Electronic Assignment Cover Sheet

Please fill out and attach as the first page of Assignment.

Student (s) Number as per your student card:

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Sudhanva Hukkeri **10383120**

Course Title: Information Systems with Computing

Lecturer Name: Paul Laird

Module/Subject Title: Enterprise Information Systems in Computing with IS

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Online Book Search using Web Services

By

Sudhanva S. Hukkeri

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1 Introduction

In the past few decades the use of hard copy of the books has been complete nil. The young generation prefers softcopy over hardcopy any day of the week. But some people with old principles prefer hardcopy of the books. A few decades ago publish of the book was tedious work like sales of the books, popularity etc... Even if author could publish his own book he had to spend his own money, if he went to publisher they would see whether the book is profitable or not. So, some books may not have been published because of these reasons, but now that is all null and void. Authors can now publish books online and charge. Or they can release a small chapter and according to that they could see whether they could move onto the printing hardcopy.

As the publishing has become so easy many authors published their unpublished works mostly free, because this reason the web is flooded with many books with similar names with contents very different, so it has become very tedious job of finding required book. And now it is very easy to get duped because of the similar names to find the official book with the authentic author. So here I am comparing the ISBN[1] numbers of the Books between APIs repository to find the get the book. In this project we can also do a comparative study of the book APIs.

In this project I am aiming to do a search web application using two Book APIs where the info from both APIs will be displayed to do a comparison, to authenticate the book you have searched.

[1] ISBN - International Standard Book Number

2 Research Background

2.1 Aims

The main goal of the research is to understand the working of web services, and how to utilise them in the web application or other applications. Consume the REST APIs in the web application development. Final aim is to develop a web application that could search the book through a key word using the Google Book API, and display the result. When a particular book is clicked, then the ISBN of that book is used to find the corresponding book from another book API “Open Library” and it will show the corresponding book info, and we can compare both information sources for the authenticity.

2.2 Objectives

2.2.1 Usage of REST APIs.

API manual are provided by the “Google Books” and “Open Library” for its usage in the web application development. Both pf the APIs are free and open Source they do not require any form of the authentication for the execution. Just a java script command and the Jason data can be obtained, then its all about the handling tof the Jason data. But the parameter for the both APIs are different, for Google Books API Google Developers, 2018) there is no Specification. But for the Open Library API (Openlibrary.org, 2018) the search can be done with the ISBN only, so it is not so flexible to use. Below diagram shows the working of the REST APIs (Pitkäniemi, 2016) (Pattamsetti, 2017).

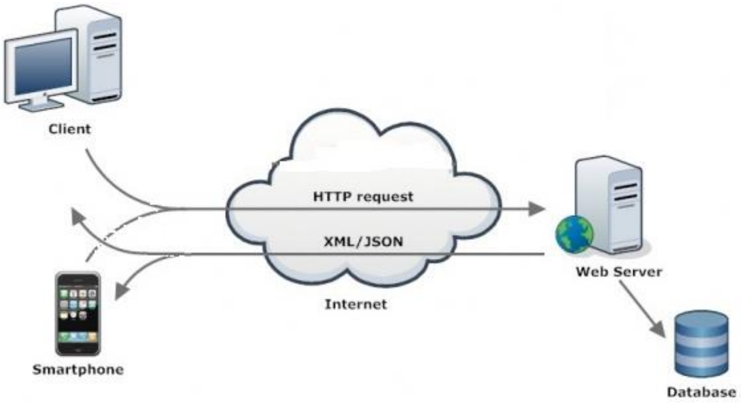

Figure 1: Conceptual diagram of RESTful Webservices

2.2.2 Platform for the Web Application

I have developed a Progressive Web Application, for the front end using Bootsstrap CSS because the frame-work be used for any platform or devise. And the APIs are called using JavaScripting dynamically at the search time.

2.2.3 Authentication of the ISBN

The searched and selected Book is checked against the Open library API for the verification of the ISBN for the authentic book.

2.2.4 Deployment of the Web Application

In Git Hub we can deploy the Web application with ease, they have the documentation with easy steps for deployment of the repository with the Web application.

3 Project Design

3.1 Overview on Web Services (web API)

Web service used in this project are based on REST Architecture (RESTful web services). A web service have open protocols that are used to exchange data between applications or systems. Software applications on various platforms and of different programming languages can use web services to exchange data over the Internet. This interoperability (e.g., between Windows and Linux applications, or Java and Html) is due to the use of open standards such as JSON (Cerealsdb.uk.net, 2018).

The Google Book API which I have used uses HTTP methods to implement the concept of REST architecture. This API provides resource representation such as JSON and other HTTP Methods (Cerealsdb.uk.net, 2018).

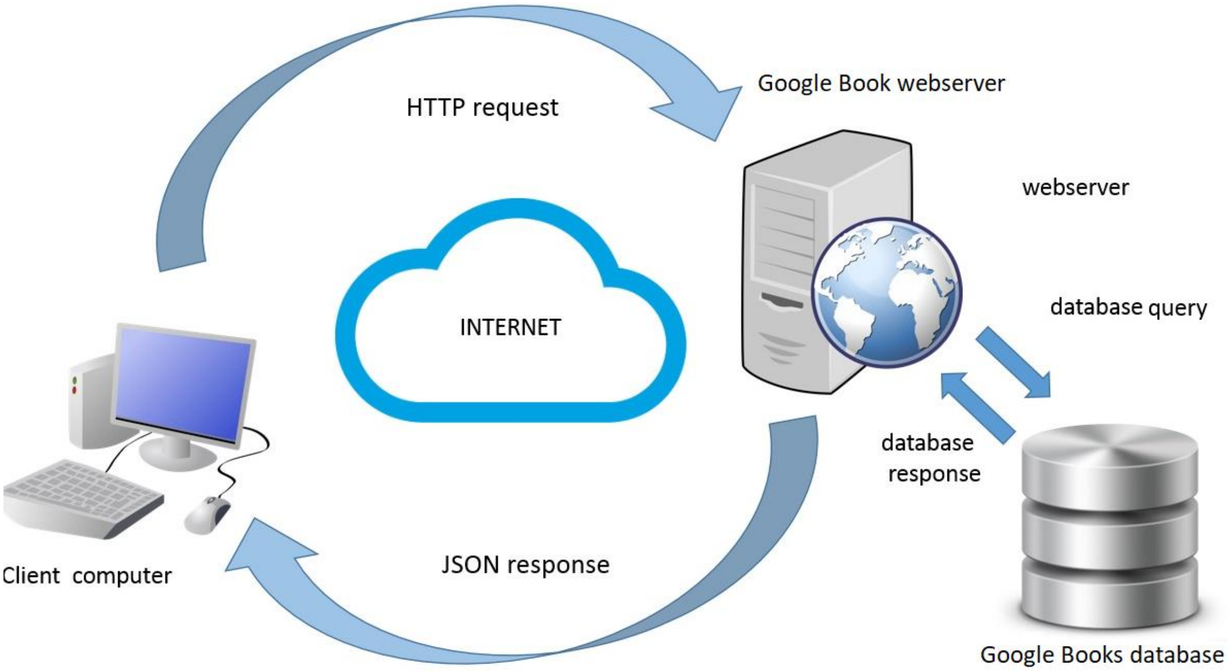

Figure 2: Conceptual working of the RESTful Web Services (ex: Google Book API)

The above diagram shows a simple request made by a client computer across the web in the form of an HTTP request. The Google Book API then interprets this request and queries Google Book DB. The response is converted into JSON and received by the client computer, where the JSON code can be parsed to get the information (Cerealsdb.uk.net, 2018).

3.2 Sequence Diagram

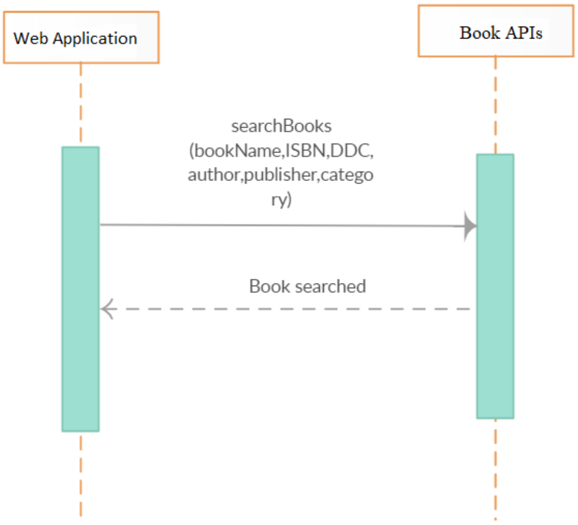

Figure 3: Basic Sequence Diagram of the Book search Web Application

Above is the basic sequence diagram of the book search web application. Only for the successful case.

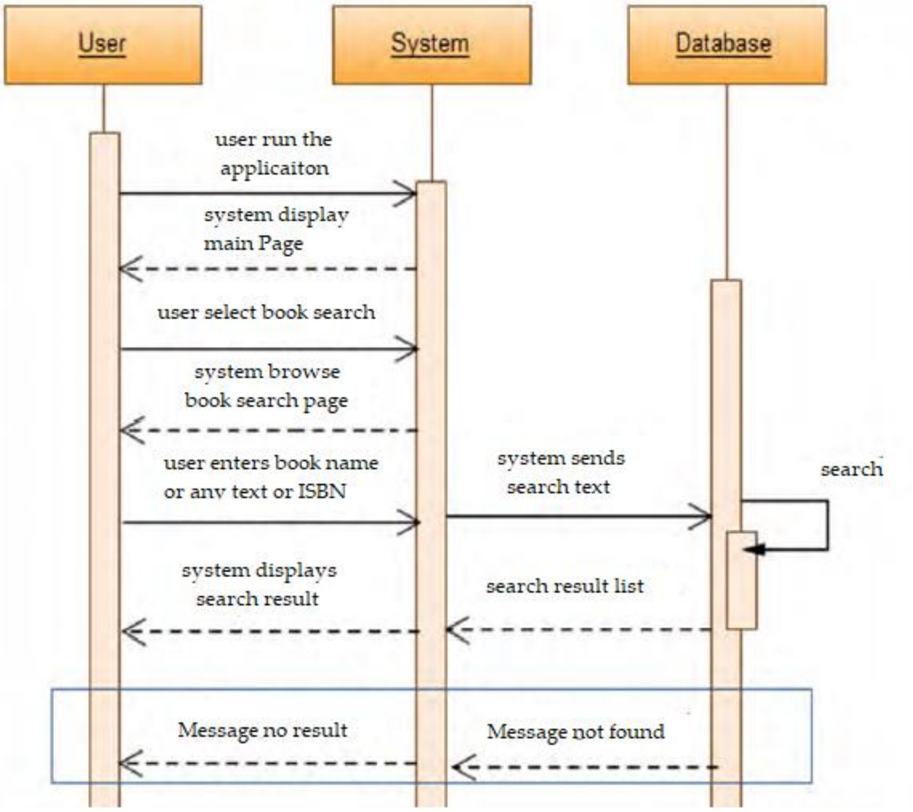

Figure 4: Detailed Sequence Diagram of the Book Search Web Application

3.3 Project Design Process

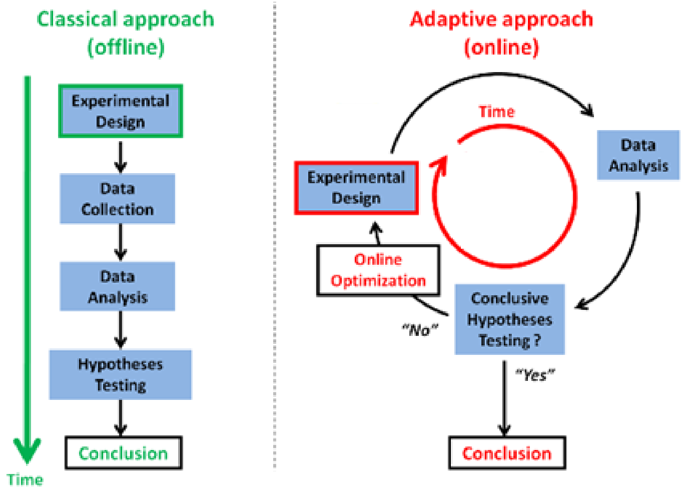

Figure 5: Project Design Process

Research process can be followed by any approach mentioned above classical approach or Dynamic Adaptive approach. Both approaches have pros and cons.

Like Classical approach is rigid in the development phase but it takes less time for development. Vice versa dynamic approach is very flexible, and the application features can be changed after each iteration, but the development process takes lot of time.

So in this project I used the dynamic process, even though it was time consuming, because the end result and the working of the application was more important.

3.4 Project Relevance

My project here is into gook search web application. It is very general and simple to develop. But what I wanted to do was more the book search functionality more concentrated to authentic books. The present search function retrieves all the book with that particular search word, it is very broad and lengthy list. My idea was to create a search function which will show only related regent and authentic books of the said word.

4 Project Limitations

- My application can search books with any word. But the result is only 10 books.
- As the Google Books collections and Open Library Collections different there may be match or not description page of the web-application.
- The Image display of Open Library works some of the time only.
- The search function can be only done by mouse_click in html code.

5 Conclusion

References

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7. Pitkäniemi, J. (2016). INFORMS MEETING CALENDAR. Interfaces, 46(6), pp.C3-C3.

6 Appendix

1. Source code for the Web Application can be found in the following Github link.

   https://github.com/sudhush/EISApp10383120.git

2. The working Web application is hosted in below link

   https://sudhush.github.io/EISApp10383120/