

SENG2021: Software Engineering Workshop Application Specification

Term 1, 2021

Introduction

The goal of this workshop is to design and develop a prototype of a web application that can help users to navigate through information source(s), e.g. photo archives, Wikipedia, news archives, etc. The application has to be Web-based and be viewable using a common Web browser such as Firefox, Edge or Chrome. The information presented in your prototype application must be related to a selected theme.

Application requirements

There are no fixed requirements, other than that the prototype must be designed to provide a good user experience for discovering and interacting with one or several information archives based on a theme. Here are some suggested themes for the application:

- Planning a Journey/Holidays (using multiple APIs)
- Exploring a topic of interest over time (e.g. photos over time of a suburb)
- Special event coverage (e.g. Olympics)
- Platform to share information, enhanced by publicly available APIs (e.g. leftover food!)

There is a lot of flexibility in providing innovative ways of presenting the information. These issues will be presented and discussed during lectures/mentoring sessions.

Information archives for the workshop

Firstly, you need to select the theme of your project. Several themes will be suggested during lectures/mentoring sessions but you are free to choose your own theme as long as it involves processing one or several information archives. Here are a number of information archives that could be used in the project. For each archive, some work has to be done in determining how to access information from your system via an API. The final selection of which information archive should be used will be dependent on the selected theme.

Wikipedia

The MediaWiki web API is a web service that provides convenient access to wiki features, data, and meta-data over HTTP. Client programs can log in to a wiki, get data, and post changes automatically by making HTTP requests to the web service.

- https://www.mediawiki.org/wiki/API:Main_page

Australian government archives

GovPond.org is a data aggregator listing thousands of Australian government data. To find them:

- Navigate to <http://www.govpond.org/>

For example, some photo archives you will find include:

- Photographs of Sydney before 1885 in CSV format (containing links to the actual images):
<http://data.gov.au/dataset/photographs-of-sydney-before-1885>

National Library of Australia

Trove (from National Library of Australia) helps you find and use resources relating to Australia. Trove brings together content from libraries, museums, archives and other research organisations and gives you tools to build your own applications, tools and resources.

- Trove at <http://help.nla.gov.au/trove/using-trove/getting-to-know-us>
- Building with trove: <http://help.nla.gov.au/trove/building-with-trove>

New York Times

With the Article Search API, you can search New York Times articles from 1981 to today, retrieving headlines, abstracts, lead paragraphs, links to associated multimedia and other article metadata. Along with standard keyword searching, the API also offers faceted searching.

- http://developer.nytimes.com/docs/read/article_search_api

Flickr

This is a public photo archive that allows people to upload their personal photos and share them with other people. The two most relevant links are:

- Developer documentation: <https://www.flickr.com/services/developer/>
- API documentation: <https://www.flickr.com/services/api/>

Instagram

This is another public photo archive that allows people to post their personal photos for sharing with other people. The two most relevant links are:

- Developer documentation: <http://instagram.com/developer/>
- Media API documentation: <http://instagram.com/developer/endpoints/media/>

Fairfax

Fairfax is a media company that owns several newspapers such as the Sydney Morning Herald. Journalists have access to a large photo archive that is used internally. However, Fairfax also makes images available from:

<http://consumer.fairfaxsyndication.com/>

Fairfax is in the process of uploading collections from their glass plate negatives. If you do a search on Glass Plate Negatives, you'll see some of the images and the 82 collections they've uploaded so far. Example collection below:

<http://consumer.fairfaxsyndication.com/Package/2ITHRGQPUVA4>

Powerhouse Museum

The Powerhouse Museum has also developed a large information collection. See,

- <https://collection.maas.museum/>

Other

You are allowed to use data from sources not listed here, but you MUST verify that you are legally permitted to use the data to develop your application. YOU are responsible for obtaining all permissions required when developing your application.

General purpose data sources or APIs

Some public Web APIs that you may obtain useful data from include:

- **Twitter API:** <https://dev.twitter.com/docs>
This API can provide information on the latest trending topics across Australia. You can also use it to access tweets about various topics (hashtags).
- **Google Maps or Bing Maps:** <https://developers.google.com/maps/> or <https://www.bingmapsportal.com/>
These APIs enable information to be overlaid on top of a map.
- **Yahoo! GeoPlanet:** <http://developer.yahoo.com/geo/geoplanet/>
This API can be used to obtain latitude and longitude data for well-known locations such as cities and states. Combined with a map API, this enables the map to accurately display location specific information.

Technologies to be used

Server-side Web programming

We recommend that you use the web framework **Django**. However, you are free to use any other software frameworks and/or libraries that you are comfortable with.

Submissions and Demonstrations

There will be different forms of deliverables:

- Documents: mainly design documents explaining your design choices
- Source code: you will be required to submit your source code (zipped) via GitHub.
- Live prototype: for demonstration and your own testing purposes, you can use your allocated CSE Web site to host your prototype application or use a cloud provider.
- Global marking criteria
 - Analysis: how original is the selected theme? How well is the case presented?
 - Interface design: how good/intuitive is the GUI? Is it an innovative use of available technologies?
 - Software design: how adequate are software components? Does design have qualities like reusability, extensibility, performance and modularity

- Prototyping: how good is the prototype in conveying the design ideas? How smooth is the user experience ?

Each deliverable will have specific marking criteria attached to it.