COS30017 - Software Development for Mobile Devices

Formative Assignment - 02 (Graded as Pass / Fail, Individual Work)

Objectives

This assignment task has the following objectives,

1. Understand the concept of string externalisation
2. Exploring Android elements by creating simple interactive applications using media player.
3. Managing UI event listeners, device rotation

Tasks

Task 1

For this task, create an app to play the sneezing and nose blowing sound effect when the button is clicked or when rotating the device. Three sound clips are provided on Canvas. Set them according to the buttons. The user interface consists of three buttons as shown in Figure 1. The sneezing effect must come first, followed by nose blowing effect alternately. By rotating the device, the right sound clip will be automatically played alternately. For example, if the user clicks on the SNEEZE button, the sneezing effect will be played. Then if the user rotates the device, the nose blowing effect should sound. (*Hint: You are to include `"android:configChanges="orientation|screenSize"` in your Android Manifest file.)

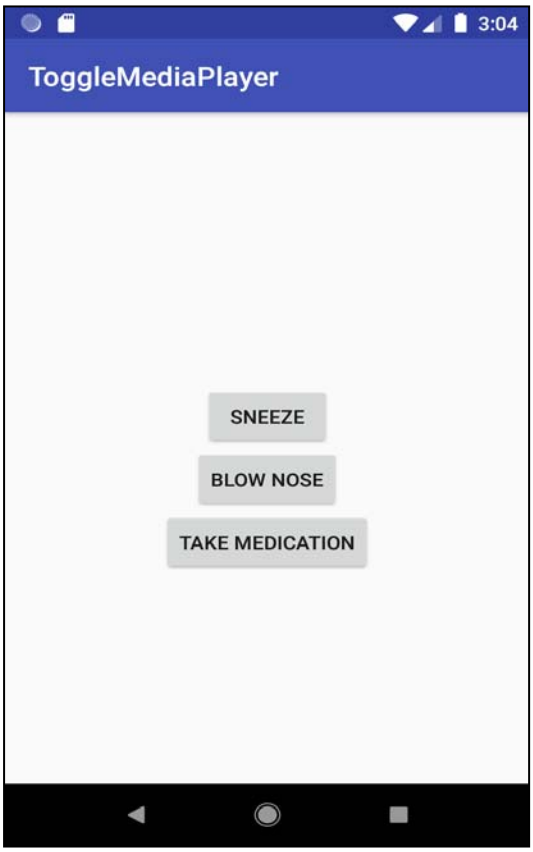

Figure 1

In addition to that, you are to keep track of the health level. Set the initial health level to 10. Every sneeze will reduce the health level by 1. When the "Take Medication" button is clicked, the health level will increase by 2. The health level should be kept between 0 - 10. When the health falls to level 7 and below, change the background colour to light blue. If it falls to level 5 and below, change the background colour to red.

You are to log the health level on the console to show that it is working accordingly.

Include your Java source code (eg. MainActivity.java) and the Android Manifest XML in your report submission.

Task 2

Describe the concept of String externalization and how it assists localization (in under 1 page, including images). Illustrate using the subtask 2.2 from assignment 1. Convert the language that you have created to other language (e.g. French) apart from English. Take screen shots of the app. with language changes (explore Settings -> Language & Keyboard to do this). You must also include the codes that shows how the string value is referenced from within the layout file.

Note: You may attempt this exercise with any non-English languages of your choice (check the languages that are supported by your mobile device or in the emulator.

Task 3

Create a simple app that allows the users to customise the burger that they wish to order. As shown in Figure 2, it provides the options to select the main filling and some add-ons. As the user makes the selections, the total amount should be updated on the *Textview* at the bottom of the screen.

Figure 2

As a supporter of healthy living, the burger outlet wants to encourage the customer to consume more vegetables with 3 for the price of 2 campaign. For any 3 selections from the Fiber section, the customer will only have to pay for 2 selections. And the customer may only select a maximum of 3 items from the section. Your app should disable the checkboxes after hitting the maximum number of selections.

The price for each item will be provided below. The default size for the burger is small. The user may choose from the following size: small, regular, large, gigantic. For regular size, an additional 20% will be added to the total price, large will incur an additional 30% to the total followed by gigantic 50%.

When the user clicks on the "Order" button, your app should ensure that the user has selected the main filling (protein section). You are to prompt the user with a *Toast* message if no selection has been made. If the right selection has been made, toast the total amount to be paid.

Items	Price (RM)
Protein	
beef	4.50
chicken	3.00
fish	4.00
egg	2.00
Fiber	
Lettuce	0.50
Tomato	0.50
Pickle	0.50
Onion	0.50
Unhealthy Fat	
Cheese	1.00
Mayonaise	0.50
Mustard	0.70

The image and icons are provided on Canvas.

Once you have completed, take screen shots of your app. in portrait mode to be included in the report. Briefly describe what you used in your codes in a clear and concise manner. Focus especially on the following key points:

- Layout (UI components are visible and properly aligned across the screen)
- Data structure used apart from variables and arrays
- Methods created and their main functions
- Good programming practice (Modular, clean logic flow, minimum redundancy)

Include the Java source codes in your report submission.

You are encouraged to work out the logical flow of the app and plan properly before you start coding.

Core/Extension Tasks

All tasks in this assignment are “core”. You must complete all core tasks, submit for feedback, and achieve a pass for all tasks in order to be eligible for a pass grade in this unit.

Submission

i. You are required to submit a printed report:

- With the assignment cover page

- The document must have a title (e.g. Submission for Assignment 01)

- The document does NOT need a table of contents.
- Scrappy work will not be entertained

ii. You are required to submit a softcopy of your report through the Blackboard.

The report is assessed and returned to you with feedback. You are expected to incorporate the feedback (esp. if changes are required) and submit the changed reports as part of the final portfolio.

Late submission will reflect on your performance. Any submission after 1 week of the due date will **NOT** be entertained.

Note: This is a formative assignment. That is, an assignment designed to provide feedback. If you fail this assignment, you have a maximum of **1 week** to make corrections and resubmit to pass.

Breach of Academic Integrity

Cases of improper academic integrity includes plagiarism (re-producing in whole or substantial part of the codes/report from book, or the internet) and cheating (copying from your friends). Violation of academic integrity will have its consequences depending on the severity. A repeat offence could lead to a fail in this unit.

Demonstration

You may be asked to demonstrate your assignment in the lab or during the signed-off sessions. You should be able to do this and explain your code when asked. Failure to do so will have an adverse effect on your performance.

FAQ

What happens if a student is unable to submit the assignment?

If you are unable to submit due to medical reasons, then a doctor's certificate will have to be shown. In exceptional circumstances, an email submission is permitted (with prior agreement with convenor). In normal conditions, all students are expected to make a submission by the due date, else the assignment is graded as a fail.

What happens if assignment submission is graded as a 'fail'?

You will have to repeat the task and submit in the following weeks lab session. Students can repeat the task and submit for feedback up to **twice**. If your submission is graded as 'fail' twice then you may fail this unit.

Useful References

Localization - http://developer.android.com/guide/topics/resources/localization.html

Building a Simple Android Application -

http://apcmag.com/building-a-simple-android-app.htm

Working with Layouts and Orientation -

http://apcmag.com/working-with-layouts-and-orientation-changes.htm

Working with media player –

https://abhiandroid.com/androidstudio/add-audio-android-studio.html

https://www.tutorialspoint.com/android/android_mediaplayer.htm

What happens if assignment submission is graded as a 'fail'?

You will have to repeat the task and submit in the following week's lab session. Students can repeat the task and submit for feedback twice. If you fail this assignment twice, you may fail this unit.