TextToSpeech

Background

This module demonstrates the use of Android's TextToSpeech API. This API is utilized to programmatically convert text to speech.

A working version of this app is available at: https://github.com/milk-modules/Apps/tree/master/accessible/DemoApp05

Prerequisite

1. Android studio is installed on the development workstation
2. A working Android emulator is available for testing
3. TalkBack is enabled on the emulator.
    a. Details on installing and activating TalkBack: https://milk-modules.github.io/activities/general/Android_TalkBack_Install.pdf

Activity Instructions

This activity will utilize a pre-created version of this project and only applies the TextToSpeech functionality. Download the code for DemoApp05 from: https://github.com/milk-modules/Apps/tree/master/non-accessible

The project contains only one screen (activity). The primary user interface (UI) elements of this screen are:

1. A Switch control located at the top of the screen. Turning this control 'on' and 'off' will hide/show the UI elements on the screen. This behavior is to simulate a blind user.
2. Two Buttons. One button is to obtain the current date and the other button is to obtain the current time.
3. A TextView located towards the bottom of the screen. This control will show the date and time when the button is tapped/clicked.

The existing project contains the code to show the date and time when the buttons are tapped/clicked.

Follow the below steps to add TextToSpeech functionality so that when a button is tapped/clicked, the app will announce/speak the date and time.

Steps

1. Create the following variable:

```
private TextToSpeech textToSpeech;
```

2. Add the following method:

```
private void provideMessage(final String message){
    AccessibilityManager accessibilityManager = (AccessibilityManager)
getSystemService(ACCESSIBILITY_SERVICE);
    boolean isAccessibilityEnabled = accessibilityManager.isEnabled();
    boolean isExploreByTouchEnabled =
accessibilityManager.isTouchExplorationEnabled();

    if (isAccessibilityEnabled && isExploreByTouchEnabled){
        textToSpeech = new TextToSpeech(MainActivity.this, new
TextToSpeech.OnInitListener() {
            @Override
            public void onInit(int status) {
                if(Build.VERSION.SDK_INT >= Build.VERSION_CODES.LOLLIPOP){
                    textToSpeech.speak(message, TextToSpeech.QUEUE_FLUSH, null, null);
                }
                else{
                    textToSpeech.speak(message, TextToSpeech.QUEUE_FLUSH, null);
                }
            }
        });
    }

    txtDisplay.setText(message);
}
```

3. Update the handler for the two buttons.
    a. Replace: `txtDisplay.setText("Today's Date: " + todayDateString);`
       With: `provideMessage("Today's Date: " + todayDateString);`
    b. Replace: `txtDisplay.setText("Current Time: " + currentTimeString);`
       With: `provideMessage("Current Time: " + currentTimeString);`

The purpose of the method provideMessage is to utilize Android's TextToSpeech API to announce the date and time. The method only calls the API if the accessibility and talk back is enabled.