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Web Service Course Project

Library Management System

Phase 3

CONTENT

Library Management System 1
CONTENT 2
Project description 3
Business impact 3
Data Input, Output 5
Data Structure used in the Project 5
Testing of API web services 6
REST API /getCatalogHTML 6
REST API /booksToReturn 7
REST API /searchBook 8
REST API /bookInfo 9
REST API /addBook 10
REST API /updateBook 11
REST API /deleteBook 12
SOAP API /getCatalog 13
SOAP API /getUser 14

Project description

The project Library Management System for the course Web Services, takes as basics existing desktop project on Java, that was done in previous Block 3.

Library Management System is created as basic software that has all necessary features for ordinary libraries. It has implemented a connection to database (MySQL). This application has two types of users: Librarian and Student and provides the next functionality:

- for LIBRARIAN: Add Users, Add books, Update books quantity, See "Books" Catalog, See "Available Books" Catalog, See "Issued Books" Catalog, Filter all Catalogs, Sort Catalogs by any field, Issue Books, Return Books, Change Language.
- for USER: See "All Books" Catalog, See "Available Books" Catalog, Filter and Sort Catalogs, Borrow Book from Available, See All "Borrowed Books", Return Books.

Web Services should extend desktop applications and implement the possibility to interact through browsers.

Business impact

The Library Management System will bring a huge impact to the business process.

Using REST API allows users to manage a business process:

- Add Book;
- Add User;
- Show Catalog;
- Show Book’s information;
- Show Borrowed Books;
- Issue Book;
- Return Book
- Get User Information

Next Web Services planned to be implemented in some steps starting from the Phase1 till the end of the Project:

- Implemented REST API in Phase1:
    - Show Books Catalog
    - Show book's detailed description
    - Show borrowed books by user ID
    - Search Book by ISBN
- Implemented REST API in Phase 2:
    - Add Book
    - Update Book
    - Delete Book
    - Search Book by ISBN
    - Java Client Application
- Implemented SOAP API in Phase 3
    - Show Books Catalog
    - Get User by Login

Java Client Application is implemented to test all implementations of REST Web Services.

Data Input, Output

Data INPUT:

- User ID;
- Book ISBN;
- Links and http addresses

Data OUTPUT:

- Books Catalog:
- Book details;
- Borrowed books by User ID;
- User Catalog;

Data Structure used in the Project

In this Project has been implemented a connection to database (MySQL).

Testing of API web services

REST API /getCatalogHTML

LibraryPhase1 / **WebLibraryREST Catalog HTML**

GET http://localhost:8080/LibraryManagementSystem/rest/WebLibraryGet/getCatalogHTML

Params Authorization Headers (7) Body Pre-request Script Tests Settings

Headers Hide auto-generated headers

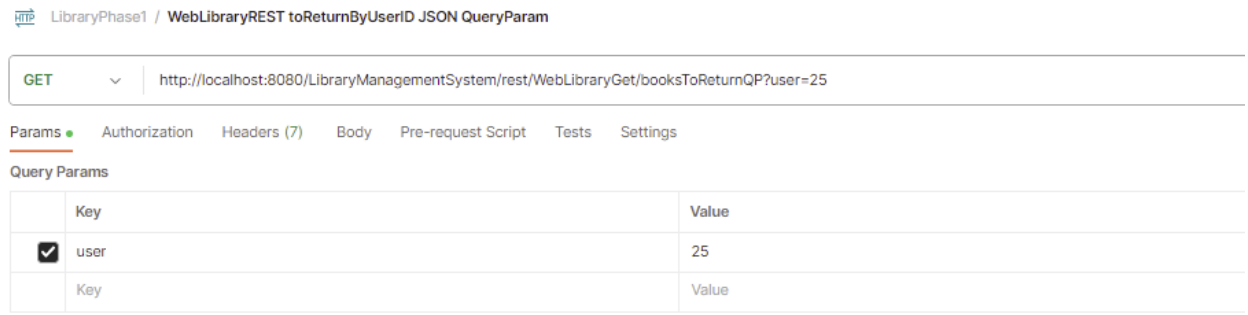
Key	Value
Postman-Token	<calculated when request is sent>
Host	<calculated when request is sent>
User-Agent	PostmanRuntime/7.32.3
Accept	*/*
Accept-Encoding	gzip, deflate, br
Connection	keep-alive
Accept	text/html
Key	Value

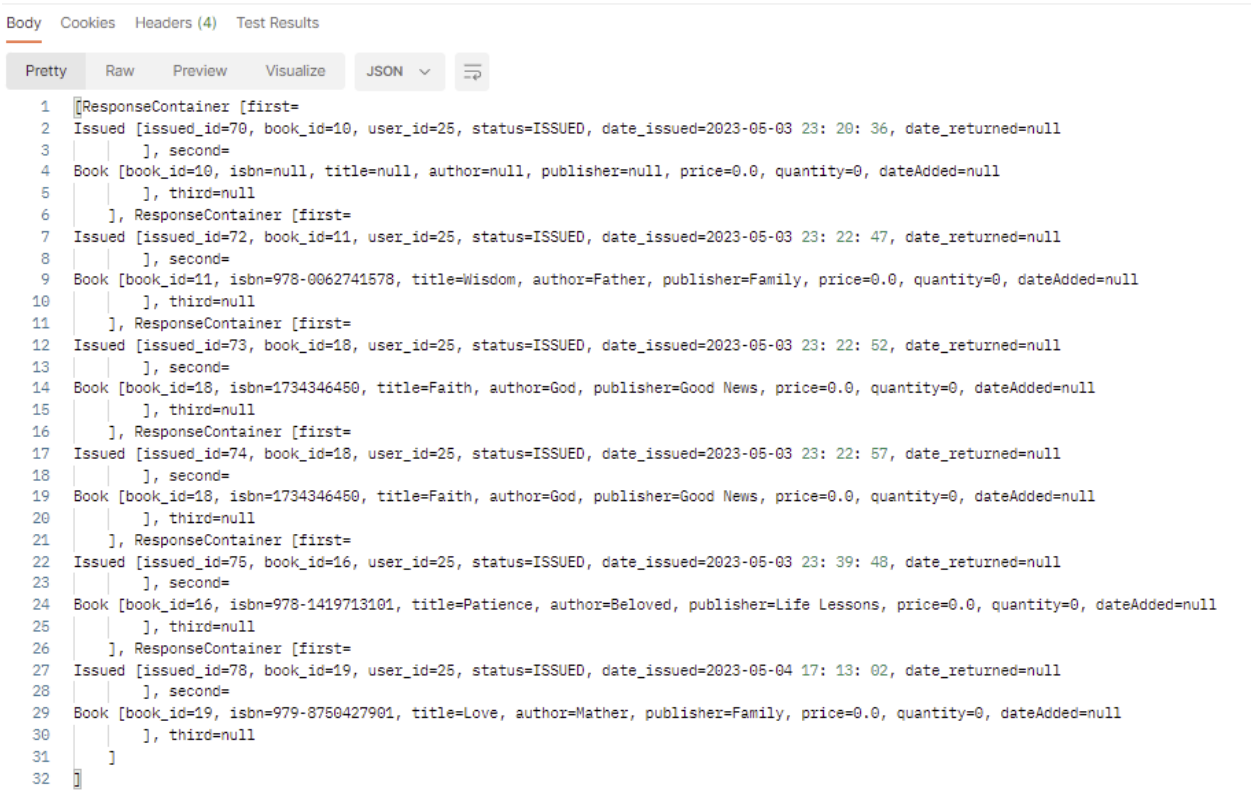
Body Cookies Headers (4) Test Results

Pretty Raw Preview Visualize

Book Catalog			
Isbn	Title	Author	Publisher
978-1524740917	Love	God	Good News
978-1452139975	Joy	Friends	Good News
1452139970	Peace	God	Good News
978-0062741578	Wisdom	Father	Family
0062741578	Care	Mother	Family
0711264228	Prosperity	Father	Gift to Receive
978-0711264229	Help me	Friend	Gift to Receive
9781419713101	Share with me	Friend	Gift to Receive
978-1419713101	Patience	Beloved	Life Lessons
978-1734346459	Faithfulness	Beloved	Family
1734346450	Faith	God	Good News
979-8750427901	Love	Mather	Family
978-1955520270	Love me	Brothers	Family
978-1524740918	LOVE	Joy	
1648768067	Joy	Joy	

REST API /booksToReturn with Query Parameters



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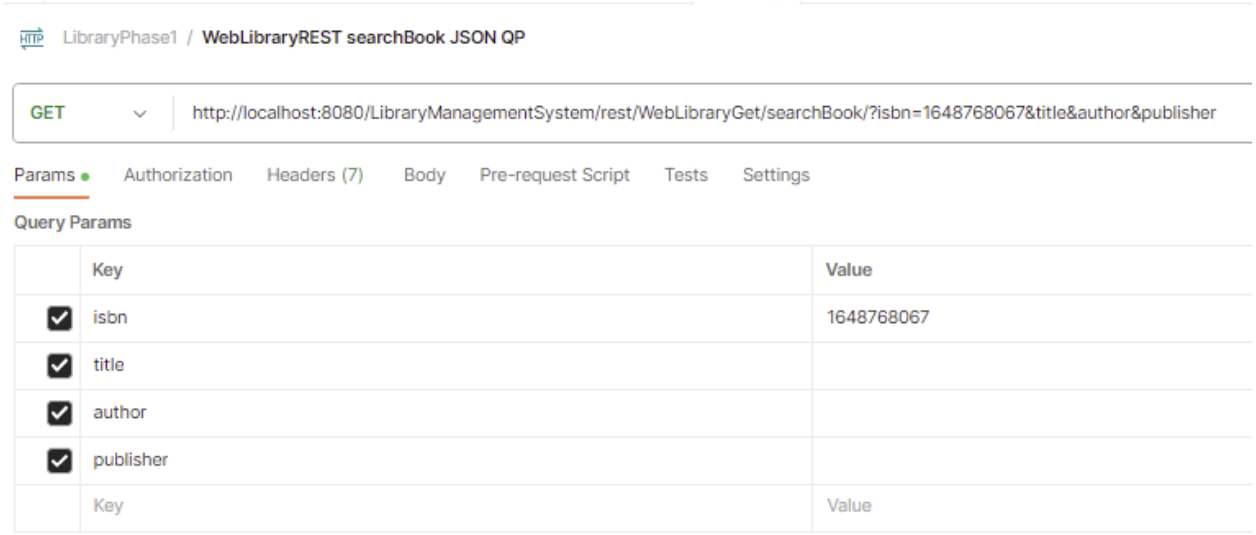
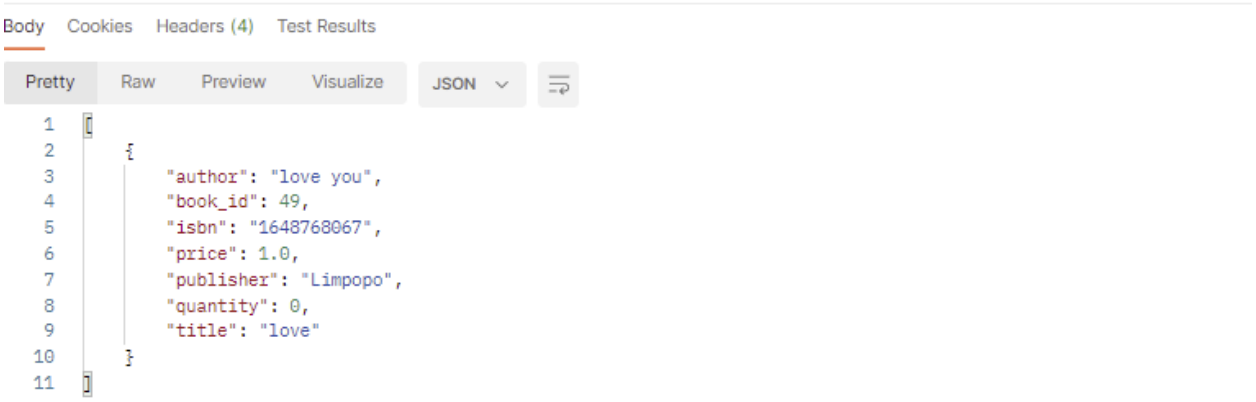
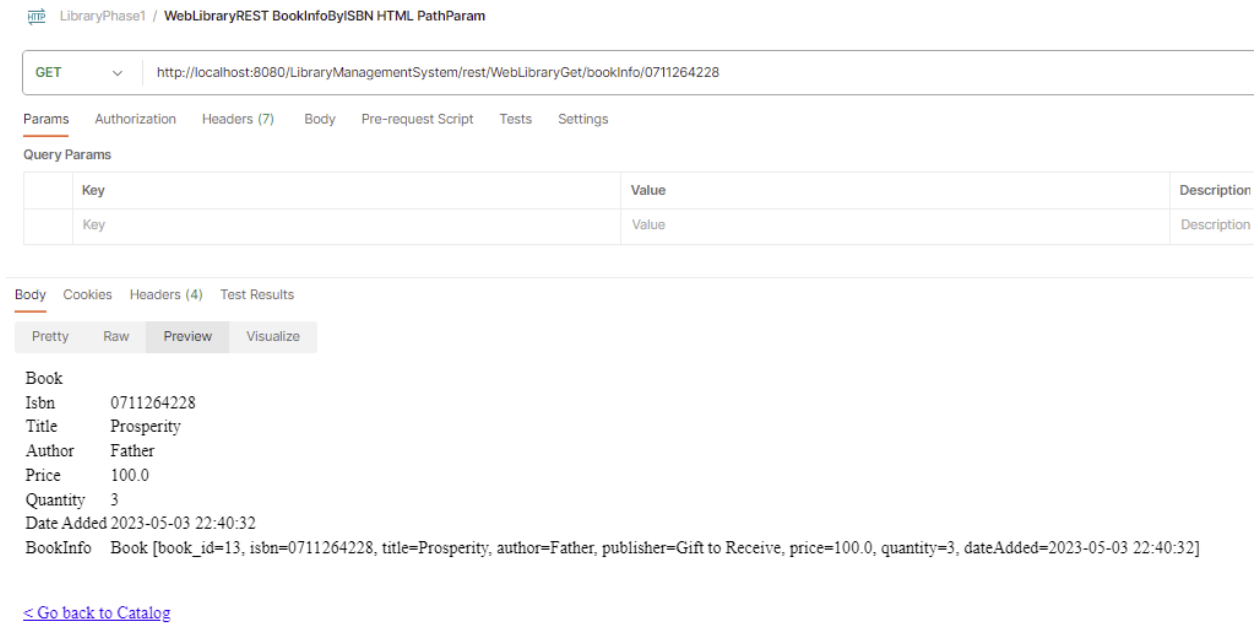
REST API /searchBook with Query Parameters

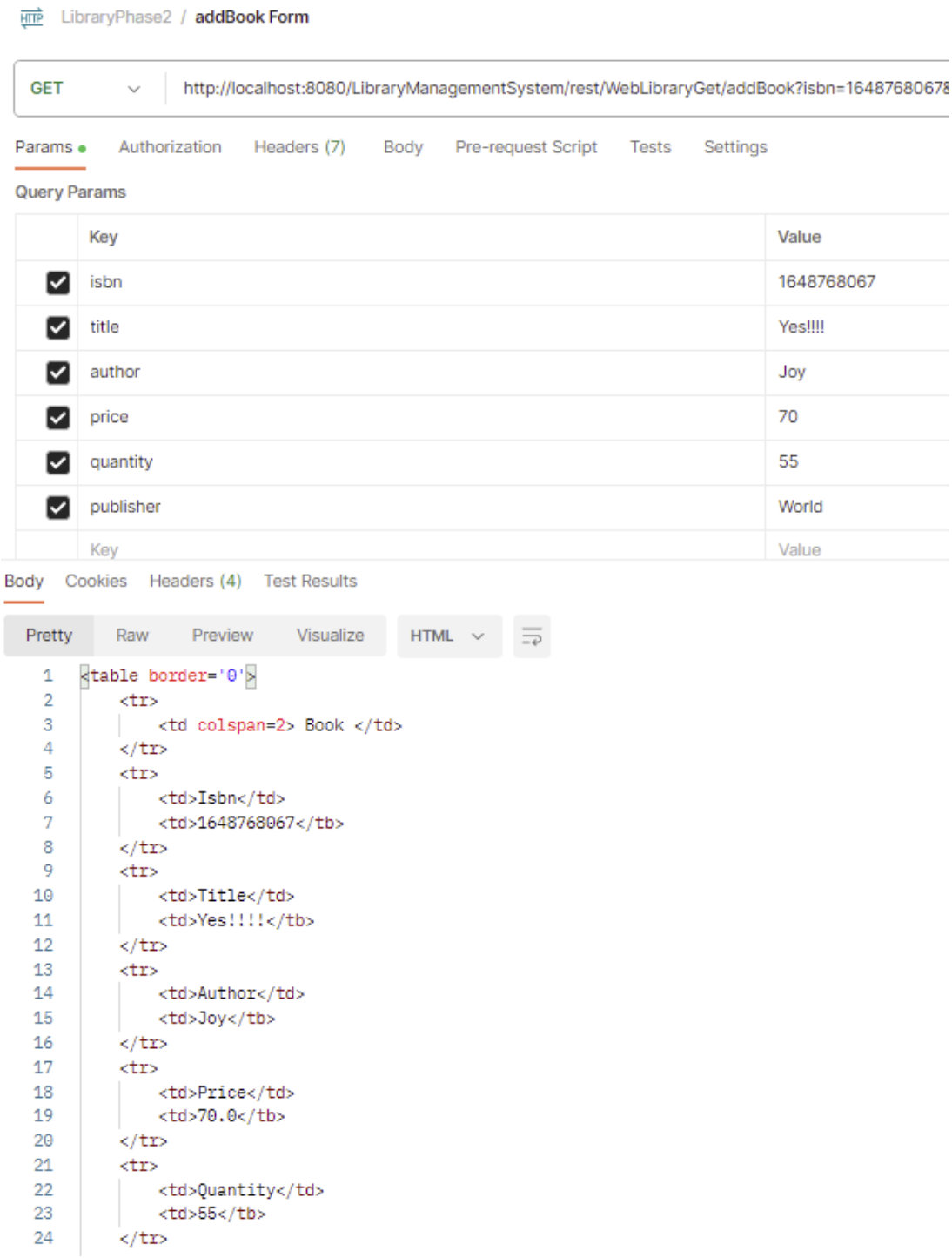




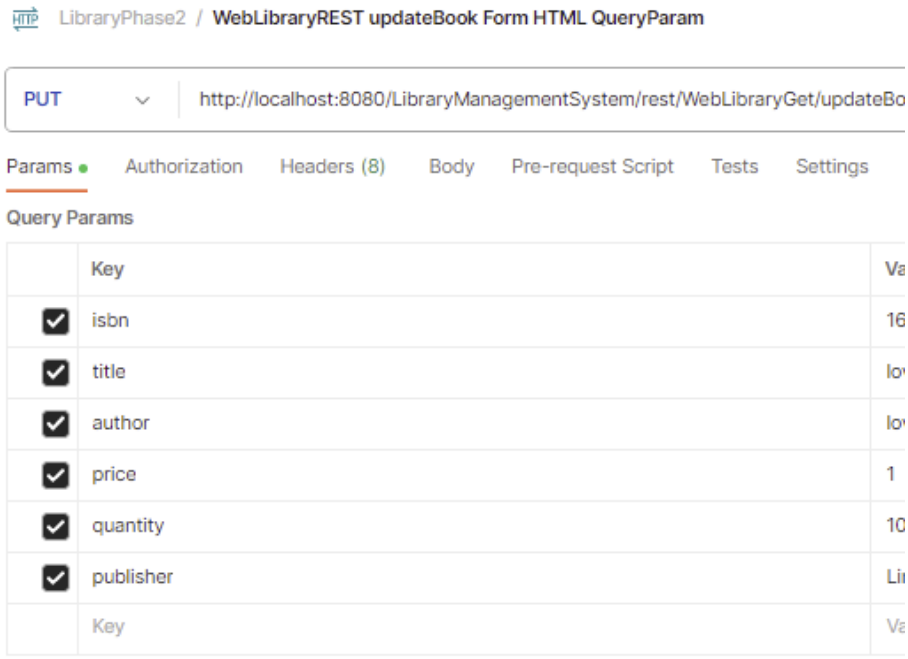
REST API /bookInfo with PathParameter

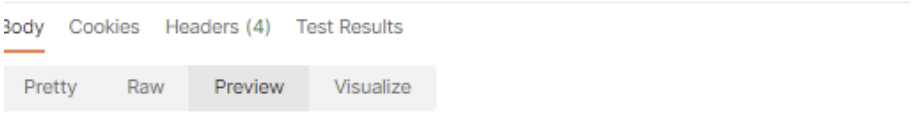


REST API /addBook with QueryParameter



REST API /updateBook with QueryParameter





Book Catalog			
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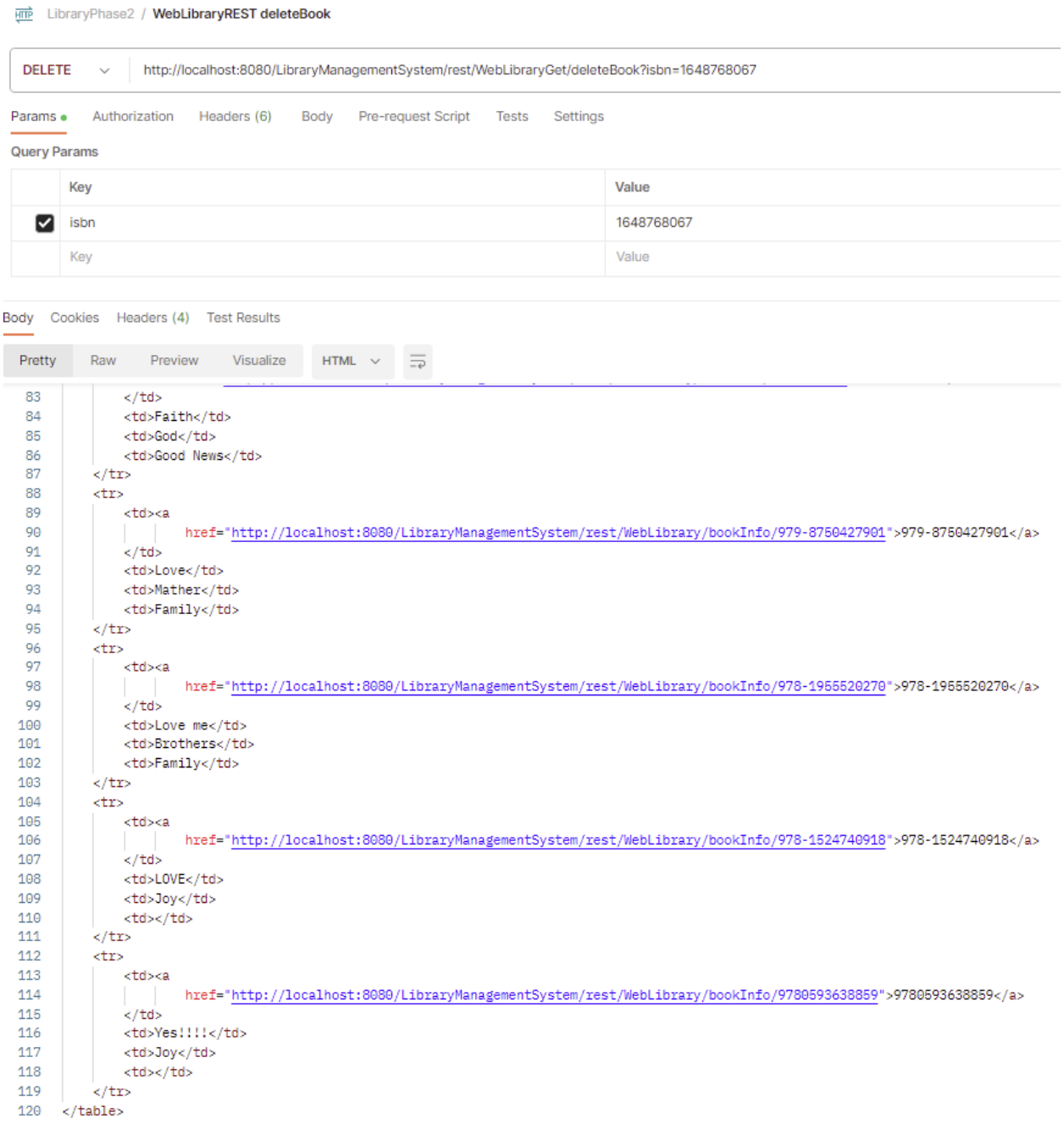
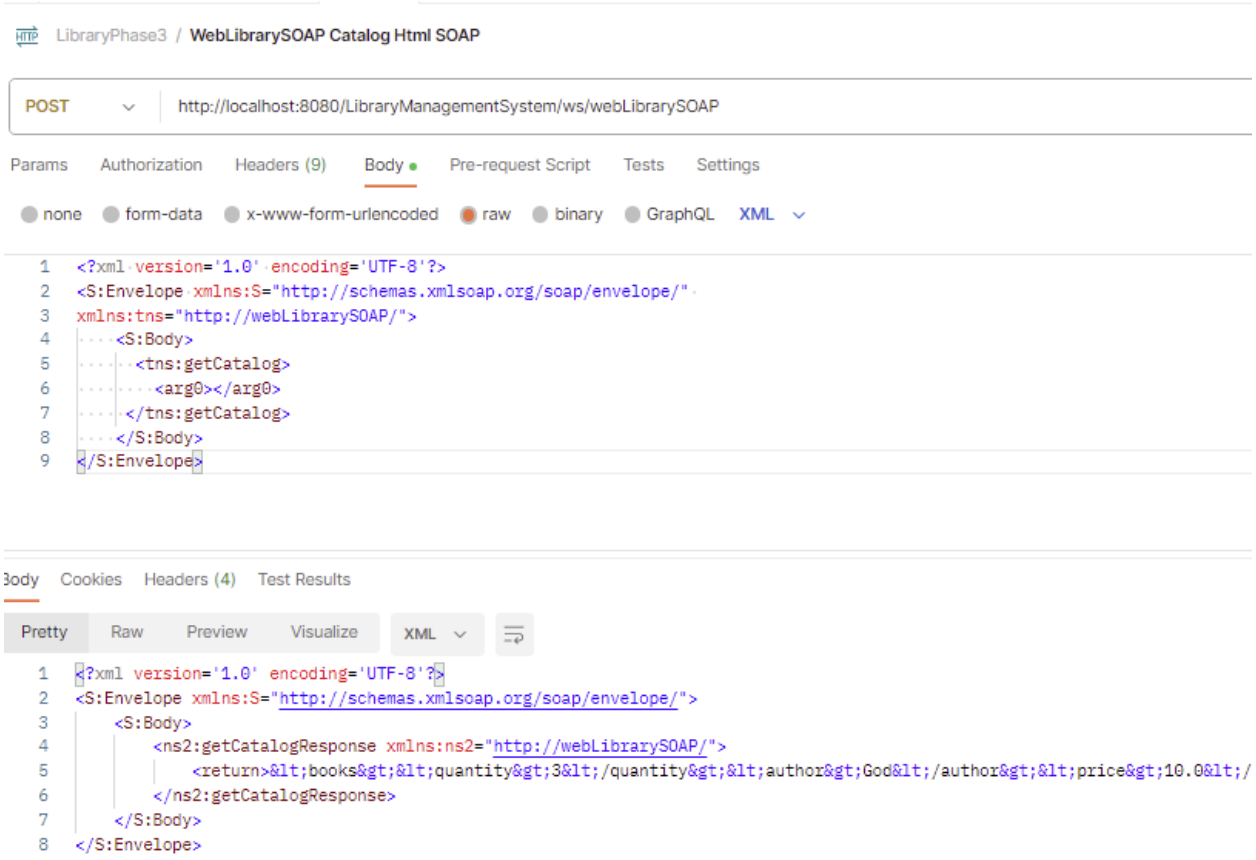
978-0711264229	Help me	Friend	Gift to Receive
9781419713101	Share with me	Friend	Gift to Receive
978-1419713101	Patience	Beloved	Life Lessons
978-1734346459	Faithfulness	Beloved	Family
1734346450	Faith	God	Good News
979-8750427901	Love	Mather	Family
978-1955520270	Love me	Brothers	Family
978-1524740918	LOVE	Joy	
9780593638859	Yes!!!!	Joy	
1648768067	love	love you	Limpopo

REST API /deleteBook with QueryParameter



SOAP API /getCatalog



SOAP API /getUser