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EXPERIMENT 12

WORKING WITH AUDIO

AIM: To create an application that records and play audio

THEORY:

Android has a built in microphone through which you can capture audio and store it , or play it in your phone. There are many ways to do that but the most common way is through MediaRecorder class.

Android provides MediaRecorder class to record audio or video. In order to use MediaRecorder class ,you will first create an instance of MediaRecorder class. Its syntax is given below.

```
MediaRecorder myAudioRecorder = new MediaRecorder();
```

Now you will set the source , output and encoding format and output file. Their syntax is given below.

```
myAudioRecorder.setAudioSource(MediaRecorder.AudioSource.MIC);  
myAudioRecorder.setOutputFormat(MediaRecorder.OutputFormat.THREE_GPP);  
myAudioRecorder.setAudioEncoder(MediaRecorder.OutputFormat.AMR_NB);  
myAudioRecorder.setOutputFile(outputFile);
```

After specifying the audio source and format and its output file, we can then call the two basic methods prepare and start to start recording the audio.

```
myAudioRecorder.prepare();  
myAudioRecorder.start();
```

stop() - This method stops the recording process.

release() - This method should be called when the recorder instance is needed.

ASSIGNMENT

1. Create an application that will record and play an audio.

CODE

activity_main.xml

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

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```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Record"
        android:textSize="30dp"
        android:textStyle="bold"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="10dp"
        android:id="@+id/textV1" />
    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Record"
        android:textSize="30dp"
        android:textStyle="bold"
        android:layout_below="@+id/textV1"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="20dp"
        android:id="@+id/btnRecord"
    />
    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Stop"
        android:textSize="30dp"
        android:textStyle="bold"
        android:layout_below="@+id/btnRecord"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="20dp"
        android:id="@+id/btnStop"
    />
    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Play"
        android:textSize="30dp"
        android:textStyle="bold"
        android:layout_below="@+id/btnStop"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="20dp"
        android:id="@+id/btnPlay"
    />
</RelativeLayout>
```

MainActivity.java

```
package com.example.mca1634.record button;
```

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```
import android.media.MediaPlayer;
import android.media.MediaRecorder;
import android.os.Environment;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;
import java.io.IOException;
public class MainActivity extends AppCompatActivity {
    Button btnRecord,btnStop,btnPlay;
    private MediaRecorder myAudioRecorder;
    private String outputFile;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        btnRecord=(Button)findViewById(R.id.btnRecord);
        btnStop=(Button)findViewById(R.id.btnStop);
        btnPlay=(Button)findViewById(R.id.btnPlay);
        btnPlay.setEnabled(false);
        btnStop.setEnabled(false);
        outputFile = Environment.getExternalStorageDirectory().getAbsolutePath()
+ "/" + "recording.3gp";
        myAudioRecorder = new MediaRecorder();
        myAudioRecorder.setAudioSource(MediaRecorder.AudioSource.MIC);
        myAudioRecorder.setOutputFormat(MediaRecorder.OutputFormat.THREE_GPP);
        myAudioRecorder.setAudioEncoder(MediaRecorder.OutputFormat.AMR_NB);
        myAudioRecorder.setOutputFile(outputFile);
        btnRecord.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                try
                {
                    myAudioRecorder.prepare();
                    myAudioRecorder.start();
                }
                catch(IOException e)
                {
                    e.printStackTrace();
                }
                btnRecord.setEnabled(false);
                btnStop.setEnabled(true);

                Toast.makeText(getApplicationContext(),"Recording",Toast.LENGTH_SHORT).show();
            }
        });
        btnStop.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                myAudioRecorder.stop();
                myAudioRecorder.release();
                btnStop.setEnabled(false);
                btnRecord.setEnabled(true);
            }
        });
    }
}
```

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```
        btnPlay.setEnabled(true);

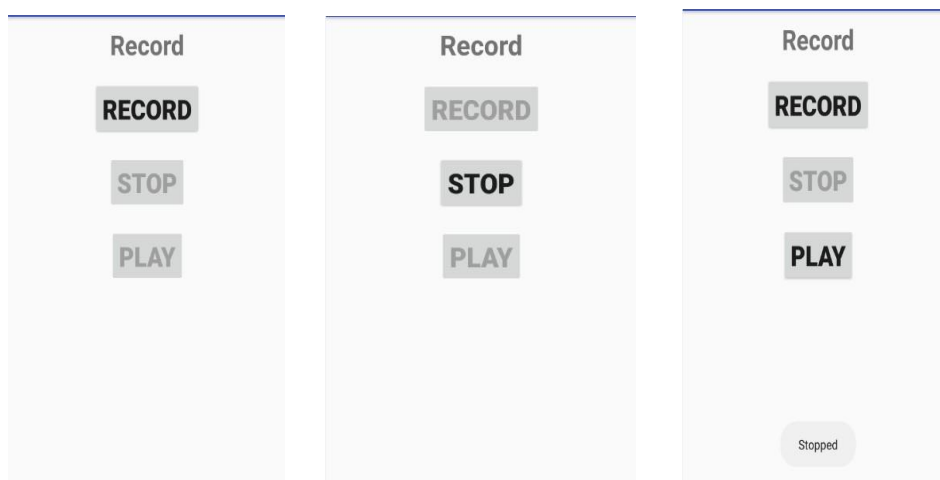
Toast.makeText(getApplicationContext(),"Stopped",Toast.LENGTH_SHORT).show();
    }
});
btnPlay.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        MediaPlayer media=new MediaPlayer();
        try
        {
            media.setDataSource(outputFile);
            media.prepare();
            media.start();
        }
        catch(IOException e)
        {
            e.printStackTrace();
        }
        btnRecord.setEnabled(true);
        btnPlay.setEnabled(true);
    }
});
}
```

AndroidManifest.xml

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

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

OUTPUT



CONCLUSION: Successfully implemented Audio Record