v)
94     {
95
96         // determine mpDrums's action based on the playing state
97
98         switch (playing)
99         {
100             case NOT_PLAYING:
101                 mpDrums.start();
102                 playing = PLAYING;
103
104                 btnDrums.setText(DRUMS_PLAYING);
105
106                 btnUkelele.setVisibility(View.INVISIBLE);
107
108                 break;
109             case PLAYING:
110                 mpDrums.pause();
111                 playing = NOT_PLAYING;
112
113                 btnDrums.setText(DRUMS_PAUSED);
114
115                 btnUkelele.setVisibility(View.VISIBLE);
116
117                 break;
118         } // end switch
119
120     } // end onClick handler
121
122
123 } // end MainActivity class
124
```

MainActivity > btnDrumsListener > new OnClickListener > onClick()

TODO Terminal Build Logcat Profiler Run Event Log

Stop process

115:60 CRLF UTF-8 4 spaces

AlohaMusic [C:\Users\nbashias1\Documents\AndroidStudioProjects\AlohaMusic] - ...app\src\main\java\edu\udayton\alohamusic\MainActivity.java [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

Re-run the app ...

AlohaMusic > app > src > m n Run 'app' (Shift+F10)

1:Project

Android

app

- manifests
- java
 - edu.udayton.alohamusic
 - MainActivity
 - SplashActivity
 - edu.udayton.alohamusic (androidTest)
 - edu.udayton.alohamusic (test)
- generatedJava
- res

Resource Manager

Gradle Scripts

2:Structure

3:Favorites

Build Variants

Layout Captures

MainActivity.java

```
77
78     btnUkelele.setText(UKELELE_PAUSED);
79
80     btnDrums.setVisibility(View.VISIBLE);
81
82     break;
83 } // end switch
84
85 } // end onClick handler
86
87 // click listener for btnDrums button
88
89 Button.OnClickListener btnDrumsListener = new Button.OnClickListener()
90 {
91
92     @Override
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104                 btnDrums.setText(DRUMS_PLAYING);
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106                 btnUkelele.setVisibility(View.INVISIBLE);
107
108                 break;
109             case PLAYING:
110                 mpDrums.pause();
111                 playing = NOT_PLAYING;
112
113                 btnDrums.setText(DRUMS_PAUSED);
114
115                 btnUkelele.setVisibility(View.VISIBLE);
116
117                 break;
118         } // end switch
119
120     } // end onClick handler
121
122 }
123 } // end MainActivity class
124
```

MainActivity > btnDrumsListener > new OnClickListener > onClick()

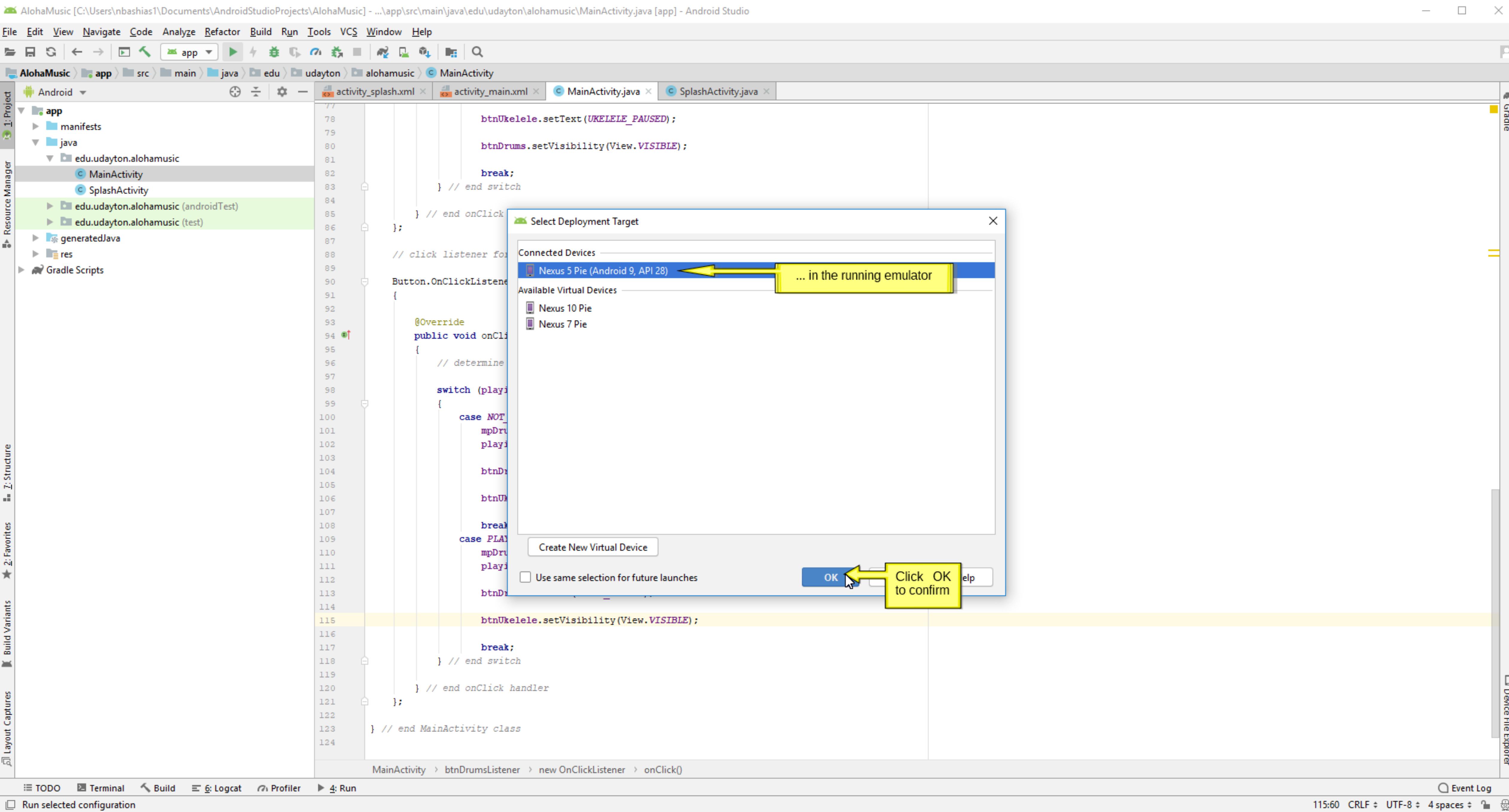
TODO Terminal Build Logcat Profiler Run

Run selected configuration

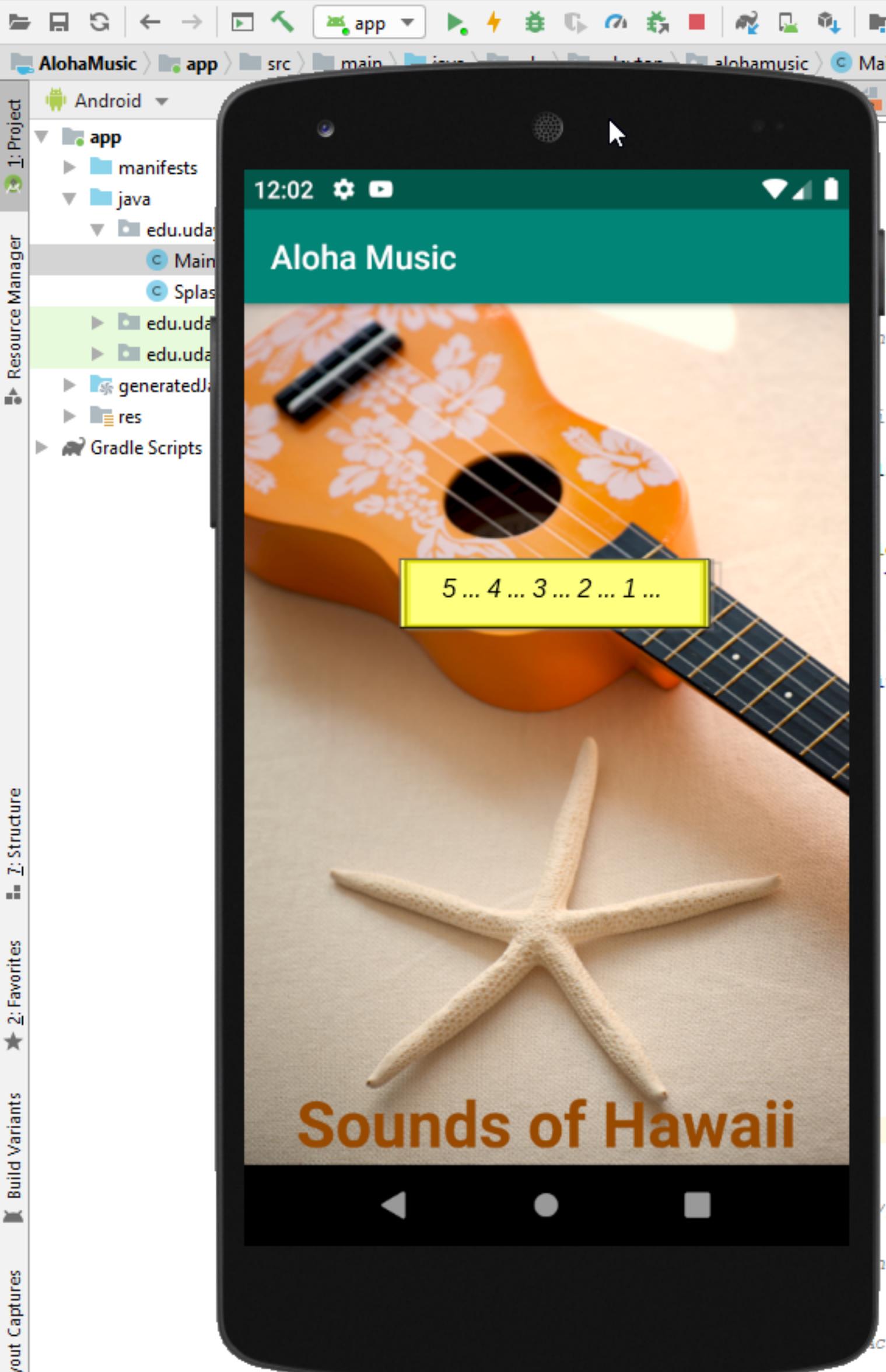
115:60 CRLF UTF-8 4 spaces

Device File Explorer

Event Log



File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help



```
AlohaMusic > app > src > main > java > edu > udayton > alohamusic > MainActivity.java
```

```
elele.setText(UKELELE_PAUSED);

ums.setVisibility(View.VISIBLE);

;

handler

btnDrums button

btnDrumsListener = new Button.OnClickListener()

    @Override
    public void onClick(View v)
        mpDrums's action based on the playing state
    }

    case PLAYING:
        mpDrums.start();
        playing = NOT_PLAYING;
    }

    ums.setText(DRUMS_PAUSED);

    btnUkelele.setVisibility(View.INVISIBLE);

    break;
case NOT_PLAYING:
    mpDrums.pause();
    playing = PLAYING;

    btnDrums.setText(DRUMS_PAUSED);

    btnUkelele.setVisibility(View.VISIBLE);

    break;
// end switch

    and onClick handler

activity class
```

MainActivity > btnDrumsListener > new OnClickListener > onClick()

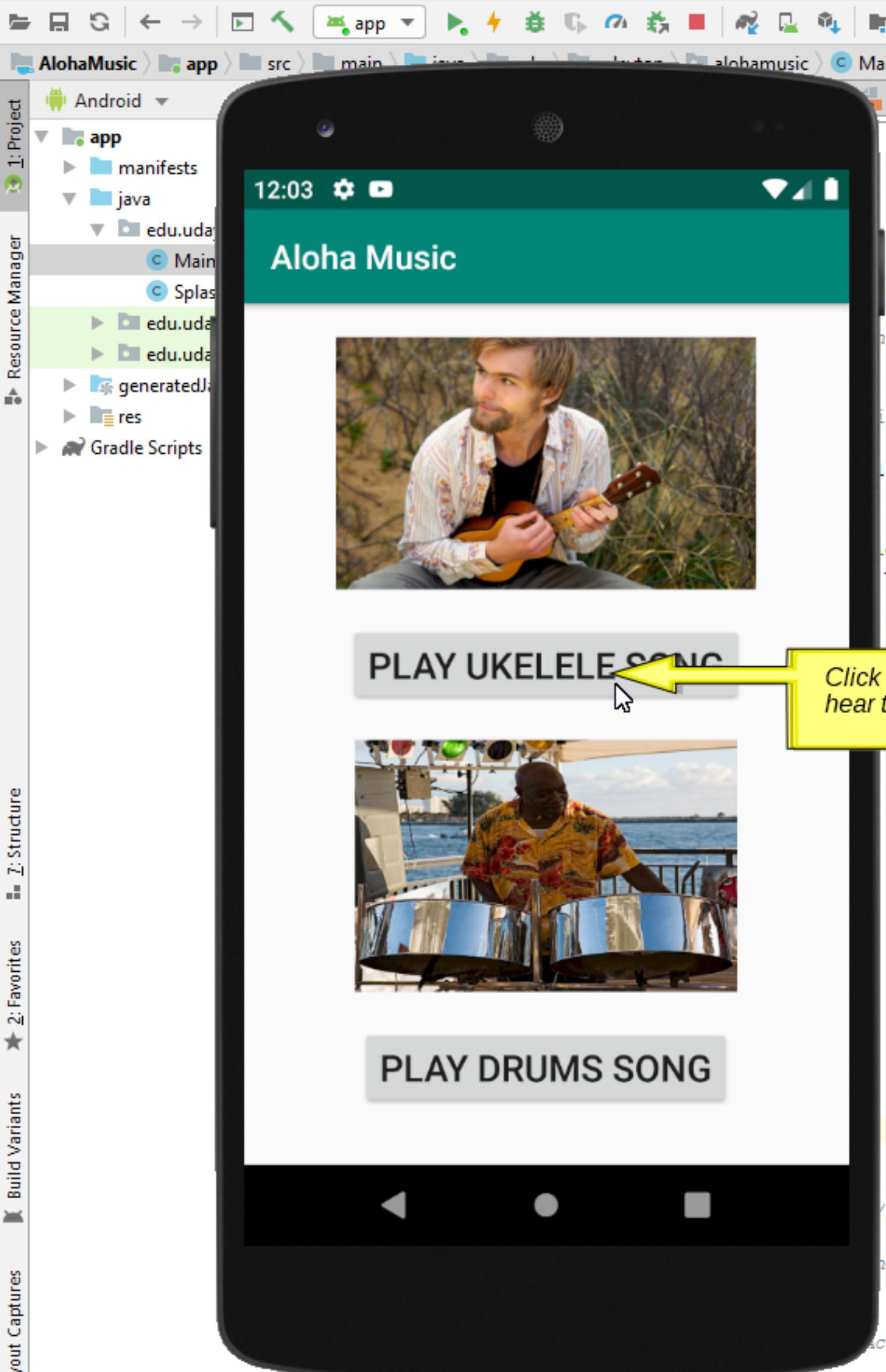
TODO Terminal Build Logcat Profiler Run

Event Log

Gradle build finished in 3 s 414 ms (moments ago)

115:60 CRLF UTF-8 4 spaces

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help



```
elele.setText(UKELELE_PAUSED);

ums.setVisibility(View.VISIBLE);
;

handler
    btnDrums button
    btnDrumsListener = new Button.OnClickListener()

    ck(View v)
        mpDrums's action based on the playing state

        ms.start();
        ng = PLAYING;
        ...
        ums.setText(DRUMS_PLAYING);

        btnUkelele.setVisibility(View.INVISIBLE);

        break;
case PLAYING:
    mpDrums.pause();
    playing = NOT_PLAYING;

    btnDrums.setText(DRUMS_PAUSED);

    btnUkelele.setVisibility(View.VISIBLE);

    break;
// end switch

    and onClick handler

activity class
```

MainActivity > btnDrumsListener > new OnClickListener > onClick()

TODO Terminal Build Logcat Profiler Run

Event Log

Gradle build finished in 3 s 414 ms (moments ago)

115:60 CRLF ÷ UTF-8 ÷ 4 spaces ÷



```
activity_main.xml x MainActivity.java x SplashActivity.java x
```

```
        ukelele.setText(UKELELE_PAUSED);

        ums.setVisibility(View.VISIBLE);
    }

    handler
    btnDrums button
    btnDrumsListener = new Button.OnClickListener()

    @Override
    public void onClick(View v)
        mpDrums's action based on th

        ms.start();
        playing = PLAYING;
        ...

        ums.setText(DRUMS_PLAYING);

        btnUkelele.setVisibility(View.INVISIBLE);

        break;
    case PLAYING:
        mpDrums.pause();
        playing = NOT_PLAYING;

        btnDrums.setText(DRUMS_PAUSED);

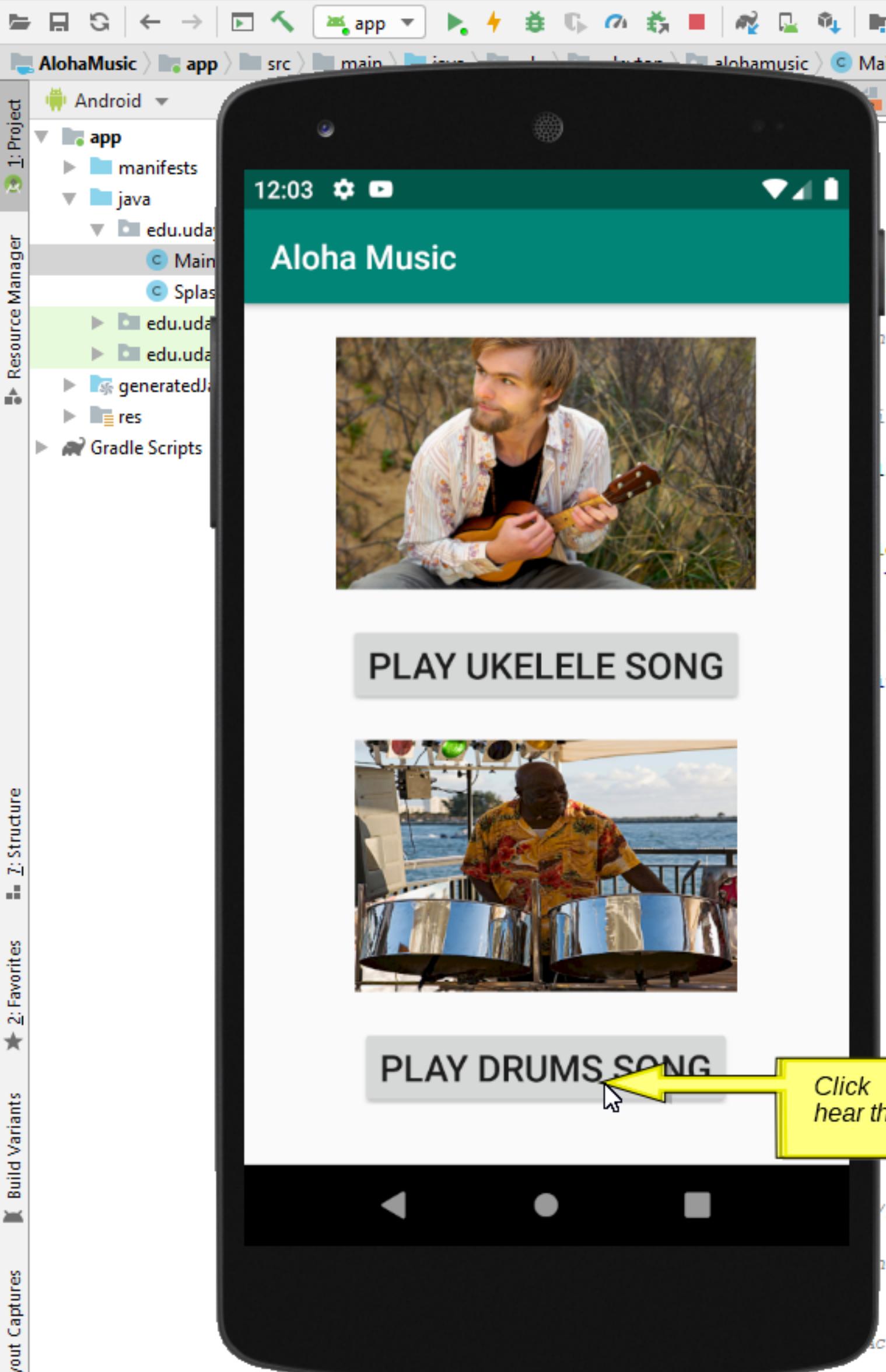
        btnUkelele.setVisibility(View.VISIBLE);

        break;
    // end switch

    end onClick handler

    activity class
```

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help



```
activity class
```

```
elele.setText(UKELELE_PAUSED);

ums.setVisibility(View.VISIBLE);
;

handler
    btnDrums button
    r btnDrumsListener = new Button.OnClickListener()

    ck(View v)
        mpDrums's action based on the playing state
        ng)

        PLAYING:
        ms.start();
        ng = PLAYING;
        ...

        ums.setText(DRUMS_PLAYING);

        btnUkelele.setVisibility(View.INVISIBLE);

        break;
case PLAYING:
    mpDrums.pause();
    playing = NOT_PLAYING;
    ...

    visibility(View.VISIBLE);

    break;
// end switch

    and onClick handler
}

activity class
```

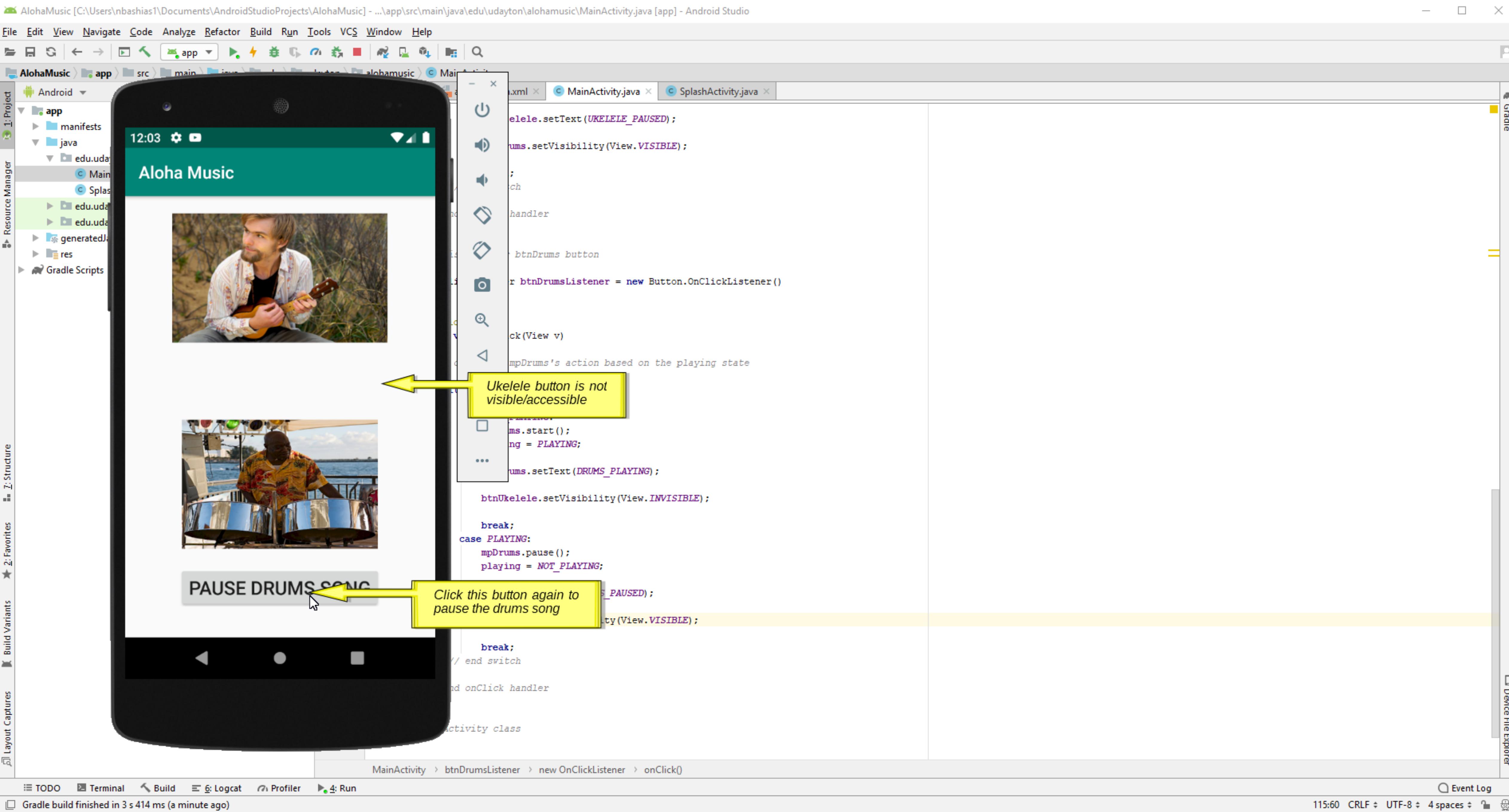
MainActivity > btnDrumsListener > new OnClickListener > onClick()

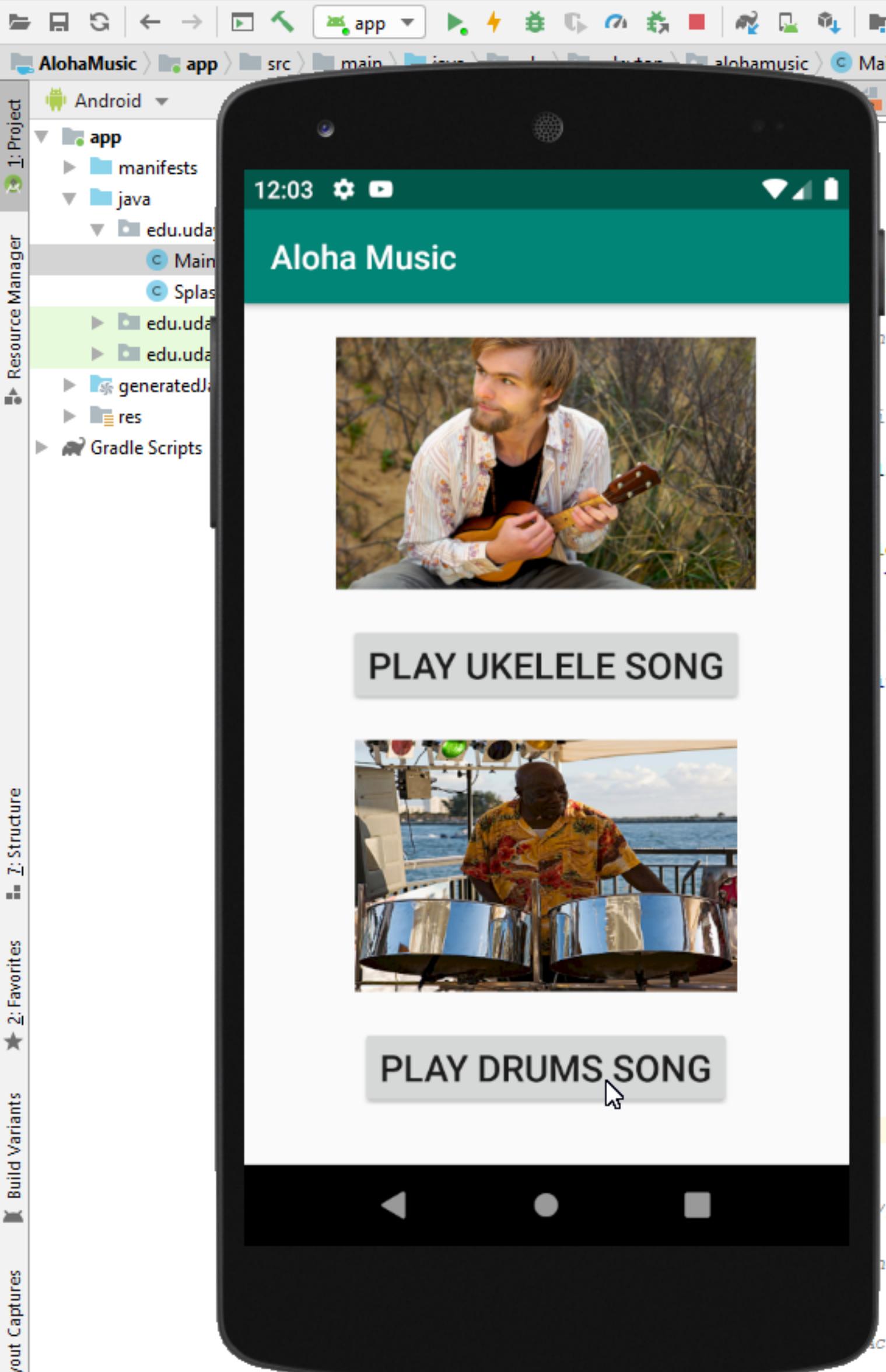
TODO Terminal Build Logcat Profiler Run

Gradle build finished in 3 s 414 ms (a minute ago)

115:60 CRLF ÷ UTF-8 ÷ 4 spaces ÷

Event Log





```
activity class
```

```
MainActivity > btnDrumsListener > new OnClickListener > onClick()
```

```
elele.setText(UKELELE_PAUSED);

ums.setVisibility(View.VISIBLE);

;

handler

btnDrums button

btnDrumsListener = new Button.OnClickListener()

click(View v)

mpDrums's action based on the playing state

ng)

PLAYING:
ms.start();
ng = PLAYING;

ums.setText(DRUMS_PLAYING);

btnUkelele.setVisibility(View.INVISIBLE);

break;
case PLAYING:
mpDrums.pause();
playing = NOT_PLAYING;

btnDrums.setText(DRUMS_PAUSED);

btnUkelele.setVisibility(View.VISIBLE);

break;
// end switch

and onClick handler
```

```
activity class
```

This concludes Lesson 8.