DT228-3 Mobile Software Development CA

Android App Design and Development Assignment

Marks

The app development assignment is worth **30%** of your overall mark in Mobile S/W development.   It is marked as follows:

- App source code and demo – marked out of 100.

- App design - which will be done as a workshop in class during review week. This will be a multiplier on your overall App source code and demo mark (1 if design is done, 0.8 if not completed).

- Total App mark out of 100= (App source code and demo)* App design multiplier

- Each student will demo their app in the lab.

Specification

The purpose of this assignment is to design and develop an Android app. The app can deal with any area that you want – but has to include the following skeleton features:

- The app must store data in a local SQLLite database

- It must contain an "input" screen where the user has to enter data

- Must include a list (populated with data from the SQLlite database)

- Must have underlying operations on the database (i.e. all of INSERT, UPDATE, SELECT, DELETE usage on the database)

- At an absolute minimum, must have *at least* 1 list screen, 1 input screen, 1 extra screen

- Use at least *two* Android features outside of the above specification. The purpose of this is to demonstrate your proficiency at using the API to discover new features, which you can then implement because you should have built up enough general familiarity with Android to be able to do this.

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Examples of features might be using using the camera API, linking to network resources using HTTP and grabbing remote data, location services, more creative GUIs using features such as touch input.

That is the skeleton specification to guide you. Obviously you will have you own programme logic and/or algorithm(s) that support the functionality you want to put in.

What do you have to hand in?

1) A design document by Friday October 28th at midday. We will use one of our lecture sessions that week to work on the design.

2) The project source code and screen prints by Tuesday November 22nd@ midday
   a. A screen print of your first screen.
   b. Project Code: Provide a single zipped file containing all directories/files in your Android project. Therefore, all classes, source code, resources, manifest file etc will be included. Include your name in the file name e.g. JohnMurphy.zip .

Please read the notes about code snippets and referencing towards the end of this document.

What needs to be in the Design document (for October 28th)

The Design document should specify:

• We will discuss this nearer the date, but it will include class diagram, screen flows, use cases and database design.
• Submit the design in webcourses as a PDF or .doc titled yourname.xxx .. e.g. JohnMurphy.doc

How will your app code be marked (for November 24th)?

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Marks for the source code for the app will be as follows.

- **Accuracy/ Completeness** (40%) – for supplying the deliverables listed (working commented code), and for handing in an app that meets the various points in the specification to a high standard.

  Quality of the user interface (20%) – Are the screens easy to use? Are they laid out neatly? Do they look viable?

  a. **Overall quality and complexity of the app** (40%) –Does your app function well and robustly? What extra features beyond the standard functionality requested are included? How complex is it?   Here are examples of the types of apps considered basic versus difficult – but don't code these up, use your own idea!:
     i. An app that allows you to maintain, search and add a set of contacts. It uses a single database table in a local SQLlite database. Extra features are some extra UI widgets (use of . DatePicker and menus). This is *basic complexity*, meeting the minimal skeleton specification.
     ii. An app that stores a list of all schools in the Ireland. Data is held locally in the app. The user can add new schools/ update school descriptions. The list is displayed on a map of Ireland, with the ability to click on an individual school and retrieve information about it and the local area. This includes a calculation of other skills within "X" kilometres of the school, or in the same county. More than one database table in the SQLlite database. Solid user interface, credible screens. This is m*edium complexity* because the features supplied as medium difficulty (an active map, additional UI widgets), there is some algorithm complexity around calculations and the data is more complex than one or two columns on a single SQLlite table).
     iii. An app that displays and maintains property sales information - Data is stored locally in the app, but property price updates are also scraped regularly from the cloud. The user is able to search by address for particular properties (using reverse geocoding),

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with extra search functionality on property price comparisons also supplied. The user interface is of a high standard and maximises usability for the user. This is *high* complexity because the extra features are difficult (e.g. web scraping data from the cloud and loading this data into a local database, use of *fragments*) , there is algorithmic logic (calculations, price comparisons etc), and the user interface is completely credible.

What sort of app should I develop?

Something of interest to you – it's up to you. Given the specification, you're going to be developing an app that captures information about something (e.g. a sports team, news items, college work, social media,… etc). . You need to make sure that you include the functionality requested – so your app will have *at least* four or five screens in total.

Submission Dates (in webcourses)

Please submit the design document no later than Friday **October 28th @ 12 midday.** Please submit the source code/screen print no later than Thursday **November 22nd @ 12 midday.**

Regulations

Late assignments within a week of the due date will be marked out of 50%.

Late assignments more than a week late (without a documented reason) will not be marked.

The app must be your own work. **Assignments that are copied or written by someone else will receive zero marks,** and the plagiarism escalated as per DIT assessment regulations. Note: As described below, a**ny code snippets used from elsewhere must be referenced using comments in the code or they are treated as plagiarism!**

External Code/ Code snippets

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- If you use code snippets that you obtained from an online or book example, you MUST reference with an opening AND closing comment around the code block itself in the .java file and/or XML file. E.g. for java

```
// Reference: The following code is from
Android example @www.and.etc

Intent. I = new  Intent (.. etc

// Reference complete
```

If you don't reference code snippets and the code is not yours, it is technically plagiarised code.   It is not practical to prevent students from using code snippets, but marks will reduce the more you rely on code written by someone else.

- Follow coding standards –indented code, comment header blocks for .java files, tidy code, naming standards, appropriate comments etc.- Google's java standards are fine:

    https://google.github.io/styleguide/javaguide.html