Homework 8

due Tues Apr. 17, 2018 at 5pm

1. Create a flask-based website that provides a query interface to BibTeX bibliographic data. The website must allow a user to upload a BibTeX file, store the contents of the file in a database, and provide a query interface to the database.

Upon insertion, each set of bibliography entries (contained within the ".bib" file) is a "collection", and the collection name is provided by the user. This is useful if a user has multiple BibTex files, possibly relating to different research projects or pertaining to different fields of study.

The database must have columns for citation tag, author list, journal, volume, pages, year, title, and collection. The website provides a query interface by passing user-entered SQL statements to sqlite3.

2. Get your (public) GitHub repo setup with Travis CI and make sure that you have at least 70% code coverage.

Advice

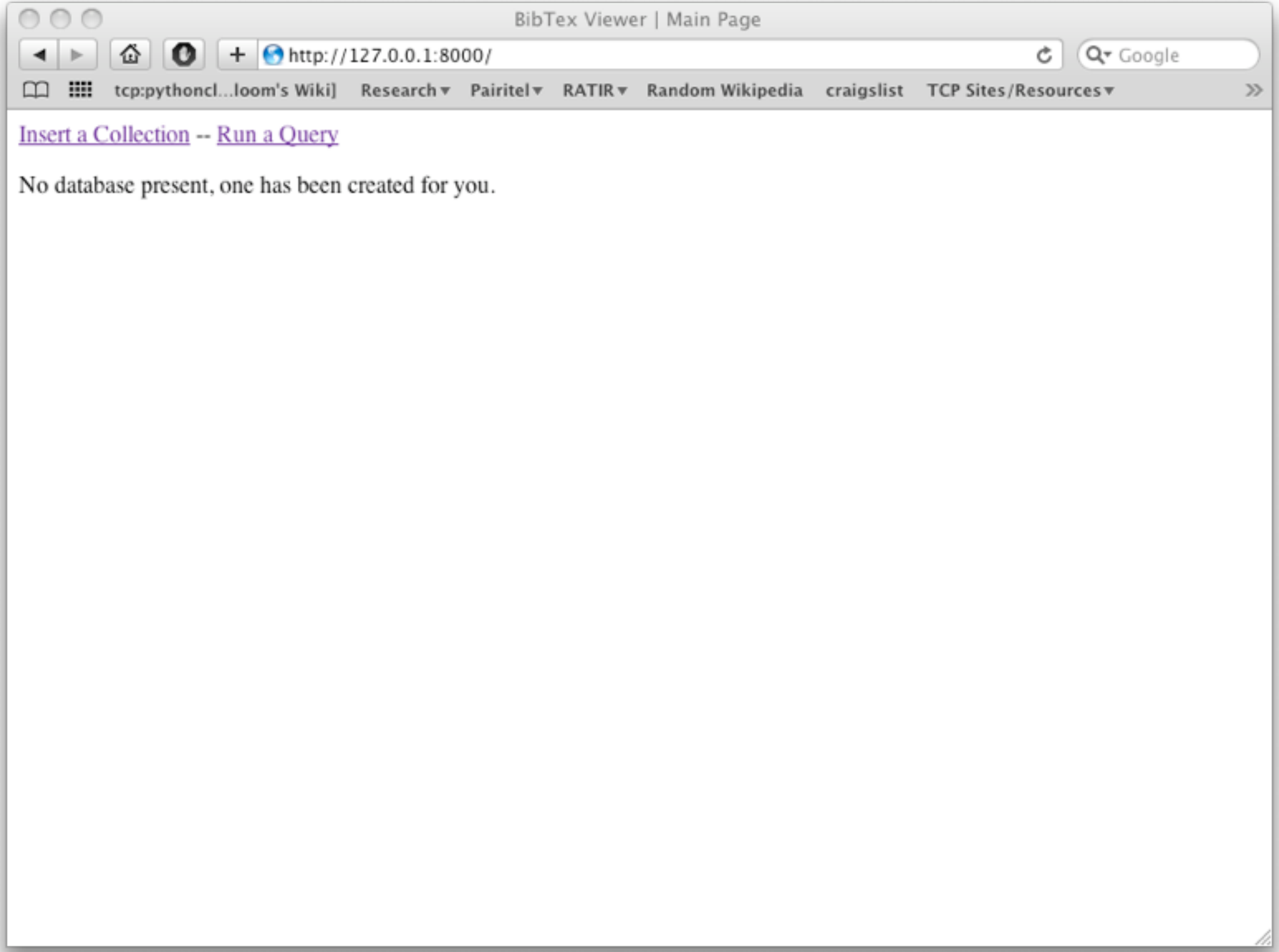
This can be a long and/or difficult assignment, depending on how much experience you have with web development. Make sure to start early and ask for help when you need it.

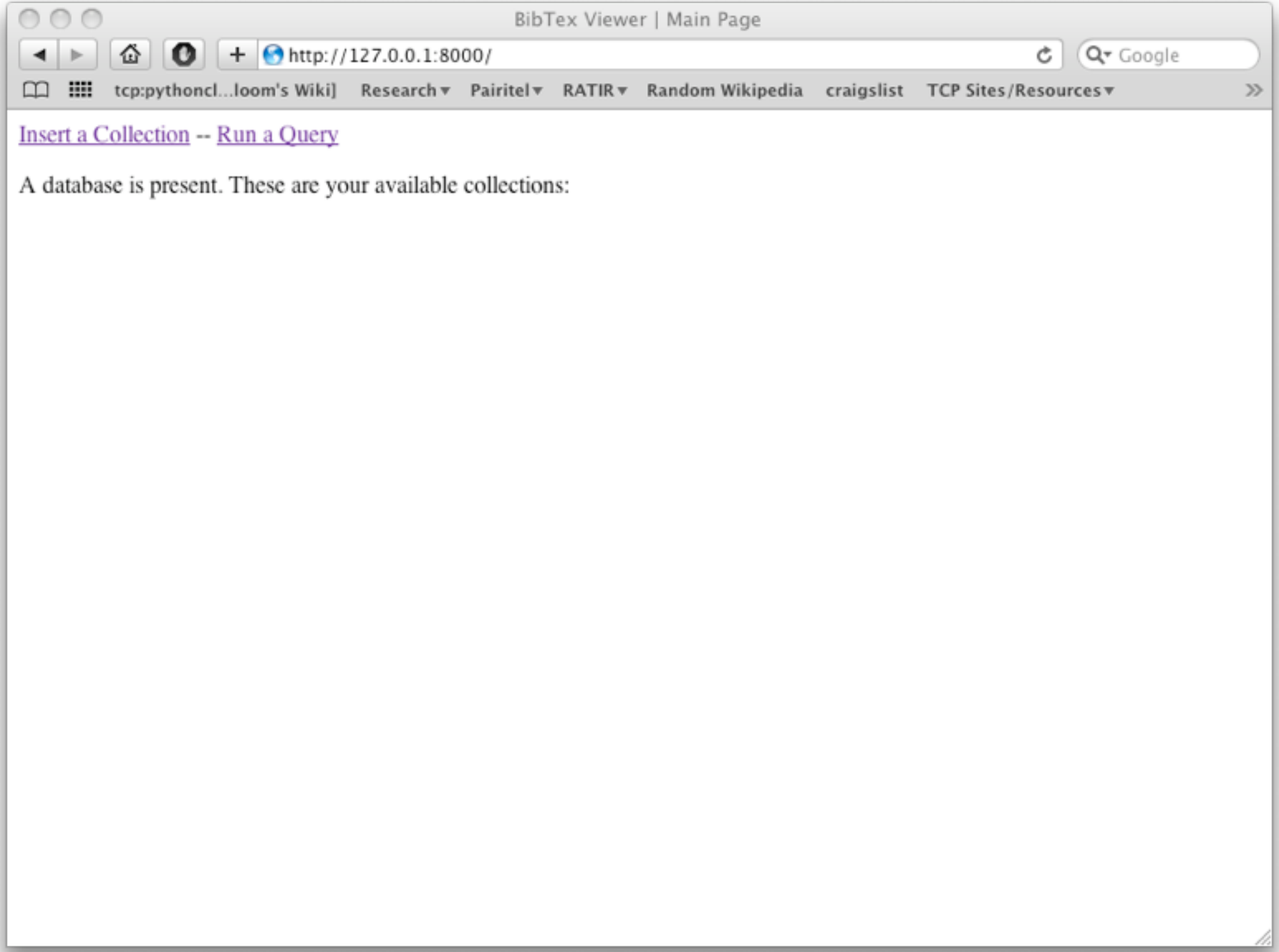
Use third party Python module pybtex to parse the BibTeX files.

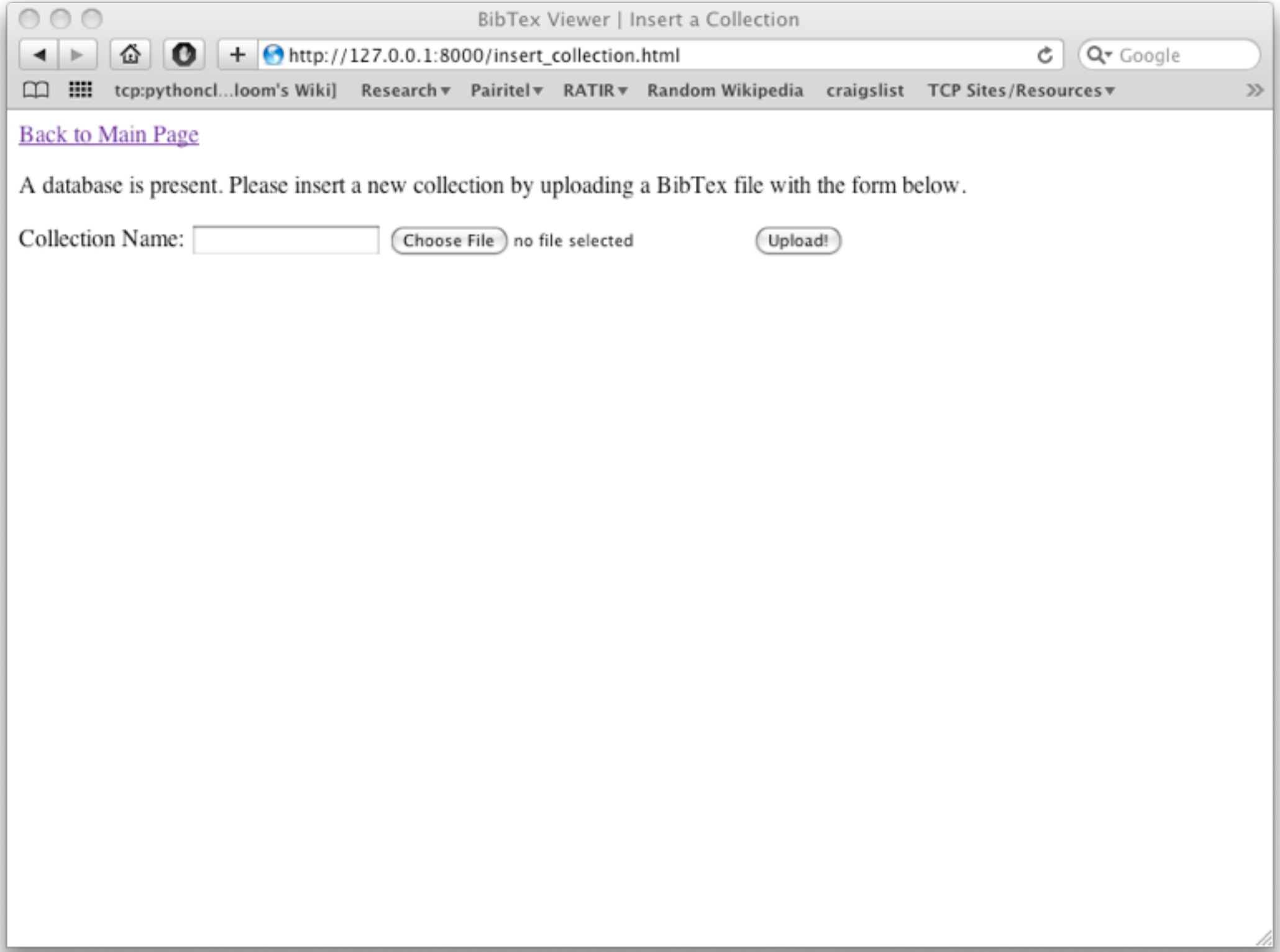
You'll need to look up how to upload a file through flask and how/where to use POST or GET methods. Check out the official flask documentation for information on this stuff. We've given you the basics, but like all topics in this class you'll need to do some autodidacticism to become proficient.

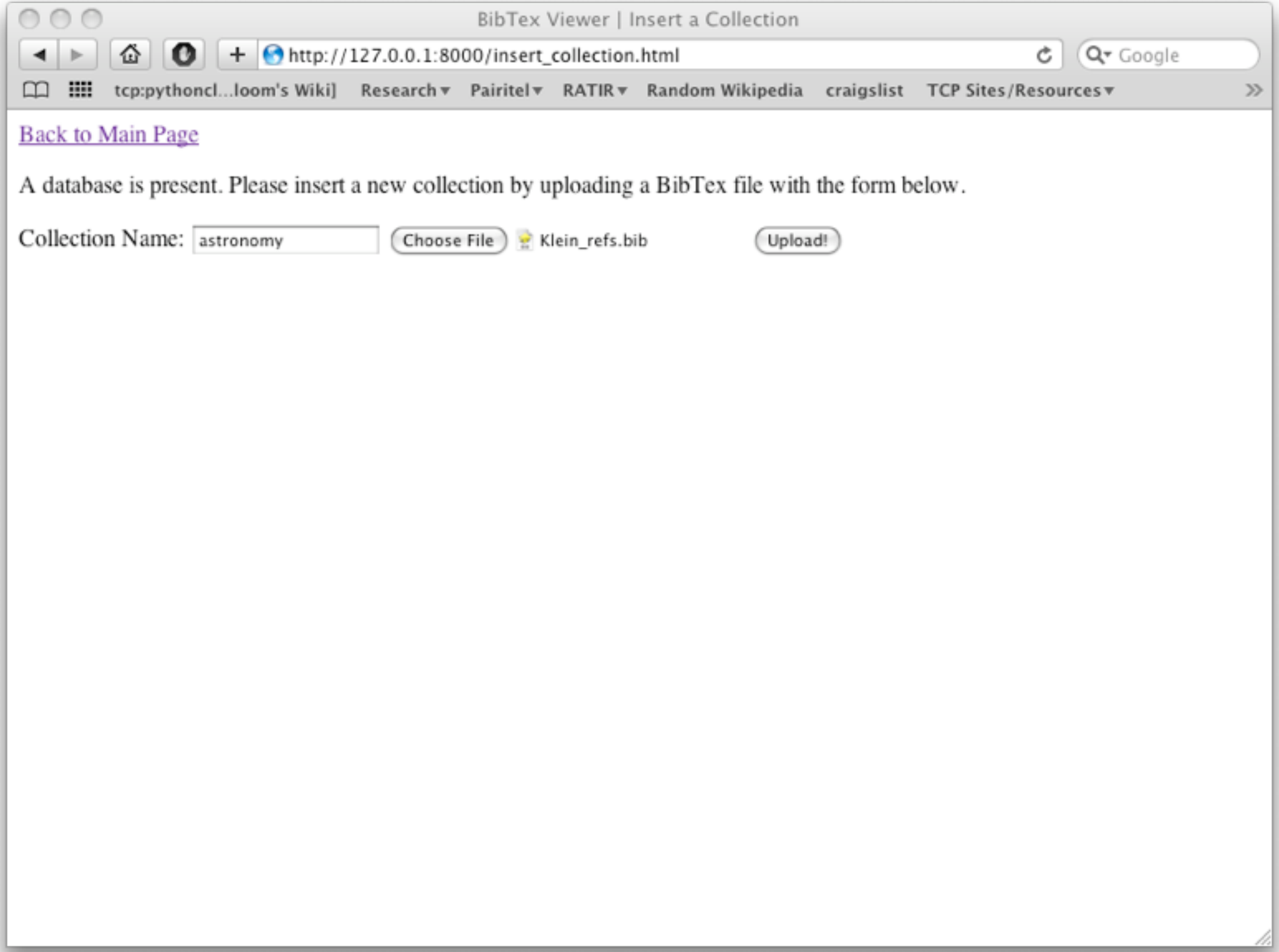
Also, you'll need to reuse your database/sqlite3 knowledge and the posted lectures should be useful refreshers.

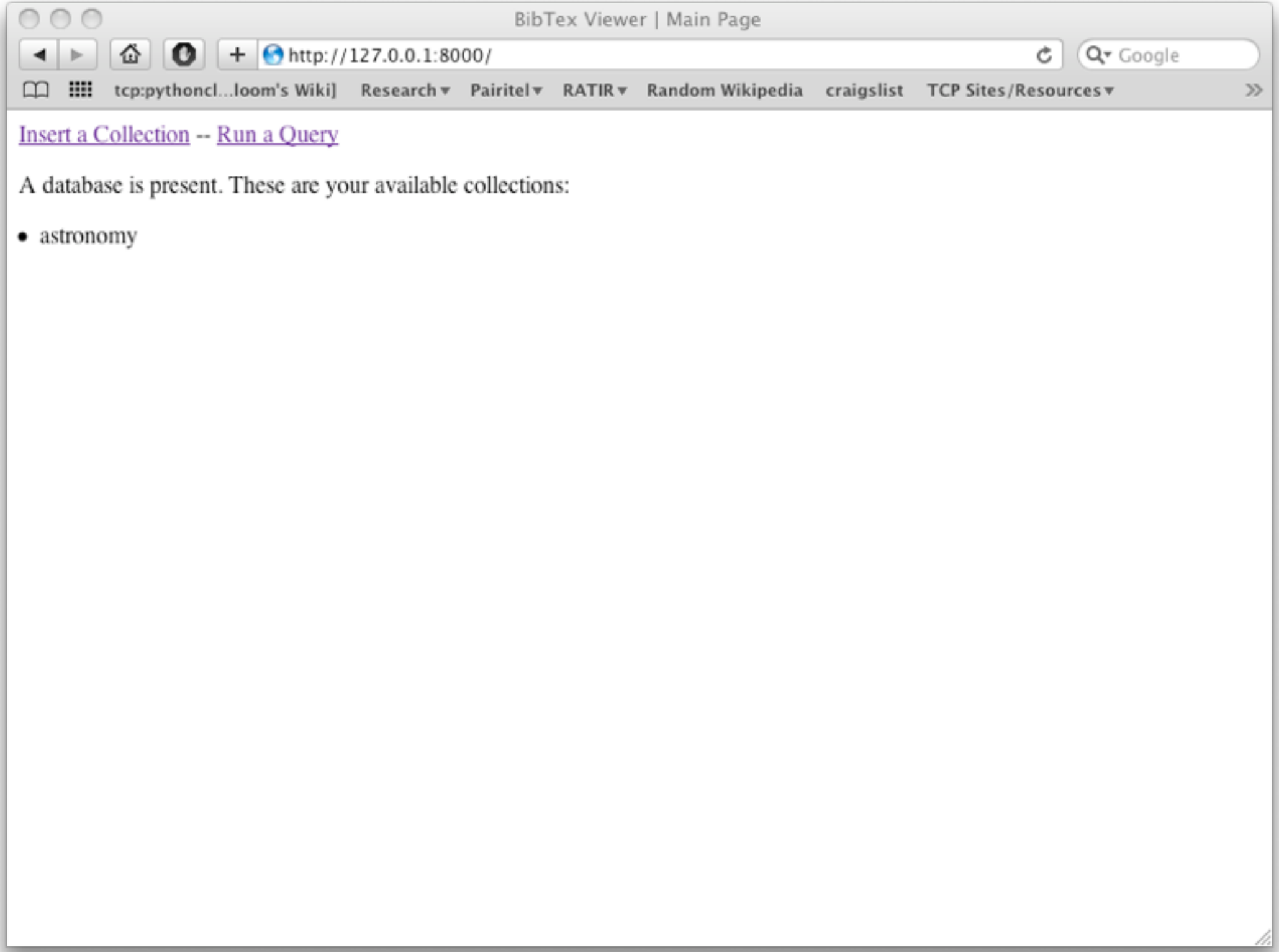
You are welcome to make the webpage look spiffy, but bare-bones functionality is fine. See the next pages for example.


BibTex Viewer | Main Page
http://127.0.0.1:8000/
Google
tcp:pythoncl...loom's Wiki]
Research
Pairitel
RATIR
Random Wikipedia
craigslist
TCP Sites/Resources
Insert a Collection -- Run a Query
No database present, one has been created for you.


BibTex Viewer | Main Page
http://127.0.0.1:8000/
Google
tcp:pythoncl...loom's Wiki]
Research
Pairitel
RATIR
Random Wikipedia
craigslist
TCP Sites/Resources
Insert a Collection -- Run a Query
A database is present. These are your available collections:


BibTex Viewer | Insert a Collection
http://127.0.0.1:8000/insert_collection.html
Google
tcp:pythoncl...loom's Wiki]
Research
Pairitel
RATIR
Random Wikipedia
craigslist
TCP Sites/Resources
Back to Main Page
A database is present. Please insert a new collection by uploading a BibTex file with the form below.
Collection Name:
Choose File
no file selected
Upload!


BibTex Viewer | Insert a Collection
http://127.0.0.1:8000/insert_collection.html
Google
tcp:pythoncl...loom's Wiki]
Research
Pairitel
RATIR
Random Wikipedia
craigslist
TCP Sites/Resources
Back to Main Page
A database is present. Please insert a new collection by uploading a BibTex file with the form below.
Collection Name:
astronomy
Choose File
Klein_refs.bib
Upload!


BibTex Viewer | Main Page
http://127.0.0.1:8000/
Google
tcp:pythoncl...loom's Wiki]
Research
Pairitel
RATIR
Random Wikipedia
craigslist
TCP Sites/Resources
Insert a Collection -- Run a Query
A database is present. These are your available collections:
astronomy

Back to Main Page

A database is present. You can query it with the form below.
Use SQL query syntax to enter the query string that follows the "WHERE".
Column names are "ref_tag", "author_list", "journal", "volume" (integer), "pages", "year" (integer), "title", and "collection".
To use wildcards, use "LIKE" and employ the "%" (percent symbol) as multiple character wildcard and "_" (underscore) as single character wildcard.
Make sure to explicitly put strings in quotes.

Query string: Query!

No query results to display.

Back to Main Page

A database is present. You can query it with the form below.
Use SQL query syntax to enter the query string that follows the "WHERE".
Column names are "ref_tag", "author_list", "journal", "volume" (integer), "pages", "year" (integer), "title", and "collection".
To use wildcards, use "LIKE" and employ the "%" (percent symbol) as multiple character wildcard and "_" (underscore) as single character wildcard.
Make sure to explicitly put strings in quotes.

Query string: year < 1910 Query!

No query results to display.

Back to Main Page

A database is present. You can query it with the form below.
Use SQL query syntax to enter the query string that follows the "WHERE".
Column names are "ref_tag", "author_list", "journal", "volume" (integer), "pages", "year" (integer), "title", and "collection".
To use wildcards, use "LIKE" and employ the "%" (percent symbol) as multiple character wildcard and "_" (underscore) as single character wildcard.
Make sure to explicitly put strings in quotes.

Query string: Query!

- Reference Tag: 1908AnHar..60...87L

Author List: Leavitt, H. S.
Journal: Annals of Harvard College Observatory
Volume: 60
Pages: 87-108
Year: 1908
Title: 1777 variables in the Magellanic Clouds
Collection: astronomy

Back to Main Page

A database is present. You can query it with the form below.
Use SQL query syntax to enter the query string that follows the "WHERE".
Column names are "ref_tag", "author_list", "journal", "volume" (integer), "pages", "year" (integer), "title", and "collection".
To use wildcards, use "LIKE" and employ the "%" (percent symbol) as multiple character wildcard and "_" (underscore) as single character wildcard.
Make sure to explicitly put strings in quotes.

Query string: title LIKE "%parallax%" and author_list LIKE "%Hawley%" Query!

No query results to display.

Back to Main Page

A database is present. You can query it with the form below.
Use SQL query syntax to enter the query string that follows the "WHERE".
Column names are "ref_tag", "author_list", "journal", "volume" (integer), "pages", "year" (integer), "title", and "collection".
To use wildcards, use "LIKE" and employ the "%" (percent symbol) as multiple character wildcard and "_" (underscore) as single character wildcard.
Make sure to explicitly put strings in quotes.

Query string: Query!

- Reference Tag: 1998A&A...330..515F

Author List: Fernley, J. and Barnes, T. G. and Skillen, I. and Hawley, S. L. and Hanley, C. J. and Evans, D. W. and Solano, E. and Garrido, R.
Journal: aap
Volume: 330
Pages: 515-520
Year: 1998
Title: The absolute magnitudes of RR Lyraes from HIPPARCOS parallaxes and proper motions
Collection: astronomy