

ITIS/ITCS 4180/5180 Mobile Application Development  
Midterm

Date Posted: 10/26/2015 at 18:30

Due Date: 10/26/2015 at 21:30

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**Basic Instructions:**

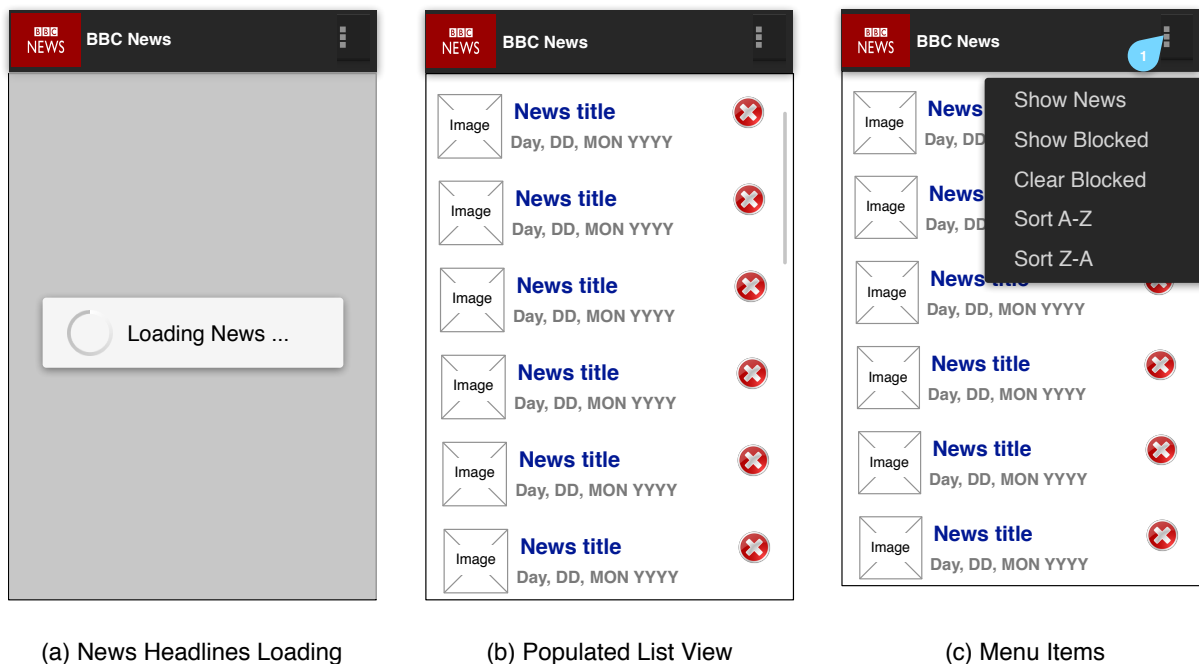
1. This is the Midterm Exam, which will count for 15% of the total course grade.
2. In every file submitted you MUST place the following comments:
  - a. Your Full Name.
3. This Midterm is an individual effort. Each student is responsible for her/his own Midterm and its submission.
4. Once you have picked up the exam, you may not discuss it in any way with anyone until the exam period is over.
5. During the exam, you are allowed to use the course videos, slides, and your code from previous homeworks and in class assignments. You are NOT allowed to use code provided by other students or from other sources.
6. Answer all the exam parts, all the parts are required.
7. Please download the support files provided with the Midterm and use them when implementing your project.
8. 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.
9. Export your Android project and create a zip file which includes all the project folder and any required libraries. The file name is very important and should follow the following format: **Midterm.zip**
- 10. Failure to do the above instructions will result in loss of points.**
- 11. Any violation of the rules regarding consultation with others will not be tolerated and will result disciplinary action and failing the course.**

## Midterm (100 Points)

In this assignment you will develop a simple Yahoo! new rss feed client application using BBC Technology news API (see [http://feeds.bbc.co.uk/news/video\\_and\\_audio/technology/rss.xml](http://feeds.bbc.co.uk/news/video_and_audio/technology/rss.xml) ). The application should be able to load news feeds details into a list. Users of the application will be able to block and unblock feeds to their local blocked list. The blocked list should be stored into a SQLite database.

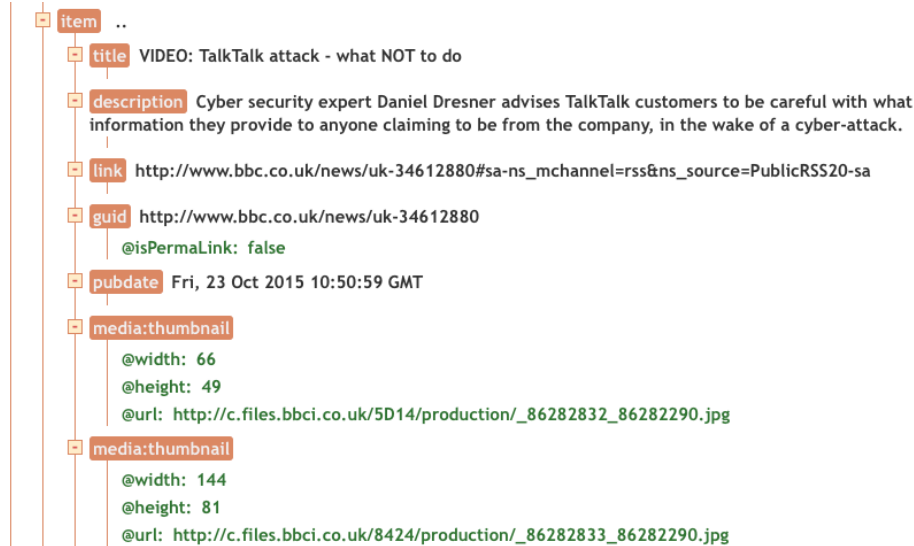
### Part A: Main Activity (90 Points)

The **Main Activity** wireframe is shown in Figure 1.



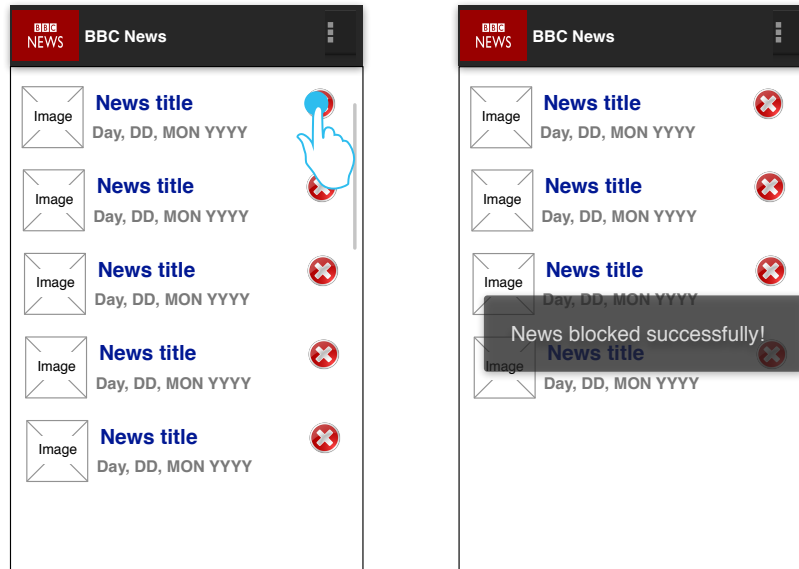
**Figure 1, The Main Activity**

1. Use the api provided by BBC Technology News :  
[http://feeds.bbc.co.uk/news/video\\_and\\_audio/technology/rss.xml](http://feeds.bbc.co.uk/news/video_and_audio/technology/rss.xml)
2. This is an RSS feed from the BBC News - Technology website. The content of the API should be retrieved by establishing a HTTP connection to the service. All the parsing and HTTP connections should be performed by a worker thread or an AsyncTask and should not be performed by the main thread. While, the list is being loaded you should indicate that using the progress alert as indicated in Figure 1(a).
3. Figure 2, shows a sample XML item. The fields required are the Title, Publication date, ThumbnailImage and News link (URL).
4. The loaded list should be displayed in a RecyclerView/ListView, as shown in Figure 1(b). Note that for each News the list item should display the News image ( thumbnail), news title, and date. We recommend you use a RecyclerView as it is easier to setup event handlers.
5. News must be ordered by date in descending order. i.e. the most recent News is displayed at the top of the list.



**Figure 2, News Feed XML**

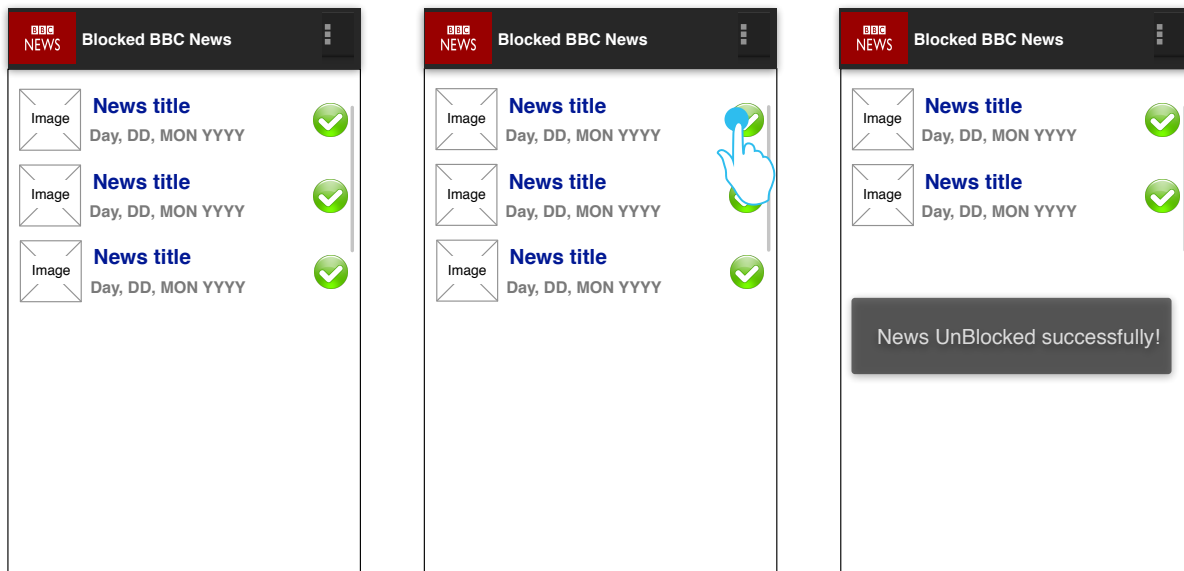
6. By default the apps activity should load the news list by retrieving it from the RSS feed api. A block icon should be displayed. Tapping the block icon should do the following :
  - Insert the news into local database (Blocked List) and display a Toast Message indicating the result (saved successfully or not).
  - List should be reloaded to display only the unblocked news items, as shown in Figure 3(b).
7. Clicking a News Item should open the News link in a WebView inside **WebViewActivity**.
8. **Menu Item (Show News):** This should retrieve the News from the BBC api. Note that the news should be filtered according to the saved blocked list. i.e. If a News item is already blocked, it should not be displayed.
9. **Menu Item (Show Blocked):** This should display the list of blocked News. Each News will have unblock icon, tapping this icon should remove the News from the blocked list. This operation should do the following: (See Figure 4)
  - Delete the News from the SQLite database, and display a Toast message indicating the result (whether the News was deleted successfully or not).
  - Reload the blocked list to show the blocked news items.
10. **Menu Item (Clear Blocked) :** This should delete all blocked news items from the the local database.
  - If the News list is displayed, the list should be reloaded to display all the news items. If the blocked list is displayed, the list should be reloaded to display an empty list.
11. **Menu Item (Sort A-Z) :** This should sort the News based on Title field in ascending order (A-Z).
12. **Menu Item (Sort Z-A) :** This should sort the News based on Title field in descending order (Z-A).



(a) News Headlines Loading

(b) Populated List View

**Figure 3, Adding News to Blocking List**



(a) Show Blocked

(b) Unblock News

(c) Blocked News Updated

**Figure 4, Show Blocked**

### **Part B: WebView Activity (10 Points)**

This activity should include a WebView component that will display the news URL. Please ensure that the WebView is setup to enable JavaScript and handle URL redirects.