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

Practical 02: Android Overview

Assessment Overview

In this assessment, you will create a calculator project in preparation for the next assessment. This assessment is worth **1%** of the 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 assessment during your learner managed time, however, there will be availability during the teaching sessions to discuss the requirements & your progress of this assessment. This assessment will need to be completed by **Friday, 12 March 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. Checkout from the **main** branch to the **02-practical** branch by running the command - **git checkout 02-practical**. 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 1:

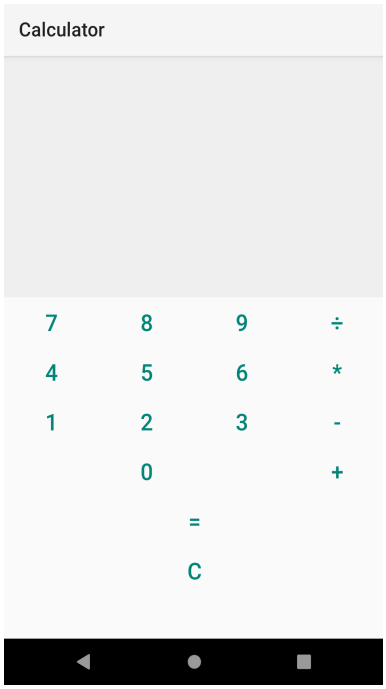
Create a new **Android** project with the following configurations:

- Template - Empty activity

- Name - Calculator
- Package name - op.mobile.app.dev.calculator
- Save location - /<YOUR GITHUB REPOSITORY>/practical-02
- Language - Kotlin
- Minimum SDK - API 28: Android 9.0 (Pie)

Task 2:

In **activity.xml**, create a calculator layout. For example:



Do **not** need to worry about the functionality of the calculator (we will look at this next assessment). Feel free to express your **creativity** in this assessment.

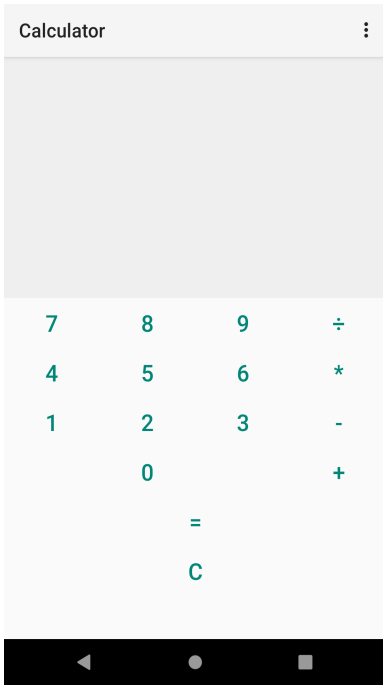
Task 3:

In its basic form, the **action bar** displays the **title** for the activity on the right-hand side & an overflow **menu** on the left-hand side. Create a new resource directory called **menu**. To do this, right-click **res** > **Android Resource Directory**. In the **New Resource Directory** window, change the **Directory name** & **Resource type** to **menu**. In the **res/menu/**, create a new file called **menu.xml**. Use the following resource to define a menu in **menu.xml** - https://developer.android.com/guide/topics/ui/menus

To specify the options menu for an activity, override **onCreateOptionsMenu()**. In this method, you can inflate your menu resource (defined in **XML**) into the **Menu** provided in the callback. For example:

```
override fun onCreateOptionsMenu(menu: Menu): Boolean {
    val inflater = menuInflater
    inflater.inflate(R.menu.menu, menu)
    return true
}
```

Run your application on the **Android Emulator** or **connect device**. You should see the following:



Reflection:

In **02-reflection.md**, answer the following:

1. The <**item**> element supports several attributes, describe the following attributes:
   - **android:title**
   - **android:showAsAction**
2. What are the **three** fundamental types of menus?