Project

Due: Monday, March 19, 2018 at 12:30 p.m.   **Points:** 100

Please turn in your solution for this homework assignment on Canvas under Projects in Assignments.

> **NOTE**: Please have the user input the number of references and the keywords to be searched for. The latter is a comma-separated list of keywords, with no spaces.

Homework #4 had you produce a list of publication IDs from a keyword search on PubMed. The final project is to produce a list of the publication citations for that keyword.

Begin with your solution to the last homework (or the one on Canvas). From that, you will get a list of PubMed publication IDs. Use the following URL to get the metadata for the publications:

```
http://eutils.ncbi.nlm.nih.gov/entrez/eutils/efetch.fcgi?db=pubmed&retmode=xml&id=idlist
```

with no spaces and all on a single line, and *idlist* replaced with the ID list you got from the output of the last assignment. The web page you get back is an XML document giving details of the publications.

Your job is to print a bibliography from this record. Your entry for each journal should look like this:

A. Bester, R. Zelazny, and H. Ellison, "On the Role of Viruses in Future Epidemics," *Journal of Irreproducible Results* **3**(4) pp. 29–35 (Mar. 2103). PUBMED: 23456789; DOI 12.1119/2847595.

Then print the abstract, if it is present in the record.

If there is no DOI, use the PII. If neither is there, omit that part of the entry.

You will need to look at the XML records to get the fields. These are delimited by tags with attributes, each of which may have a value. For example, the element

```
<ELocationID EIdType="doi" ValidYN="Y">10.1016/j.vaccine.2015.04.071</ELocationID>
```

has a tag of `ELocationID`, attributes of `EIdType` (with value `doi`) and `ValidYN` (with a value of `Y`), and the field contains `10.1016/j.vaccine.2015.04.071`, which (as the EIdType value indicates) is a DOI.

The easiest way to see what the records look like is to run your solution to homework #4, and ask for a single entry. You can then see its structure. The fields of interest will have these tags:

- Article — contains the Journal, ArticleTitle (article title), Pagination (page numbers), ElocationID, which gives both the DOI and PII (if those exist), the Abstract, and the AuthorList.

- Journal — this consists of several elements, including JournalIssue, which contains the Volume,Issue, and Pub-Date (publication date), and Title (article title).

- AuthorList — this lists the authors, each author being in a field called Author. Subfields of interest are LastName and Initial (the initial of the first name)

Those will be enough to build the reference, as described above.

You can find methods for processing XML in the Python Library Reference, section 19.7 at `https://docs.python.org/2/library/xml.etree.elementtree.html`