EX:NO:14 SPEECH TO TEXT REG.NO:210701307

DATE:10/5/2024

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.