PRACTICAL 9

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**Q9. Create an android app that will record audio and save it in 3gp format in external storage. Also add a Button that will be able to play that recording.**

# Activity\_main.xml:

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

<LinearLayout xmlns:android=["ht](http://schemas.android.com/apk/res/android)t[p://schemas.android.com/apk/res/android"](http://schemas.android.com/apk/res/android) xmlns:app=["http:](http://schemas.android.com/apk/res-auto)/[/schemas.android.com/apk/res-auto"](http://schemas.android.com/apk/res-auto) xmlns:tools=["ht](http://schemas.android.com/tools)t[p://schemas.android.com/tools"](http://schemas.android.com/tools) android:layout\_width="match\_parent" android:layout\_height="match\_parent"

android:orientation="vertical" tools:context=".MainActivity">

<Button android:id="@+id/btnRecord" android:layout\_width="200dp"

android:layout\_height="wrap\_content" android:layout\_marginLeft="100dp" android:layout\_marginTop="120dp" android:text="Start Recording" />

<Button android:id="@+id/btnStop" android:layout\_width="200dp"

android:layout\_height="wrap\_content" android:layout\_marginLeft="100dp" android:text="Stop Recording" />

<Button android:id="@+id/btnPlay" android:layout\_width="200dp"

android:layout\_height="wrap\_content" android:layout\_marginLeft="100dp" android:text="Play Recording" />

<Button android:id="@+id/btnStopPlay" android:layout\_width="200dp"

android:layout\_height="wrap\_content" android:layout\_marginLeft="100dp" android:text="Stop Playing" />

</LinearLayout>

# MainActivity.java:

**package** com.example.androidpractical9;

**import** androidx.appcompat.app.AppCompatActivity;

**import** androidx.core.app.ActivityCompat;

**import** androidx.core.content.ContextCompat;

**import** android.content.pm.PackageManager;

**import** android.media.MediaPlayer; **import** android.media.MediaRecorder; **import** android.os.Bundle;

**import** android.os.Environment; **import** android.util.Log; **import** android.view.View; **import** android.widget.Button; **import** android.widget.Toast;

**import** java.io.IOException;

**import static** android.Manifest.permission.***RECORD\_AUDIO***;

**import static** android.Manifest.permission.***WRITE\_EXTERNAL\_STORAGE***;

**public class** MainActivity **extends** AppCompatActivity {

**private** Button **startbtn**, **stopbtn**, **playbtn**, **stopplay**; **private** MediaRecorder **mRecorder**;

**private** MediaPlayer **mPlayer**;

**private static final** String ***LOG\_TAG*** = **"AudioRecording"**; **private static** String *mFileName* = **null**;

**public static final int *REQUEST\_AUDIO\_PERMISSION\_CODE*** = 1; @Override

**protected void** onCreate(Bundle savedInstanceState) { **super**.onCreate(savedInstanceState); setContentView(R.layout.***activity\_main***);

**startbtn** = (Button)findViewById(R.id.***btnRecord***); **stopbtn** = (Button)findViewById(R.id.***btnStop***); **playbtn** = (Button)findViewById(R.id.***btnPlay***); **stopplay** = (Button)findViewById(R.id.***btnStopPlay***); **stopbtn**.setEnabled(**false**); **playbtn**.setEnabled(**false**); **stopplay**.setEnabled(**false**);

*mFileName* = Environment.*getExternalStorageDirectory*().getAbsolutePath();

*mFileName* += **"/AudioRecording.3gp"**; **startbtn**.setOnClickListener(**new** View.OnClickListener() {

@Override

**public void** onClick(View v) {

**if**(CheckPermissions()) { **stopbtn**.setEnabled(**true**); **startbtn**.setEnabled(**false**); **playbtn**.setEnabled(**false**); **stopplay**.setEnabled(**false**); **mRecorder** = **new** MediaRecorder();

**mRecorder**.setAudioSource(MediaRecorder.AudioSource.***MIC***); **mRecorder**.setOutputFormat(MediaRecorder.OutputFormat.***THREE\_GPP***); **mRecorder**.setAudioEncoder(MediaRecorder.AudioEncoder.***AMR\_NB***); **mRecorder**.setOutputFile(*mFileName*);

try {

**mRecorder**.prepare();

} **catch** (IOException e) { Log.*e*(***LOG\_TAG***, **"prepare() failed"**);

}

**mRecorder**.start();

Toast.*makeText*(getApplicationContext(), **"Recording Started"**, Toast.***LENGTH\_LONG***).show();

}

else

{

RequestPermissions();

}

}

});

**stopbtn**.setOnClickListener(**new** View.OnClickListener() { @Override

**public void** onClick(View v) { **stopbtn**.setEnabled(**false**); **startbtn**.setEnabled(**true**); **playbtn**.setEnabled(**true**); **stopplay**.setEnabled(**true**); **mRecorder**.stop(); **mRecorder**.release(); **mRecorder** = **null**;

Toast.*makeText*(getApplicationContext(), **"Recording Stopped"**, Toast.***LENGTH\_LONG***).show();

}

});

**playbtn**.setOnClickListener(**new** View.OnClickListener() { @Override

**public void** onClick(View v) { **stopbtn**.setEnabled(**false**); **startbtn**.setEnabled(**true**); **playbtn**.setEnabled(**false**); **stopplay**.setEnabled(**true**); **mPlayer** = **new** MediaPlayer(); **try** {

**mPlayer**.setDataSource(*mFileName*); **mPlayer**.prepare();

**mPlayer**.start();

Toast.*makeText*(getApplicationContext(), **"Recording Started Playing"**, Toast.***LENGTH\_LONG***).show();

} **catch** (IOException e) { Log.*e*(***LOG\_TAG***, **"prepare() failed"**);

}

}

});

**stopplay**.setOnClickListener(**new** View.OnClickListener() { @Override

**public void** onClick(View v) {

**mPlayer**.release(); **mPlayer** = **null**; **stopbtn**.setEnabled(**false**); **startbtn**.setEnabled(**true**); **playbtn**.setEnabled(**true**); **stopplay**.setEnabled(**false**);

Toast.*makeText*(getApplicationContext(),**"Playing Audio Stopped"**, Toast.***LENGTH\_SHORT***).show();

}

});

}

@Override

**public void** onRequestPermissionsResult(**int** requestCode, String[] permissions, **int**[] grantResults)

{

**switch** (requestCode) {

**case *REQUEST\_AUDIO\_PERMISSION\_CODE***:

**if** (grantResults.**length**> 0) {

**boolean** permissionToRecord = grantResults[0] ==

PackageManager.***PERMISSION\_GRANTED***;

**boolean** permissionToStore = grantResults[1] == PackageManager.***PERMISSION\_GRANTED***;

**if** (permissionToRecord && permissionToStore) { Toast.*makeText*(getApplicationContext(), **"Permission Granted"**,

Toast.***LENGTH\_LONG***).show();

} **else** {

Toast.*makeText*(getApplicationContext(),**"Permission Denied"**,Toast.***LENGTH\_LONG***).show();

}

}

break;

}

}

**public boolean** CheckPermissions() {

**int** result = ContextCompat.*checkSelfPermission*(getApplicationContext(),

***WRITE\_EXTERNAL\_STORAGE***);

**int** result1 = ContextCompat.*checkSelfPermission*(getApplicationContext(),

***RECORD\_AUDIO***);

**return** result == PackageManager.***PERMISSION\_GRANTED*** && result1 == PackageManager.***PERMISSION\_GRANTED***;

}

**private void** RequestPermissions() { ActivityCompat.*requestPermissions*(MainActivity.**this**, **new** String[]{***RECORD\_AUDIO***,

***WRITE\_EXTERNAL\_STORAGE***}, ***REQUEST\_AUDIO\_PERMISSION\_CODE***);

}

}

# OUTPUT:

 

