



Book Finder App

01286131 Object-oriented Programming

Software Engineering Program

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Project Description:

The BookFinder App is a powerful tool that utilizes the Google Books API to retrieve information about books and presents the data in various formats. This application aims to simplify the process of finding and exploring books by providing users with a seamless and intuitive search experience.

Objectives:

The main objectives of the Book Finder App project were as follows:

1. Develop a user-friendly application for searching books.
2. Integrate the Google Books API to retrieve book data.
3. Display search results in a new window.
4. Implement a book details window to show additional information about a selected book.
5. Enable users to view book descriptions and access external links for more information.

Implementation Details:

The Book Finder App was developed using the following technologies and methodologies:

Programming Language: [C++]

User Interface Design: [Qt Framework, Qt Creator]

Google Books API Integration: The BookFinder App utilizes the Google Books API to access a vast database of books, enabling users to search for books based on various criteria such as title, author, ISBN, or keywords.

Scraping and Data Retrieval: The app employs scraping techniques to fetch relevant data from the Google Books API. It sends requests to the API, retrieves JSON responses, and extracts essential information about books, including their titles, authors, publication dates, descriptions, and cover images.

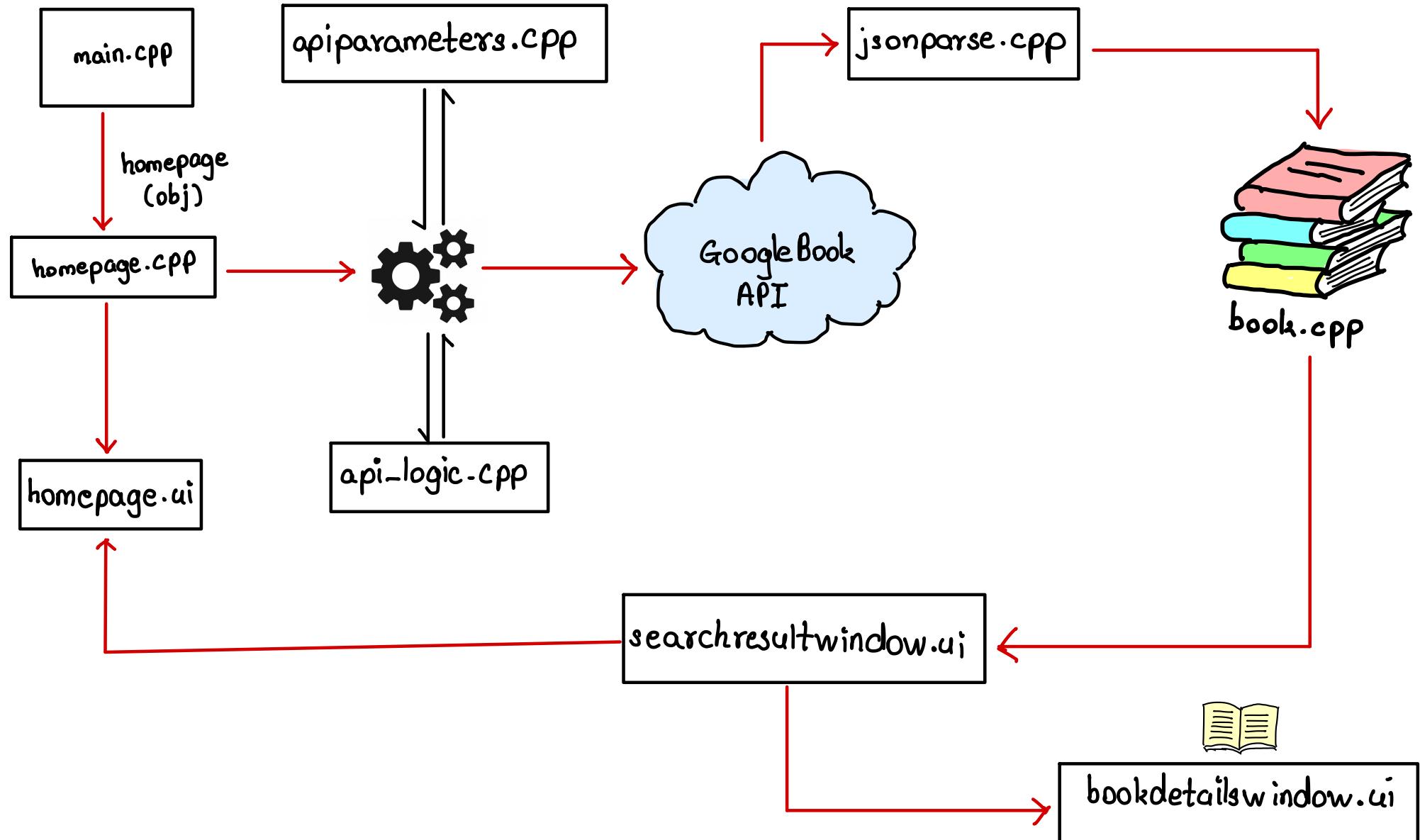
JSON Parsing and Data Processing: The BookFinder App incorporates robust JSON parsing logic to efficiently extract relevant information from the API responses. It handles the parsing of complex JSON structures and organizes the retrieved data into manageable objects for further processing.

Search Functionality: The app provides users with a user-friendly search interface where they can enter their search queries. It then sends the requests to the Google Books API, retrieves matching results, and presents them to the users.

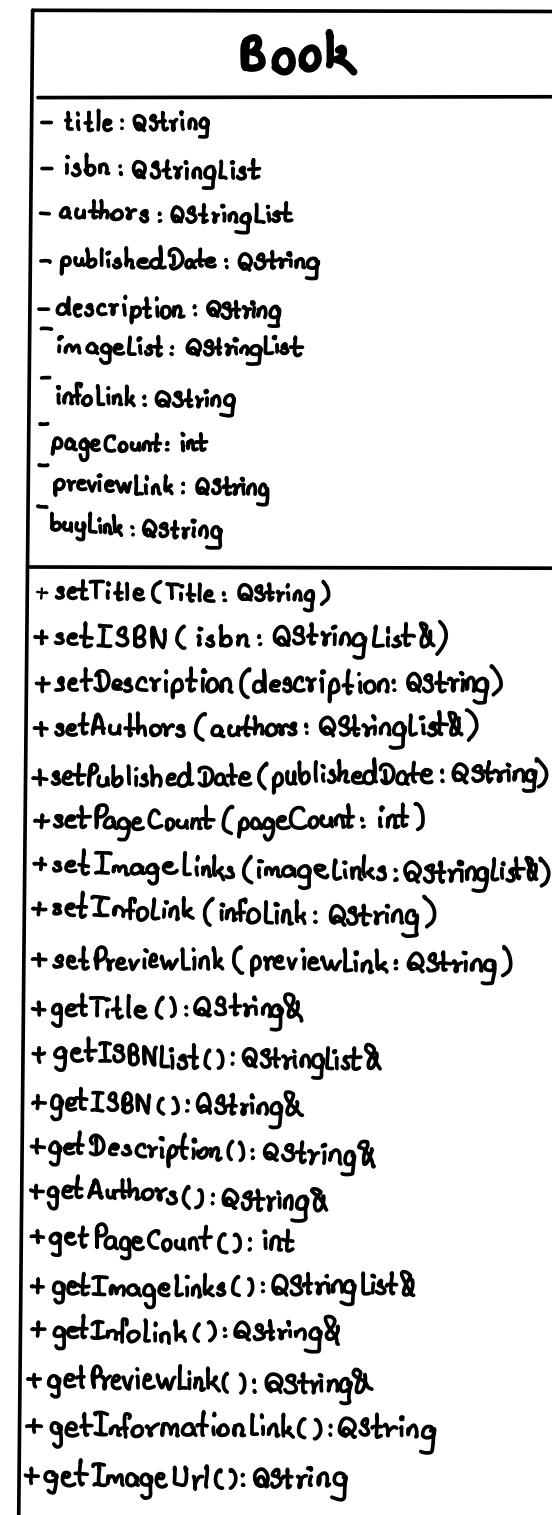
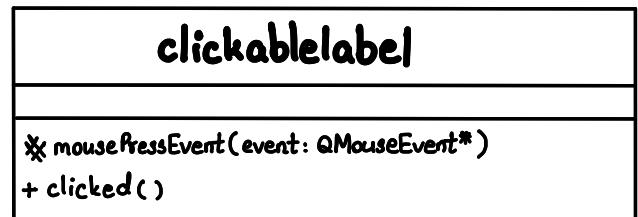
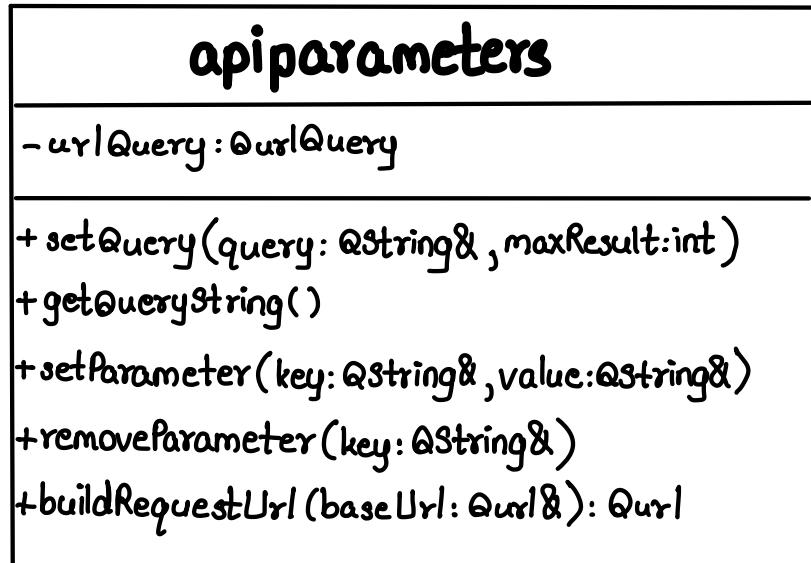
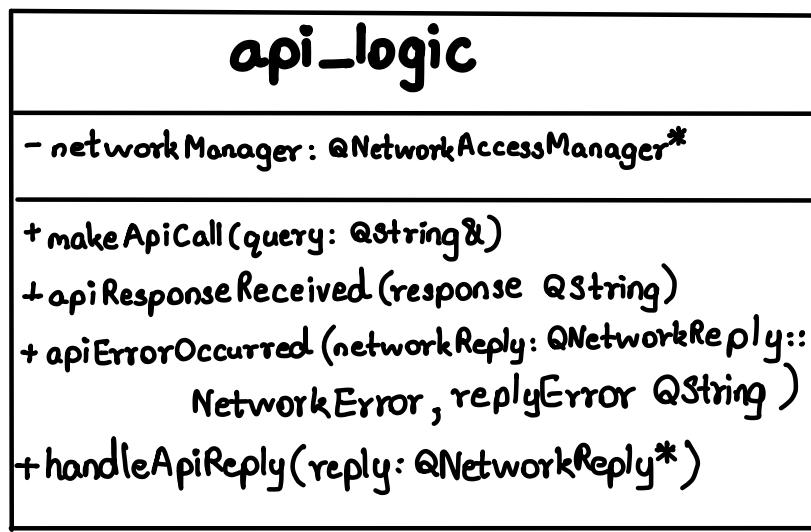
Data Presentation: BookFinder offers multiple formats for presenting the book data to cater to different user preferences. It can display search results in a list view, providing essential details such as book title, author, and publication date. Additionally, users can access detailed views for individual books, including descriptions, cover images, and additional metadata.

User-Friendly Interface: The app aims to provide a seamless user experience with an intuitive and visually appealing interface. It employs modern design principles, making it easy for users to navigate, search for books, and explore the retrieved data effortlessly.

Process Diagram:



Class Diagram:



homepage

```
- ui: Ui::HomePage*
- button: QPushButton*
- api: Api_logic*
- jsonparse: Jsonparse*
- apiparameters: Apiparameters*
- searchresultwin: SearchResultWindow*
- maxResult: int

- handleButtonClicked()
- handleApiResponse(response: QString)
- onImageDownloaded(reply: QNetworkReply*)
- on radioButton_5_toggled(checked: bool)
- on radioButton_10_toggled(checked: bool)
- on radioButton_20_toggled(checked: bool)
- on radioButton_30_toggled(checked: bool)
- on radioButton_40_toggled(checked: bool)
- setMaxResult(maxResult: int&)
- getMaxResult(): int
```

bookdetailswindow

```
+ downloadImageData(url: QString&): QByteArray
```

jsonparse

```
- bookList: QList<Book>

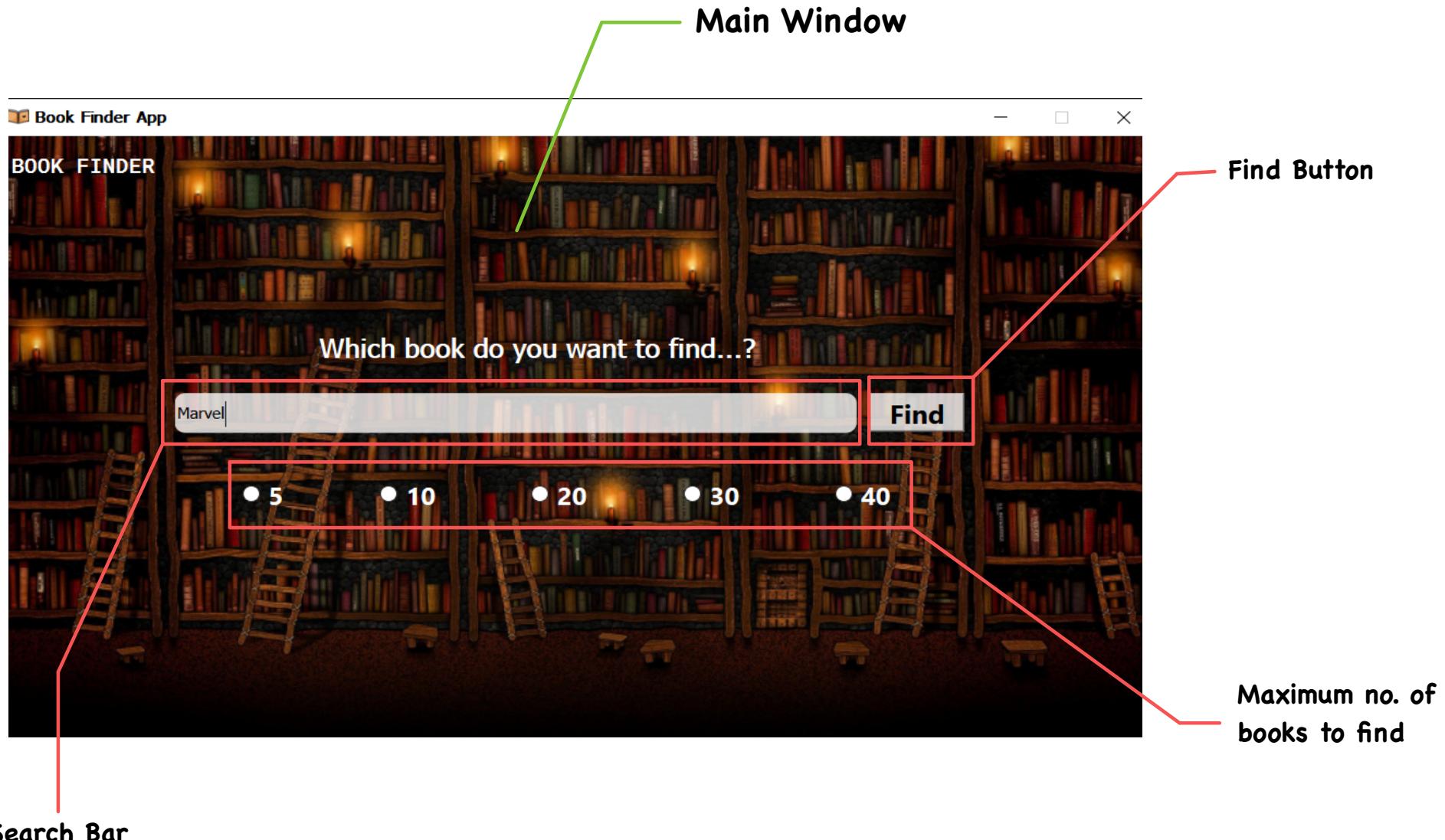
+ parseJson(jsonString: QString&): bool
+ printData()
+ populateData(jsonArray: QJsonArray&)
+ processKeyValue(key: QString&, value: QJsonValue&)
```

searchresultwindow

```
- ui: Ui::SearchResultWindow*
- bookdata: QList<Book>

+ getData()
+ handleBookButtonClick(book: Book&)
+ openBookDetailsWindow(book: Book&)
+ createBookGroupBox(book: Book&): QGroupBox*
+ loadImageFromUrl(imageUrl: QString&): QPixmap
+ createBookCard(book: Book&): QWidget*
- goToHomePage()
```

User-friendly Interfaces:

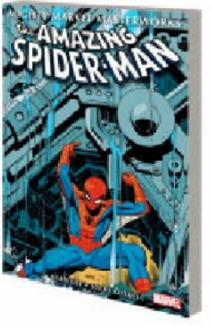


Go back to
Main Window

Searched Results Window

BOOK FINDER APP

BOOK FINDER



Title: Mighty Marvel Masterworks: the Amazing Spider-Man

ISBN: 1302948997

Authors:

Published Date: (2023-07-11)

READ MORE



Title: Marvel Comics: A Manga Tribute

ISBN: 1974737136

Authors: Marvel Comics

Published Date: (2023-07-18)

READ MORE



Title: Marvel-Verse

ISBN: 9781302944780

Authors: Roberto Aguirre-Sacasa

Published Date: (2023-01-18)

READ MORE



Title: Marvel Masterworks: Daredevil Vol. 17

ISBN: 130294925X

Authors:

Published Date: (2023-04-18)

READ MORE

Clickable image to pop up
Book Details Window

Read More Button to go to
Book Details Window



Book Details

Book Details Window



0 Pages

Title: Mighty Marvel Masterworks: the Amazing Spider-Man Vol. 4 - the Master Planner

ISBN: 1302948997

Authors:

Published Date: 2023-07-11

Description:

Stan Lee and Steve Ditko created an unabashed cultural phenomenon in AMAZING SPIDER-MAN! Their dramatic blend of Peter Parker's everyday woes mixed with his web-slinging alter ego's exploits was something undeniably special. And after years of perfecting that formula, Lee and Ditko unleashed their Spider-Man masterpiece: the Master Planner saga! It's as perfect a Spider-Man story as you'll ever find, including one of the most iconic moments in Marvel history! Plus: Peter's first days on campus at Empire State University introduce you to Gwen Stacy, tease something strange afoot with Norman Osborn and feature villains from the colorful

[More Info](#)

Book Preview

External Link for Further Information

Project Outcomes:

The Book Finder App project achieved the following outcomes:

1. Successful integration of the Google Books API to fetch book data.
2. Seamless implementation of search functionality with various search criteria.
3. Intuitive user interface design, providing a pleasant browsing experience.
4. Accurate parsing of JSON data to extract relevant book details.
5. Efficient loading of book covers and information in both the search results and book details windows.
6. Proper handling of errors and exceptions to ensure smooth operation of the application.

Technical Challenges:

During the development of the Book Finder App, the team encountered several technical challenges that required attention and problem-solving. These challenges included:

Qt Creator: The team needed time to become familiar with the Qt Creator integrated development environment (IDE) to efficiently design and develop the user interface of the application.

HTTP Requesting: Implementing HTTP requests to fetch data from the Google Books API required understanding the underlying protocols and handling response codes and error conditions.

JSON Parsing: Parsing JSON data received from the API response required careful handling and extraction of relevant information, ensuring the correct data was utilized in the app's various components.

Error Handling: Properly handling errors and exceptions during API requests, network connectivity issues, or invalid data responses to prevent application crashes or unexpected behavior.

Performance Optimization: Ensuring efficient loading of book covers and information, minimizing response times, and optimizing the app's overall performance to provide a smooth user experience.

Further Improvements:

Moving forward, future enhancements to the app could include additional features such as user reviews, book ratings, and personalized recommendations based on user preferences.

Conclusion:

The development of the Book Finder App was a success, meeting all the objectives outlined. The app provides users with a convenient and efficient way to search for books, explore search results, and access detailed information about their desired books.