

ITIS/ITCS 5180 Mobile Application Development Homework 05

Basic Instructions:

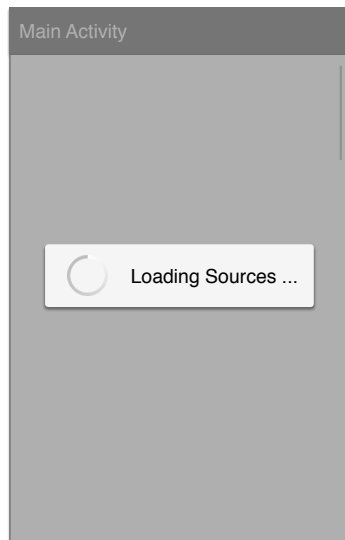
1. In every file submitted you **MUST** place the following comments:
 - a. Assignment #.
 - b. File Name.
 - c. Full name of all students in your group.
2. Each group should submit only one assignment. Only the group leader is supposed to submit the assignment on behalf of all the other group members.
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. Only a single group member is required to submit on canvas for each group.
 - b. The file name is very important and should follow the following format:
Group#_HW05.zip
 - c. You should submit the assignment through Canvas: Submit the zip file.
6. **Please set the Target SDK to 27, not 28.**
7. **Failure to follow the above instructions will result in point deductions.**

Homework 05 (100 Points)

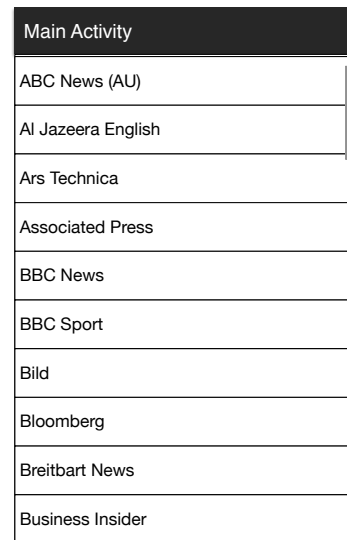
In this midterm exam assignment you will develop a news app. The app will enable the user to select the news source and will display the news for the selected news source. The api used for this assignment is the News API <https://newsapi.org/>.

API Setup:

1. Sources API: https://newsapi.org/v2/sources?apiKey=<Your_Key>
2. Top headlines API: https://newsapi.org/v2/top-headlines?sources=<Source_id>&apiKey=<Your_Key>



(a) Main Activity loading the news sources.



(b) Main Activity ScrollView listing news sources.

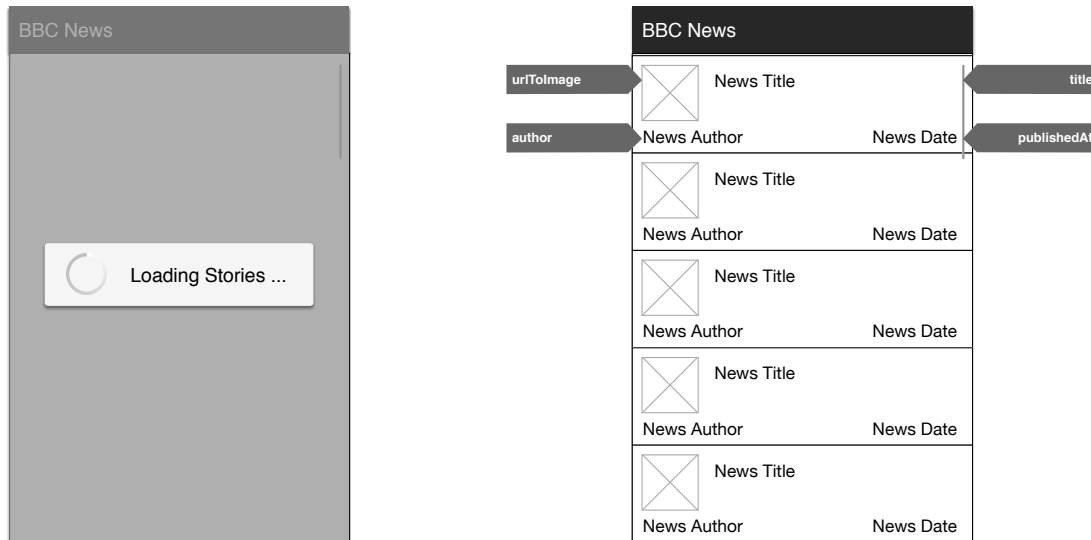
Figure 1, Main Activity Wireframe

Part 1: Main Activity (35 points)

The **Main** activity is responsible for the loading and displaying the different sources available at NewsAPI. The requirements are as follows (Figure 1):

1. Upon loading the Main Activity, the app should connect to the "Sources" NewsAPI api to retrieve the JSON list of the sources provided by the NewsAPI.
 - a) Create a "Source" class containing variables: id and name, which should be populated from the retrieved JSON.
 - b) The app should use a child thread (or AsyncTask) to perform data retrieval and data parsing. The parsed JSON should return a list of Source objects. The list of news sources should be then returned to the Main Thread to be displayed.

- c) Display a Progress Bar during the download and parsing of the JSON as indicated in Figure 1(a).
2. The Source items should be displayed in a ListView. See Figure 1(b).
3. Upon clicking a list item it should open the News Activity, you should also pass the news source Source object to the News Activity.



(a) Loading Stories in News Activity

(b) ScrollView listing the news items for BBC News

Figure 2, News Activity Wireframe

Part 2: News Activity (55 points)

This activity displays the top news items for the selected news source. The requirements are as follows:

1. Update the activity title to display the name of the name of the news source.
2. Upon loading the News Activity, the app should connect to the “Top Headlines” API api to retrieve the JSON list of the articles for the selected source.
 - a) Create a “News” class containing variables: author, title, url, urlToImage and publishedAt, which should be populated from the retrieved JSON.
 - b) The app should use a child thread (or AsyncTask) to perform data retrieval and data parsing. The parsed JSON should return a list of News objects. The list of news articles should be then returned to the Main Thread to be displayed.
 - c) Display a Progress Bar during the download and parsing of the JSON and as indicated in Figure 2(a)
3. The Article items should be displayed in a ListView.

- a) The image for each news item should be downloaded using the Picasso Library located at <http://square.github.io/picasso/>
- 4. Upon clicking a news item it should send the **url** of the selected news item to the WebView Activity.

Part 3: WebView Activity (10 points)

This activity should display the url of the news item in a WebView. Please use the instructions at <https://developer.android.com/reference/android/webkit/WebView.html> to correctly setup the WebView component.