1 Introduction

1.1Project Objective and scope

The Objective of the test plan Document is to:

- Identifying requirements.
- Create test cases for the use cases that have been implemented so far.
- The implementation of the unit tests for use cases.
- The implementation of the unit tests for the classes.
- Implementation of Automated API.
- Prove and show the test results.

scope: all the tests will be implemented and performed in this iteration (unit tests, function tests and API tests)

1.2 System overview

The software product that is being developed is a half-finished web application which is the foundation of a library system for books. The system can add books, modify the books, and remove the books. the system stack is implemented in a modern way and the two modules (the client and the server) will communicate via HTTP requests. The front end is implemented using a Single Page Application (SPA) architecture, which means that no rendering is done on server side all logic for the visual part is done locally and no reload of the page is needed. This also means that the border between back end and front end is very sharp, the only way to know how to communicate is to use the API. The application server is executed in a virtual machine that is managed via Vagrant, the client is executed in your web browser.

1.2 Stakeholders

- Customers: Fully functional CRUD system that have been tested.
- Developers: A Fully tested and functional system that work according to the API.

2 Test Requirements

Below is a list of the uses cases, functional and non-functional requirements that will be targeted for testing.

2.1 Functional Testing

2.1.1 Use Case 1: View a list of books.
2.1.2 Use Case 2: view a book.
2.1.3 Use Case 3: add a book
2.1.4 Use Case 4: edit a book
2.1.5 Use Case 5: delete a book

2.2 Unit Testing

2.2.1 Class: bookTest.
2.2.2 Class: booksDaoTest.

2.3 API Testing

2.3.1 Class: GetBooksResouruces.
2.3.2 Class: RemoveBookResources.
2.3.3 Class: AddBookResource
2.3.4 Class: EditBookResource
2.3.5 Class: GetBookResource

3 Test Strategy

The test Strategy offers a method or way of testing the requirement(targets). This section outlines how the test will be executed and what techniques will be used.

3.1 Functional Testing

- Test goals: to make sure the application is functioning properly.
- Techniques: to test each use case flow and establish the test targets by using correct and incorrect input to make sure of the expected results
- Complete Standard: all tests should be carried and failure tests should be reported.
- Consideration: server must be running before testing.

3.2 Unit Testing

- Test goals: to make sure the classes are functioning properly.
- Techniques: to create a unit test and execute the test.
- Complete Standard: all tests should be carried and failure tests should be reported.
- Consideration: server must be running before testing.

3.3 API Testing

- Test goals: to make sure the application is functioning properly according to the API.
- Techniques: to create a automotive API test
- Complete Standard: all tests should be carried and the system must response to the API and failure tests should be reported.
- Consideration: server must be running before testing.

4 Resource Management

Management plan for the resources which will be used in this project.

Resource	type	Discerption
Developer/programmer	Human resources.	The one who implements the missing functionality
Vagrant	Software, virtual machine	Software which runs virtual machine
ATOM	Text editor.	Software for edition java codes
Note pad ++	Text editor.	Software for edition java codes
Test Designer	Human resources.	The one who identify and establish test cases and implement them
Tester	Human resources.	The one who excites tests

5 Milestones

Planning and implementation will be done in an agile defined in the test plan method as defined in the test plan.

Milestone objective	Start	End
Test Plan	3/9/2018	3/9/2018
Test Design	3/9/2018	3/9/2018
Test Implementation	3/9/2018	3/9/2018
Test Execution	3/9/2018	3/9/2018

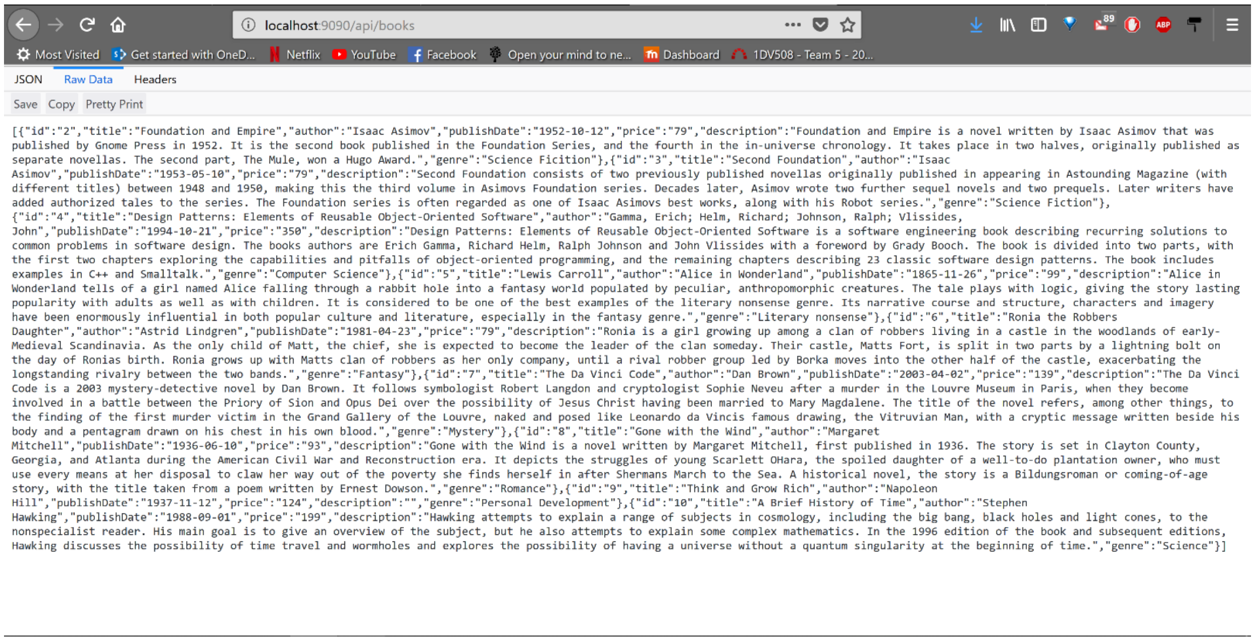
6 Test Plan

Test Type	Objective	Requirement	Started on	Ended on
Function Testing	Create test cases and implement unit test for each use cases	2.1.1 2.1.2 2.1.3 2.1.4 2.1.5	3/9/2018	3/9/2018
Unit Testing	Implement unit test for each class	2.2.1 2.2.2	3/9/2018	3/9/2018
API Testing	Test the classes	2.3.1 2.3.2 2.3.3 2.3.4 2.3.5	3/9/2018	3/9/2018

7 Test Cases

Below are all the test cases for each use case that have been implemented in the system.

Test ID	**1**
Test Name	should view a list of books
Requirement Covered	2.1.1
Use Case	View a list of books
Test Scenario	User send Get Request URI (/api/books)
Pre-Conditions	Server must run and the system must have 1 or more book(s)
Test Steps	Open the browser and provide test data
Test Data	Localhost:9090/api/books
Expected Results	System should display a list of books in an JSON array and response with 200 ok
Post-Conditions	User should see the list of books
Actual results	System displays the list of books and response with 200 ok
Status: (pass/fail)	pass
Date:	3/9/2018
Comments	



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[{"id":"2","title":"Foundation and Empire","author":"Isaac Asimov","publishDate":"1952-10-12","price":"79","description":"Foundation and Empire is a novel written by Isaac Asimov that was
published by Gnome Press in 1952. It is the second book published in the Foundation Series, and the fourth in the in-universe chronology. It takes place in two halves, originally published as
separate novellas. The second part, The Mule, won a Hugo Award.","genre":"Science Ficition"},{"id":"3","title":"Second Foundation","author":"Isaac
Asimov","publishDate":"1953-05-10","price":"79","description":"Second Foundation consists of two previously published novellas originally published in appearing in Astounding Magazine (with
different titles) between 1948 and 1950, making this the third volume in Asimovs Foundation series. Decades later, Asimov wrote two further sequel novels and two prequels. Later writers have
added authorized tales to the series. The Foundation series is often regarded as one of Isaac Asimovs best works, along with his Robot series.","genre":"Science Fiction"},
{"id":"4","title":"Design Patterns: Elements of Reusable Object-Oriented Software","author":"Gamma, Erich; Helm, Richard; Johnson, Ralph; Vlissides,
John","publishDate":"1994-10-21","price":"350","description":"Design Patterns: Elements of Reusable Object-Oriented Software is a software engineering book describing recurring solutions to
common problems in software design. The books authors are Erich Gamma, Richard Helm, Ralph Johnson and John Vlissides with a foreword by Grady Booch. The book is divided into two parts, with
the first two chapters exploring the capabilities and pitfalls of object-oriented programming, and the remaining chapters describing 23 classic software design patterns. The book includes
examples in C++ and Smalltalk.","genre":"Computer Science"},{"id":"5","title":"Lewis Carroll","author":"Alice in Wonderland","publishDate":"1865-11-26","price":"99","description":"Alice in
Wonderland tells of a girl named Alice falling through a rabbit hole into a fantasy world populated by peculiar, anthropomorphic creatures. The tale plays with logic, giving the story lasting
popularity with adults as well as with children. It is considered to be one of the best examples of the literary nonsense genre. Its narrative course and structure, characters and imagery
have been enormously influential in both popular culture and literature, especially in the fantasy genre.","genre":"Literary nonsense"},{"id":"6","title":"Ronia the Robbers
Daughter","author":"Astrid Lindgren","publishDate":"1981-04-23","price":"79","description":"Ronia is a girl growing up among a clan of robbers living in a castle in the woodlands of early-
Medieval Scandinavia. As the only child of Matt, the chief, she is expected to become the leader of the clan someday. Their castle, Matts Fort, is split in two parts by a lightning bolt on
the day of Ronias birth. Ronia grows up with Matts clan of robbers as her only company, until a rival robber group led by Borka moves into the other half of the castle, exacerbating the
longstanding rivalry between the two bands.","genre":"Fantasy"},{"id":"7","title":"The Da Vinci Code","author":"Dan Brown","publishDate":"2003-04-02","price":"139","description":"The Da Vinci
Code is a 2003 mystery-detective novel by Dan Brown. It follows symbologist Robert Langdon and cryptologist Sophie Neveu after a murder in the Louvre Museum in Paris, when they become
involved in a battle between the Priory of Sion and Opus Dei over the possibility of Jesus Christ having been married to Mary Magdalene. The title of the novel refers, among other things, to
the finding of the first murder victim in the Grand Gallery of the Louvre, naked and posed like Leonardo da Vincis famous drawing, the Vitruvian Man, with a cryptic message written beside his
body and a pentagram drawn on his chest in his own blood.","genre":"Mystery"},{"id":"8","title":"Gone with the Wind","author":"Margaret
Mitchell","publishDate":"1936-06-10","price":"93","description":"Gone with the Wind is a novel written by Margaret Mitchell, first published in 1936. The story is set in Clayton County,
Georgia, and Atlanta during the American Civil War and Reconstruction era. It depicts the struggles of young Scarlett OHara, the spoiled daughter of a well-to-do plantation owner, who must
use every means at her disposal to claw her way out of the poverty she finds herself in after Shermans March to the Sea. A historical novel, the story is a Bildungsroman or coming-of-age
story, with the title taken from a poem written by Ernest Dowson.","genre":"Romance"},{"id":"9","title":"Think and Grow Rich","author":"Napoleon
Hill","publishDate":"1937-11-12","price":"124","description":"","genre":"Personal Development"},{"id":"10","title":"A Brief History of Time","author":"Stephen
Hawking","publishDate":"1988-09-01","price":"199","description":"Hawking attempts to explain a range of subjects in cosmology, including the big bang, black holes and light cones, to the
nonspecialist reader. His main goal is to give an overview of the subject, but he also attempts to explain some complex mathematics. In the 1996 edition of the book and subsequent editions,
Hawking discusses the possibility of time travel and wormholes and explores the possibility of having a universe without a quantum singularity at the beginning of time.","genre":"Science"}]
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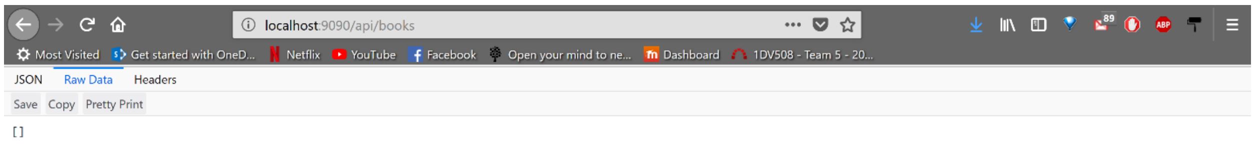
Test ID	**2**
Test Name	User should view an empty list of books
Requirement Covered	2.1.1
Use Case	View a list of books
Test Scenario	User send Get Request URI (/api/books)
Pre-Conditions	Server must run and the system must have no books
Test Steps	Open the browser and provide test data
Test Data	Localhost:9090/api/books
Expected Results	System should display an empty list of books and response with 200 ok
Post-Conditions	User should see the empty list of books
Actual results	System displays the list of books and response with 200 ok
Status: (pass/fail)	pass
Date:	9/3/2018
Comments	



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[]
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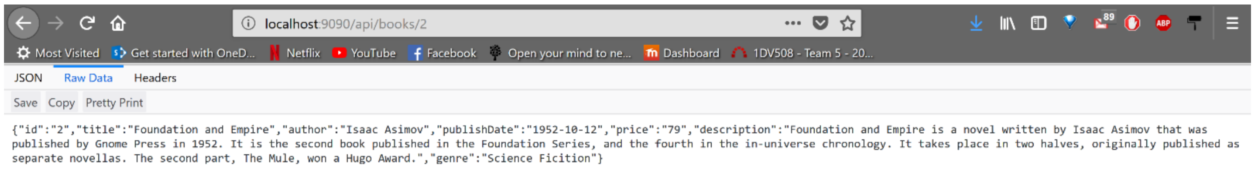
Test ID	**3**
Test Name	User should view a book
Requirement Covered	2.1.2
Use Case	View a book
Test Scenario	User send Get Request URI (/api/books/{book_id})
Pre-Conditions	Server must run and the system must have the specified book
Test Steps	Open the browser and provide test data
Test Data	Localhost:9090/api/books/2
Expected Results	System should display the specified book in json format and response with 200 ok
Post-Conditions	User should see the specified book
Actual results	System displays the specified book with 200 ok
Status: (pass/fail)	pass
Date:	3/1/2018
Comments	



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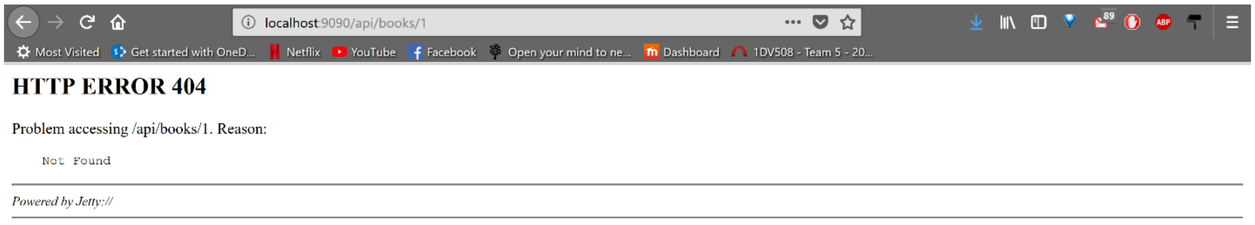
{"id":"2","title":"Foundation and Empire","author":"Isaac Asimov","publishDate":"1952-10-12","price":"79","description":"Foundation and Empire is a novel written by Isaac Asimov that was
published by Gnome Press in 1952. It is the second book published in the Foundation Series, and the fourth in the in-universe chronology. It takes place in two halves, originally published as
separate novellas. The second part, The Mule, won a Hugo Award.","genre":"Science Ficition"}
```

Test ID	**4**
Test Name	User should not view a book
Requirement Covered	2.1.2
Use Case	View a book
Test Scenario	User run the server and send request to (/api/books/{book_id})
Pre-Conditions	Server must run and the system must not have the specified book
Test Steps	Open the browser and provide test data
Test Data	Localhost:9090/api/books/1
Expected Results	System should not display the specified book and response with 404 ok
Post-Conditions	User should not see the specified book
Actual results	System does not displays the specified book and response with 404 ok
Status: (pass/fail)	pass
Date:	3/1/2018
Comments	



HTTP ERROR 404

Problem accessing /api/books/1. Reason:

```
    Not Found
```

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8 Test Results

All tests are successful.