Practical No.09

Exercise - Create android application to demonstrate images and videos components

Audio Player

Program:

activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/textView"
        android:layout_width="225dp"
        android:layout_height="65dp"
        android:fontFamily="sans-serif-medium"
        android:text="Heeriye"
        android:textAlignment="center"
        android:textSize="20sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.535"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.113" />

    <SeekBar
        android:id="@+id/seekBar"
        android:layout_width="226dp"
        android:layout_height="144dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.563"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.545" />

    <ImageView
        android:id="@+id/imageView2"
        android:layout_width="117dp"
        android:layout_height="102dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.53"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.26"
        app:srcCompat="@drawable/baseline_music_note_24" />

    <ImageButton
        android:id="@+id/btn_play"
        android:layout_width="72dp"
        android:layout_height="72dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.364"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
```

```xml
        app:layout_constraintVertical_bias="0.809"
        app:srcCompat="@drawable/baseline_play_circle_24"
        tools:ignore="SpeakableTextPresentCheck" />

    <ImageButton
        android:id="@+id/btn_pause"
        android:layout_width="74dp"
        android:layout_height="71dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.756"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.81"
        app:srcCompat="@drawable/baseline_pause_circle_24"
        tools:ignore="SpeakableTextPresentCheck" />

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

MainActivity.java

```java
package com.example.audioapp;

import androidx.appcompat.app.AppCompatActivity;

import android.media.MediaPlayer;
import android.os.Bundle;
import android.widget.ImageButton;
import android.widget.SeekBar;

import java.util.Timer;
import java.util.TimerTask;

public class MainActivity extends AppCompatActivity {

    ImageButton btn_play, btn_pause;

    SeekBar seekBar;

    Thread updateSeek;

    MediaPlayer mediaPlayer;


    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        btn_play = findViewById(R.id.btn_play);
        btn_pause = findViewById(R.id.btn_pause);
        seekBar = findViewById(R.id.seekBar);


        mediaPlayer = MediaPlayer.create(this, R.raw.heeriye);
        mediaPlayer.start();
        seekBar.setMax(mediaPlayer.getDuration());
        new Timer().scheduleAtFixedRate(new TimerTask() {
            public void run(){
                try{
                        seekBar.setProgress(mediaPlayer.getCurrentPosition());
                }
                catch (Exception e){
                    e.printStackTrace();
                }
            }
        },0,800);
```

```java
        seekBar.setOnSeekBarChangeListener(new SeekBar.OnSeekBarChangeListener(){
            public void onProgressChanged(SeekBar seekBar, int progress, boolean
fromUser){
                if(fromUser){
                    mediaPlayer.seekTo(progress);
                }
            }

            public void onStartTrackingTouch(SeekBar seekBar){

            }

            public void onStopTrackingTouch(SeekBar seekBar){
                mediaPlayer.seekTo(seekBar.getProgress());
            }
        });

        btn_play.setOnClickListener(v -> mediaPlayer.start());
        btn_pause.setOnClickListener(v -> mediaPlayer.pause());
    }

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

    protected void onDestroy(){
        super.onDestroy();
        clearMediaPlayer();
    }
}
```
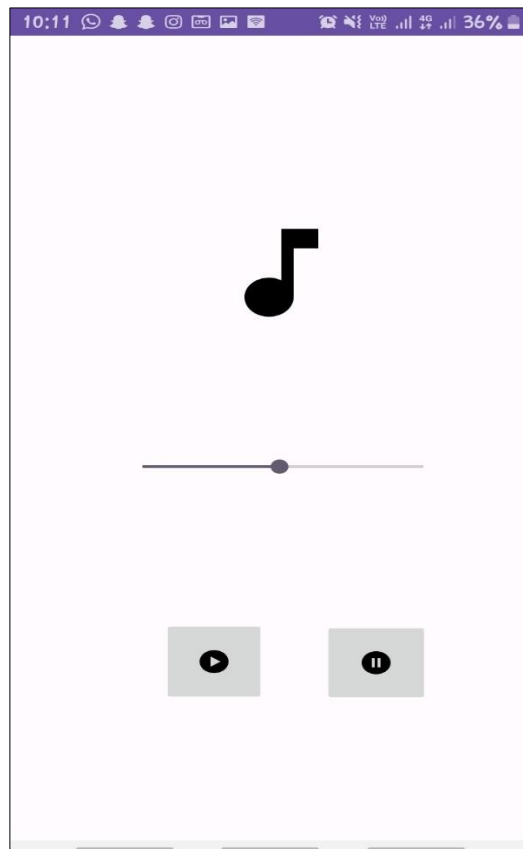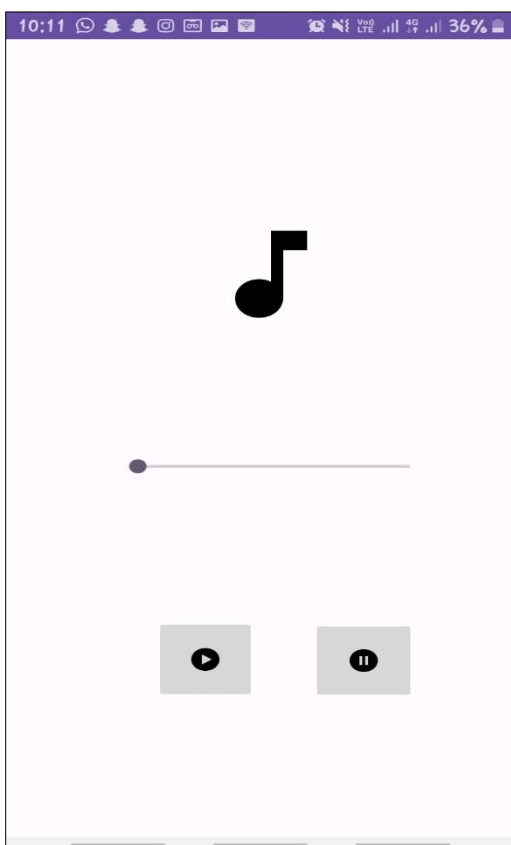
Output:

Video Player

activity_main.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <SurfaceView
        android:id="@+id/surfaceView"
        android:layout_width="396dp"
        android:layout_height="298dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.466"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.009" />

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/play"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.661" />

    <Button
        android:id="@+id/button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/video_view_button1"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.498"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.759" />

    <SeekBar
        android:id="@+id/seekBar"
        style="@style/Widget.AppCompat.SeekBar.Discrete"
        android:layout_width="386dp"
        android:layout_height="34dp"
        android:max="10"
        android:progress="3"
        android:progressTint="#2196F3"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.457"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.382" />
```

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

activity_video_view.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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=".MainActivity">

    <VideoView
        android:id="@+id/videoView"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        tools:ignore="MissingConstraints"
        tools:layout_editor_absoluteX="0dp"
        tools:layout_editor_absoluteY="127dp" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```java
package com.example.videodemo;

import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.media.MediaPlayer;
import android.os.Bundle;
import android.view.SurfaceHolder;
import android.view.SurfaceView;
import android.widget.Button;
import android.widget.SeekBar;

import java.util.Timer;
import java.util.TimerTask;

public class MainActivity extends AppCompatActivity {
    Button button , button2;
    SeekBar seekBar;
    SurfaceView surfaceView;
    MediaPlayer mediaPlayer;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        surfaceView = findViewById(R.id.surfaceView);
        button = findViewById(R.id.button);
        button2 = findViewById(R.id.button2);
        seekBar = findViewById(R.id.seekBar);
        mediaPlayer = MediaPlayer.create(this,R.raw.video1);
        surfaceView.setKeepScreenOn(true);
        SurfaceHolder surfaceHolder = surfaceView.getHolder();
        surfaceHolder.addCallback(new SurfaceHolder.Callback() {
            @Override
            public void surfaceCreated(@NonNull SurfaceHolder surfaceHolder) {
                mediaPlayer.setDisplay(surfaceHolder);
            }

            @Override
```

```java
            public void surfaceChanged(@NonNull SurfaceHolder surfaceHolder, int
format, int width, int height) {


            }

            @Override
            public void surfaceDestroyed(@NonNull SurfaceHolder surfaceHolder) {


            }
        });
        seekBar.setMax(mediaPlayer.getDuration());

        new Timer().scheduleAtFixedRate(new TimerTask()
        {
            @Override
            public void run()
            {
                try
                {
                    seekBar.setProgress(mediaPlayer.getCurrentPosition());
                }
                catch(Exception e)
                {
                    e.printStackTrace();
                }
            }
        },0,800);

        seekBar.setOnSeekBarChangeListener(new SeekBar.OnSeekBarChangeListener() {
            @Override
            public void onProgressChanged(SeekBar seekBar, int progress, boolean
fromUser) {
                if (fromUser) {
                    mediaPlayer.seekTo(progress);
                }
            }

            @Override
            public void onStartTrackingTouch(SeekBar seekBar) {


            }

            @Override
            public void onStopTrackingTouch(SeekBar seekBar) {


            }
        });

        button.setOnClickListener(v ->{
            if (mediaPlayer.isPlaying()){
                mediaPlayer.pause();
                button.setText("Play");
            }
            else{
                mediaPlayer.start();
                button.setText("Pause");
            }
        });

        button2.setOnClickListener(v -> {
            Intent i = new Intent(this,MainVideoViewActivity.class);
            startActivity(i);
        });


    }
```

```
}
```

MainVideoViewActivity.java

```java
package com.example.videodemo;
import android.net.Uri;
import android.os.Bundle;
import android.widget.MediaController;
import android.widget.VideoView;
import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.appcompat.app.AppCompatActivity;
public class MainVideoViewActivity extends AppCompatActivity {
    VideoView videoView;
    String videoUrl = "https://media.geeksforgeeks.org/wp-
content/uploads/20201217192146/Screenrecorder-2020-12-17-19-17-36-828.mp4?_=1";
    @Override
    protected void onCreate(@Nullable Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_video_view);
        videoView = findViewById(R.id.videoView);
        Uri uri = Uri.parse(videoUrl);
        videoView.setVideoURI(uri);
        MediaController mediaController = new MediaController(this);
        mediaController.setAnchorView(videoView);
        videoView.setMediaController(mediaController);
        videoView.start();

    }
}
```

AndroidManifest.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">
    <uses-permission android:name="android.permission.INTERNET"></uses-permission>
    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.VideoDemo"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
        <activity android:name=".MainVideoViewActivity"
            android:exported="true">
        </activity>
    </application>
</manifest>
```

Output:-