

# Advanced User Interface Programming

## Assignment 2

**Tutor**

Paul Morris

**Date Last Revised**

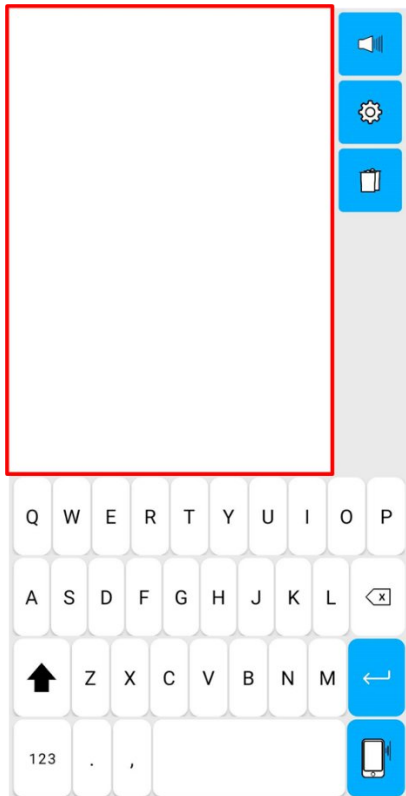
Tuesday, 23 May 2023

## Table of Contents

1. Text Fragment.....	3
A. Screenshot.....	3
B. Notes.....	3
2. Sidebar Fragment.....	4
A. Screenshot.....	4
B. Notes.....	4
3. Keyboard Fragment.....	5
A. Screenshot.....	5
B. Notes.....	5
4. Header Fragment.....	6
A. Screenshot.....	6
B. Notes.....	6
5. Settings Menu Fragment.....	7
A. Screenshot.....	7
B. Notes.....	7
6. Settings Keyboard Fragment.....	8
A. Screenshot.....	8
B. Notes.....	8
7. Speech Fragment.....	9
A. Screenshot.....	9
B. Notes.....	9
8. Message Window Fragment.....	10
A. Screenshot.....	10
B. Notes.....	10
9. Device Voice Fragment.....	11
A. Screenshot.....	11
B. Notes.....	11
10. Themes Fragment.....	12
A. Screenshot.....	12
B. Notes.....	12

# 1. Text Fragment

## A. Screenshot



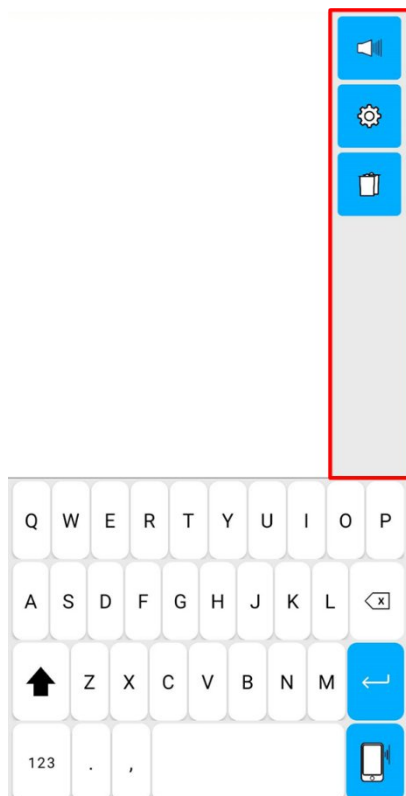
## B. Notes

- Constraint Layout for General Layout
- Text Field for Text to Speech Text
- Button for Advanced Message Window Functionality
- Method to Disable Soft Keyboard on Text Field Focus
- Method to Setup User Settings Object
- Method to Setup Text Field's On Click Listener
- Method to Setup Text to Speech Object + Validation for Object's Setup
- Method to Setup Advanced Message Window Functionality
- On Click Event Listener For Text Field which validates the "speak phrases on tap" setting and reads out the tapped word if the setting is enabled.
- Set Utterance Progress Event Listener which validates the "clear after speak setting" and clears the text field after the full text has been read if the setting is enabled.

- Message Window Click Event Listener which validates the advanced message window functionality setting and performs the selected function i.e., speak all / speak last sentence if the advanced message window functionality is enabled.
- Method to Speak Text using the Text to Speech Object
- Method to Stop the Text to Speech Object from Speaking Text
- Method to Add New Line to Text Field
- Method to Erase the Character Before the Cursor or Highlighted Text (Depending on if any Text is Highlighted)
- Method to Type Characters
- Method to Get Text Field Text
- Method to Delete All Text within Text Field and Set Keyboard Back to Uppercase
- Method to Replace Text within Text Field
- Methods to Get Text Selection (Start and End)

## 2. Sidebar Fragment

### A. Screenshot

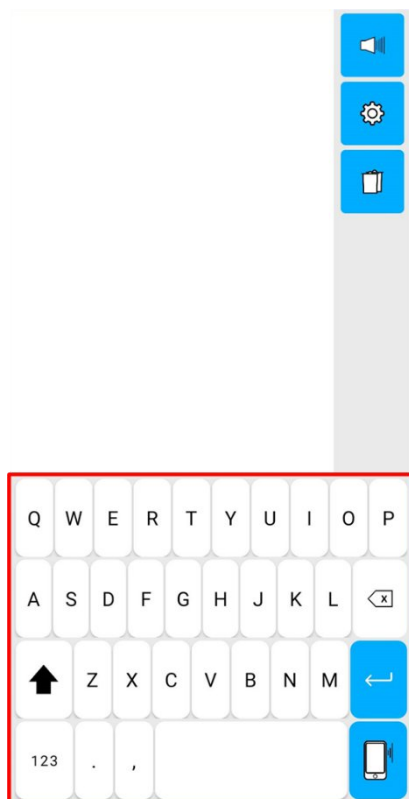


## B. Notes

- Linear Layout for Vertical Button Layout
- Image Button to Speak Text using Text Fragment's Text to Speech Object
- Image Button to Display Settings Header and Menu
- Image Button to Delete All Text From Text Fragment's Text Field
- Sets Speak and Delete All On Click Event Listeners to run Text Fragment Methods
- Method to Setup Settings Navigation Button
- Utilizes Fragments Class to Setup Navigation Between Input Fragment and Settings Fragment

## 3. Keyboard Fragment

### A. Screenshot



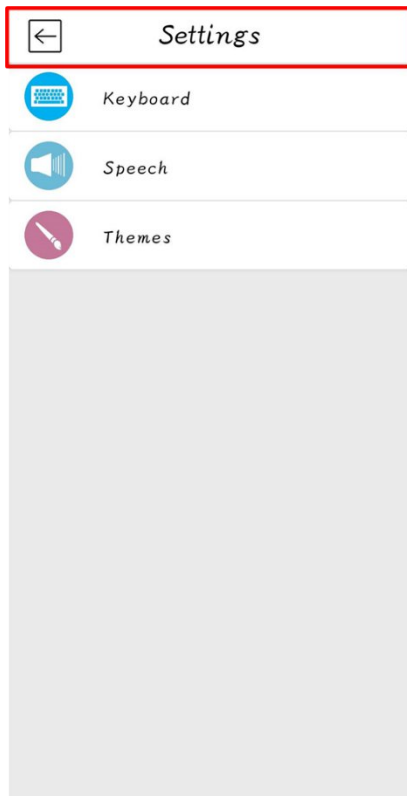
## B. Notes

- Linear Layout for Body and Each Row of the Keyboard Keys
- Twenty-Six Buttons for Standard Keyboard Keys
- Image Buttons for Erase, Enter, and Wait Keys
- Material Button for Change Case Key

- Button for Switch Characters, Full Stop, Comma, and Space Bar Keys
- List to Store Wait Phrases
- Method to Setup User Settings Object
- Method to Collect Data For Dynamic Buttons
- Method to Get Standard (Full Stop, Comma, and Space) Buttons
- Method to Get Special (Change Case, Enter, Erase, Switch Characters, and Wait) Buttons
- Method to Loop Through Dynamic Buttons and Set On Click Event Listeners
- Method to Loop Through Standard Buttons and Set On Click Event Listeners
- Method to Set On Click Event Listeners for Special Buttons
- Methods to Change Letter Case / Switch to Letter Case on Keyboard
- Methods to Switch Characters i.e., Letter, Number Pad, Special Characters
- Method to Erase Letter or Highlighted Text From Text Fragment's Text Field (Depending on if Text is Highlighted)
- Method to Type Characters
- Method to Speak Randomly Selected Wait Phrase
- Method to Set Keyboard to Uppercase

## 4. Header Fragment

### A. Screenshot

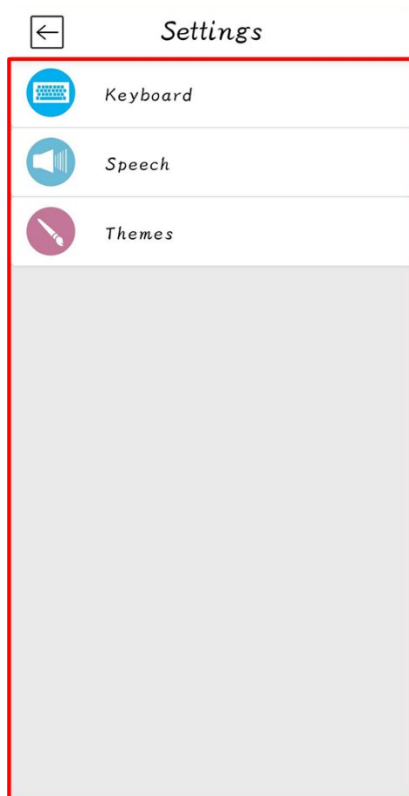


### B. Notes

- Frame Layout for General Layout
- Text View for Header Text
- Image Button for Back Button
- Method to Set Static Header Variable of Fragments Class and Setup Back Button for Settings Fragments

## 5. Settings Menu Fragment

### A. Screenshot



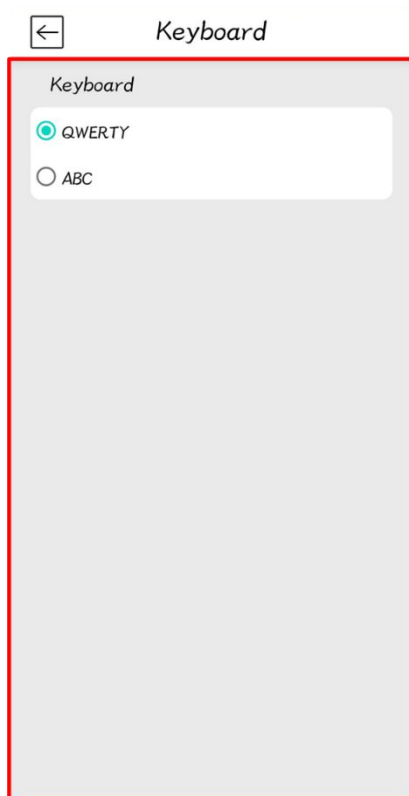
### B. Notes

- Linear Layout For Body
- Three Buttons For Keyboard, Speech, and Themes Fragments Navigation
- Three Dividers
- Fragments Class Utilized For Navigation Between Keyboard, Speech, and Themes Fragments
- Method to Setup Navigation



## 6. Settings Keyboard Fragment

### A. Screenshot

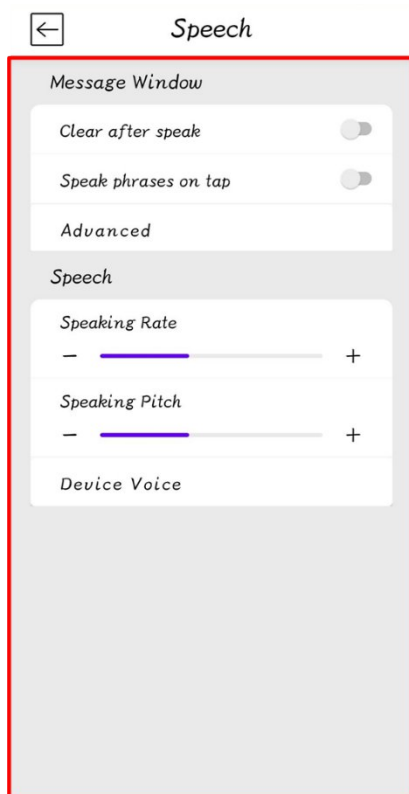


### B. Notes

- Linear Layout For Body
- Text View Utilized For Keyboard Header
- Radio Group Utilized For Radio Buttons
- Two Radio Buttons Utilized For Keyboard Types, QWERTY and ABC
- Method to Setup User Settings Object
- Method to Setup Radio Buttons
- On Checked Change Event Listener Utilized to Save Selected Radio Button Value and Utilize It within the Text Fragment
- Extension Method to Get Radio Button Content

## 7. Speech Fragment

### A. Screenshot



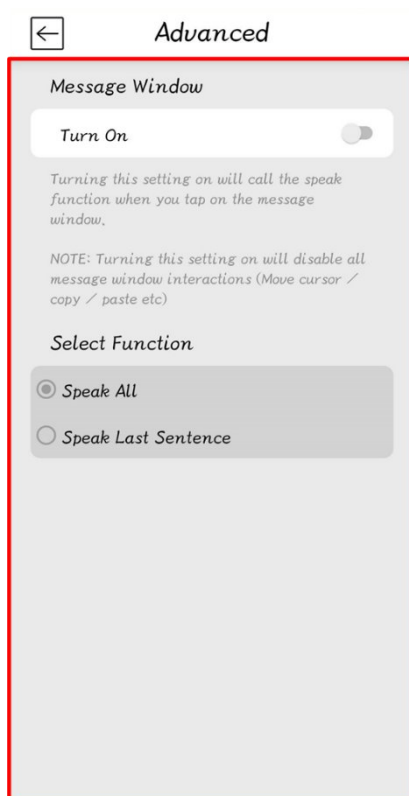
### B. Notes

- Linear Layout For Body
- Text View Utilized For Message Window Header
- Linear Layout Utilized For Message Window Group
- Switch Utilized For Clear After Speak, and Speak Phrases on Tap
- Button Utilized For Advanced UI Element
- Text View Utilized For Speech Header
- Relative Layouts Utilized For Seek Bar Layouts
- Text Views Utilized For “Speaking Rate” and “Speaking Pitch” Seek Bar Headers
- Seek Bars Utilized For Speaking Rate and Speaking Pitch
- Buttons Utilized For Minus and Plus UI Elements For Speaking Rate and Speaking Pitch
- Button Utilized For Device Voice UI Element
- Material Dividers Utilized

- Method to Setup User Settings Object
- Method to Setup Navigation For Advanced Button and Device Voice Button Utilizing Fragments Class
- Method to Setup Seek Bars Utilizing Seek Bars Class
- Method to Setup Switches Utilizing Switches Class

## 8. Message Window Fragment

### A. Screenshot



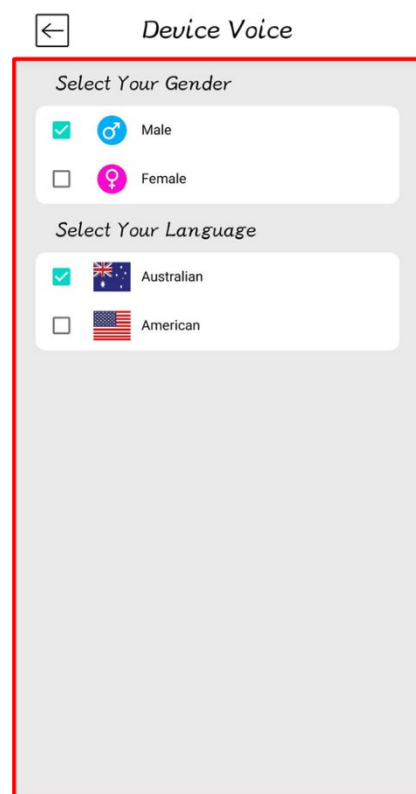
### B. Notes

- Linear Layout For Body
- Text View Utilized For Message Window Header
- Linear Layout Utilized For “Turn On” Switch Background
- Switch Utilized to Toggle Message Window Functionality
- Two Text Views Utilized For Note Text
- Text View Utilized For Select Function Header
- Linear Layout Utilized For Select Function Group

- Radio Group Utilized For Select Function Radio Buttons
- Two Radio Buttons Utilized For “Speak All” and “Speak Last Sentence” UI Elements
- Method to Setup User Settings Object
- Method to Setup Switch
- Method to Setup Radio Buttons
- Checked Change Event Listener Utilized to Toggle the Message Window Functionality ON or OFF in User Settings which will later be utilized within the Text Fragment
- Radio Click Event Listener Utilized to Set the Message Window Function i.e., “Speak All” or “Speak Last Sentence” in User Settings which will later be utilized within the Text Fragment
- Method to Toggle (Enable / Disable) Radio Buttons

## 9. Device Voice Fragment

### A. Screenshot



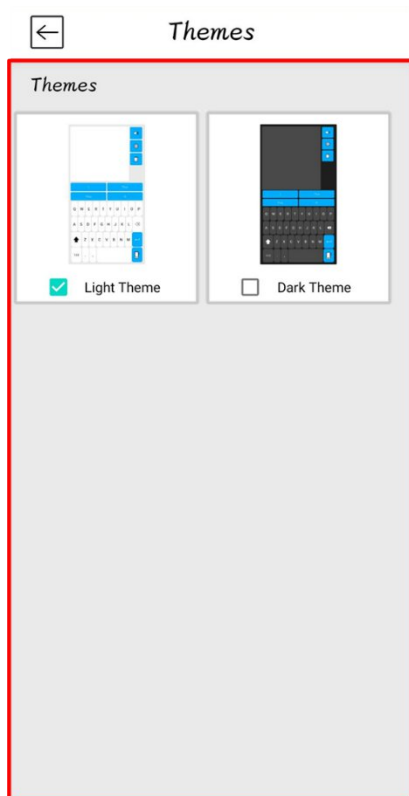
### B. Notes

- Linear Layout For Body
- Text View Utilized For Select Your Gender Header
- Linear Layout Utilized For Gender Group Background

- Two Relative Layouts Utilized For “Male” and “Female” Check Box Containers
- Two Linear Layouts Utilized For “Male” and “Female” Check Box Content
- Two Check Boxes Utilized For “Male” and “Female” UI Elements
- Two Image Views Utilized For “Male” and “Female” UI Element Icons
- Two Text Views Utilized For “Male” and “Female” UI Element Labels
- Two Buttons Utilized For “Male” and “Female” UI Element Interactions
- Text View Utilized For Select Your Language Header
- Linear Layout Utilized For Language Group Background
- Two Relative Layouts Utilized For “Australian” and “American” Check Box Containers
- Two Linear Layouts Utilized For “Australian” and “American” Check Box Content
- Two Check Boxes Utilized For “Australian” and “American” UI Elements
- Two Image Views Utilized For “Australian” and “American” UI Element Icons
- Two Text Views Utilized For “Australian” and “American” UI Element Labels
- Two Buttons Utilized For “Australian” and “American” UI Element Interactions
- Method to Setup User Settings Object
- Method to Setup Languages Utilizing CheckBoxes Class
- Method to Setup Genders Utilizing CheckBoxes Class

## 10. Themes Fragment

### A. Screenshot



### B. Notes

- Linear Layout For Body
- Utilizing Text View For Themes Header
- Utilizing Flex Box Layout For Theme Item Wrap Layout
- Utilizing Two Relative Layouts For Theme Item Containers
- Utilizing Two Include UI Functions For Theme Item Contents and Buttons
- Utilizing Two Linear Layouts For Theme Item Inner Containers
- Utilizing Two Image Views For Theme Preview
- Utilizing Two Check Boxes For Theme Item Check Boxes and Labels
- Method to Setup User Settings Object
- Method to Setup Check Boxes Utilizing CheckBoxes Class