College of Engineering, Construction and Living Sciences
Bachelor of Information Technology
IN721: Design and Development of Applications for Mobile Devices
Level 7, Credits 15

Practical 05: Async Task & Recycler View

Assessment Table

Assessment Activity	Weighting	Learning Outcomes	Assessment Grading Scheme	Completion Requirements
Practicals	25%	1, 3, 4	CRA	Cumulative
Language Translator	20%	1, 3, 4	CRA	Cumulative
Wishlist	25%	1, 3, 4	CRA	Cumulative
Exam	30%	2, 3, 4	CRA	Cumulative

Conditions of Assessment

This assessment will need to be completed by Friday, 12 June 2020.

Pass Criteria

This assessment is criterion-referenced with a cumulative pass mark of 50%.

Submission Details

You must submit your program files via **GitHub Classroom**. Here is the link to the repository you will be using for your submission – https://classroom.github.com/a/ifyWTPlw. For ease of marking, please submit the marking sheet with your name & student id number via **Microsoft Teams** under the **Assignments** tab.

Authenticity

All parts of your submitted assessment must be completely your work and any references must be cited appropriately.

Policy on Submissions, Extensions, Resubmissions & Resits

The school's process concerning **Submissions, Extensions, Resubmissions and Resits** complies with Otago Polytechnic policies. Students can view policies on the Otago Polytechnic website located at https://www.op.ac.nz/about-us/governance-and-management/policies.

Extensions

Please familiarise yourself with the assessment due dates. If you need an extension, please contact your lecturer before the due date. If you require more than a week's extension, a medical certificate or support letter from your manager may be needed.

Resubmissions

Students may be requested to resubmit an assessment following a rework of part/s of the original assessment. Resubmissions are completed within a short time frame (usually no more than 5 working days) and usually must be completed within the timing of the course to which the assessment relates. Resubmissions will be available to students who have made a genuine attempt at the first assessment opportunity. The maximum grade awarded for resubmission will be C-.

Learning Outcomes

At the successful completion of this course, students will be able to:

1. Implement complete, non-trivial, industry-standard mobile applications following sound architectural and code-quality standards.
2. Explain relevant principles of human perception and cognition and their importance to software design.
3. Identify relevant use cases for a mobile computing scenario and incorporate them into an effective user experience design.
4. Follow industry standard software engineering practice in the design of mobile applications.

Assessment Overview

In this practical, you will complete a series of tasks covering today's lecture. This practical is worth 1% of the final mark for the Design and Development of Applications for Mobile Devices.

Last time we looked at how you can asynchronously download XML from Apple's RSS feed. Today, we will look at how you can download JSON data, again asynchronously from the Last.fm API. For some of you, this will be the first time handling JSON data...don't worry, you will be fine. As mentioned in the last practical, the JSON technique is succinct & you don't need a parser - the in-built libraries do this for you.

Over the next two weeks, we will be building a small to medium-sized application. This application will be the starter code for your first assessment which will be released next week.

Task 1

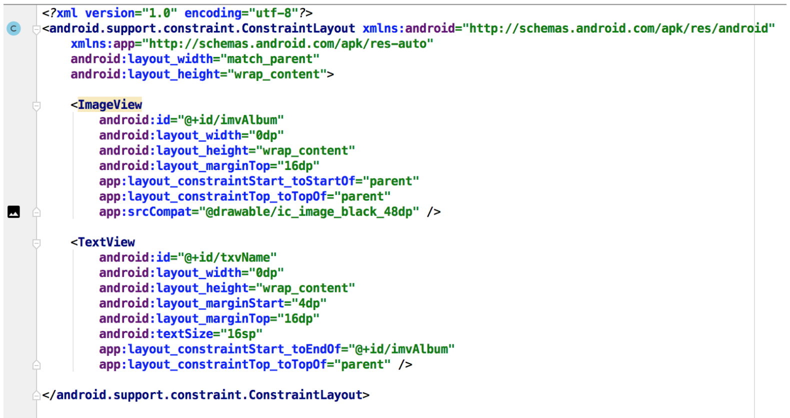
- I have provided starter code in **mobile-course-materials/practicals**. This is going to be like the last practical, where I provide you with starter code & you are expected to complete the application using the lecture slides & online resources. This practical should only require the lecture slides.

- Open up the application in **Android Studio** and familiarise yourself with the file structure, **BaseActivity.kt**, **MainActivity.kt** & **RawDataAsyncTask.kt**.

- Create the four helper classes in the **helpers** directory as specified in lecture slide 5. This is **Album.kt**, **LastFmAsyncTask.kt**, **LastFmRecyclerViewAdapter.kt** & **LastFmViewHolder.kt**.

- Create the two interface classes in the **interfaces** directory as specified in lecture slide 5. This is **IDataDownloadAvailable.kt** & **IDataDownloadAvailable.kt**.

- Create a layout file called **list_item.xml**. This file should **only** contain one constraint layout, one image view & two text views. Write the following XML below in this file:



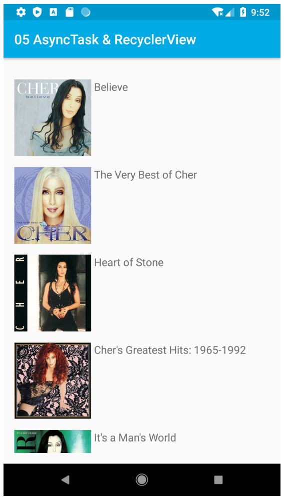
```
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    android:layout_width="match_parent"
    android:layout_height="wrap_content">

    <ImageView
        android:id="@+id/imvAlbum"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_marginTop="16dp"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:srcCompat="@drawable/ic_image_black_48dp" />

    <TextView
        android:id="@+id/txvName"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:layout_marginStart="4dp"
        android:layout_marginTop="16dp"
        android:textSize="16sp"
        app:layout_constraintStart_toEndOf="@+id/imvAlbum"
        app:layout_constraintTop_toTopOf="parent" />

</android.support.constraint.ConstraintLayout>
```

Task 2

- **Do not modify BaseActivity.kt, MainActivity.kt & FeedXMLParser.kt**

- Use the code in the slides to complete the helper & interface classes. Make sure you comment each class so you know what they do & how they interact with each other. If you are stuck, I can go through the code snippets or you can use Google.

- After successfully completing the classes, run your application. You should see the following screens:



9:52

05 AsyncTask & RecyclerView

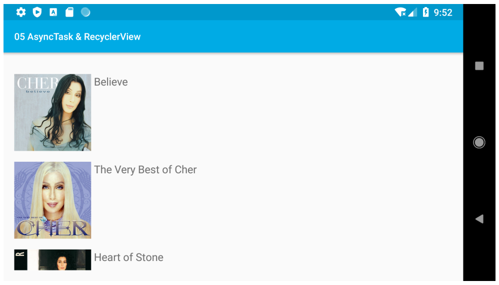
Believe

The Very Best of Cher

Heart of Stone

Cher's Greatest Hits: 1965-1992

It's a Man's World



9:52

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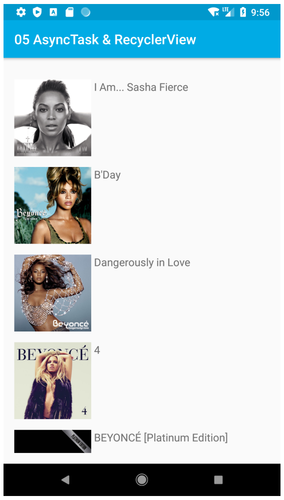
Believe

The Very Best of Cher

Heart of Stone

Task 3

- In the part where you call the **createURI** method, change the artist value from **cher** to **beyonce**.
- Run your application & you should see the following screens:



9:56

05 AsyncTask & RecyclerView

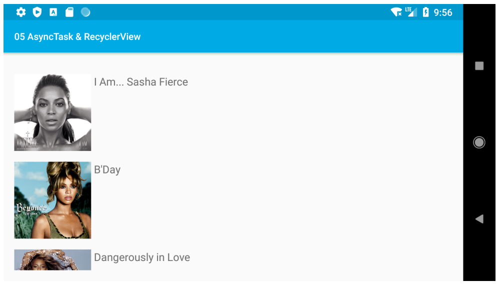
I Am... Sasha Fierce

B'Day

Dangerously in Love

4

BEYONCÉ [Platinum Edition]



9:56

05 AsyncTask & RecyclerView

I Am... Sasha Fierce

B'Day

Dangerously in Love

Submission

- Create a new branch named 05-checkpoint within your practicals GitHub repository
- Create a new pull request and assign Grayson-Orr to review your submission
- Deadline: Friday, 12 June at 5pm

Note: Please don't merge your own pull request.