ICP11

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https://github.com/sc7vc/Web_Applications/tree/main/Mobile/ICP11

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https://github.com/mmg6m/Web/tree/main/Mobile/ICP11

A. Introduction:

Android Studio is an open-source framework for developing applications for Android OS devices including cell phones, tablets, and websites. In this errand, we are utilizing Text to speech, and it converts text on the screen into speech. Text-to-speech is a well-known availability work that helps the individuals who have trouble perusing on-screen text, but on the other hand it's valuable for the people who wish to be perused to. This capacity has proven to be a famous and advantageous component among clients.

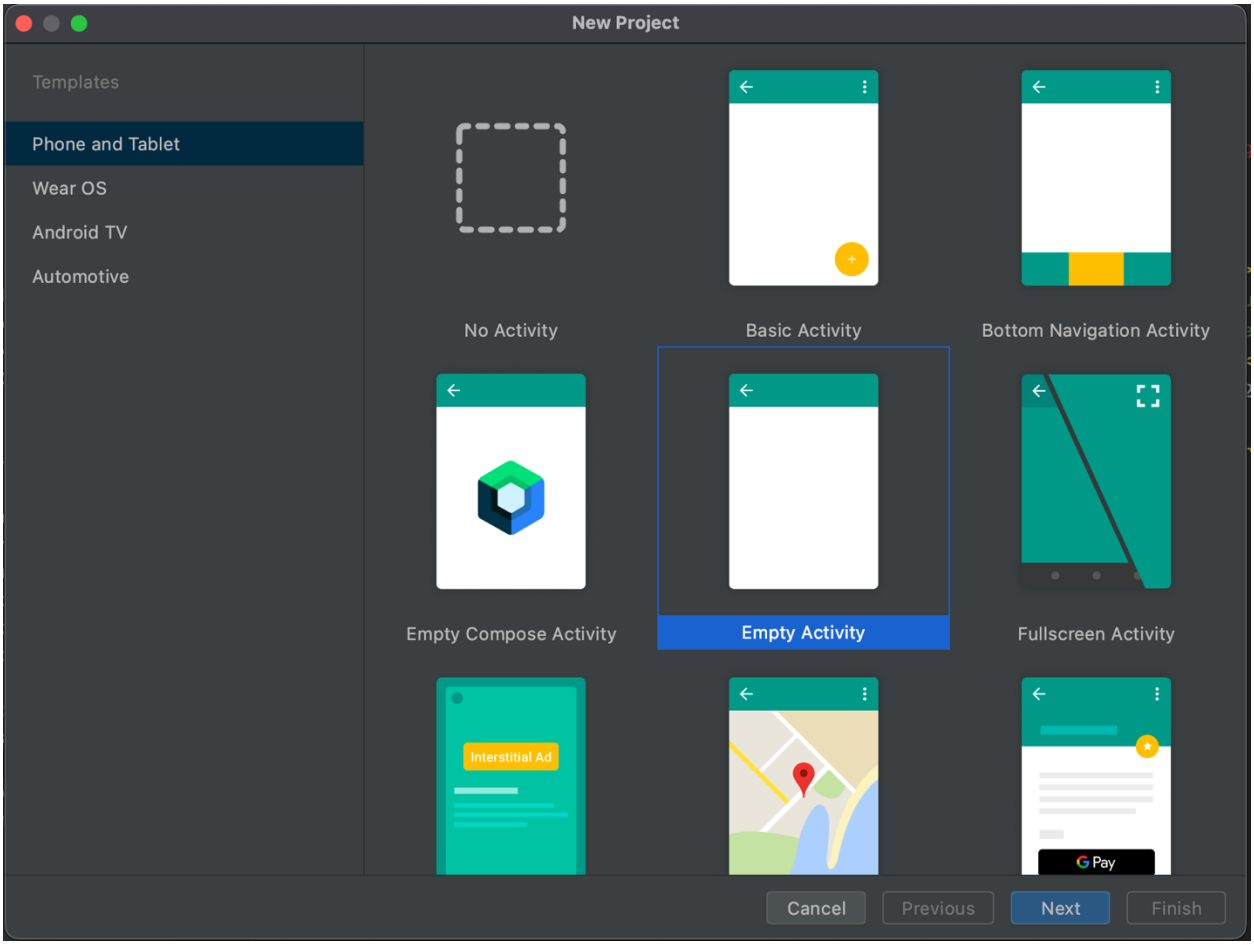
In this ICP, we utilized Android Studio, Java and XML dialects for mobile application development. We are creating Mobile app which will convert the text into speech which is given as input by user.

B. Task Description:

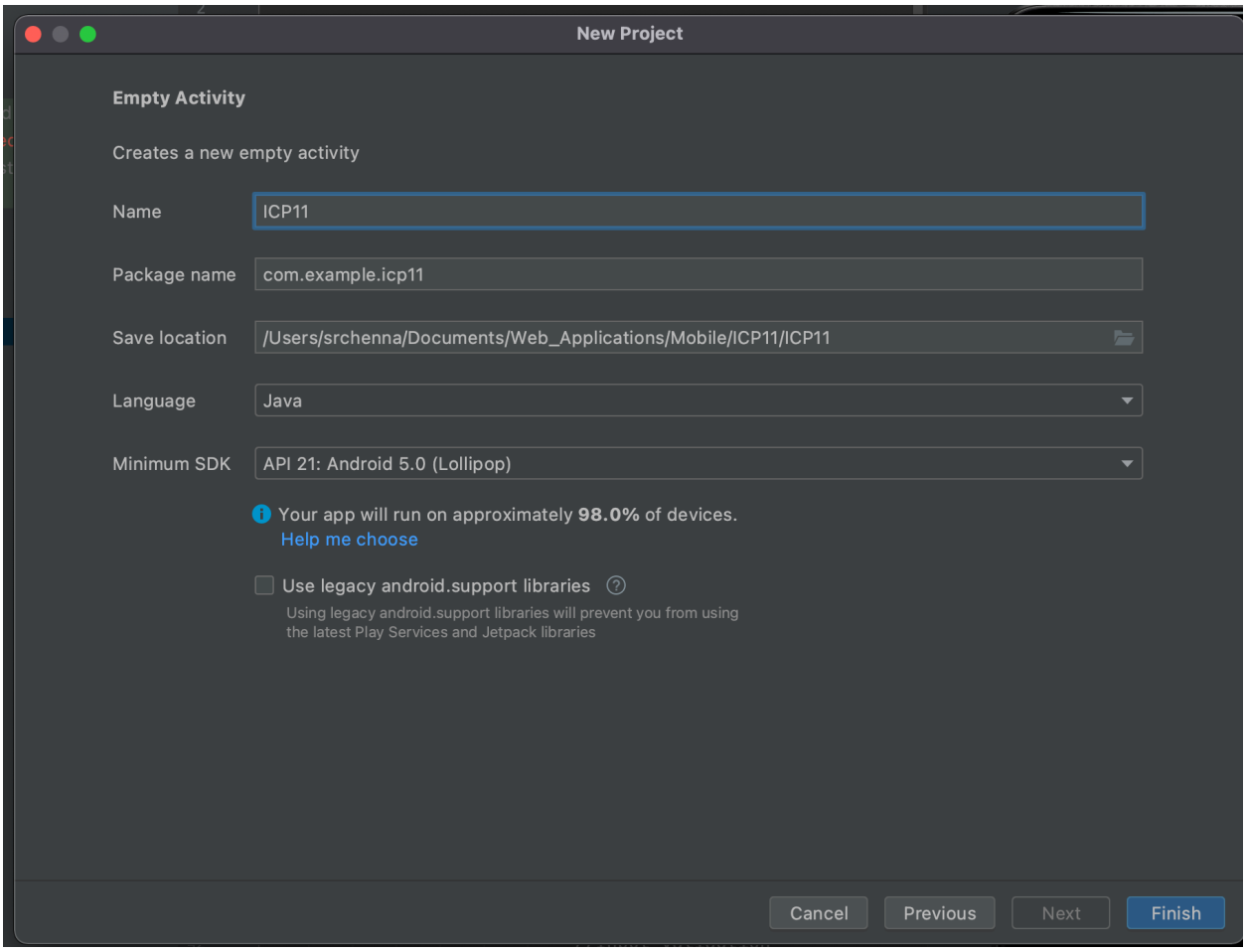
In this task, we are performing Text-to-Speech functionality to convert the text that is entered on the screen into speech using android studio.

C. Implementation Process:

1. Open the Android Studio and click on New Project and select empty activity as below



2. Give our project name as ICP11 as below and click on Finish



3. Now open activity_main.xml and add TextView to display the title in our application as below

```
<TextView
    android:id="@+id/textViewTTS"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Text to Speech"
    android:textSize="45dp"
    android:textColor="#a4c639"
    android:layout_centerHorizontal="true" />
```

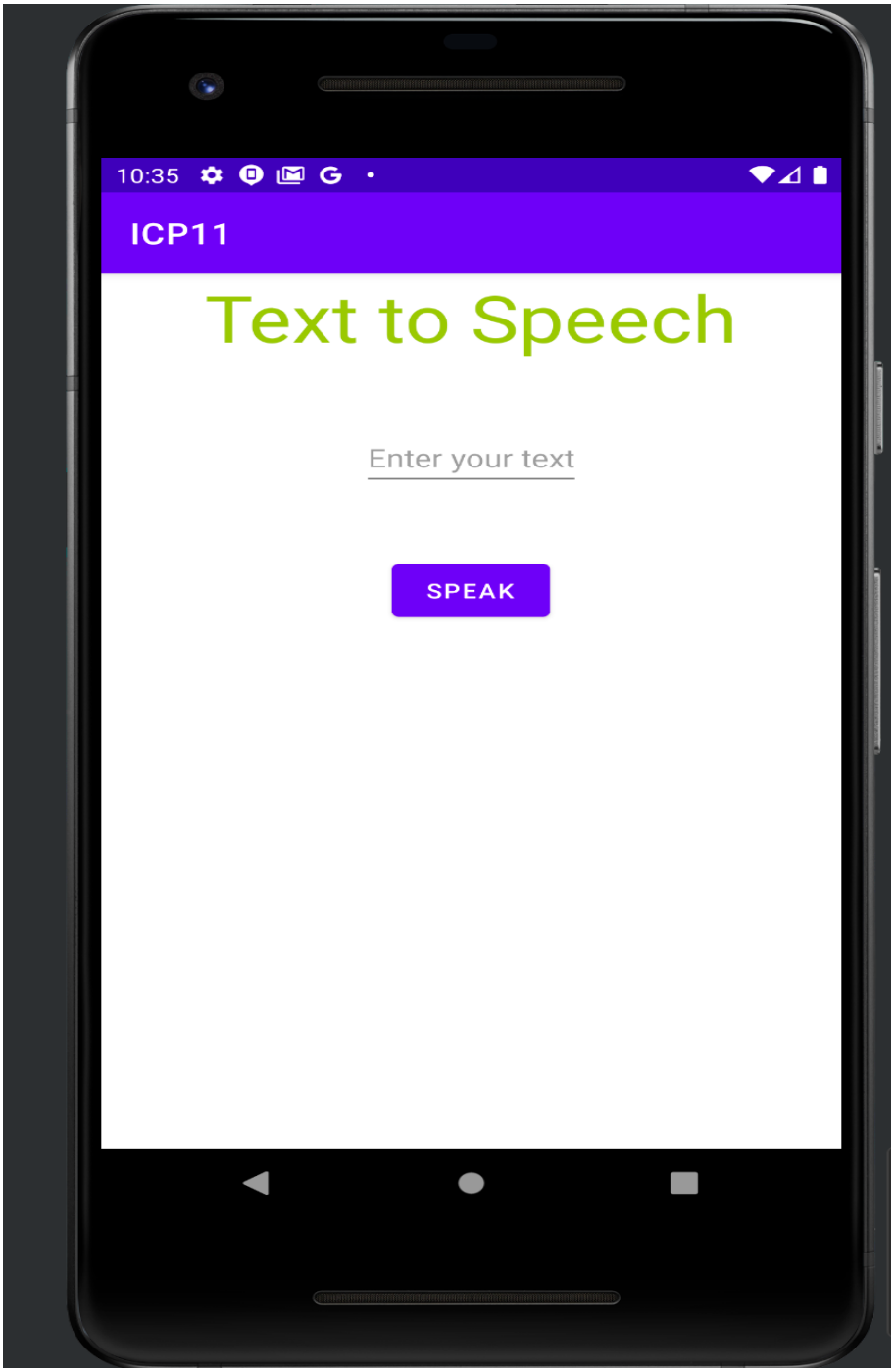
4. Use below input called EditText to take input from user as text field

```
<EditText
    android:id="@+id/editTextTTS"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:hint="Enter your text"
    android:layout_below="@+id/textViewTTS"
    android:layout_margin="45dp"
    android:layout_centerHorizontal="true" />
```

5. Now create a button with name Speak, where user will click on that button to convert the written text into speech.

```
<Button
    android:id="@+id/btnTTS"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_below="@id/editTextTTS"
    android:text="Speak"
    android:layout_centerHorizontal="true" />
```

6. Now we can see the UI output as below



7. we are creating objects for text, button, speech conversion as below

```
EditText text;
Button butn;
TextToSpeech textToSpeech;
```

```
//for text
text = findViewById(R.id.editTextTTS);
//for button
butn = findViewById(R.id.btnTTS);
```

8. We can convert the text to speech as below function

```
textToSpeech = new TextToSpeech(MainActivity.this, new
TextToSpeech.OnInitListener() {
```

9. We can check the status of successful conversion of text to speech as below

```
  if(status == TextToSpeech.SUCCESS) {
```

10. We can set the input language as our desired as below

```
int result = textToSpeech.setLanguage(Locale.US);
```

11. If user gives invalid input we can check it as below

```
if (result == TextToSpeech.LANG_NOT_SUPPORTED
```

12. same way if input is missing then we can check as below

```
result == TextToSpeech.LANG_MISSING_DATA
```

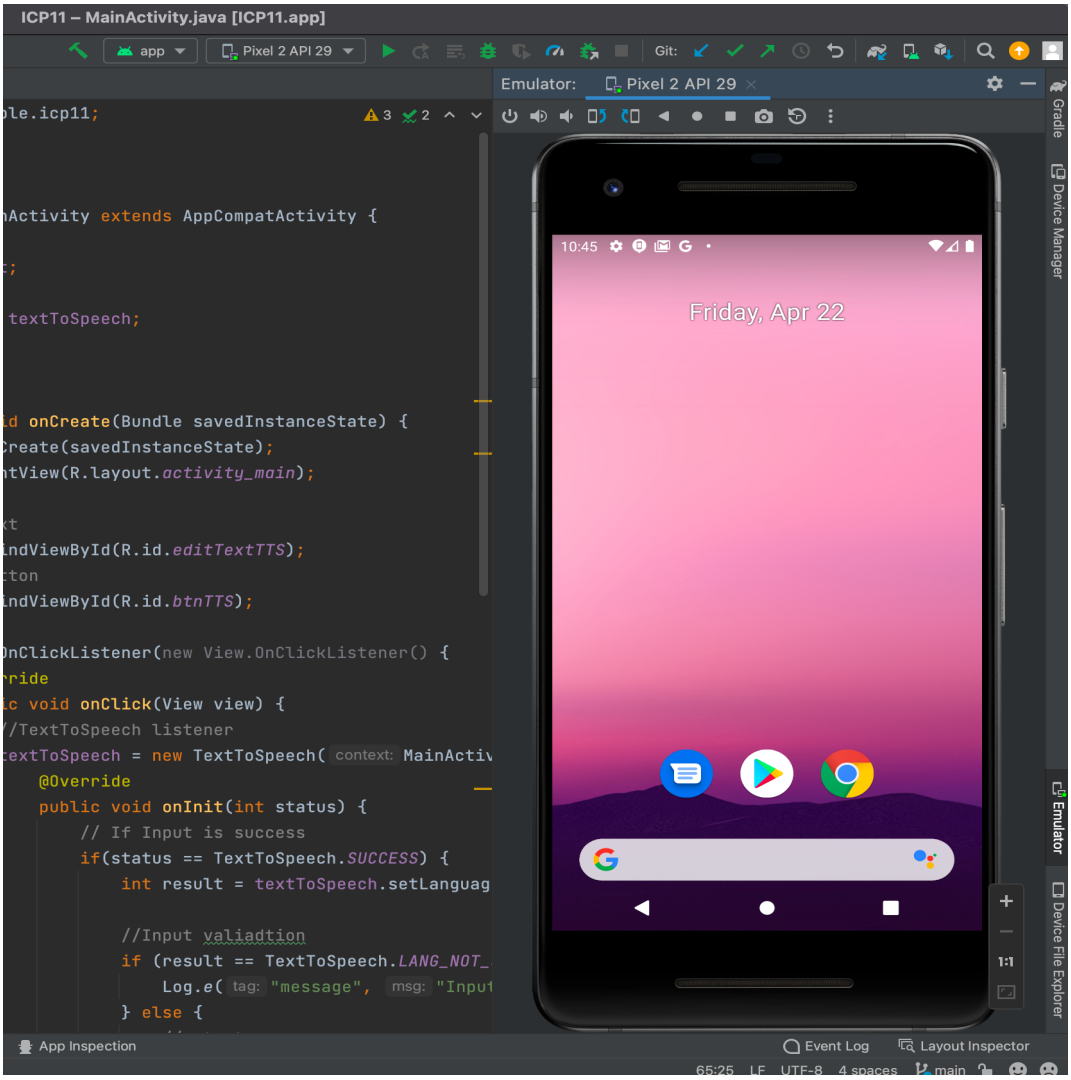
13. we can generate the message to user as below

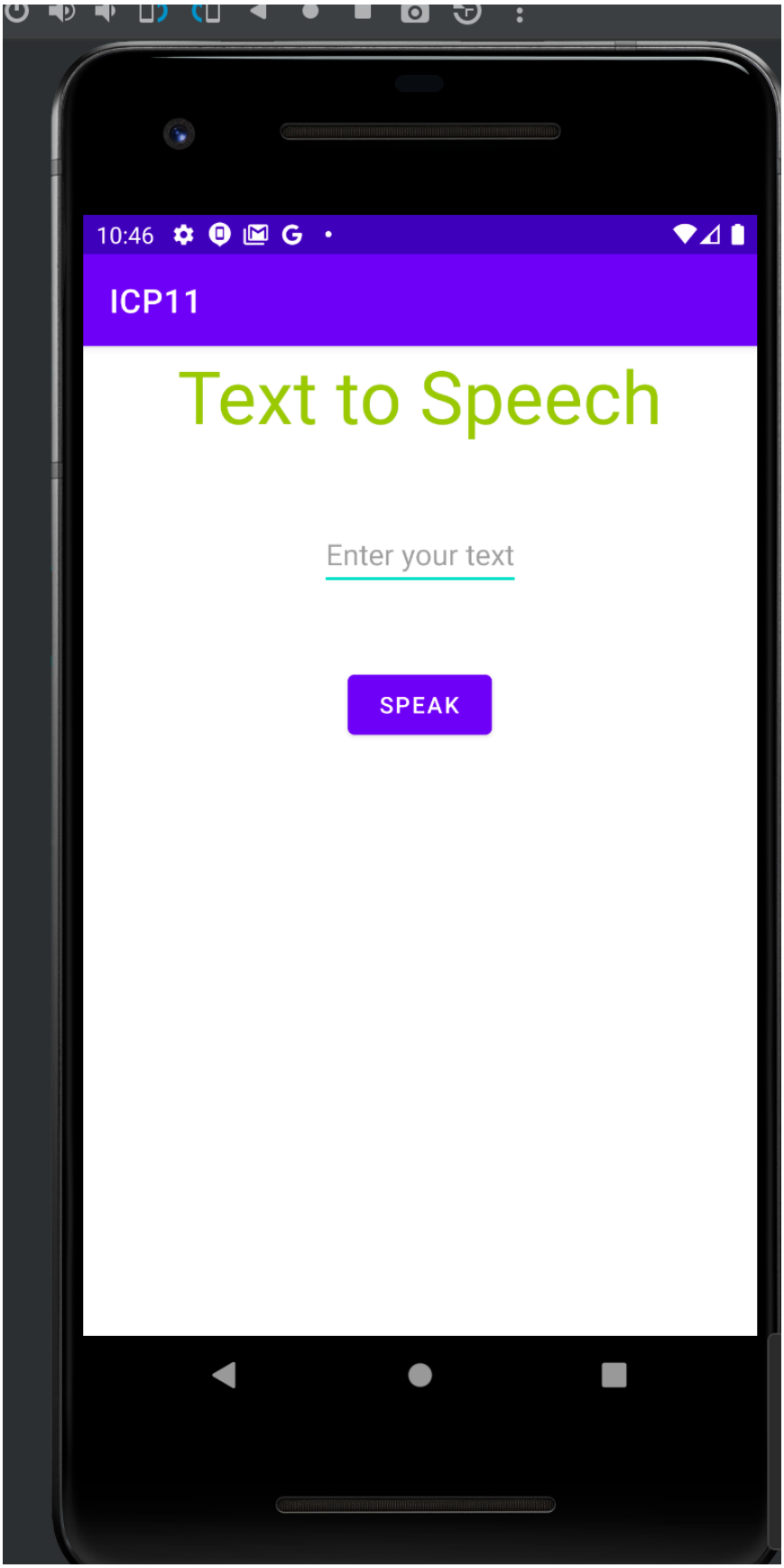
```
Log.e("message", "Input Language is not supported");
```

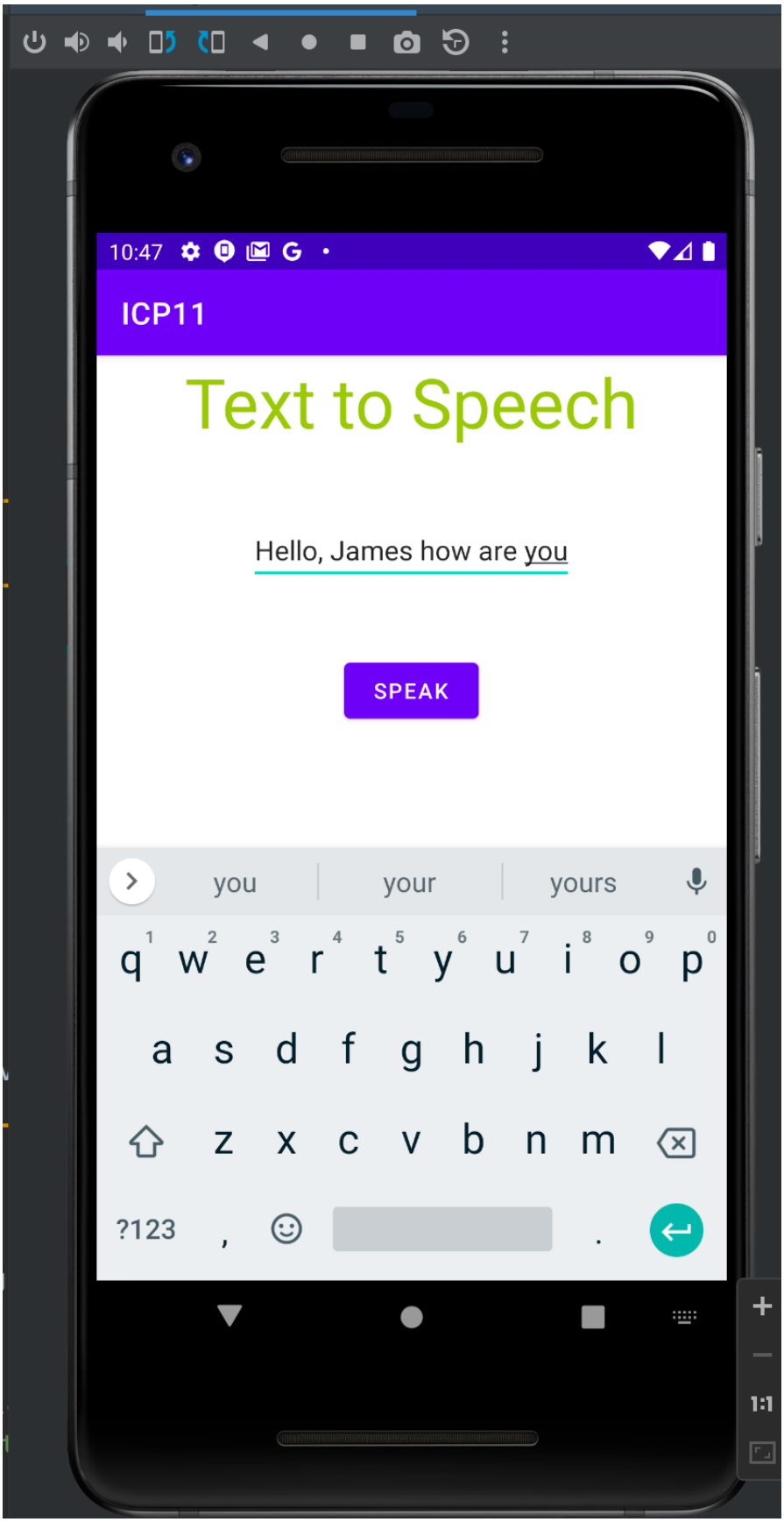
14. By using below method we are perform text to speech conversion

```
void speakToUser(){
        //  reading input
    String input = text.getText().toString();

        //setting speech rate
    textToSpeech.setSpeechRate(0.5f);

        //converting to speech
    textToSpeech.speak(input, TextToSpeech.QUEUE_ADD, null);

}
```

15. Now let's run the project and see the output




10:46
ICP11
Text to Speech
Enter your text
SPEAK


10:47
ICP11
Text to Speech
Hello, James how are you
SPEAK
you
your
yours
q w e r t y u i o p
a s d f g h j k l
z x c v b n m
?123
1:1

When user clicks on speak button, the text will be converted into speech.

Contribution:
Both of us had performed tasks equally

Conclusion:
It's fun to learn Android Mobile app development using Android Studio. We have learned to various things like using activities, giving customized error responses to user, converting text to speech which is awesome.

Challenges:
We didn't face any issues.