College of Engineering, Construction and Living Sciences
Bachelor of Information Technology
IN721: Mobile Application Development
Level 7, Credits 15

Practical 04: Country API

Assessment Overview

In this assessment, you will design, develop & UI test an application which makes a request to the **Country API** hosted on **GitHub Gist** & displays the data using a **RecyclerView**. This assessment contributes **3%** towards your final mark in **IN721: Mobile Application Development**.

Learning Outcomes

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

1. Implement & publish complete, non-trivial, industry-standard mobile applications following sound architectural & code-quality standards.
2. Identify relevant use cases for a mobile computing scenario & incorporate them into an effective user experience design.
3. Follow industry standard software engineering practice in the design of mobile applications.

Assessment Table

Assessment Activity	Weighting	Learning Outcomes	Assessment Grading Scheme	Completion Requirements
Practical	20%	2, 3	CRA	Cumulative
Project	80%	1, 2, 3	CRA	Cumulative

Conditions of Assessment

You will complete this individual assessment inside & outside timetabled class time. This assessment will need to be completed by **Friday, 16 April 2021** at **5:00 PM**.

Pass Criteria

This assessment is criterion-referenced (CRA) with a cumulative pass mark of **50%** over all assessments in **IN721: Mobile Application Development**.

Authenticity

All parts of your submitted assessment must be completely your work & any references must be cited appropriately including, externally-sourced graphic elements. Provide your references in a **README.md** file. All media must be royalty free (or legally purchased) for educational use. Failure to do this will result in a mark of **zero** for this assessment.

Policy on Submissions, Extensions, Resubmissions & Resits

The school's process concerning submissions, extensions, resubmissions & resits complies with **Otago Polytechnic** policies. Learners can view policies on the **Otago Polytechnic** website located at https://www.op.ac.nz/about-us/governance-and-management/policies.

Submissions

You must submit all program files via **GitHub Classroom**. Here is the URL to the repository you will use for your submission – https://classroom.github.com/a/VJIq7Ae0. Create a new branch called **04-country-api** from the **main** branch by running the command - **git checkout -b 04-country-api**. This branch will be your development branch for this assessment. Once you have completed this assessment, create a pull request & assign the **GitHub** user **grayson-orr** to a reviewer. **Do not** merge your own pull request. Late submissions will incur a **10% penalty per day**, rolling over at **5:00 PM**.

Extensions

Familiarise yourself with the assessment due date. If you need an extension, contact the course 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

Learners may be requested to resubmit an assessment following a rework of part/s of the original assessment. Resubmissions are to be completed within a negotiable short time frame & usually must be completed within the timing of the course to which the assessment relates. Resubmissions will be available to learners who have made a genuine attempt at the first assessment opportunity & achieved a **D grade (40-49%)**. The maximum grade awarded for resubmission will be **C-**.

Resits

Resits & reassessments are not applicable in **IN721: Mobile Application Development**.

Instructions - Learning Outcomes 2, 3

Task One (2%):

Create a new project with the following configurations:

- Template - Empty activity

- Name - CountryAPI
- Package name - op.mobile.app.dev.country.api
- Save location - /path to your practical GitHub repository/04-country-api
- Language - Kotlin
- Minimum SDK - API 28: Android 9.0 (Pie)

The application structure is similar to the code examples from the **13-recycler-view** teaching session. Instead, you will request data from the **Country API**.

Familiarise yourself with the following **API** URL:

https://gist.githubusercontent.com/Grayson-Orr/34991fb3b0192aaf636e56623cbdd9d3/raw/7e63d91a981c004a1389e7b0945533

In **recycler_view_item.xml**, add two **TextViews** & an **ImageView**. You will bind your model data to these **Views**. However, binding data to an **ImageView** is not quite straight forward.

Glide is a fast & efficient image loading framework that supports fetching & displaying images. To use **Glide**, declare the following dependency in **build.gradle (CountryAPI.app)**.

```
dependencies {
    ...
    implementation 'com.github.bumptech.glide:glide:4.8.0'
    ...
}
```

In **ServiceStatusBindingAdapter.kt**, add the following **BindingAdapter** function:

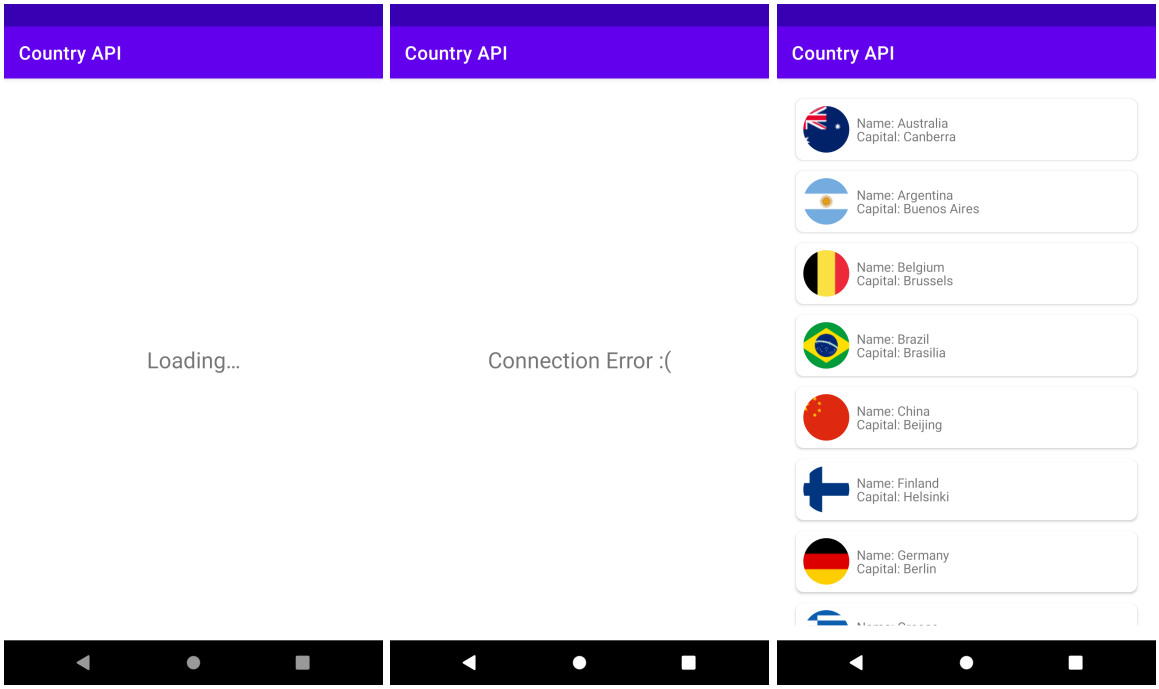
```
    ...

    @BindingAdapter("flagImage")
    fun bindFlagImage(imageView: ImageView, imageUrl: String) {
        Glide.with(view.context)
            .load(imageUrl).apply(RequestOptions().circleCrop())
            .into(view)
    }
```

Resource: https://github.com/bumptech/glide

In **recycler_view_item.xml**, declare & set the **flagImage** attribute to the flag image data in your model.

Run your application on either an **Android Emulator** or **connect device**.



Task Three (1%):

Create a new test file called **CountryTest**. To do this, right-click on **op.mobile.app.dev.country (androidTest) > Kotlin Class/File**. In **CountryTest.kt**, write three UI tests. To run your test file, right-click **CountryTest.kt > 'Run CountryTest'**.