News App Design Document

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# Requirements / Main Functionality

The purpose of this app is to provide the user with a brief headline and description of news stories from a variety of sources.

A mock-up of the app is shown in Figure 1. The figure shows that the app has that the news articles are displayed in a vertical list and showcase a headline, description and the source of the article.



Figure 1: Mock-up of basic app layout

The app will have 2 tabs: a headlines tab and everything tab. The headlines tab shows only the headlines from the API, whilst the everything tab shows everything from the API. The API used is from newsapi.org. This API allows the querying of either the headlines or everything.

The blank squares represent a horizontal list of icons. These icons are the news sources that are supplied by the newsapi.org source. Note: only a selection of the news are used (detailed below). The news sources are horizontally scrollable.

At launch of the app, all news sources are selected and the headlines tab is open. When a user selects on a news source icon, that icon becomes deactivated (greyed-out) and all news items from that source are removed from the list. This behaviour occurs until all items are deactivated and no articles are shown. When a user selects a deactivated news source, they become active again and the articles are placed back into the list.

The app shall provide a search mechanism that the user can enter keywords and the app displays articles relating to the keywords.

The app shall provide a refresh feature (to get new articles) when the user swipes down from the top of the list.

The app shall open a web browser to the news article URL when the news article is pressed in the app.

# Main Method Descriptions

The news app features 6 java class files which are detailed below

## Main Activity

This activity is the front screen of the app. On creation it establishes the news source icon list and initiates a request to the URL https://newsapi.org/v2/top-headlines?sources=abc-news-au,buzzfeed,entertainment-weekly,the-guardian-au,the-new-york-times,news-com-au,time&apiKey=

Note: The apiKey has been removed for security purposes.

The current news sources included in the app are:

* ABC News Australia
* Buzzfeed
* Entertainment Weekly
* The Guardian Australia
* The New York Times
* News.com.au
* Time

The main activity users a LoaderManager to handle the asynch tasks needed to perform HTTP requests. The response from the URL is in JSON format, which is decoded by the methods in the QueryUtils class.

The refresh feature is implemented by the SwipeRefreshObject. When this is called by the user, it resets the LoaderManager which clears the display and performs a new HTTP request.

## NewsIconAdapter

This is the class that handles the creation of the news source icons and monitors when one is selected for activation/deactivation.

The onBinderHolder method has a listener that listens for when a news source icon is pressed. It determines if the item is currently activated or deactivated by looking for the “greyed” tag and setting appropriately. Once it is activated/deactivated a method is called that generates the new query URL with only the current activated sources.

Note: This does not initiate a new HTTP request. This needs to be done by the user by swiping to refresh.

## NewsItem

This class is the news item object that contains the Headline, Description, Source and URL of each news article that comes from the HTTP request.

## NewsItemAdapter

This class adapters the list view in the main activity to the news items that are created from the HTTP request.

## NewsLoader

This is the loader class that performs the background loading tasks needed for HTTP requests.

## QueryUtils

This is a set of helper methods that have been developed for performing the HTTP request, getting a response back, creating the string from the response and decoding the JSON response for the required details.

# Future Features / Improvements

The current state of the app as of 04/12/18 does not contain all the required features. The below list outlines the future features and improvements needed.

* Improvement: The spinner when a user refreshes is not is sync with when the data actually loads. The spinner disappears much sooner before the screen refreshes.
* Improvement: When all news icons are active, when a user selects on a news source all other news sources should be deactivated and leave the selected one active.
* Improvement: When a user selects a news source icon to activate/deactivate the screen should refresh with the relevant news articles. Currently user needs to manually refresh.
* New feature: The everything tab. Currently only shows headlines with no tabs.
* New feature: The search feature.
* Improvement: UI upgrades. Add improved colour scheme and user friendliness.