CS 442: Mobile Applications Development

Assignment 3 – Multi-Note Pad *(200 pts)*

Uses: RecyclerView, CardLayout, Multi-Activity, JSON File, Option-Menus, Async Task

App Requirements

- This app allows the creation and maintenance of multiple notes. Any number of notes are allowed (including no notes at all). Notes are made up of a Title and Note Text.

- There is no need to use a different layout for landscape orientation in this application.

- Notes should be saved to (and loaded from) the internal file system in ***JSON*** format. If no file is found upon loading, the application should start with no existing notes and no errors. (A new JSON file would then be created when new notes are saved).

- JSON file *loading* must happen in an AsyncTask that is started in the onCreate method. Saving should happen in the onPause method.

- A Note class (with last save date and note text) should be created to represent each individual note in the application.

- The application is made up of 3 activities. These are described below:

1) Main Activity:
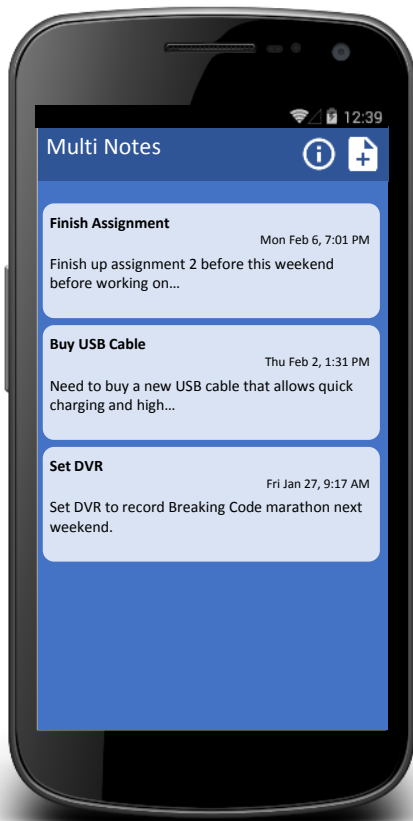
- The **Main Activity** will allow the user to create a *new* note via an *Add* options-menu item 📄. Pressing this button will open the **Edit Activity** with empty Title and Note Text areas.

- The main activity will allow the user to edit an *existing* note by clicking on an existing note in the displayed list of notes. Doing so will open the **Edit Activity,** displaying the note's Title and Note Text – both available for editing.

- The main activity will also have an *Info* options-menu item ⓘ that will open the **About Activity** when pressed. The **About Activity** (described later) indicates the application's name, the date & author, and the version number.

- Notes can be deleted from the **Main Activity** by *long-pressing* on a note entry. Upon doing so, a confirmation *dialog* will be opened where the user can confirm (or cancel) the delete operation.

- Note list-entries contain the note title (bold), the last-save-time, and the first 80 characters of the note text (see image). Notes with more than 80 characters should display "…" after the first 80 characters are displayed.

- Notes are displayed in the list in time order (latest-update-first).

- Individual list entries should be displayed using a CardView with rounded corners. The CardView should contain a ConstraintLayout. The note data should be placed in this ConstraintLayout.

- **Main Activity (continued)**

  - The note list must be implemented using the RecyclerView.

  - The activity background should be set to a color other than white (preferable a darker color). The CardView list entries should be a lighter version of that same color.

  - Icons for the Add and Info menu items should be selected from Google's Material Design icon set (https://material.io/icons/)

2) Edit Activity

  - The **Edit Activity** contains editable fields for the note *title* and note *text*.

  - The note title is a single-line text field (EditText) where the user can enter or edit a title for the current note.

  - The note text is a multi-line text area (EditText) with no size limit. This should have scrolling capabilities for when notes exceed the size of the activity.

  - The **Edit Activity** allows the note title & text to be saved by either:

    a) Pressing the *Save* options-menu item 💾 . This will add the note to the **Main Activity**'s list of notes and then exit the **Edit Activity**. If no changes have been made to the current note, the **Edit Activity** simply exits.

    b) Pressing the Back arrow to exit the activity. This will first display a confirmation *dialog* where the user can opt to save the note (if changes have been made) before exiting the activity. If saved, the note will be added to the **Main Activity**'s list of notes and then exit the **Edit Activity**. If not saved, the **Edit Activity** will exit. If no changes have been made to the current note, the **Edit Activity** simply exits.

    - Note this "Save" in "a" and "b" does not imply saving to file – it implies updating an existing note object in the Main Activity's note list or adding a new note to the Main Activity's note list.

  - A note without a title is not allowed to be saved (even if there is note text). If such an attempt is made simply exit the activity without saving and show a Toast message indicating that the un-titled activity was not saved.

  - The activity background should be set to a color other than white (preferably the same color used in the Main Activity). The title and text fields should be a lighter version of that same color (preferably the same color used in the Main Activity).

  - Icons for the Save menu item should be selected from Google's Material Design icon set (https://material.io/icons/)
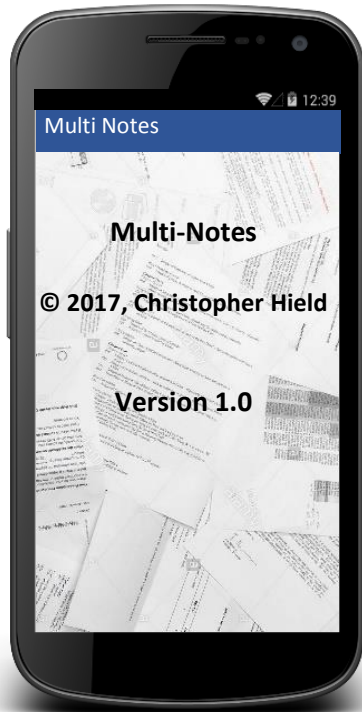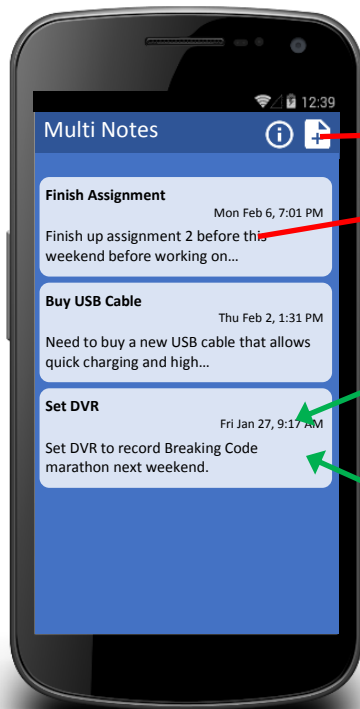
- **About Activity**

- The **About Activity** should contain a full-screen image background (use any non-copywritten image you desire).

- Over the background image, key information on the application should be clearly displayed (clearly readable). This information should include the application title, a copyright date and *your* name, and the version number (1.0).

- There is no functionality present on this activity. The only action a user can take is to press the Back arrow to exit the activity.

Multi Notes

Multi-Notes

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Version 1.0

Application Flow Diagrams *(showing how the various behaviors should work)*

1) Add a New Note/Edit an Existing Note

Edit Activity

Main Activity

Multi Notes

Finish Assignment
Mon Feb 6, 7:01 PM
Finish up assignment 2 before this weekend before working on…

Buy USB Cable
Thu Feb 2, 1:31 PM
Need to buy a new USB cable that allows quick charging and high…

Set DVR
Fri Jan 27, 9:17 AM
Set DVR to record Breaking Code marathon next weekend.

1a) Click the *Add* button

1b) Click on a note to edit

3a) Click the *Save* button

Multi Notes

Set DVR

Set DVR to record Breaking Code marathon this weekend.

Starts at 9:00 am, on channel 123. 12 episodes – all day.

Editable Fields

4) Select YES

Your note is not saved! Save note 'Set DVR'?
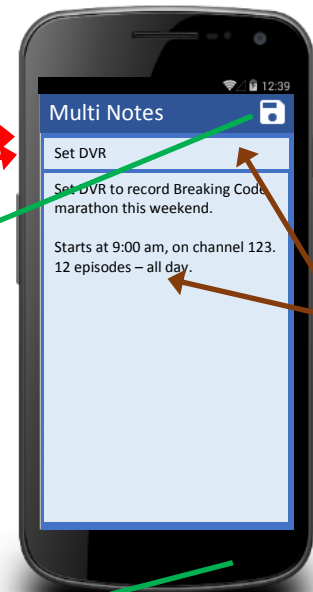
NO   YES

3b) Press the *Back* button

2) Delete an Existing Note

Main Activity

Delete Note 'Set DVR'?

NO   YES
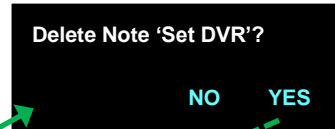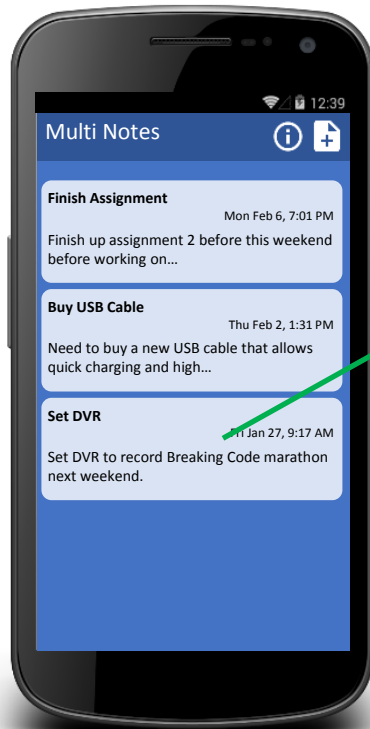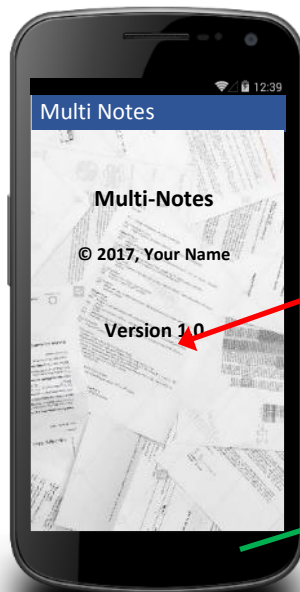
1) Long-Press a Note

2) Selecting YES will remove the note from the Main Activity's note list.

3) View the application details

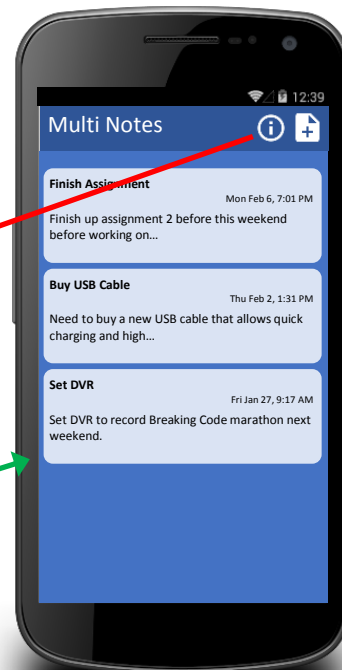**About Activity**

Main Activity

Multi-Notes

© 2017, Your Name

Version 1.0

1) Click the *Info* button

2) Press the *Back* button to return

Assignment Assistance

The TAs for our course is available to assist you with your assignment if needed. Questions on assignment requirements and course concepts can be sent to the instructor.

Submissions & Grading

1) Submissions must consist of your zipped project folder *(please execute Build =>Clean Project before generating the zip file)*.

2) Submissions should reflect the concepts and practices we cover in class, and the requirements specified in this document.

3) Late submissions will be penalized by 10% per week late. (i.e., from one second late to 1 week late: 10% penalty, from one week plus one second late to 2 weeks late: 20% penalty, etc.).

- The following are the key points that will be examined in Project when graded:
- General (25%)
    - o Loads and Saves Notes to a JSON file – no errors displayed if file is not present.
    - o Load is initiated in the *onResult* method, save is performed in the *onPause* method.
        - ▪ Uses *ASyncTask* for JSON file loading
    - o A separate Note class used to represent note data
    - o App is functional and visible in portrait and landscape orientations

- MainActivity (37%)
    - o Options Menu is present in App-Bar and is displayed as Icons
    - o Clicking Add button opens the Edit Activity
    - o Clicking Info in the list opens the About Activity, displaying the note's title and content
    - o Long-click on a note in the list displays Delete Confirmation dialog.
        - ▪ Approving dialog results in note deleted from list
        - ▪ Cancelling dialog leaves the list unchanged
    - o Activity background color is a color other than white
    - o List uses *RecyclerView*
    - o Note list is displayed in order of most recent first
    - o List Entry Uses *CardView*
    - o List entry contains a bold title, the last-save-time, and note text is limited to 80 chars
        - ▪ Adds "…" for notes containing more than 80 chars

- EditActivity (28%)

    o Contains editable fields for title (single line) and note text (multi-line)

    o Options Menu is present in App-Bar and is displayed as Icons

    o Clicking Save button saves the note, closes the *EditActivity*, and updates the *MainActivity* list

    o Clicking Back button displays Save Confirmation dialog.

        ▪ Approving dialog results in note saved, closes the *EditActivity*, and updates the *MainActivity* list

        ▪ Cancelling dialog closes the *EditActivity* and leaves the list unchanged

    o Notes with no title are not saved (Toast message informs the user)

    o Activity background color is a color other than white

- About Activity (10%)

    o Contains full-screen background image

    o Shows application title, copyright data and student name, and Version 1.0

NOTE

This assignment is worth 200 points (your first 2 assignments were worth 100 points each).

This means (for example) that if you get 89% on this assignment, your recorded score will be:

(89% * 200 points = 178 points)

*Note that this also means that the 10% late submission penalty will be 10% * 200 points = 20 points.*

If you do not understand anything in this handout, please ask.

Otherwise the assumption is that you understand the content.

Unsure? Ask!