Lab3

Main Code for TTS and STT Application:

import android.content.\*;

import android.os.Bundle;

import android.support.v7.app.AppCompatActivity;

import android.system.Os;

import android.widget.\*;

import java.text.SimpleDateFormat;

import java.util.\*;

import android.speech.\*;

public class MainActivity extends AppCompatActivity {

private TextToSpeech tts;

private final int CHECK\_CODE = 0x1;

private final int LONG\_DURATION = 5000;

private final int SHORT\_DURATION = 1200;

private static final int REQ\_CODE\_SPEECH\_INPUT = 100;

private TextView mVoiceInputTv;

private ImageButton mSpeakBtn;

private SharedPreferences preferences;

private SharedPreferences.Editor editor;

String NAME = "name";

private Speaker speaker;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

tts = new TextToSpeech(this, new TextToSpeech.OnInitListener() {

@Override

public void onInit(int status) {

if (status == TextToSpeech.SUCCESS) {

// Change this to match your

// locale

tts.setLanguage(Locale.US);

tts.speak("hello", TextToSpeech.QUEUE\_FLUSH, null);

}

}

});

preferences = getApplicationContext().getSharedPreferences("pref", getApplicationContext().MODE\_PRIVATE);

editor = preferences.edit();

mVoiceInputTv = (TextView) findViewById(R.id.voiceInput);

mSpeakBtn = (ImageButton) findViewById(R.id.btnSpeak);

mSpeakBtn.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

startVoiceInput();

}

});

}

private void checkTTS() {

Intent check = new Intent();

check.setAction(TextToSpeech.Engine.ACTION\_CHECK\_TTS\_DATA);

startActivityForResult(check, CHECK\_CODE);

}

private void startVoiceInput() {

Intent intent = new Intent(RecognizerIntent.ACTION\_RECOGNIZE\_SPEECH);

intent.putExtra(RecognizerIntent.EXTRA\_LANGUAGE\_MODEL, RecognizerIntent.LANGUAGE\_MODEL\_FREE\_FORM);

intent.putExtra(RecognizerIntent.EXTRA\_LANGUAGE, Locale.getDefault());

intent.putExtra(RecognizerIntent.EXTRA\_PROMPT, " I am D and I am bored, do u need help with anything?");

try {

startActivityForResult(intent, REQ\_CODE\_SPEECH\_INPUT);

} catch (ActivityNotFoundException a) {

}

}

@Override

protected void onActivityResult(int requestCode, int resultCode, Intent data) {

super.onActivityResult(requestCode, resultCode, data);

switch (requestCode) {

case REQ\_CODE\_SPEECH\_INPUT: {

if (resultCode == RESULT\_OK && null != data) {

ArrayList<String> result = data.getStringArrayListExtra(RecognizerIntent.EXTRA\_RESULTS);

if (result.get(0).equalsIgnoreCase("Hello")) {

mVoiceInputTv.setText("Hey,may I know your name please?");

tts.speak("Hey,may I know your name please?",TextToSpeech.QUEUE\_FLUSH, null);

} else if (result.get(0).equalsIgnoreCase("what is your name")) {

mVoiceInputTv.setText("I am D and I am bored, do u need help with anything?");

tts.speak(“ I am D and I am bored, do u need help with anything?",TextToSpeech.QUEUE\_FLUSH, null);

}

else if (result.get(0).contains("name is")) {

String name = result.get(0).split("is")[1];

editor.putString(NAME, name).apply();

mVoiceInputTv.setText("Good Morning " + preferences.getString(NAME, "name") + ". I am here to assist you today ");

tts.speak("Good Morning " + preferences.getString(NAME, "name") + “I am here to assist you today",TextToSpeech.QUEUE\_FLUSH, null);

} else if (result.get(0).contains("thanks")) {

mVoiceInputTv.setText("I appreciate your help " + preferences.getString(NAME, "name"));

tts.speak(“I appreciate your help too”+ preferences.getString(NAME,"name"),TextToSpeech.QUEUE\_FLUSH, null);

} else if (result.get(0).contains("what") && result.get(0).contains("time")) {

SimpleDateFormat sdfDate = new SimpleDateFormat("HH:mm");

Date date = new Date();

String[] strDate = sdfDate.format(date).split(":");

if (strDate[1].contains("00"))

strDate[1] = "o'clock";

mVoiceInputTv.setText("time now is:" + sdfDate.format(date));

tts.speak("Time now is :" + sdfDate.format(date),TextToSpeech.QUEUE\_FLUSH, null);

} else {

mVoiceInputTv.setText("Ooop’s Didn’t understand!!.");

tts.speak("Ooop’s Didn’t understand!!",TextToSpeech.QUEUE\_FLUSH, null);

}

break;

}

}

}

}