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GitHub link:

[https://github.com/LukeT11/WebMobileProgramming/tree/main/Mobile\\_Lessons/Mobile\\_ICP4](https://github.com/LukeT11/WebMobileProgramming/tree/main/Mobile_Lessons/Mobile_ICP4)

Mobile ICP 4

## Text-to-Speech

### Introduction

Text-to-Speech sends the 'speech' or text to be read and output as audio, converting text into voice. This can be used to take a text input and be output in different languages which can be useful in many different scenarios. This can be used to translate a specific input text and be translated as audio output for another language.

### Tasks

Mobile ICP4:

- Main Activity with a Button, Edit-Text, and Text-to-Speech.
- When the button is clicked, it should take the input text from the user and audio output as speech.
- An onPause action to stop the current audio output when in the middle of outputting and then begins the next output when the button is clicked again.

## Code

```
1 <?xml version="1.0" encoding="utf-8"?>
2 <androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"
3     xmlns:app="http://schemas.android.com/apk/res-auto"
4     xmlns:tools="http://schemas.android.com/tools"
5     android:layout_width="match_parent"
6     android:layout_height="match_parent"
7     tools:context=".MainActivity">
8
9     <!-- Layout -->
10    <LinearLayout
11        android:layout_width="match_parent"
12        android:layout_height="match_parent"
13        android:orientation="vertical">
14
15        <!-- Text Title -->
16        <TextView
17            android:id="@+id/title"
18            android:layout_width="match_parent"
19            android:layout_height="wrap_content"
20            android:text="Text-To-Speech"
21            app:layout_constraintBottom_toBottomOf="parent"
22            app:layout_constraintLeft_toLeftOf="parent"
23            app:layout_constraintRight_toRightOf="parent"
24            app:layout_constraintTop_toTopOf="parent"
25            android:layout_marginTop="50dp"
26            android:layout_marginBottom="30dp"
27            android:textAlignment="center"
28            android:textSize="40dp"
29            android:textColor="#34E718"/>
30
31        <!-- Input Text -->
32        <EditText
33            android:id="@+id/speechInput"
34            android:layout_width="200dp"
35            android:layout_height="wrap_content"
36            android:layout_margin="10dp"
37            android:textSize="20sp"
38            android:layout_gravity="center"
39            android:textAlignment="center"
```

```
19            android:layout_height="wrap_content"
20            android:text="Text-To-Speech"
21            app:layout_constraintBottom_toBottomOf="parent"
22            app:layout_constraintLeft_toLeftOf="parent"
23            app:layout_constraintRight_toRightOf="parent"
24            app:layout_constraintTop_toTopOf="parent"
25            android:layout_marginTop="50dp"
26            android:layout_marginBottom="30dp"
27            android:textAlignment="center"
28            android:textSize="40dp"
29            android:textColor="#34E718"/>
30
31        <!-- Input Text -->
32        <EditText
33            android:id="@+id/speechInput"
34            android:layout_width="200dp"
35            android:layout_height="wrap_content"
36            android:layout_margin="10dp"
37            android:textSize="20sp"
38            android:layout_gravity="center"
39            android:textAlignment="center"
40            android:hint="Enter Text"/>
41
42        <!-- Button for initiate audio output -->
43        <Button
44            android:id="@+id/speakBtn"
45            android:layout_width="wrap_content"
46            android:layout_height="wrap_content"
47            android:text="Speak"
48            android:textSize="15sp"
49            android:layout_gravity="center"/>
50    </LinearLayout>
51
52 </androidx.constraintlayout.widget.ConstraintLayout>
```

```

1 package com.example.texttospeech;
2
3 import ...
4
15
16 public class MainActivity extends AppCompatActivity {
17
18     //Used Variables
19     EditText inputTxt;
20     Button speakBtn;
21     TextToSpeech tts;
22
23
24
25
26 @Override
27 protected void onCreate(Bundle savedInstanceState) {
28     super.onCreate(savedInstanceState);
29     setContentView(R.layout.activity_main);
30
31     //Setting variables to
32     inputTxt = findViewById(R.id.speechInput);
33     speakBtn = findViewById(R.id.speakBtn);
34
35     //Listener Button click initiate input text to audio text
36     speakBtn.setOnClickListener(new View.OnClickListener() {
37         @Override
38         public void onClick(View view) {
39             tts = new TextToSpeech(context, MainActivity.this, new TextToSpeech.OnInitListener() {
40                 @Override
41                 public void onInit(int status) {
42                     if (status == TextToSpeech.SUCCESS) {
43                         int result = tts.setLanguage(Locale.US);
44                         if (result == TextToSpeech.LANG_MISSING_DATA || result == TextToSpeech.LANG_NOT_SUPPORTED) {
45                             Log.e(tag, "message", msg: "Language is not supported");
46                         }
47                         else {
48                             //tts.setLanguage(Locale.US);
49                             //tts.speak("Test Text to Speech", TextToSpeech.QUEUE_ADD, null);
50                             speak();
51                         }
52                     }
53                 }
54             });
55         }
56     });
57 }
58
59

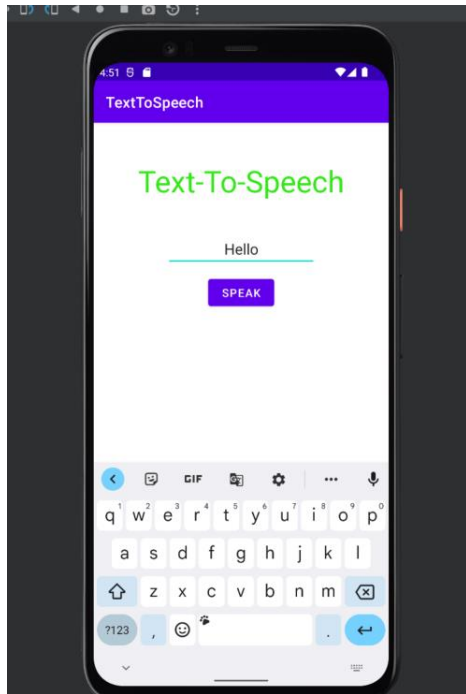
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## Output



## Contributors

I worked independently, so I am the sole contributor.

## Conclusion

I used Android Studio to create a simple mobile application that implements the use of Text-to-Speech. The application contains a simple main activity screen with a title text, edit text for user input and a button. The purpose is for a user to be able to input a text in the edit text box and whenever the button is clicked, the input text is taken and is output as audio back to the user. The current audio output language is set to English but can be changed to other languages. If the input button is clicked again while its currently audio outputting the text, the audio is paused and then begins reading the next input text that is entered.