Manual Test Plan for Digital Library Frontend

Prerequisites:

1. IDE that support python like PyCharm, PyDev for Eclipse, Visual Studio Code (with plugins)
2. mongoDB + PyMongo

Environment Setup and configurations:

1. Download mongoDB from link:
https://www.mongodb.com/try/download/community
Choose version 5.0.3, package msi, then download.
2. Download mongoDB shell from link:
https://www.mongodb.com/try/download/shell
Choose version 1.0.7, package msi, then download.
3. Make a connection to database and record HOST and PORT to the .env file in "Digital_Library" folder. For example, use "mongodb://localhost:27017" for the connection.
4. Navigate to the Digital_Library directory, then download flask. There will be a venv folder under Digital_Library directory.
5. First run in terminal: venv/Scripts/activate
Then run: py -m src.library_app

Operations and the results:

1. First run in terminal: py -m src.program
Then enter 1; then enter
https://www.goodreads.com/book/show/3735293-clean-code
then enter 15; then enter 15.
This step is to first scrape 15 books and 15 authors for later test.

```
(venv) PS D:\cs242\cs242-assignment2\Digital_Library> py -m src.program
Choose int value from one of the following:
1 = Scrape books and authors by starting url
2 = Read from JSON file and update/insert to database
3 = Simulate web api in command line
4 = Export existing books/authors into src/library.json
0 = EXIT

1
Please enter the starting url of a book page:

https://www.goodreads.com/book/show/3735293-clean-code
Please enter the number of books to scrape:

15
Please enter the number of authors to scrape:

15
```
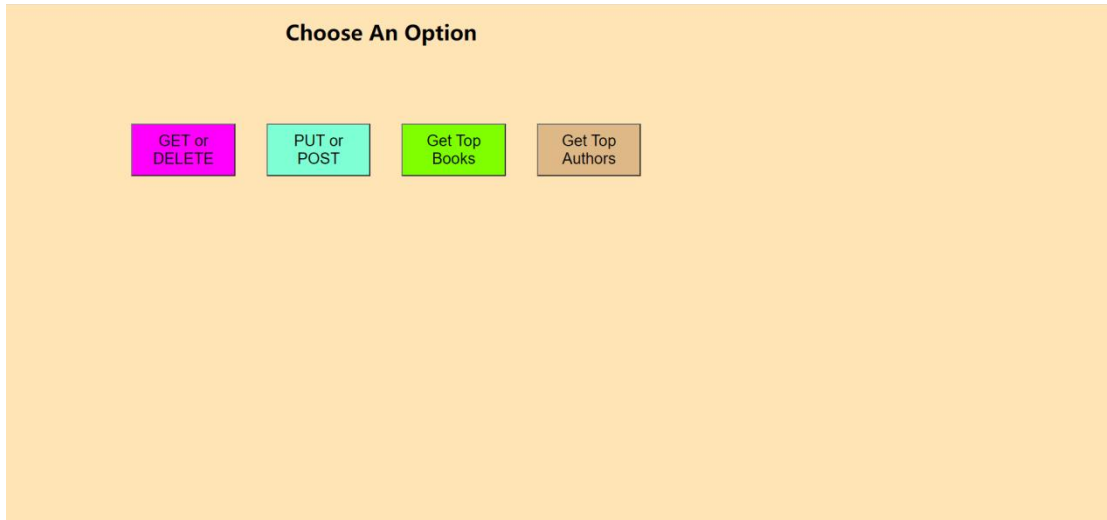
2. Open in browser: http://127.0.0.1:5000/
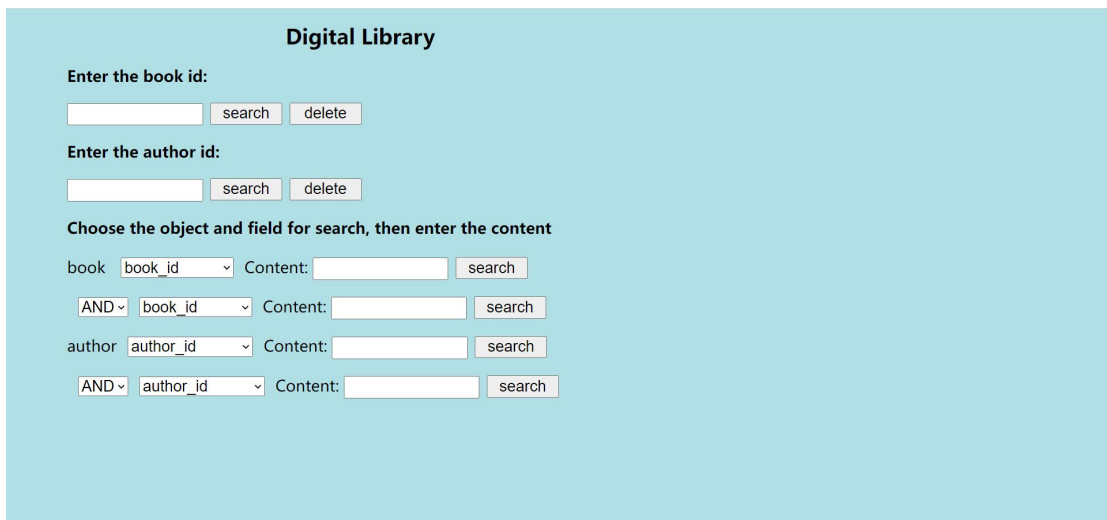Then this index page will show:

Choose An Option

GET or DELETE   PUT or POST   Get Top Books   Get Top Authors

3. Click button "GET or DELETE", then this page will show:
   http://127.0.0.1:5000/get_or_delete

Digital Library

Enter the book id:

[   ] search   delete

Enter the author id:

[   ] search   delete

Choose the object and field for search, then enter the content

book [book_id ▾] Content: [   ] search

[AND ▾] [book_id ▾] Content: [   ] search

author [author_id ▾] Content: [   ] search

[AND ▾] [author_id ▾] Content: [   ] search

4. In the box under the "Enter the book id", enter 100 and click "search", then this list will show at the bottom of the page:

Digital Library

Enter the book id:

| 100 | search | delete |

Enter the author id:

| | search | delete |

Choose the object and field for search, then enter the content

book [book_id ∨] Content: [   ] [search]

[AND ∨] [book_id ∨] Content: [   ] [search]

author [author_id ∨] Content: [   ] [search]

[AND ∨] [author_id ∨] Content: [   ] [search]

- --BOOK--
- [GET error] Book with id 100 is not found

5. In the box under the "Enter the book id", enter 4099 and click "search", then the list will update and show the book information:

book [book_id ∨] Content: [   ] [search]

[AND ∨] [book_id ∨] Content: [   ] [search]

author [author_id ∨] Content: [   ] [search]

[AND ∨] [author_id ∨] Content: [   ] [search]

- --BOOK--
- [GET error] Book with id 100 is not found
- --BOOK--
- [ISBN] 020161622X
  [author] Andy Hunt
  [author_url] https://www.goodreads.com/author/show/2815.Andy_Hunt
  [book_id] 4099
  [book_url] https://www.goodreads.com/book/show/4099.The_Pragmatic_Programmer
  [image_url] https://i.gr-assets.com/images/S/compressed.photo.goodreads.com/books/1401432508l/4099.jpg
  [rating] 4.32
  [rating_count] 17689
  [review_count] 1070
  [similar_books] Clean Code: A Handbook of Agile Software Craftsmanship,Code Complete,Design Patterns: Elements of Reusable Object-Oriented Software,Refactoring: Improving the Design of Existing Code,The Mythical Man-Month: Essays on Software Engineering,The Clean Coder: A Code of Conduct for Professional Programmers,Clean Architecture,Head First Design Patterns,JavaScript: The Good Parts,Designing Data-Intensive Applications,Test-Driven Development: By Example,Domain-Driven Design: Tackling Complexity in the Heart of Software,Working Effectively with Legacy Code,Soft Skills: The Software Developer's Life Manual,Extreme Programming Explained: Embrace Change (The XP Series),Effective Java,Structure and Interpretation of Computer Programs,Coders at Work: Reflections on the Craft of Programming,Patterns of Enterprise Application Architecture,Building Microservices: Designing Fine-Grained Systems,The Passionate Programmer,The C Programming Language,Introduction to Algorithms,Peopleware: Productive Projects and Teams,Release It!: Design and Deploy Production-Ready Software (Pragmatic Programmers),The Phoenix Project: A Novel About IT, DevOps, and Helping Your Business Win,Implementing Domain-Driven Design,Grokking Algorithms An Illustrated Guide For Programmers and Other Curious People,A Philosophy of Software Design,Fundamentals of Software Architecture: An Engineering Approach
  [title] The Pragmatic Programmer: From Journeyman to Master

6. We then click "delete", then this new message of DELETE success will show:

book [book_id ∨] Content: [   ] [search]

[AND ∨] [book_id ∨] Content: [   ] [search]

author [author_id ∨] Content: [   ] [search]

[AND ∨] [author_id ∨] Content: [   ] [search]

- --BOOK--
- [GET error] Book with id 100 is not found
- --BOOK--
- [ISBN] 020161622X
  [author] Andy Hunt
  [author_url] https://www.goodreads.com/author/show/2815.Andy_Hunt
  [book_id] 4099
  [book_url] https://www.goodreads.com/book/show/4099.The_Pragmatic_Programmer
  [image_url] https://i.gr-assets.com/images/S/compressed.photo.goodreads.com/books/1401432508l/4099.jpg
  [rating] 4.32
  [rating_count] 17689
  [review_count] 1070
  [similar_books] Clean Code: A Handbook of Agile Software Craftsmanship,Code Complete,Design Patterns: Elements of Reusable Object-Oriented Software,Refactoring: Improving the Design of Existing Code,The Mythical Man-Month: Essays on Software Engineering,The Clean Coder: A Code of Conduct for Professional Programmers,Clean Architecture,Head First Design Patterns,JavaScript: The Good Parts,Designing Data-Intensive Applications,Test-Driven Development: By Example,Domain-Driven Design: Tackling Complexity in the Heart of Software,Working Effectively with Legacy Code,Soft Skills: The Software Developer's Life Manual,Extreme Programming Explained: Embrace Change (The XP Series),Effective Java,Structure and Interpretation of Computer Programs,Coders at Work: Reflections on the Craft of Programming,Patterns of Enterprise Application Architecture,Building Microservices: Designing Fine-Grained Systems,The Passionate Programmer,The C Programming Language,Introduction to Algorithms,Peopleware: Productive Projects and Teams,Release It!: Design and Deploy Production-Ready Software (Pragmatic Programmers),The Phoenix Project: A Novel About IT, DevOps, and Helping Your Business Win,Implementing Domain-Driven Design,Grokking Algorithms An Illustrated Guide For Programmers and Other Curious People,A Philosophy of Software Design,Fundamentals of Software Architecture: An Engineering Approach
  [title] The Pragmatic Programmer: From Journeyman to Master
- --BOOK--
- [DELETE success] Book with id 4099 is deleted

7. Refresh the page. In the box under "Choose the object and field for search, then enter the content" and after "book" text, choose "title" in the drop down and enter single word Design to the content. Then list of books with Design contained in the title will show.

Choose the object and field for search, then enter the content

book [title ▾] Content: [Design] [search]

[AND ▾] [book_id ▾] Content: [   ] [search]

author [author_id ▾] Content: [   ] [search]

[AND ▾] [author_id ▾] Content: [   ] [search]

- --BOOKS--
- [ISBN] 0201633612
  [author] Erich Gamma
  [author_url] https://www.goodreads.com/author/show/48622.Erich_Gamma
  [book_id] 85009
  [book_url] https://www.goodreads.com/book/show/85009.Design_Patterns
  [image_url] https://i.gr-assets.com/images/S/compressed.photo.goodreads.com/books/1348027904l/85009.jpg
  [rating] 4.19
  [rating_count] 10469
  [review_count] 374
  [similar_books] Clean Code: A Handbook of Agile Software Craftsmanship,Refactoring: Improving the Design of Existing Code,Head First Design Patterns,The Pragmatic Programmer: From Journeyman to Master,Code Complete,Test-Driven Development: By Example,Introduction to Algorithms,Domain-Driven Design: Tackling Complexity in the Heart of Software,Effective Java,Patterns of Enterprise Application Architecture,The C Programming Language,The Mythical Man-Month: Essays on Software Engineering,Effective C++: 55 Specific Ways to Improve Your Programs and Designs,Clean Architecture,Working Effectively with Legacy Code,The Clean Coder: A Code of Conduct for Professional Programmers,JavaScript: The Good Parts,The C++ Programming Language,Java Concurrency in Practice,Designing Data-Intensive Applications,Building Microservices: Designing Fine-Grained Systems,Extreme Programming Explained: Embrace Change (The XP Series),Effective Modern C++: 42 Specific Ways to Improve Your Use of C++11 and C++14,Growing Object-Oriented Software, Guided by Tests,Cracking the Coding Interview: 150 Programming Questions and Solutions,Compilers: Principles, Techniques, and Tools,Release It!: Design and Deploy Production-Ready Software (Pragmatic Programmers),Continuous Delivery: Reliable Software Releases Through Build, Test, and Deployment Automation,Structure and Interpretation of Computer Programs,Coders at Work: Reflections on the Craft of Programming
  [title] Design Patterns: Elements of Reusable Object-Oriented Software

8. Refresh the page. In the box under "Choose the object and field for search, then enter the content" and after "author" text, choose "name" in the drop down and enter single word Martin to the content. Then choose "OR" in the drop down, choose "author_id" in the drop down after "OR", and enter 25215 in the content. Then list of authors with either Martin contained in the name or author with id 25215 will show.

author [name ▾] Content: [Martin] [search]

[OR ▾] [author_id ▾] Content: [25215] [search]

- --AUTHORS--
- [author_books] Clean Code: A Handbook of Agile Software Craftsmanship,The Clean Coder: A Code of Conduct for Professional Programmers,Clean Architecture,Agile Software Development, Principles, Patterns, and Practices,Agile Principles, Patterns, and Practices in C#,Clean Agile: Back to Basics,The Robert C. Martin Clean Code Collection,UML for Java Programmers,Pattern Languages of Program Design 3,Design Principles and Design Patterns
  [author_id] 45372
  [author_url] https://www.goodreads.com/author/show/45372.Robert_C_Martin
  [image_url] https://images.gr-assets.com/authors/1490470967p5/45372.jpg
  [name] Robert C. Martin
  [rating] 4.34
  [rating_count] 31611
  [related_authors] Andy Hunt,Steve McConnell,Michael C. Feathers,Kent Beck,Martin Fowler,Eric Freeman,Erich Gamma,Joshua Bloch,Eric Evans,Gene Kim,Frederick P. Brooks Jr.,Sam Newman,Martin Kleppmann
  [review_count] 2104
- [author_books] Refactoring: Improving the Design of Existing Code,Patterns of Enterprise Application Architecture,UML Distilled: A Brief Guide to the Standard Object Modeling Language,Domain-Specific Languages,Analysis Patterns: Reusable Object Models,Continuous Integration,Inversion of Control Containers and the Dependency Injection pattern,Knowledge Management 95 Success Secrets - 95 Most Asked Questions on Knowledge Management - What You Need to Know,The Adventures of Dai Dreaming,Eradicating Non-Determinism in Tests
  [author_id] 25215
  [author_url] https://www.goodreads.com/author/show/25215.Martin_Fowler
  [image_url] https://images.gr-assets.com/authors/1297592054p5/25215.jpg
  [name] Martin Fowler
  [rating] 4.12
  [rating_count] 16274
  [related_authors] Andy Hunt,Steve McConnell,Michael T. Nygard,Michael C. Feathers,Kent Beck,Eric Freeman,Robert C. Martin,Erich Gamma,Joshua Bloch,Thomas H. Cormen,Eric Evans,Frederick P. Brooks Jr.,Sam Newman,Martin Kleppmann
  [review_count] 750
- [author_books] Designing Data-Intensive Applications,Making Sense of Stream Processing,Designing Data-Intensive Applications: The Big Ideas Behind Reliable, Scalable, and Maintainable Systems by Martin Kleppmann, O'Reilly Media,Hacker Monthly Issue 10
  [author_id] 7969625

9. Now click "Digital Library" header and go back to the index page, then click "PUT or POST" button.
http://127.0.0.1:5000/put_or_post

Digital Library

Enter the book information:

book id:
title:
book url:
ISBN:
author url:
author:
rating:
rating count:
review count:
image url:
similar books:

[Put One] [Post One] [Append] [Post All]

Enter the author information:

author id:
name:
author url:

10. In the boxes under "Enter the book information:", enter change title after "title:", enter 3.9 after "rating" and click "Put one". Then this error message will show at the bottom of the page:

author id:
name:
author url:
rating:
rating count:
review count:
image url:
related authors:
author books:

[Put One] [Post One] [Append] [Post All]

Enter the url of book/author to scrape:

url to scrape:

[Scrape]

- --BOOK--
- [PUT error] Book id is not valid

11. We then enter 85009 after "book id:" and click "Put one".

Digital Library

Enter the book information:

book id: 85009
title: change title
book url:
ISBN:
author url:
author:
rating: 3.9
rating count:
review count:
image url:
similar books:

[Put One]   [Post One]   [Append]   [Post All]

Enter the author information:

author id:
name:
author url:

Success message will show at the bottom.

---

name:
author url:
rating:
rating count:
review count:
image url:
related authors:
author books:

[Put One]   [Post One]   [Append]   [Post All]

Enter the url of book/author to scrape:

url to scrape:

[Scrape]

- --BOOK--
- [PUT error] Book id is not valid
- --BOOK--
- [PUT success] Book with id 85009 is updated

---

12. Refresh the page. Enter these author information and then click "Post One".
author id: 111
name: Tom
rating: 3.1
Then success message will show.

Enter the author information:

author id: 111
name: Tom
author url:
rating: 3.1
rating count:
review count:
image url:
related authors:
author books:

[Put One] [Post One] [Append] [Post All]

Enter the url of book/author to scrape:

url to scrape:

[Scrape]

- --AUTHOR--
- [POST success] Author with id 111 is inserted

13. Enter these author information and follow the instructions.
author id: 222
name: Jerry
rating: 3.5
Click "Append".
author id: 333
name: Dog
rating: 3.8
Click "Append". Click "Post All".
We will see the number of pending authors after clicking "Append" and final success message after clicking "Post All".

Enter the author information:

author id: 333
name: Dog
author url:
rating: 3.8
rating count:
review count:
image url:
related authors:
author books:

[Put One] [Post One] [Append] [Post All]

Enter the url of book/author to scrape:

url to scrape:

[Scrape]

- --AUTHOR--
- [POST success] Author with id 111 is inserted
- There are 1 authors in pending author list
- There are 2 authors in pending author list
- --AUTHORS--
- [POST 222 success] Author with id 222 is inserted
  [POST 333 success] Author with id 333 is inserted

14. Refresh the page. After "url to scrape", enter the relative url:
book/show/95144.In_the_Night_Kitchen
Then click "Scrape".

Enter the author information:

author id:
name:
author url:
rating:
rating count:
review count:
image url:
related authors:
author books:

| Put One | Post One | Append | Post All |

Enter the url of book/author to scrape:

url to scrape: book/show/95144.In_the_Night_Kitchen

| Scrape |

- --SCRAPE--
- [POST success] Book with id 95144 is inserted

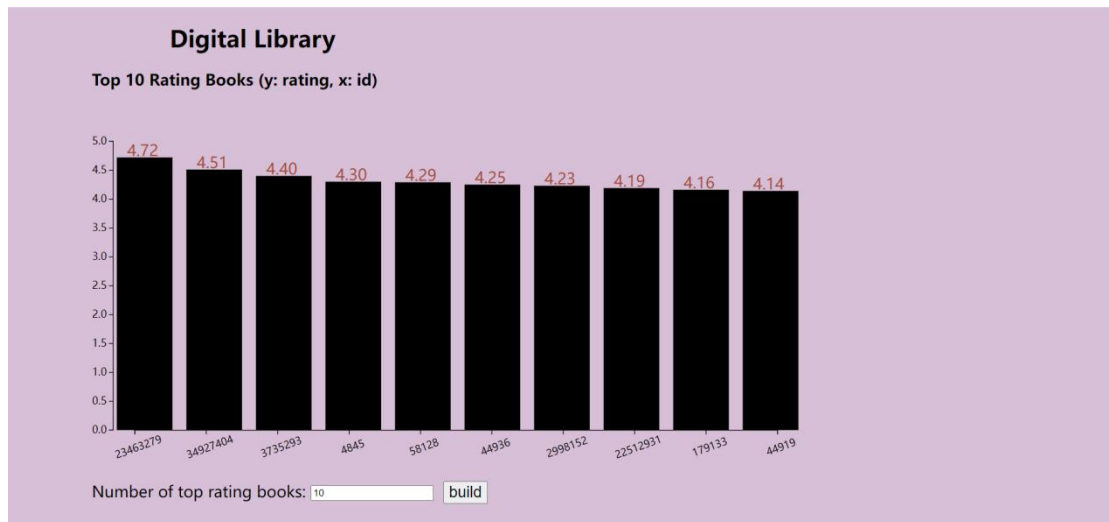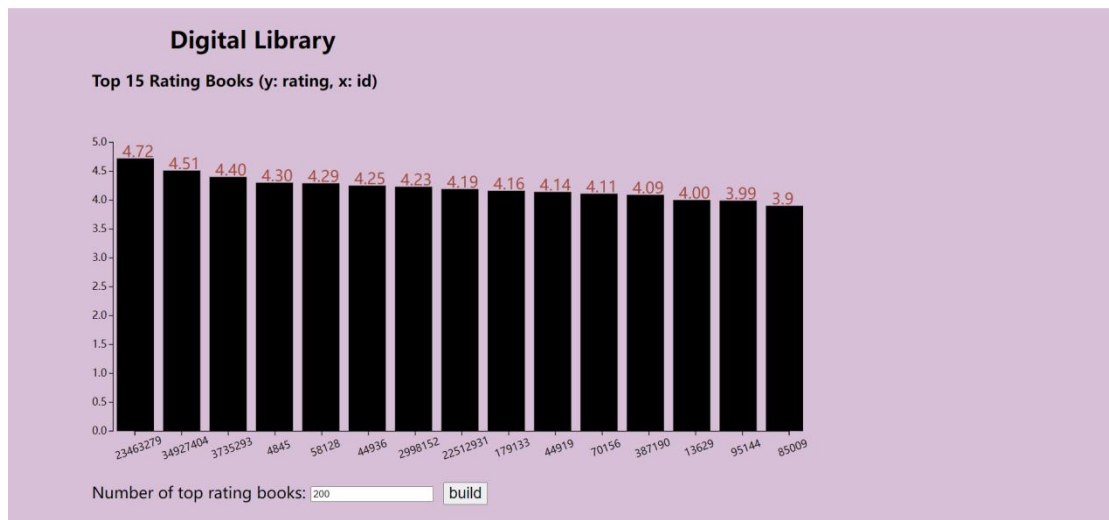15. Click "Digital Library" header to go back to index page. Then click "Get Top Books" button to this page.
http://127.0.0.1:5000/vis/top-books

Digital Library

Top k Rating Books

Number of top rating books: [_____] [build]

16. Enter 10 in the box and click "build". A bar chart with 10 bars will show. X-axis is the book id, y-axis is the rating of book. Order is in descending order.
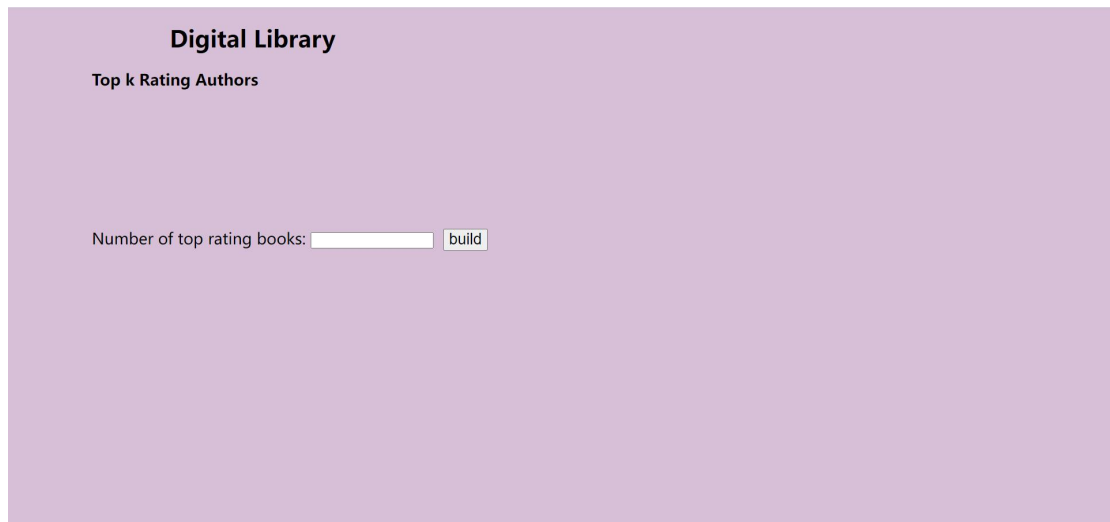
17. Enter 200 and click "build", then only 15 bars will show because we only have 15 books in database.
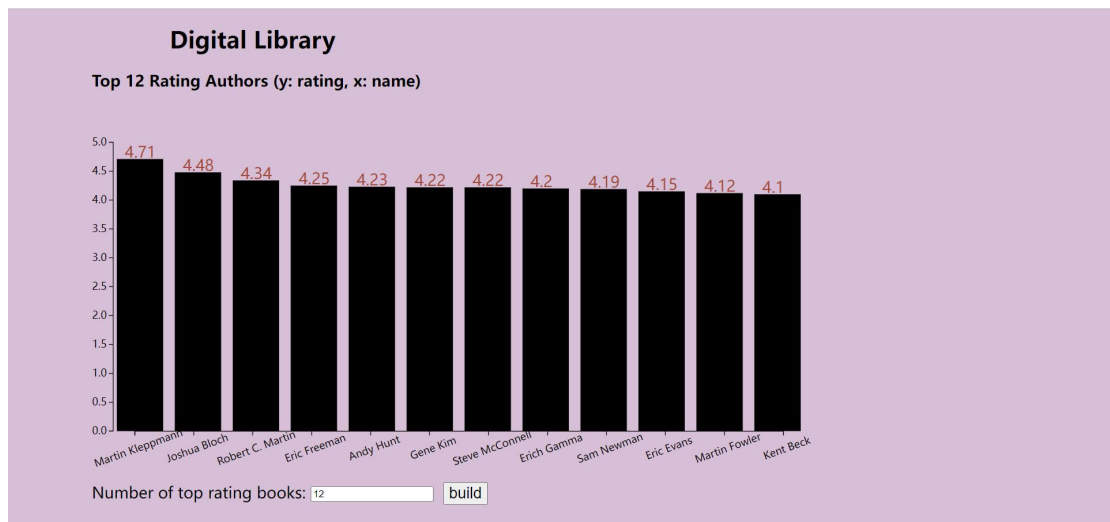

18. Click "Digital Library" header to go back to index page. Then click "Get Top Books" button to this page.
http://127.0.0.1:5000/vis/top-authors

19. Enter 12 in the box and click "build". A bar chart with 12 bars will show. X-axis is the author name, y-axis is the rating of author. Order is in descending order.

20. Enter 200 and click "build", then only 18 bars will show because we only have 18 authors in database.

Digital Library

Top 18 Rating Authors (y: rating, x: name)

Number of top rating books: [200] [build]