University of Stirling
Computing Science and Mathematics
CSCU9YH

Project – Diary Entry App

The Android Project is about a Diary Entry application. There will be a lab sheet to help you on your way with a skeleton application. However, you are expected to add further functionality to this for this assignment.

In brief, the application is an app to input and display entries into a diary. The app will have three screens, one for selecting the date, the second to actually enter the diary entry text, and the third to display stored diary entries. You might have other ideas of how to structure the UI of the app, however, the split between the three screens is **mandatory** for this assignment.

The three screens are to be implemented using Fragments within an Activity. **Before you continue with working on the tasks in this handout make sure you have completed the lab on the YH Project (on fragments).**

In previous labs you have created Activities, databases, a basic GUI, and Fragments.

The project should include the following functionality:

- The first screen should allow the user to select a date in a user friendly way, ideally using a spinner or picker.
- The second screen is expected to offer the user the functionality to input the text for the diary entry. There should also be a button to clear any previous input and perhaps a second button to action the insertion into the diary.
- The second screen should also state the date that was selected on the first page.
- The third screen should display previously added diary entries.

At the most basic level, your application should:

- Support fragments
- Be able to accept user input for the date (on the first fragment), as well as a text entry (on the second fragment).
- Store the diary entries (possibly up to a certain max number of entries). This may be implemented in a simplistic way (internal data structure, Android shared preferences)
- Display diary entries (on the third fragment).

You may also develop an app for a different purpose (other than a diary) according to your own interests. However, the basic specification including fragments with multiple tabs, transferring information between the fragments, user input using Android controls, and storing data need to be adhered to. You also MUST use the provided code for fragments from the project lab.

Further functionality and refinement
The functionality listed above is what is expected of a basic app. However, for additional credit you can refine your application further. Rather than storing the entries internally in a data structure, you may consider using persistent storage for this data. You may also want to store the diary in a separate app which allows other apps to use its data. You could also enhance the viewing of the diary, for instance you may offer to filter entries by date or offer a search function. You could even integrate photos on the phone or a song or a voice recording in diary entries? A common feature many users expect is that the app also works correctly when the screen is rotated, making good use of the screen in landscape orientation, and that the app also works nicely on larger screens, e.g. tablets. However, you may also have your own ideas for refinement of the app. **Please note these suggestions are just that, ideas. There is no expectation that you will implement all of these features.**

How to begin
Start a new project and give it an appropriate name, such as DiaryApp. Alternatively, you may want to create a copy of the project lab (fragments) and rename the copy to DiaryApp. In any case, start with a minimal application and make sure that it runs and works correctly before you add code and functionality. Then build up the application in small iterative steps, making sure that it compiles and runs as expected after each step. **Take backups!**

Submission Instructions
The deadline for submitting your project is **Monday, 28th November 2022**. Separately, you will be asked to submit a demo video of your solution to the given problem. For the submission you should prepare a **single document** which includes a report discussing the problem, any assumptions you made, and **your solution**, as well as the full (Kotlin/Java, UI XML) code listings of your program code as an appendix. Separately, you are asked to submit to Canvas **a zipped copy of your Android Studio project** (please clean your project of any compiled files before zipping it up (see Android Studio menu Project/Clean Project).The zipped archive should be no larger than 1MB.

For the report, make sure the source code is formatted appropriately and is readable. Your report should present your solution and discuss the structure of your app, key features, and UI design. The report should include appropriate diagrams of the design and screen shots of your application. The report also should provide details as to how complete your solution is, any additional functionality you have implemented, and if applicable, any special cases when your program is not working correctly. Make sure your report is laid out nicely and looks professional. Your report should **be critical and reflective** in nature. You may want to discuss alternative approaches to implementing certain functionality. Are there better ways to implement features, but you have not used these (e.g. due to time constraints)? You should discuss and justify design choices you have made, perhaps with reference to Android design principles, API functionality offered, or other similar apps.

You should submit your document via Canvas. *You are expected to demonstrate your solution,* so please do test out the final version. Make sure that what you submit does work in some fashion. You can comment out incomplete code before submission.

It is important that your program code is thoroughly and intelligently commented. You will lose marks if the code is not sufficiently and usefully commented! Good comments explain the *use* of variables and methods/classes, and *why* certain values are assigned.
In short, your project consists of:

- a report discussing your solution, including your program code with comments, and a cover sheet giving your student number,
- a zipped copy of the cleaned Android Studio project
- a demo video of your solution.

Plagiarism
Work which is submitted for assessment must be your own work. Students are encouraged to share ideas. However, each student must individually code their own assignments. Source code will be checked and tested to verify individual work. All students should note that the University has a formal policy on plagiarism which can be found at http://www.stir.ac.uk/academicpolicy/handbook/assessment/#q-8.

Plagiarism means presenting the work of others as though it were your own. The University takes a very serious view of plagiarism, and the penalties can be severe. Specific guidance in relation to Computing Science assignments may be found in the Computing Science Student Handbook.

We check submissions carefully for evidence of plagiarism, and pursue the cases found. Penalties range from a reduced grade, through 0 for the module, to being required to withdraw from studies.

Assessment Criteria

In this assignment we shall be assessing your work with respect to various criteria, the most important of which are:

- Correctness of operation
- Appropriate use of programming constructs
- Intelligent code comments
- Clear, comprehensive and critical report
- Consistency, legibility and tidiness of program layout

The marks for the project count for 100% of the module grade. The split for the project is as follows: report (30%) and the implemented functionality in code (70%). The Code component consists of basic functionality (30%), advanced features (50%) and code comments (20%).

Late submission

If you cannot meet the assignment hand in deadline and have good cause, please apply via Canvas explaining the reasons for the extension request. Submissions will be accepted up to **seven days** after the hand in deadline (or expiry of any agreed extension), with the mark being lowered by three points per day. After seven days the work will be deemed a non-submission and will receive an X (no grade).

Backups: You are advised to make backup copies of your work regularly.