

EX:NO:14

SPEECH TO TEXT

REG.NO:210701701

DATE:02/5/2024

**AIM:-**

Develop an android application to perform Speech to Text.

**PROCEDURE:-**

Step 1: Create a new Android Project.

Step 2: Add required permissions.

Step 3: Design the user interface.

Step 4: Implement speech to text functionality.

Step 5: Handle errors and permissions.

Step 6: Test the application.

Step 7: Optimize and refine.

**PRGRAM CODE:-**

**AndroidManifest.xml:**

```
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.speechtotext">
    <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=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

### **activity\_main.xml:**

```
<?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=".MainActivity">
    <Button
        android:id="@+id/buttonRecord"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Record"
```

```
        android:layout_centerHorizontal="true"
        android:layout_marginTop="16dp" />
<TextView
    android:id="@+id/textViewResult"
    android:layout_below="@id/buttonRecord"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="16dp"
    android:text="Result:"
    android:textSize="18sp"
    android:textStyle="bold" />
</RelativeLayout>
```

### **MainActivity.kt:**

```
package com.example.speechtotext

import android.content.Intent
import android.speech.RecognizerIntent
import androidx.appcompat.app.AppCompatActivity
import android.os.Bundle
import android.speech.RecognitionListener
import android.speech.SpeechRecognizer
import android.widget.Button
import android.widget.TextView
import java.util.*
```

```
class MainActivity : AppCompatActivity() {  
    private lateinit var buttonRecord: Button  
    private lateinit var textViewResult: TextView  
    private lateinit var speechRecognizer: SpeechRecognizer  
    override fun onCreate(savedInstanceState: Bundle?) {  
        super.onCreate(savedInstanceState)  
        setContentView(R.layout.activity_main)  
        buttonRecord = findViewById(R.id.buttonRecord)  
        textViewResult = findViewById(R.id.textViewResult)  
        speechRecognizer = SpeechRecognizer.createSpeechRecognizer(this)  
        buttonRecord.setOnClickListener {  
            startSpeechToText()  
        }  
        speechRecognizer.setRecognitionListener(object : RecognitionListener {  
            override fun onReadyForSpeech(params: Bundle?) {}  
            override fun onBeginningOfSpeech() {}  
            override fun onRmsChanged(rmsdB: Float) {}  
            override fun onBufferReceived(buffer: ByteArray?) {}  
            override fun onEndOfSpeech() {}  
            override fun onError(error: Int) {}  
            override fun onResults(results: Bundle?) {  
                val matches =  
results?.getStringArrayList(SpeechRecognizer.RESULTS_RECOGNITION)
```

```
        if (matches != null) {  
            val result = matches[0]  
            textViewResult.text = "Result: $result"  
        }  
    }  
  
    override fun onPartialResults(partialResults: Bundle?) {}  
    override fun onEvent(eventType: Int, params: Bundle?) {}  
})  
}  
  
private fun startSpeechToText() {  
    val intent = Intent(RecognizerIntent.ACTION_RECOGNIZE_SPEECH)  
    intent.putExtra(RecognizerIntent.EXTRA_LANGUAGE_MODEL,  
RecognizerIntent.LANGUAGE_MODEL_FREE_FORM)  
    intent.putExtra(RecognizerIntent.EXTRA_LANGUAGE,  
Locale.getDefault())  
    speechRecognizer.startListening(intent)  
}  
}
```

## **OUTPUT:-**



## **RESULT:-**

Thus to develop an android application to perform Speech to Text is implemented and executed successfully.