Title: Book and Author Details

Introduction

The purpose of this Web application is to allow users to get basic information about the book and author for a specific genre. On submitting the form with user entered genre, the user will be displayed with the book's author, book's title, page count or price as well as top work of the author. In order to implement this application I have utilized 3 Web API's(2 REST and 1 SOAP). This web application is designed using Flask which is a micro web framework for Python. For displaying the elements in the web page HTML is used. And for styling elements bootstrap and plain CSS is used. For a successful execution of the application several python packages have been installed to facilitate the development and execution of the application.

API	Type	Key Used	Purpose
Google Books API	REST	Yes	To fetch author name, book title and page count or price of the book written by them
Open Library API	REST	No	To fetch top work of the author
Data Access	SOAP	No	To fetch the price or number of pages in the book in wording format

API integration:

1. Google Books API
   - This API returns JSON type data having varied information on books related to a genre. Within each document there are author names, price of the book in USD, whether the book is on sale, page count etc.
   - I have used this REST API to help me fetch information about a genre say programming, python, biomedical etc. For fast processing and efficiency I have always selected the first document out of many documents from the API results. If the selected document has more than one author then I have selected the first author.
   - Details fetched from this web service - title of the book, price or page count of the book, author of the book.
   - Link - https://developers.google.com/books/docs/v1/getting_started
   - Example link - https://www.googleapis.com/books/v1/volumes?q=python
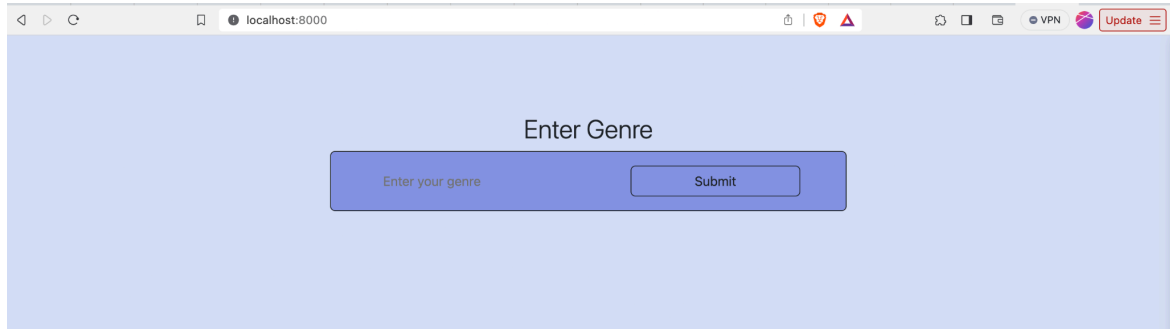
2. Open Library API
   - This API returns JSON type data having information about the author's birth date, their list of books, authors' alternate names, work_count, top work etc.
   - I have used this REST API to fetch the top work of the author.
   - Details fetched from this web service - Author's top work
   - Link - https://openlibrary.org/dev/docs/api/authors
   - Example link - https://openlibrary.org/search/authors.json?q=j%20k%20rowling
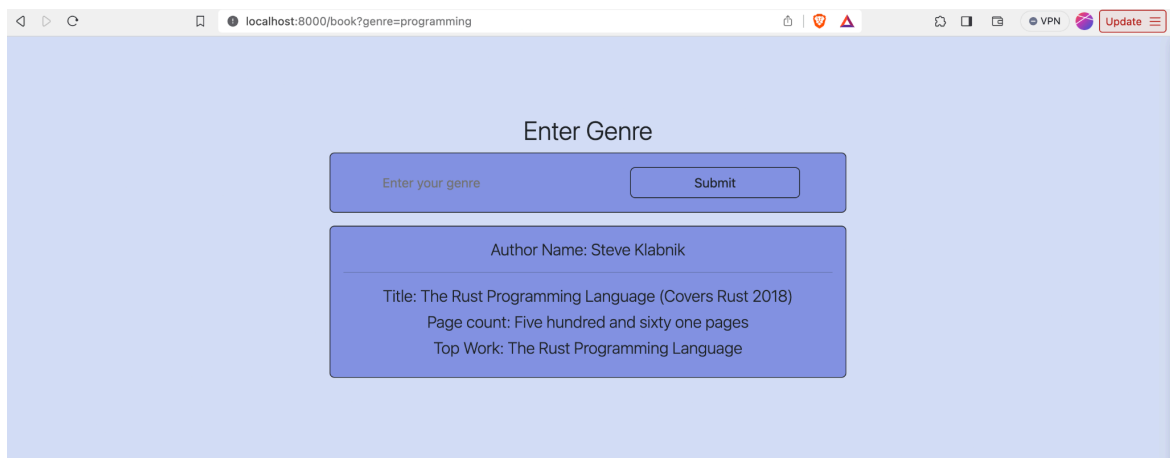
3. Data Access API
   - This SOAP API provides many SOAP based web services, like number conversions, temperature conversions, anagram checking etc.
   - I have used the number conversions web services and used two functions namely Number to words and Number to dollars to get the price and page count of the book in wordings.
   - Functions fetched from this web service - Number to words, Number to dollars
   - Link - https://www.dataaccess.com/webservicesserver/numberconversion.wso
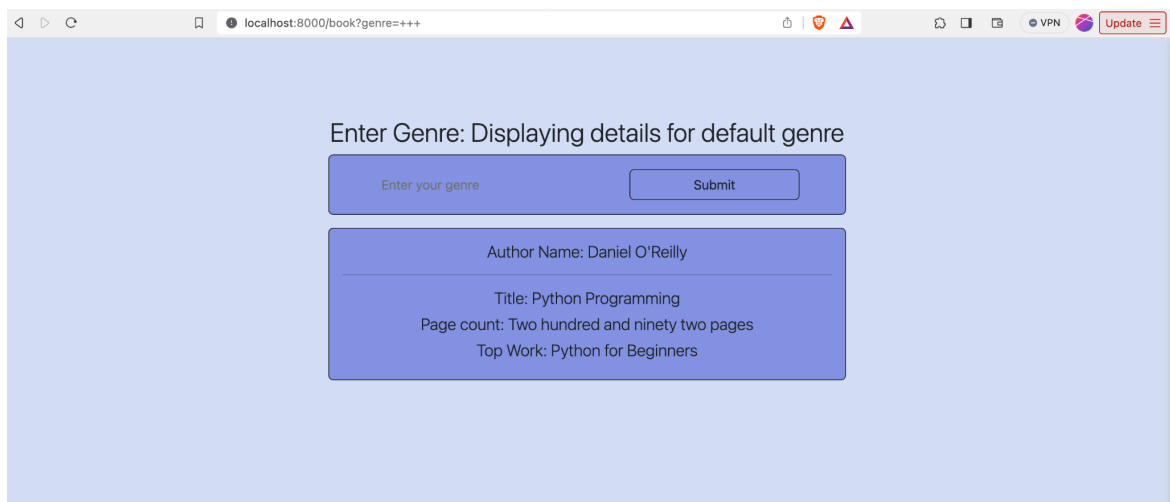
Web-Based User Interface

1. <u>Landing page</u> - This is the landing page consisting of a simple form which takes user input for a genre.

2. <u>Display Results</u> - On entering the genre and then submitting, this page will display the author's name, title of the book, price or page count of the book and top work of the author. The title entered can be seen in the url (programming)

3. <u>Default Result</u> - If the user submits the form without specifying any genre then a default message as well as default contents will be displayed in this page. I have used python as the default topic, hence getting information based on that!
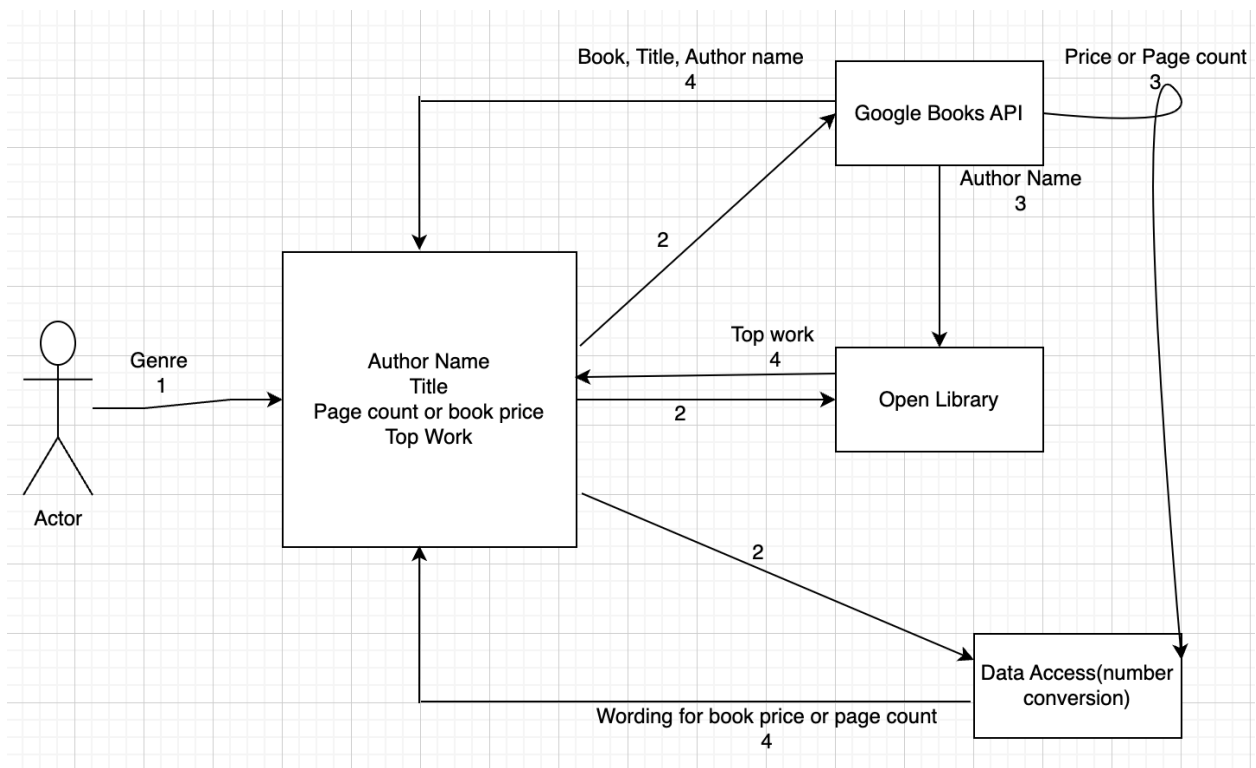
Functionalities

- The web application provides the top work of authors for any genre possible.
- The web application handles empty user input with a default output response. In this case it is python. It also makes the user display an appropriate message.
- For books returned, if those books are not available for sale, I have given information about the page count of the book. In this way the user can interpret how detailed the book can be.
- Also for books returned, I have displayed the price of the books in wording to reduce ambiguity with decimals and provide more clarity and readability.
- In case of the page count as well I have displayed it using wordings for global understanding.

Design

Diagram

Steps

1. The user submits the form after entering the genre name.
2. The backend takes the genre name and makes calls to three APIs.

3. The very first API call is to Google Books API. The API will return the title of the book, author name, price and page count of the book. It will pass the author name to the second API i.e open library and price or page count to third API i.e data access.
4. The second API will fetch the top work of the given author and return it to the user. The third API will return the wording for the passed input. If the input is about price, it will use the Number to dollars function. If the input is about page count, it will use the Number to words function.
5. As a result the user will be able to see all the data related to book title, page count or price, top work of the author and the author name itself.

Exceptions

The application also displays information when the user does not input a specific genre i.e happy, cat, super etc. But then it is quite possible that I won't be able to get the details that I want to display as books might not be available for the entered input. This will lead to an error. On the other hand, I might receive some gibberish data as a result from API which is not the main aim of this web application. Hence only genre related input should be given for this application.