COS30017 - Software Development for Mobile Devices

Formative Assignment - 03 (Graded as Pass / Fail, Individual Work)

Objectives

This assignment task has the following objectives,

- Learning to work with *Recycleview* to optimise performance
- Exploring different gestures
- Creating app with multiple activities and multiple layouts.
- Passing objects between two activities using "parcelable" objects and intents.
- Exploring the use of fragments and the communications between fragments to learn to support dynamic UI.

Tasks

Task 1: Data transfer between activities using object via explicit intents

You are to create a simple movie app that allows the user to make movie tickets reservation. This task requires you to have two activities. The main activity should list out the movies in a *Recycler-View* shown on Figure 1. Any selection from the list should trigger the second activity leading to the reservation page.

The second activity should display a simple form to capture user's reservation. The form contains 5 input controls:

- Date Picker: To display the calendar when the TextBox is clicked. Set the current date as the default date. User is allowed to book a maximum of 3 days in advance. Set the month to display in month name (eg, Jan, Feb, etc)
- Spinner: To display the movie show time. Each movie will have different show time.
- *Textview:* For the number of tickets. It has 2 buttons on each side to allow the user to increase and decrease the value. One *TextView* for adult and one for kids.
- a "Book" button

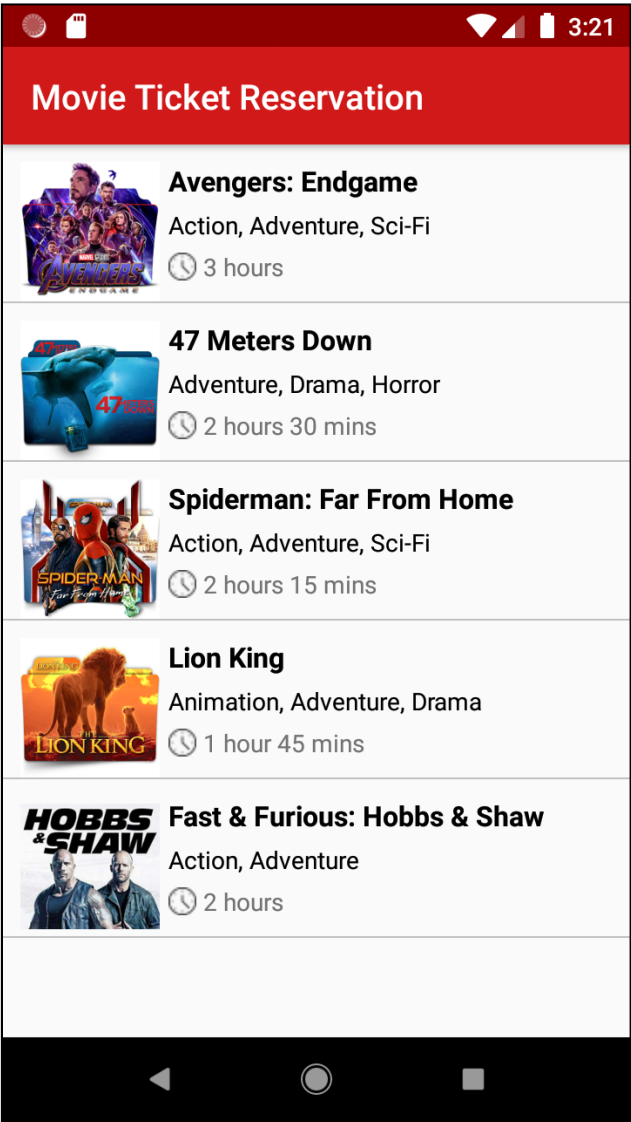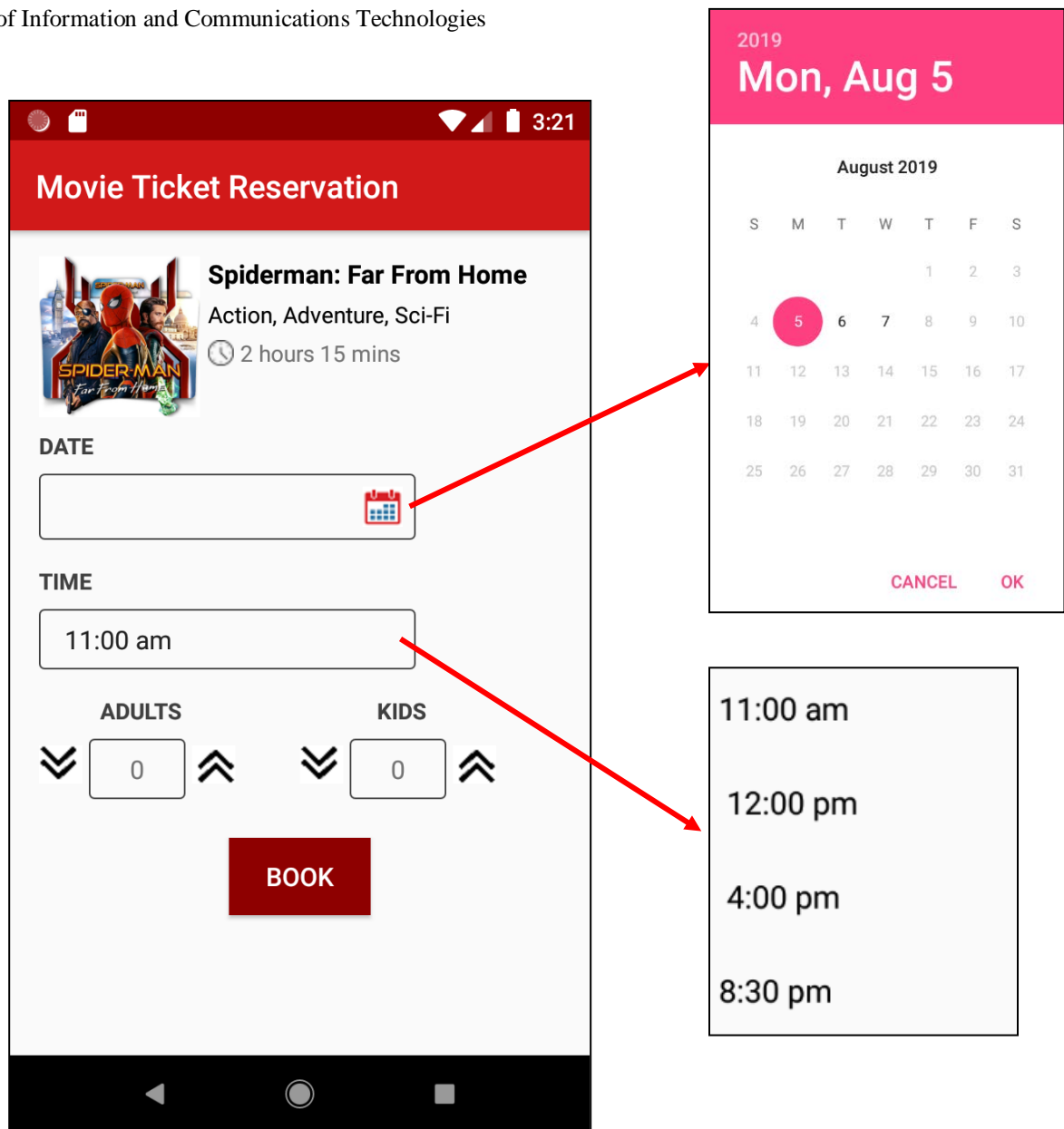The activities should pass information across as Parcelable object.

Figure 1

Figure 2

When the main activity receive the *Parcelable* object from the Intent, display it on a separate XML layout. Refer to Figure 3. Remember to check whether the user has entered all the information on the form. Refer to the Appendix for the movies' information.

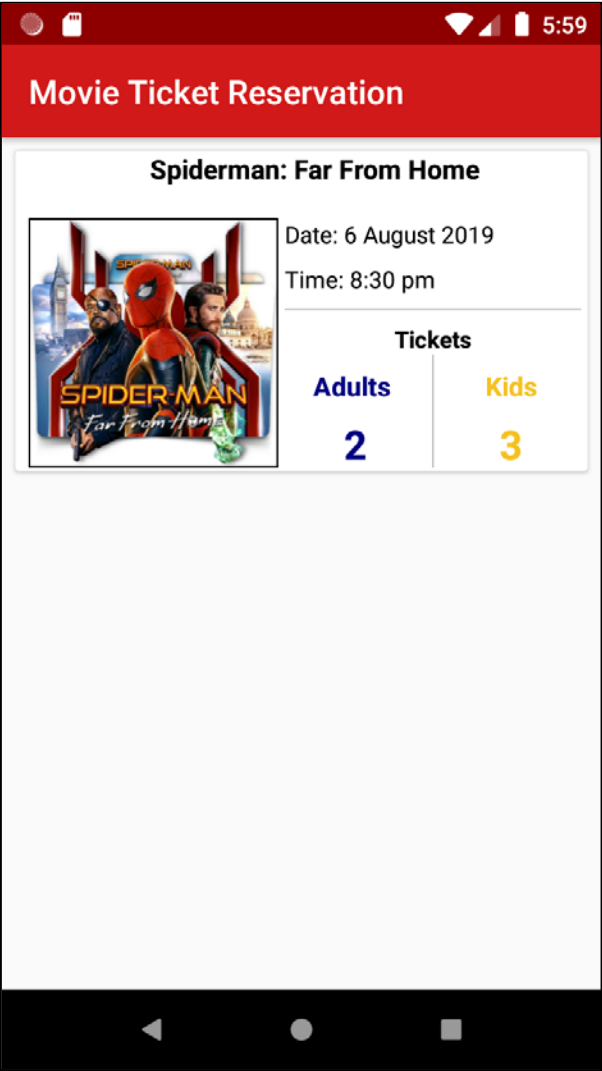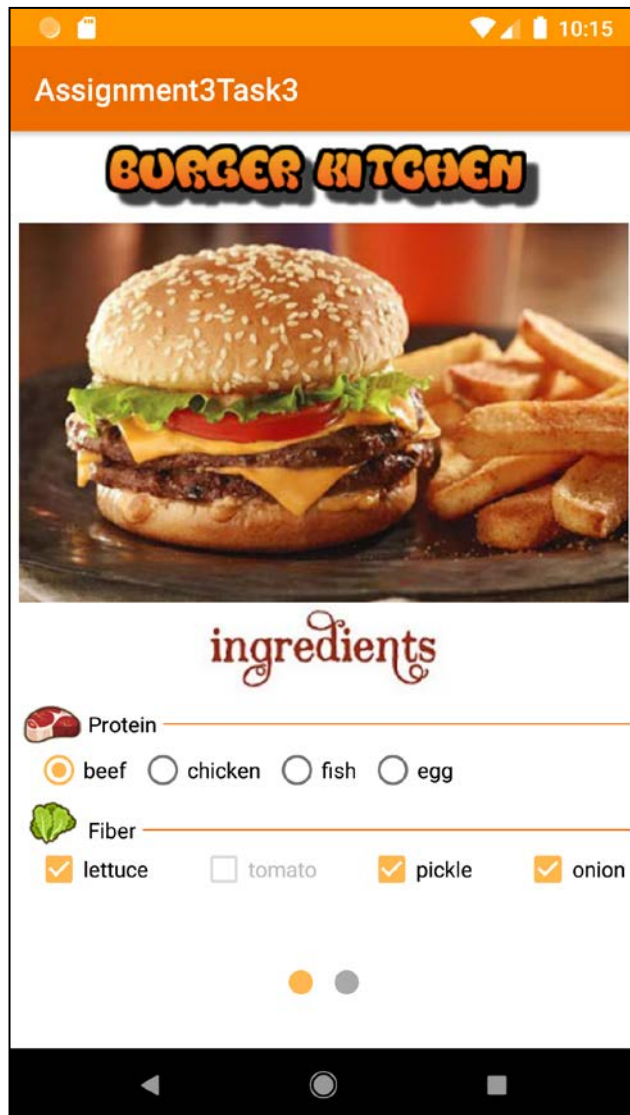Include the screenshots of your app and source code (Java) as part of your submission.

Figure 3

Task 2 : Fragments, fragment communication

In this task, you are required to work with two fragments and to establish communication between the fragments through the *Main Activity*.

Modifying from assignment 2, split the user interface into two pages. The first page will display the following options.
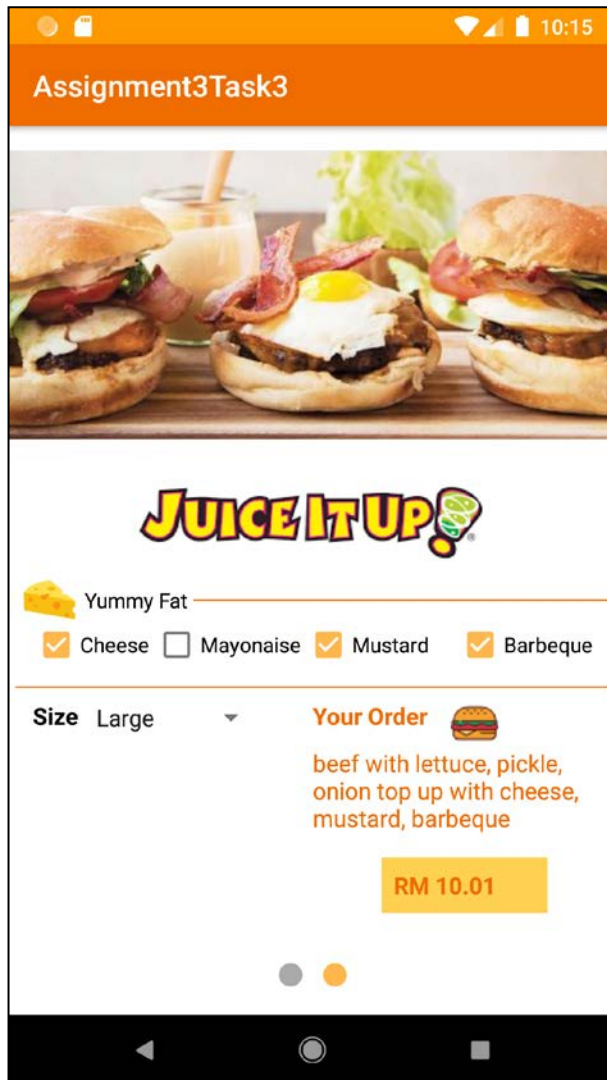

Fragment 1 to be loaded in the layout view of the main activity.

Similar to assignment 2, the user is expected to choose one protein option and a maximum of 3 fiber options. The user may move to the next page through swipe gesture. The page dot at the bottom of the page is used to indicate which page the user lands on. Create the shape in XML and control it through the main activity.

You are to create dynamic fragments for this task. Implement the swipe gesture to move to the next page using `OnSwipeTouchListener.` Perform validation to ensure that the user has made a selection on the protein type before loading the second screen.

To facilitate communications between fragments, you are to implement an interface to pass data to the *MainActivity*. Follow the guideline on the following link:

- http://developer.android.com/training/basics/fragments/communicating.html#DefineInterface
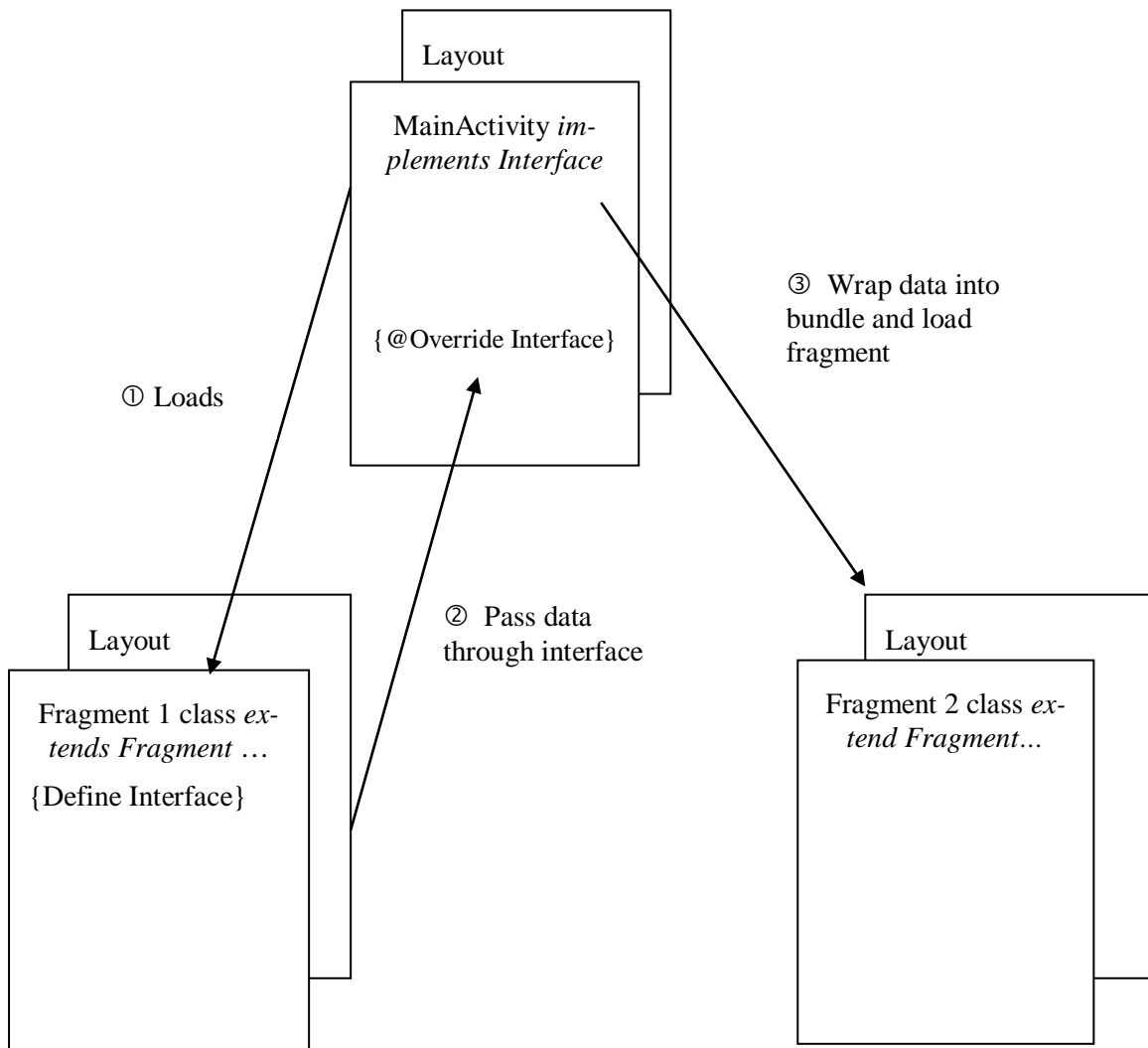- http://www.codexpedia.com/android/android-fragment-communication-through-activity/

Fragment 2 to be loaded in the layout view on the main activity

In this case, the *MainActivity* will serve as the *go-between* the fragments. Please ensure that the user is able to navigate back to the previous screen. The images/graphics can be obtained from Canvas and the charges are similar to assignment 2. The user's order and total charges should be displayed.

> You may choose to replace the swipe gesture with a button if you cannot implement it.

Refer to the diagram below to guide you through for the logical flow of the event behind the scene.

Declare an interface to communicate with the *MainActivity*

* You are to use factory methods to pass variables to the second fragment. Refer to:

https://gambitdevs.wordpress.com/2016/12/14/understanding-android-studio-include-fragment-factory-methods-tickbox/

* Remember to include *Interface Callback* when creating the fragment

Include the XML and Java source code in your report submission. Please ensure that your report is formatted with single spacing between each line and your codes are properly indented. Do a double-sided printing or else the Green Club president will hunt me down. In the meantime, sit back, warm up your fingers and start coding. Have fun !!

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 Canvas.

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.

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Appendix

```
Title: Avengers: Endgame
Genre: Action, Adventure, Sci-Fi
Show time: 11:00 am, 2:00 pm, 4:00 pm,7:30 pm
Duration: 3 hours

Title: 47 Meters Down
Genre: Adventure, Drama, Horror
Show time: 11:30 am, 3:00 pm,8:30 pm
Duration: 2 hours 30 mins


Title: Spiderman: Far From Home
Genre: Action, Adventure, Sci-Fi
Show time: 11:00 am, 12:00 pm, 4:00 pm,8:30 pm
Duration: 2 hours 15 mins


Title: Lion King
Genre: Animation, Adventure, Drama
Show time: 3:30 pm, 4:00 pm,7:30 pm, 8:00 pm
Duration: 1 hour 45 mins


Title: Fast & Furious: Hobbs & Shaw
Genre: Action, Adventure
Show time: 1:30 pm, 4:00 pm,7:30 pm
Duration: 2 hours
```