

## Tutorial 10 Android Audio & Video

Luthfie Fauzan Anshary

3SC6

### a. Audio

1. Pertama buat class bernama **ActivityAudio.java** lalu isikan seperti ini:

```
import android.content.res.AssetFileDescriptor;
import android.media.MediaPlayer;
import android.os.Bundle;
import android.view.View;
import android.widget.SeekBar;
import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;
import androidx.core.content.ContextCompat;

import com.google.android.material.floatingactionbutton.FloatingActionButton;

public class ActivityAudio extends AppCompatActivity implements Runnable {
    // Membuat objek MediaPlayer
    MediaPlayer mediaPlayer = new MediaPlayer();
    // Membuat objek SeekBar
    SeekBar seekBar;
    // Mengatur nilai variabel wasPlaying sebagai false
    boolean wasPlaying = false;
    // Membuat objek FloatingActionButton
    FloatingActionButton fab;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_audio);
        fab = findViewById(R.id.button);
        fab.setOnClickListener(new View.OnClickListener() {
            // Menjalankan fungsi playSong() ketika tombol disentuh
            @Override
            public void onClick(View view) {
                playSong();
            }
        });
        final TextView seekBarHint = findViewById(R.id.textView);
        seekBar = findViewById(R.id.seekbar);
        // Fungsi untuk aksi yang dilakukan ke SeekBar's thumb
        seekBar.setOnSeekBarChangeListener(new
SeekBar.OnSeekBarChangeListener() {
            // Fungsi menampilkan detik ke ... ketika SeekBar dipindah-
pindah
            @Override
            public void onStartTrackingTouch(SeekBar seekBar) {
                seekBarHint.setVisibility(View.VISIBLE);
            }
            // Fungsi menampilkan detik ke ... ketika SeekBar berjalan
normal
            @Override
```

```

        public void onProgressChanged(SeekBar seekBar, int progress,
boolean fromTouch) {
            seekBarHint.setVisibility(View.VISIBLE);
            // Proses konversi milliseconds ke seconds
            int x = (int) Math.ceil(progress / 1000f);
            // Mengatur nilai perpindahan adalah per detik
            if (x < 10)
                seekBarHint.setText("0:0" + x);
            else
                seekBarHint.setText("0:" + x);
            // Menyimpan variabel percent untuk mendapat persentase
nilai posisi SeekBar
            double percent = progress / (double) seekBar.getMax();
            int offset = seekBar.getThumbOffset();
            int seekWidth = seekBar.getWidth();
            int val = (int) Math.round(percent * (seekWidth - 2 *
offset));

            int labelWidth = seekBarHint.getWidth();
            seekBarHint.setX(offset + seekBar.getX() + val
                - Math.round(percent * offset)
                - Math.round(percent * labelWidth / 2));
            // Pengecekan apakah SeekBar berhenti/ lagu selesai diputar.
            if (progress > 0 && mediaPlayer != null &&
!mediaPlayer.isPlaying()) {
                clearMediaPlayer();

                fab.setImageDrawable(ContextCompat.getDrawable(ActivityAudio.this,
                    android.R.drawable.ic_media_play));
                ActivityAudio.this.seekBar.setProgress(0);
            }
            // Ketika user mengentikan SeekBar dengan disentuh.
            @Override
            public void onStopTrackingTouch(SeekBar seekBar) {
                if (mediaPlayer != null && mediaPlayer.isPlaying()) {
                    mediaPlayer.seekTo(seekBar.getProgress());
                }
            }
        });
    }

    public void playSong() {
        try {
            // Ketika lagu dijalankan
            if (mediaPlayer != null && mediaPlayer.isPlaying()) {
                clearMediaPlayer();
                seekBar.setProgress(0);
                // Menganti nilai wasPlaying menjadi true
                wasPlaying = true;

                fab.setImageDrawable(ContextCompat.getDrawable(ActivityAudio.this,
                    android.R.drawable.ic_media_play));
            }
            // Mengecek nilai wasPlaying jika tidak true
            if (!wasPlaying) {
                if (mediaPlayer == null) {
                    mediaPlayer = new MediaPlayer();
                }
            }
            // Jika nilai wasPlaying true, menentukan icon yang muncul, yakni icon
            pause

            fab.setImageDrawable(ContextCompat.getDrawable(ActivityAudio.this,

```

```

android.R.drawable.ic_media_pause));
        // Memilih lagu yang akan dijalankan
        AssetFileDescriptor descriptor =
getAssets().openFd("suits.mp3");
// Mengisi nilai mediaPlayer dengan data dari sumber lagu yang didapatkan
        mediaPlayer.setDataSource(descriptor.getFileDescriptor(),
descriptor.getStartOffset(), descriptor.getLength());
        descriptor.close();
        // Menyiapkan objek mediaPlayer
        mediaPlayer.prepare();
        // Mengatur volume lagu
        mediaPlayer.setVolume(0.5f, 0.5f);
        // Mengatur nilai looping lagu
        mediaPlayer.setLooping(false);
        // Mengambil panjang lagu
        seekBar.setMax(mediaPlayer.getDuration());
        // Memulai memutar lagu
        mediaPlayer.start();
        new Thread(this).start();
    }
    wasPlaying = false;
} catch (Exception e) {
    e.printStackTrace();
}
}

public void run() {
    // Menacari posisi SeekBar's thumb saat ini
    int currentPosition = mediaPlayer.getCurrentPosition();
    int total = mediaPlayer.getDuration();
    while (mediaPlayer != null && mediaPlayer.isPlaying() &&
currentPosition < total) {
        try {
            Thread.sleep(1000);
            currentPosition = mediaPlayer.getCurrentPosition();
        } catch (InterruptedException e) {
            return;
        } catch (Exception e) {
            return;
        }
        seekBar.setProgress(currentPosition);
    }
}

// Ketika lagu berhenti maka instance MediaPlayer akan dibersihkan
melalui fungsi clearMediaPlayer()
@Override
protected void onDestroy() {
    super.onDestroy();
    clearMediaPlayer();
}

private void clearMediaPlayer() {
    mediaPlayer.stop();
    mediaPlayer.release();
    mediaPlayer = null;
}
}
}

```

2. Lalu buat layout baru bernama **activity\_audio.xml** lalu isika seperti ini

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_gravity="center"
    android:gravity="center"
    android:layout_margin="16dp"
    android:orientation="vertical"
    tools:context=".ActivityAudio">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:text="PLAY/STOP SONG.\nSCRUB WITH SEEKBAR"
        android:textStyle="bold" />
    <SeekBar
        android:id="@+id/seekbar"
        android:layout_margin="16dp"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_gravity="center" />
    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" />
    <com.google.android.material.floatingactionbutton.FloatingActionButton
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_margin="16dp"
        android:src="@android:drawable/ic_media_play"
        android:text="PLAY SOUND" />
</LinearLayout>

```

3. Lalu buka manifestnya lalu isikan seperti ini :

```

<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.tugas10">

    <!--Required Permissions-->
    <uses-permission
android:name="android.permission.READ_EXTERNAL_STORAGE" />
    <uses-permission
android:name="android.permission.WRITE_EXTERNAL_STORAGE"/>
    <uses-permission android:name="android.permission.RECORD_AUDIO" />
    <uses-permission android:name="android.permission.INTERNET" />
    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/AppTheme">
        <activity android:name=".ActivityAudio">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER"

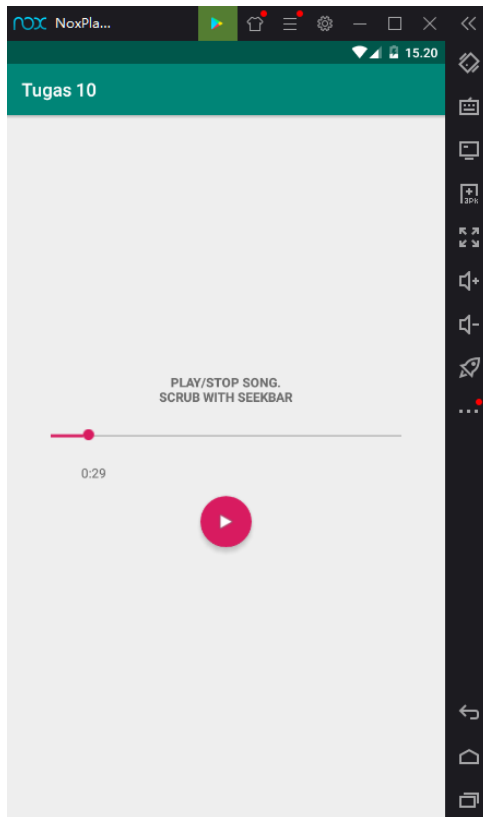
```

```

/>
        </intent-filter>
    </activity>
</application>
</manifest>

```

4. Lalu jalankan projectnya lalu jadi seperti ini



b. Video

1. Pertama buat class bernama **ActivityVideo.java** lalu isikan seperti ini:

```

import android.media.MediaPlayer;
import android.net.Uri;
import android.os.Bundle;
import android.widget.MediaController;
import android.widget.Toast;
import android.widget.VideoView;

import androidx.appcompat.app.AppCompatActivity;

import java.util.ArrayList;
import java.util.Arrays;

public class ActivityVideo extends AppCompatActivity {
    // Membuat objek VideoView
    VideoView videoView;
    // Membuat sebuah ArrayList untuk menampung URL video
    ArrayList<String> arrayList = new ArrayList<>(Arrays.asList(
        "https://commondatastorage.googleapis.com/gtv-videos-

```

```

bucket/sample/BigBuckBunny.mp4",
        "http://commondatastorage.googleapis.com/gtv-videos-
bucket/sample/ElephantsDream.mp4",
        "http://commondatastorage.googleapis.com/gtv-videos-
bucket/sample/Sintel.mp4"));
    // Mengatur nilai awal index
    int index = 0;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_video);
        videoView = findViewById(R.id.videoView);
        // Membuat objek MediaController
        final MediaController mediacontroller = new MediaController(this);
        // Mengatur nilai Anchor di videoView
        mediacontroller.setAnchorView(videoView);
        // Mengatur media control di Video View
        videoView.setMediaController(mediacontroller);
        // Mengatur nilai URL yang di parse ke URI dari index ArrayList
        videoView.setVideoURI(Uri.parse(arrayList.get(index)));
        videoView.requestFocus();
        // Fungsi ketika video selesai diputar
        videoView.setOnCompletionListener(new
MediaPlayer.OnCompletionListener() {
            @Override
            public void onCompletion(MediaPlayer mp) {
                // Memunculkan informasi video selesai diputar
                Toast.makeText(getApplicationContext(), "Video over",
Toast.LENGTH_SHORT).show();
                // Jika index video habis
                if (index++ == arrayList.size()) {
                    index = 0;
                    mp.release();
                    Toast.makeText(getApplicationContext(), "Video over",
Toast.LENGTH_SHORT).show();
                    // Jika video masih ada di list
                } else {
                    videoView.setVideoURI(Uri.parse(arrayList.get(index)));
                    videoView.start();
                }
            }
        });

        // Ketika terjadi error CRASH
        videoView.setOnErrorListener(new MediaPlayer.OnErrorListener() {
            @Override
            public boolean onError(MediaPlayer mp, int what, int extra) {
                return false;
            }
        });
    }
}

```

2. Lalu buat layout baru bernama **activity\_audio.xml** lalu isika seperti ini

```

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match parent"

```

```

        android:layout_height="match_parent"
        tools:context=".ActivityVideo">
        <TextView
            android:id="@+id/txtPlaceholder"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_above="@+id/videoView"
            android:layout_centerHorizontal="true"
            android:layout_margin="16dp"
            android:text="DOUBLE TAP TO VIEW CONTROLS"
            android:textStyle="bold" />
        <VideoView
            android:id="@+id/videoView"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_centerHorizontal="true"
            android:layout_centerVertical="true" />
    </RelativeLayout>

```

3. Lalu buka manifestnya lalu isikan seperti ini :

```

<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.tugas10">

    <!--Required Permissions-->
    <uses-permission
android:name="android.permission.READ_EXTERNAL_STORAGE" />
    <uses-permission
android:name="android.permission.WRITE_EXTERNAL_STORAGE"/>
    <uses-permission android:name="android.permission.RECORD_AUDIO" />
    <uses-permission android:name="android.permission.INTERNET" />
    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/AppTheme">
        <activity android:name=".ActivityVideo">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER"
/>
            </intent-filter>
        </activity>
    </application>
</manifest>

```

4. Lalu jalankan projectnya lalu jadi seperti ini

