

ITIS/ITCS 4180/5180 Mobile Application Development
In Class Assignment 6

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. Please download the support files provided with this assignment and use them when implementing your project.
5. Export your Android project and create a zip file which includes all the project folder and any required libraries.
6. Submission details:
 - a. Only a single group member is required to submit on moodle for each group.
 - b. The file name is very important and should follow the following format:
Group#_InClass06.zip
 - c. You should submit the assignment through Moodle: Submit the zip file.
7. **Failure to follow the above instructions will result in point deductions.**

In Class Assignment 6 (100 Points)

In this assignment you will develop “Fox News App”. The App displays news feeds from Fox News in different categories such as (Most Popular, Entertainment, Health, Lifestyle). News feeds allow you to see when websites have added new content. You can get the latest headlines, as soon as it's published. In this assignment, you will learn how parse XML news feeds, using threads, and dynamic UI management.

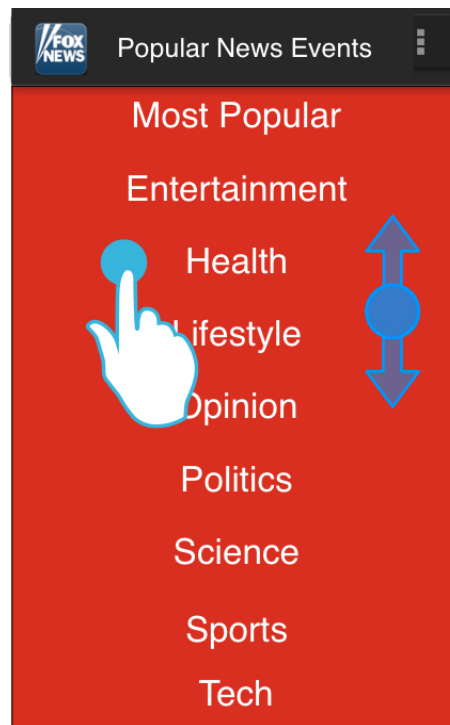


Figure 1, Main Activity Wireframe

Part A: Main Activity (10 Points)

The launching activity is the Main Activity. Figure 1, shows the UI for the Main Activity. The activity displays a list of the news categories provided by Fox News feed website at <http://www.foxnews.com/about/rss/>. The requirements are as follows:

1. The categories that should be included in the list are as given below:
Most Popular, Entertainment, Health, Lifestyle, Opinion, Politics, Science, Sports, Tech, Travel, U.S.
2. The URL for each of the above categories is provided in Table 1 for the list of URLs associated with each category.
3. The list should be created using combination of ScrollView and LinearLayout, each row could be a TextView. **You should not use a ListView in this assignment.** The goal is to expose you to managing a list without using the ListView component.
4. Clicking on any category should start the “**NewsActivity**”, passing it the URL of the selected category.

Type	URL
Most Popular	http://feeds.foxnews.com/foxnews/most-popular
Entertainment	http://feeds.foxnews.com/foxnews/entertainment
Health	http://feeds.foxnews.com/foxnews/health
Lifestyle	http://feeds.foxnews.com/foxnews/section/lifestyle
Opinion	http://feeds.foxnews.com/foxnews/opinion
Politics	http://feeds.foxnews.com/foxnews/politics
Science	http://feeds.foxnews.com/foxnews/science
Sports	http://feeds.foxnews.com/foxnews/sports
Tech	http://feeds.foxnews.com/foxnews/tech
Travel	http://feeds.foxnews.com/foxnews/internal/travel/mixed
U.S.	http://feeds.foxnews.com/foxnews/national
Table 1, Request URLs	

Part B: News Activity (50 Points)

News Activity should display list of news items of the selected category. The URL should be passed from previous activity (Main Activity). Figure 2, shows a sample XML feed for the Lifestyle category. Each news item is included under the item element, which includes the news title, description, pubDate and many other fields. In addition,

```
<?xml version="1.0" encoding="UTF-8" ?>
<rss xmlns:media="http://search.yahoo.com/mrss/" xmlns:content="http://purl.org/rss/1.0/modules/content/" xmlns:dc="http://purl.org/dc/elements/1.1/" xmlns:feedburner="http://rssnamespace.org/feedburner/ext/1.0" version="2.0">
  <channel>
    <title>FOX News </title>
    <link>http://www.foxnews.com/ </link>
    <description>
    </description>
    <image>
    </image>
    <atom10:link xmlns:atom10="http://www.w3.org/2005/Atom" rel="self" type="application/rss+xml" href="http://feeds.foxnews.com/foxnews/section/lifestyle" />
    <feedburner:info uri="foxnews/section/lifestyle" />
    <atom10:link xmlns:atom10="http://www.w3.org/2005/Atom" rel="hub" href="http://pubsubhubbub.appspot.com/" />
  </channel>
  <item>
    <guid isPermaLink="false">http://www.foxnews.com/leisure/2016/02/17/nerf-battle-racer-is-ready-to-fight-every-kid-on-block/ </guid>
    <link>http://feeds.foxnews.com/~r/foxnews/section/lifestyle/~3/vvu9m3v0C3M/ </link> News Item URL
    <media:group>
      <media:content url="http://global.fncstatic.com/static/managed/img/leisure/2009/60/60/nerf%20876%20car.jpg" medium="image" isDefault="true" />
      <media:content url="http://a57.foxnews.com/global.fncstatic.com/static/managed/img/leisure/2009/60/60/nerf%20876%20car.jpg" medium="image" width="60" height="60" />
    </media:group>
    <media:thumbnail url="http://a57.foxnews.com/global.fncstatic.com/static/managed/img/leisure/2009/60/60/nerf%20876%20car.jpg" width="60" height="60" /> News Image URL
    <category domain="foxnews.com/metadata/dc.identifier">adb8df8e291f2510VgnVCM10000007c1a8c0RCRD </category>
    <category domain="foxnews.com/taxonomy"> /FOX NEWS/AUTO/ATTRIBUTES/Accessories </category>
    <category domain="foxnews.com/metadata/prism.channel"> fnc </category>
    <category domain="foxnews.com/section-path"> fnc/Home/leisure/auto/news </category>
    <category domain="foxnews.com/section-path"> fnc/leisure/auto/news </category>
    <category domain="foxnews.com/content-type"> article </category>
    <News Title><title>Nerf Battle Racer is ready to fight every kid on the block </title>
    <description>
      Four guns and a stockpile of ammo. News Description
    </description>
    <pubDate>Wed, 17 Feb 2016 23:41:55 GMT </pubDate> Publication Date
    <category domain="foxnews.com/metadata/dc.source"> Autoblog.com </category>
    <feedburner:origlink>http://www.foxnews.com/leisure/2016/02/17/nerf-battle-racer-is-ready-to-fight-every-kid-on-block/ </feedburner:origlink>
  </item>
  <item>
  </item>
  <item>
  </item>
</channel>
</rss>
```

Figure 2, Fox News Feed in XML

each news item includes a thumbnail under media: thumbnail. The requirements are as follows:

1. The News activity is responsible for the loading the list of news items retrieved from the RSS feed API.
2. Display a Progress Dialog during the download and/or parsing of the XML and dismiss it once these operations are completed as indicated in Figure 3(a).
3. Use a thread pool (or AsyncTask) to communicate with the corresponding Fox News API and to parse the result. Do not use the main threads to download the results. Care should be taken while parsing and should take into consideration the namespace.
4. Parse the XML stream using either XMLPullParser or SAXParser and return the result to the News List.
5. For each news item retrieve the title, description, pubDate, link and the news thumbnail.
6. The retrieved news' title should be displayed in a List which is a combination of ScrollView and LinearLayout (No use of ListView).
7. The News List should be sorted in an Ascending Order of the "pubDate" value. You can use the SimpleDateFormat in Android to format the retrieved dates. <http://developer.android.com/reference/java/text/SimpleDateFormat.html>
8. Clicking a news item should start the **News Details Activity**, which provides more details about the current news item.

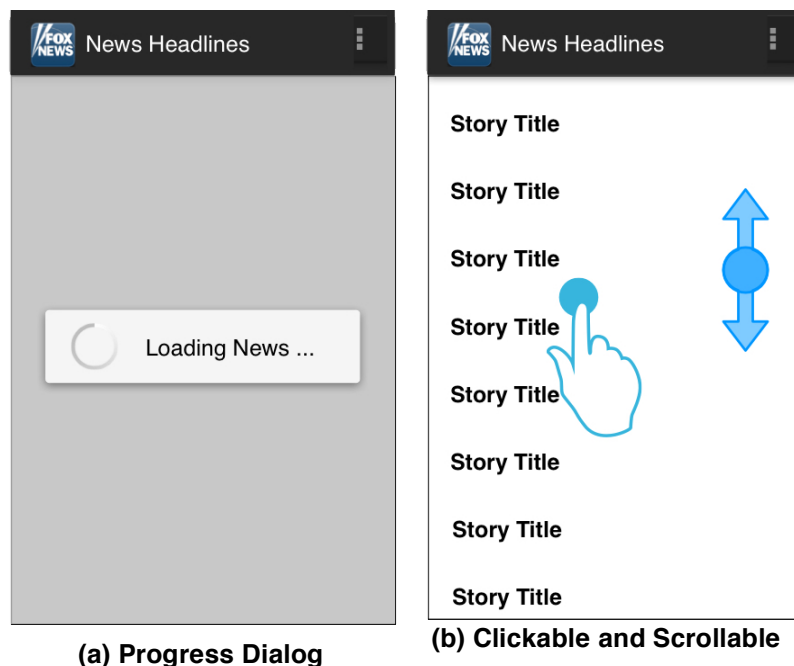


Figure 3, News Activity

Note: In order to easily view the xml feed, you can download it as an RSS XML file and view it in Firefox browser or you can copy and paste the xml to <http://codebeautify.org/xmlviewer> and click on “Beautify”.

Part C: News Details Activity (20 Points)

Detailed Activity shows details about a selected news item. The user can view more details about the news such as publication date, description etc.

The requirements are as follows:

1. The activity’s wireframe is shown in Figure 4(a). The news details should include the title, publication date, thumbnail, and description. Clicking the back key should return to the News Activity.
2. The publication date should be formatted as follows: MM/DD/YYYY HH:MM AM/ PM
2. The image should be retrieved using a background thread (Thread or AsyncTask).
3. Clicking the news image should start the News WebView Activity in order to display the news item webpage.

Part D: News WebView Activity (20 Points)

This activity should receive the news information from the News Details Activity. The activity should display the news URL in an embedded WebView as indicated in Figure 4(b). The implementation requirements include:

1. The news URL should be displayed in the WebView, which is a simple component that is able to display a webpage in the hosting activity.
2. You should override the WebView functionality to be able to handle redirects, check the [documentation](http://developer.android.com/guide/webapps/webview.html) provided at <http://developer.android.com/guide/webapps/webview.html> . The URL should be loaded in the WebView and should handle redirects and other links in the loaded page without opening the native browser.

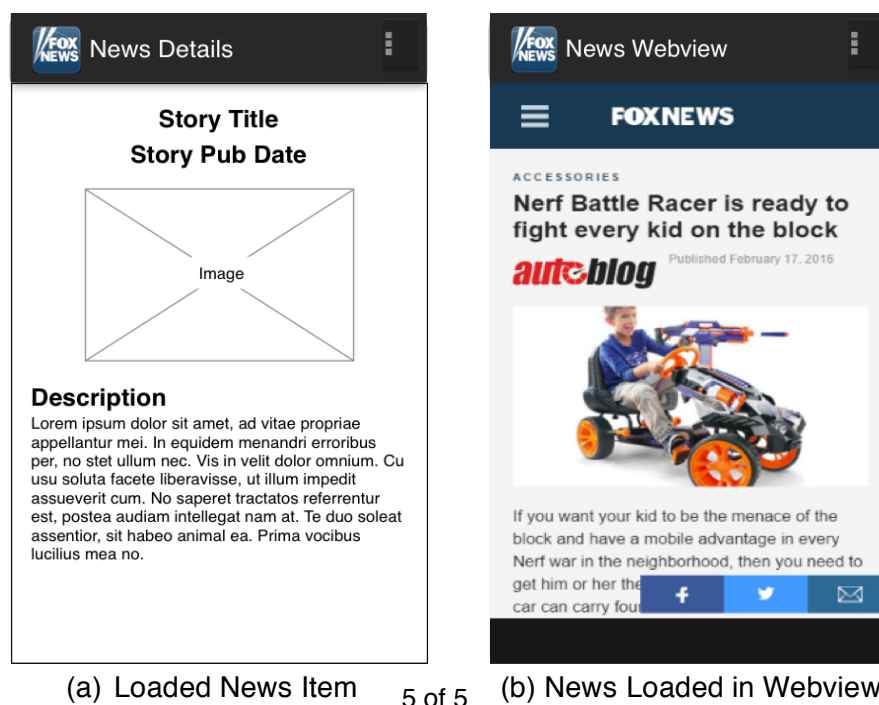


Figure 4, News Details and Webview Activity