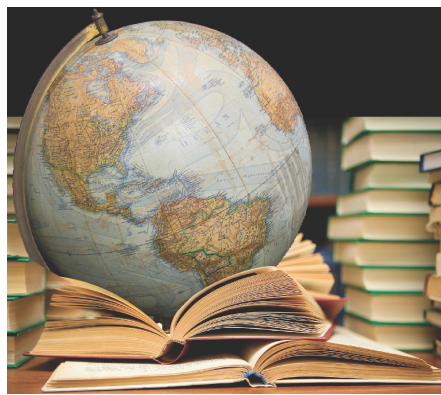


BookRUs

Technical Report: Phase 1



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Motivation

“That’s the thing about books. They let you travel without moving your feet.”

- American author Jhumpa Lahiri

Our mission is to emphasize the literary contributions of different cultures around the world. BookRUs was designed to include information regarding famous publications around the globe, their authors, and the countries they hail from. This allows us to connect and spread knowledge from distant lifestyles and faraway populations to others through inspiring stories, insightful biographies, and cross-country cultural exchange. Therefore, we can create a more mindful atmosphere as people across the globe become more conscious and appreciative of each other!

As of now, the vision of our website incorporates rich backgrounds, summaries, descriptions, and images from authors, books, and countries alike to resemble a digitized library where anyone can digest the cultural significance of a piece of literature beyond what they read on the page. Additionally, we hope that our website will aid readers in their thirst for knowledge by helping connect them to novel books, authors, and cultures that pique their interests.

User Stories

- **Information about the length of the book**

- “If possible, I would like to see a few more book attributes. One of the main factors I look at when finding a book is the book’s length. Is it possible to find data on the number of pages in the book? With book-length information, one can have one extra data point to decide if the book is for them.”
- Resolution: Yes, it’s possible to find data on the number of pages in the book! We think it’s a great suggestion and have thus added it to our site.

- **Information about book pricing/availability**

- “If I looked through the website and found a book that I really liked and wanted to purchase to support the author, it'd be nice to see pricing information or places to buy the book from various retailers. Sometimes, when I try to find books from other countries or cultures, they can be somewhat hard to find. A central place to find information about this would be really handy!”
- Resolution: Finding the pricing data will take a little extra work in the next phase, but it is doable. While the site focuses on the culture surrounding the books, authors, and countries, we think it’s a great idea to

provide clients the opportunity to dig deeper by prospecting books to purchase if they so choose.

- **Information about the book's reception**

- "An important part of learning about a book's relationship with a given culture is to examine its reception. An interesting piece of data to add would be some reviews that the book has received. This would add context to how the book fits in with the culture that the author originates from, or how readers from another culture might interpret the book."
- Resolution: Weighing the reception of the book is a great idea! This will likely be implemented in another phase as it does require some extra consideration: where will the ratings come from? How does the region where the ratings come from affect its reception? *Etc.*

- **History of the country**

- "For the culture of the countries, I would like to see the history of the country and the authors in the country can be grouped by different eras. For example, the eras can be World War I and Great Depression. This will let me know more about the background of the author's life. Moreover, I can see if the same era influences the authors to create similar genres."
- Resolution: While this is an interesting idea, it's regrettable to say that we don't see this as a feasible feature to implement given the resources made available to us. The further back we go, the less we know of the world. Narrowing down that already limited

knowledge to a specific region and a specific person is a challenge that we don't believe can be encompassed within the scope of this project.

- **Region attribute**

- “Since countries and cultures are organized geographically around the world, it would make sense to introduce more geographic attributes to the data on the site. For example, the United States and Canada are probably more culturally similar than the United States and China. It would be helpful to group countries and cultures by region, to be able to see how cultures within the same region might be similar or different based on the books that are produced.”
- Resolution: Great idea! Geography definitely has an influence on the dispersion of culture and thus we have added it to our site.

RESTful API

Our Postman API documentation can be found [here](https://documenter.getpostman.com/view/19701903/UVkvJYLx).
(<https://documenter.getpostman.com/view/19701903/UVkvJYLx>)
As of right now, the documentation for RESTful API for BookRUs contains six basic GET requests for the three of our models. Each model has two requests: one which retrieves all instances of the model and one which retrieves one instance of the model given an ID. With the tentative API endpoint of <https://www.bookrus.me/api>, our calls for each model look like the following:

1. <https://www.bookrus.me/api/books>
2. <https://www.bookrus.me/api/books/id=<id>>
3. <https://www.bookrus.me/api/authors>
4. <https://www.bookrus.me/api/authors/id=<id>>
5. <https://www.bookrus.me/api/countries>
6. <https://www.bookrus.me/api/countries/id=<id>>

Upon a successful request, each model's instance(s) will be listed out and the user will be able to access all attributes of each instance (i.e. book author, country code, author bio, etc.) The list of attributes, the available requests, and the actual practicality of the API will grow as we continue to develop the site.

Models

Presently, our project consists of three models. Data for each model comes from the Google Books API, Wikimedia, Wikipedia, natkapral's Countries Cities API, World Bank Country/Region API, and the Open Library API.

Books

- The books make up the literary component of our project.
- Sortable attributes: Author, Publication Date, Language, Genre, Title, Length
- Searchable attributes: Title, Summary, Series, Pages, Publisher, Maturity Rating, Print Type, Country, Author IDs, Book ID
- Media: Synopsis, Image

Authors

- The authors serve as a connection between their literary works and both their personal culture and the culture of their nationality.
- Sortable attributes: Nationality, Gender, Genre(s), Age, Language
- Searchable attributes: Biography, Publications, Awards, Nationality, Name, Books, Book IDs, Author ID
- Media: Bio, Image

Countries

- The countries are the macroscopic units of the culture of our project.

- Sortable attributes: Coordinates, Book, Code, Language, Population, Region
- Searchable attributes: Capital, Authors, Books, Cities, Currency, Author IDs, Book IDs
- Media: Description, Image

Data Sources

- Google Book API
 - <https://developers.google.com/books/docs/overview>
 - Gives book info and images
- Geo Country API
 - <https://rapidapi.com/natkapral/api/countries-cities/>
 - Gives country info and link to their wiki
- World Bank Country/Region API
 - <https://datahelpdesk.worldbank.org/knowledgebase/articles/898590-country-api-queries>
 - Gives country info including region
- Open Library API
 - <https://openlibrary.org/developers/api>
 - Gives book and author info
- Wiki API
 - https://www.mediawiki.org/wiki/API:Main_page
 - Multiple Wikipedia APIs to get long descriptions of objects

Tools

- **React:** A JavaScript library for building user interfaces for single-page applications. We used it to create the frontend of our app. React is popular due to its Component feature that acts as building blocks and saves significant time.
- **React-Bootstrap:** A component-based library that provides Bootstrap components as React components. We used it to easily make our navbar and design each of our site pages.
- **React-Router:** A React library that enables navigation among views of various components. We used it to navigate between pages.
- **Prettier:** An opinionated code formatter that works on most files. We ran it before our linter to fix most style issues.
- **Eslint/Eslint-Config-Airbnb:** A linter for JavaScript that is used for most of our frontend work. The Airbnb config makes the linter follow Airbnb style guidelines, which is the most popular guide for React apps.
- **Postman:** An application for testing and documenting APIs. In this phase, we used it to document the APIs we plan to make in later phases.
- **Namecheap:** A domain name provider and register. We used this to find a free domain name that would replace the domain given to use by AWS.
- **AWS Amplify:** Amazon Web Services' streamlined hosting service to make hosting clients' sites easy. This is what we used to host our website.

- **Gitlab:** A version control system that facilitates project collaboration, management, and development. We used this to manage the workflow of our project and to link to AWS Amplify.
- **Discord:** A communication platform. This is what we used to communicate and coordinate as a team whether it's through calls or messaging.

Hosting

To host our site, we used AWS Amplify and Namecheap. We started by purchasing the domain name “bookrus.me” on Namecheap for free since Namecheap has special offers for students. Next, we set up AWS Amplify which was, as advertised, quick and easy to use. We linked AWS Amplify up to our GitLab’s main branch frontend and dev branch frontend. The main difficulty of the process resulted from trying to route traffic reaching bookrus.me to the site AWS was hosting for us. For the sake of recording a lesson, we did as follows:

1. Added the CNAME record AWS provided into Namecheap
2. Added the second CNAME record AWS provided into Namecheap
3. Remove all A records from Namecheap
4. Added the ALIAS record AWS provided into Namecheap

Once we configured everything correctly in Namecheap, AWS Amplify took care of the rest. We also took the precaution of disabling automatic build updates upon committing to the dev branch to save the amount of build hours allotted to us by AWS’s free tier.

Challenges

A significant portion of the challenges we faced spawned from our lack of organization and planning. For the most part, our work suffered a heavy damper from not 1) starting early, 2) hosting a session with no work, just planning and 3) lack of communication. Planning out when we'd meet and going over the project specifications together would solve most of the problems we had as a result of disorganization: 1) finding out who works on what part of the project, 2) feeling out time can we consistently meet during the week, and 3) underestimating the magnitude of work required to complete the project. Starting early would've been, by far, the best solution to the problems we encountered; most of the hours we spent early in Phase 1 were allocated to coming up with an idea for our request for proposal and waiting for a response. Had we started earlier, we would have hit the ground running with a more concrete idea and could've dedicated more time to design rather than scrambling to complete deadlines in a chaotic manner.

Before starting Phase 2, we plan to completely restructure the codebase for our web app. This will require the early coordination that we lacked in Phase 1. When we accomplish this goal, it should make later phases a much smoother process.