**Practical: - 10**

**Create an application of Text to Speech where user can type something which is spoken by clicking on Speak button. Also, add functionality to adjust the voice tone/speed.**

**Sol: -**

**Activity\_main.xml**

*<?***xml version="1.0" encoding="utf-8"***?>*<**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"  
 android:orientation="vertical"  
 android:background="@drawable/a"  
 tools:context=".MainActivity"**>  
  
 <**TextView  
 android:id="@+id/tVSpeechRate"  
 android:layout\_width="166dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_alignParentStart="true"  
 android:layout\_alignParentTop="true"  
 android:layout\_marginStart="5dp"  
 android:layout\_marginTop="135dp"  
 android:fontFamily="sans-serif-condensed-medium"  
 android:paddingLeft="20dp"  
 android:text="Voice Tone"  
 android:textColor="#EF0808"  
 android:textSize="25dp"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.051"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.061"** />  
  
 <**SeekBar  
 android:id="@+id/sBSpeechRate"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/tVSpeechRate"  
 android:layout\_alignParentStart="true"  
 android:layout\_marginStart="0dp"  
 android:layout\_marginTop="4dp"  
 android:max="19"  
 android:progress="9"  
 app:layout\_constraintBottom\_toBottomOf="@+id/btnSpeak"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.0"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.261"** />  
  
 <**TextView  
 android:id="@+id/tVPitchRate"  
 android:layout\_width="181dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/sBSpeechRate"  
 android:layout\_alignParentStart="true"  
 android:layout\_marginStart="1dp"  
 android:layout\_marginTop="15dp"  
 android:fontFamily="sans-serif-condensed-medium"  
 android:paddingLeft="20dp"  
 android:text="Voice Speed"  
 android:textColor="#E31313"  
 android:textSize="25dp"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.045"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.179"** />  
  
 <**SeekBar  
 android:id="@+id/sBPitchRate"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@id/tVPitchRate"  
 android:layout\_alignParentStart="true"  
 android:layout\_alignParentEnd="true"  
 android:layout\_marginStart="-2dp"  
 android:layout\_marginTop="23dp"  
 android:layout\_marginEnd="3dp"  
 android:max="19"  
 android:progress="9"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.0"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.232"** />  
  
 <**EditText  
 android:id="@+id/eTPronounce"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/sBPitchRate"  
 android:layout\_alignParentStart="true"  
 android:layout\_alignParentEnd="true"  
 android:layout\_marginStart="7dp"  
 android:layout\_marginTop="33dp"  
 android:layout\_marginEnd="-9dp"  
 android:ems="10"  
 android:fontFamily="sans-serif-condensed-medium"  
 android:hint="Enter Text to Speak"  
 android:paddingLeft="20dp"  
 android:textColor="#E01010"  
 android:textSize="25dp"  
 app:layout\_constraintBottom\_toTopOf="@+id/btnSpeak"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="1.0"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.867"**>  
  
 <**requestFocus** />  
 </**EditText**>  
  
 <**Button  
 android:id="@+id/btnSpeak"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_alignParentStart="true"  
 android:layout\_alignParentTop="true"  
 android:layout\_marginStart="1dp"  
 android:layout\_marginTop="462dp"  
 android:fontFamily="sans-serif-condensed-medium"  
 android:text="Say"  
 android:textSize="25dp"  
 android:textColor="#EE0B0B"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.0"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.42"** />  
  
  
</**RelativeLayout**>

**MainActivity.java**

**package** com.example.practical100;  
  
**import** java.util.Locale;  
**import** android.os.Bundle;  
**import** android.app.Activity;  
**import** android.view.View;  
**import** android.view.View.OnClickListener;  
**import** android.widget.Button;  
**import** android.widget.EditText;  
**import** android.widget.SeekBar;  
**import** android.widget.SeekBar.OnSeekBarChangeListener;  
**import** android.widget.Toast;  
**import** android.speech.tts.TextToSpeech;  
  
**public class** MainActivity **extends** Activity **implements** TextToSpeech.OnInitListener{  
  
 **double pitch**=0.0f,**speechRate**=0.0f;  
 **private** TextToSpeech **tts**;  
 SeekBar **sBSpeechRate**,**sBPitchRate**;  
 EditText **eTPronounce**;  
 Button **btnSpeak**;  
  
 @Override  
 **protected void** onCreate(Bundle savedInstanceState) {  
 **super**.onCreate(savedInstanceState);  
 setContentView(R.layout.***activity\_main***);  
 initializeControls();  
 **tts** = **new** TextToSpeech(**this**, **this**);  
 }  
 **private void** initializeControls() {  
  
 **sBSpeechRate**=findViewById(R.id.***sBSpeechRate***);  
 **sBPitchRate**=findViewById(R.id.***sBPitchRate***);  
 **eTPronounce**=findViewById(R.id.***eTPronounce***);  
 **btnSpeak**=findViewById(R.id.***btnSpeak***);  
 **sBSpeechRate**.setOnSeekBarChangeListener(**new** OnSeekBarChangeListener() {  
  
 @Override  
 **public void** onStopTrackingTouch(SeekBar seekBar) {}  
 @Override  
 **public void** onStartTrackingTouch(SeekBar seekBar) {}  
 @Override  
 **public void** onProgressChanged(SeekBar seekBar, **int** progress,**boolean** fromUser) {  
 **speechRate**=((**double**)progress+1)/10;  
 }  
 });  
 **sBPitchRate**.setOnSeekBarChangeListener(**new** OnSeekBarChangeListener() {  
 @Override  
 **public void** onStopTrackingTouch(SeekBar seekBar) {}  
 @Override  
 **public void** onStartTrackingTouch(SeekBar seekBar) {}  
 @Override  
 **public void** onProgressChanged(SeekBar seekBar, **int** progress,**boolean** fromUser) {  
 **pitch**=((**double**)progress+1)/10;  
 }  
 });  
 **eTPronounce**.setText(**"Welcome to Agent of Shields"**);  
 **btnSpeak**.setOnClickListener(**new** OnClickListener() {  
 @Override  
 **public void** onClick(View v) {  
 speakOut();  
 }  
 });  
 }  
 @Override  
 **public void** onInit(**int** status) {  
 **if** (status == TextToSpeech.***SUCCESS***) {  
 **int** result = **tts**.setLanguage(Locale.***US***);  
 **if** (result == TextToSpeech.***LANG\_MISSING\_DATA*** || result == TextToSpeech.***LANG\_NOT\_SUPPORTED***) {  
 } **else** {  
 **btnSpeak**.setEnabled(**true**);  
 speakOut();  
 }  
 } **else** {  
 Toast.*makeText*(getBaseContext(), **"Initilization Failed!"**,Toast.***LENGTH\_SHORT***).show();  
 }  
 }  
 **private void** speakOut() {  
 String text = **eTPronounce**.getText().toString();  
 **tts**.setPitch((**float**)**pitch**);  
 **tts**.setSpeechRate((**float**)**speechRate**);  
 **tts**.speak(text, TextToSpeech.***QUEUE\_FLUSH***, **null**);  
 }  
 @Override  
 **public void** onDestroy() {  
 **if** (**tts** != **null**) {  
 **tts**.stop();  
 **tts**.shutdown();  
 }  
 **super**.onDestroy();  
 }  
}

**Output**



GitHub Link: -<https://github.com/GuruvirMongia/Practical10>