

ITIS/CS 5180 Mobile Application Development  
Homework 3

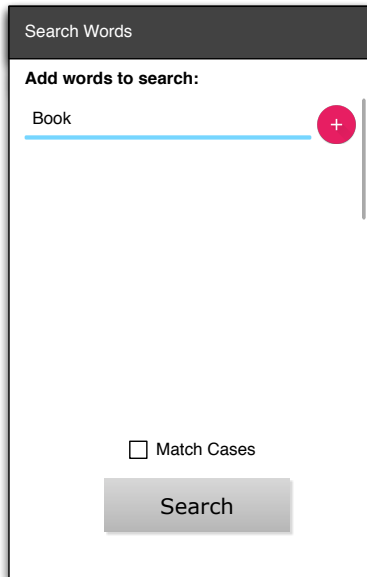
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**Basic Instructions:**

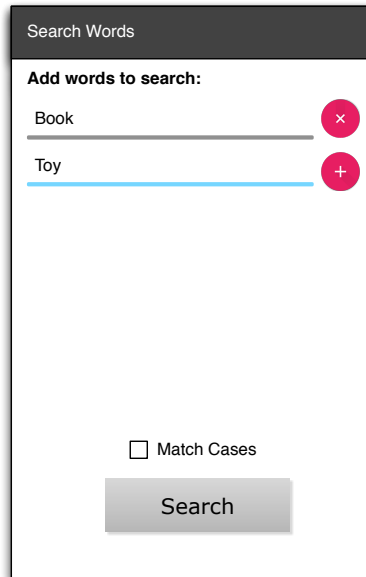
1. In every file submitted you **MUST** place the following comments:
  - a. Assignment #.
  - b. File Name.
  - c. Full name of all students in your group.
2. Each group should submit only one assignment on behalf of all the other group members.
3. Your assignment will be graded for functional requirements and efficiency of your submitted solution. You will lose points if your code is not efficient, does unnecessary processing or blocks the UI thread.
4. Export your Android project and create a zip file which includes all the project folder and any required libraries.
5. Submission details:
  - a. Compress the contents of your project folder. The file name is very important and should follow the following format: **HW3\_Groups#.zip**
  - b. Only one group member is required to submit on behalf of the whole group.
  - c. You should submit the assignment through Canvas: Submit the zip file.
6. The required Android Virtual Device (AVD) should have **minimum SDK version set to 20 and target SDK at 25**.
7. **Failure to follow the above instructions will result in point deductions.**

### Homework 03 (100 Points)

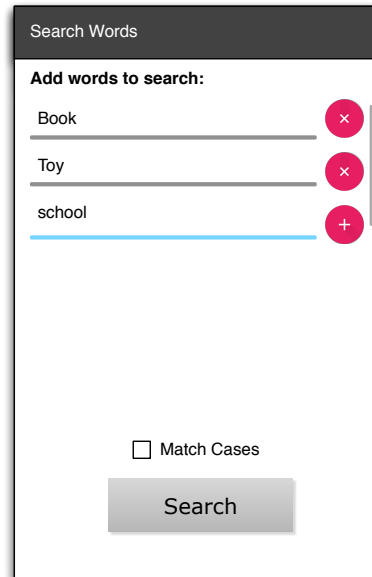
In this assignment you will continue to work on Threads/AsyncTasks. In this app, you will be reading a huge text file and search words from it. You will be using Threads/AsyncTasks to read and search the file.



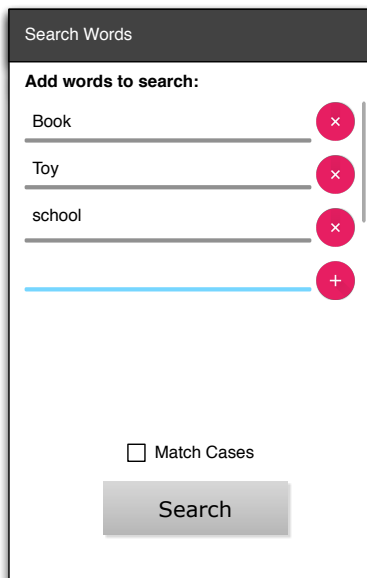
(a) Main Activity



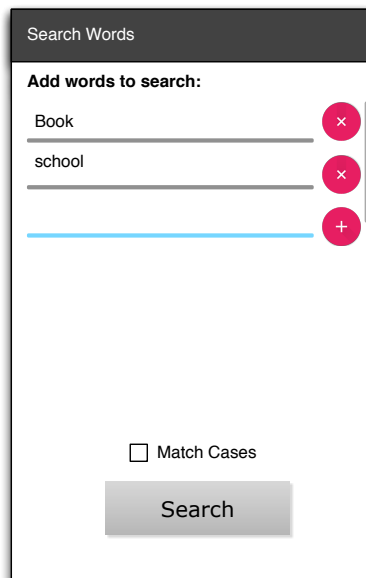
(b) Add another word



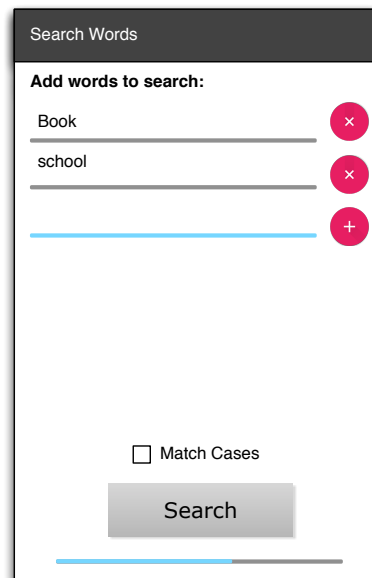
(c) Add one more, Icon changes



(d) Added words



(e) Remove one word



(f) Searching, displaying  
ProgressBar

Figure 1: Main activity wireframes

### Part 1: Main Activity (60 Points)

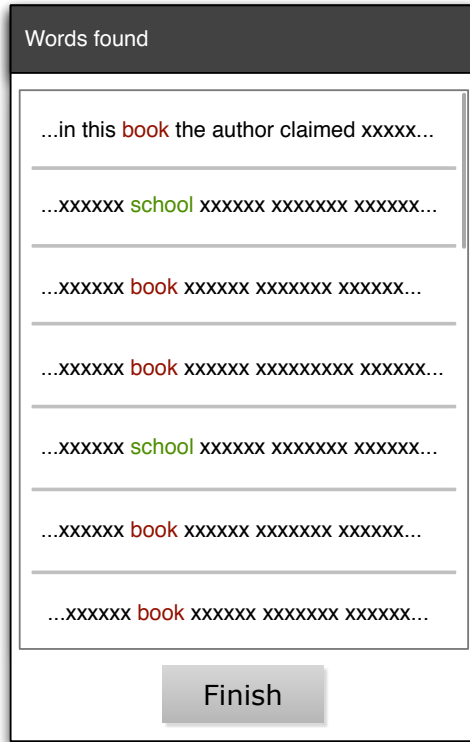
In this activity you will read the text file to find the keywords you want and count them. You need to do the following tasks:

1. Your app needs to read the text file we provided. To read the text file, you need to put the text file into Project->app->src->main->assets directory. If the “assets” directory does not exist, create it under main. For more, please watch the video: [“https://www.youtube.com/watch?v=1CHDASXojNQ”](https://www.youtube.com/watch?v=1CHDASXojNQ).
2. Use InputStream to read the file.
3. You can add keywords and search them. The list of the added items should be implemented using dynamic layout on top of a ScrollView.
4. You should be able to add up to 20 keywords to search.
5. Design the activity as it is shown in the Figure 1.
  1. Display “Add words to search:” string on top of the activity.
  2. Use ScrollView and dynamic layout to add multiple keywords.
  3. First, you will display one EditText and a floating add icon.
  4. Then, you should be able to write the keyword into the EditText and click on the add icon. Clicking on the add icon should add this word in the list and create another EditText. It should change the first icon from add icon to remove icon (see Figure 1, b and c).
  5. If you click on the remove icon, the EditText along with the remove icon should be removed from the list (see Figure 1(d and e)).
  6. You should put a checkbox giving an option to match the cases of the keywords. If the checkbox is checked, you must search the keywords matching the cases in the text file. If it is not checked, you need to find all the cases. For example, If you search the word “box”, you should find all the words matching all cases, such as “Box”, “bOx”, “BOX”, “BOx” etc.
7. There will be a button labeled as “Search” to search the keywords.
6. When you click on the Search button, it will create Threads/AsyncTasks for counting the frequencies of the keywords in the text file and start the second activity to display the results.
7. You need to display a ProgressBar at the bottom while counting the words, see Figure 1, f.
8. You must create one Thread/AsyncTask for each of the keywords.

### Part 2: Result Activity (40 Points)

In this activity you will be displaying the occurrences of the words. Please follow the instructions:

1. The name of the activity should be “Words found”.
2. It should be a ScrollView with Dynamic Layout.
3. In each of the items in the list, you need to display an occurrence of the searched keywords in the file. You need to keep in mind a few things:
  1. Every item in the list should display 36 characters having the keywords. The organization of the string will be:
    - Three dots (...) at the beginning.
    - 10 characters before the keyword from the text file.



**Figure 2: Words found activity**

- Then add the Keyword.
  - Then, fill rest of the characters to make it a 30 characters string from the text file.
  - Three dots (...) in the end.
2. You need to take care of the corner cases.
    - If the Keyword comes at the very first of the text file, where you cannot find 10 characters before it, take the characters after the Keyword to fill up until you have 30 characters from the text file.
    - If the Keyword comes at the very last of the text file, You should fill it up at the beginning.
  3. Each of the Keywords should be colored using three rotating colors: Red, Blue, and Green.
  4. There should be a Finish button at the bottom of the screen. Clicking on it should finish this activity and take you back to the main activity.