Assignment 3 – Test plan

Note : I'm sorry about my english, I'm an Erasmus student.

Task : Make use of your requirements from the previous assignment and possibly additional material from Assignment 2. Don't forget that the quality requirements will require a special treatment. Identify objectives, objects and create a work breakdown structure using test management processes, dynamic test processes, and possibly static processes for objects and objectives. Specify suitable techniques for testing in the processes you have identified

< Web Library >

Test plan

Version History :

Version	Implemented by	Date	Approved by	Reason
1	Colin	03/03/17	Colin	Test plan project

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I – Introduction

I.1 Purpose of a test plan document

The test plan documents and tracks the necessary information required to effectively define the approach to be used in the testing of the project's product. The test plan document is created during the Planning Phase of the project. It should test all the functionality before any implementation, think about the input and the output, it's also very important to task about this test with your client, and ask him what should be the output for him, so there is not missunderstood about the project.

I. 2 Purpose of the project

Brief introduction : Create a web library where it's possible to add/delete/modify a book, and end user can search for a book faster and easier than going to a real library.

II – Test item

Desciption : A test item is a software item that is the application under test.
The systems to be tested include the frontend web library of the website and also the functionality like display information from a book when clicking on it, get a list of books. Also the end user should directly see a difference from the list of books, when adding/deleting a book, instead of refresh page. I should also test the "back-end" method and check input/output of those methods ; delete a book, add a book and modify a book.

These systems will be tested in Firefox and Chrome (but should be tested also on Safari and Internet Explorer). Also there systems will be tested under Windows (should be tested on a Mac machine).

III – Features to be tested

Description : A feature that needs to tested on the testware.

Features to test	Description of test	Test date	Author of the test
Display a list of books	When clicking on books, a list of book should appear	03/03/17	Colin
Display information of a book	When clicking on a book, an information of this book, should be displayed. Note : Some information can be empty	03/03/17	Colin
Adding a book	When adding a book,	03/03/17	Colin

	verify that the book has been added to the list.		
Deleting a book	When deleting a book, verify that the book has been deleted.	03/03/17	Colin
Modify a book	Verify that the book has been modify.	03/03/17	Colin
Adding a book (2)	Check the status code, if the content type sent is correct and the length of the new list.	03/03/17	Colin
Deleting a book (2)	Check the status code, if the content type sent is correct and the length of the new list.	03/03/17	Colin
Modify a book (2)	Check the status code, if the content type sent is correct.	03/03/17	Colin
Global	Navigation on the website is fluid	03/03/17	Colin

IV – Features not to be tested

Description : Identify the features and the reasons for not including as part of testing.

Features not to be tested	Reasons
Navigation on a mobile phone.	Don't know how it work to navigate on a localhost on my phone.
Testing on a Mac machine	Don't have a Mac machine
Verify that all information of a book has been fulfilled when adding a book.	I guess that the person who are responsable of fill information is smart enough to not adding a book without author and title at least
Verify that all information of a book has been fulfilled when modify a book	I guess that the person who are responsable of fill information is smart enough to not adding a book without author and title at least

Note : Here are the features who aren't suppose to be tested, but in "real life", it should be and this should also be discuss with the client, to be clear on what we will not test. I know and specially that the last two ones should be tested, but for this project I will not.

V - Approach

Description : Details about the overall approach to testing.

The question here is how I gonna lead those tests.

I will conducted those testes by documented each test cases, I should create test runs for each test case (here only two test case) and gonna report each case as Pass / Fail / Skip. I should leave notes on actuals results. Once those tests are done, if there is failed or bugged test I should talk about with my team (in fact myself with this project).

VI - Item pass/fail criteria

Description : Documented whether a software item has passed or failed its test.

All functionnality of the system should worked as expected and outlined in the individual test cases. The thing is after have make my own tests and no critical defects found by myself, I should make come some potential (identified with the vision document) client end-user and he/she sould be able to do whatever he wants in the website without any error. It says that a good project makes pass 95% of the test case and no failed cases should be crucial to the end-user's ability to use the application. Any error or fail should be report in the test case, and report to the team who develop the application.

VII - Test deliverables

Description : The deliverables that are delivered as part of the testing process,such as test plans, test specifications and test summary reports.

This is the documents which are given to the stakeholders of software project during the software development lifecycle.

- Test plan
- Test case
- Test Unit Code

VIII - Testing tasks

Description : All tasks for planning and executing the testing.

The following activities must be completed:

- Test plan should be finished.

Functional specifications written and delivered to the testing team
- Test case should be finished and functional specification written

- Environment should be ready for testing (test add a book, delete a book, modify a book, ...)

- Try to perform the tests.

- Prepare test summary report. (who will be transmit to the team developpers). (Here myself and not implemented for this project)

IX - Environmental needs

Description : Defining the environmental requirements such as hardware, software, OS, network configurations, tools required.

I'm running this project under windows 10, I'm using WebStorm and Node.js. Regarding to the tools for testing I'm using Chai and Mocha.

X - Responsibilities

Description : Lists the roles and responsibilities of the team members.

Well I am the team members.

XI - Schedule

Description : States the important project delivery dates and key milestones.

Testing will take place 03/03/2017, and should be complete before 03/05/2017

Here there is not huge schedules, but for biggest project it could be for example : testing will take place 4 weeks after the launch date. And should be completed in one week. It's really important to have a schedule to not delay the project.

XII - Risks and Mitigation

Description : High-level project risks and assumptions and a mitigating plan for each identified risk.
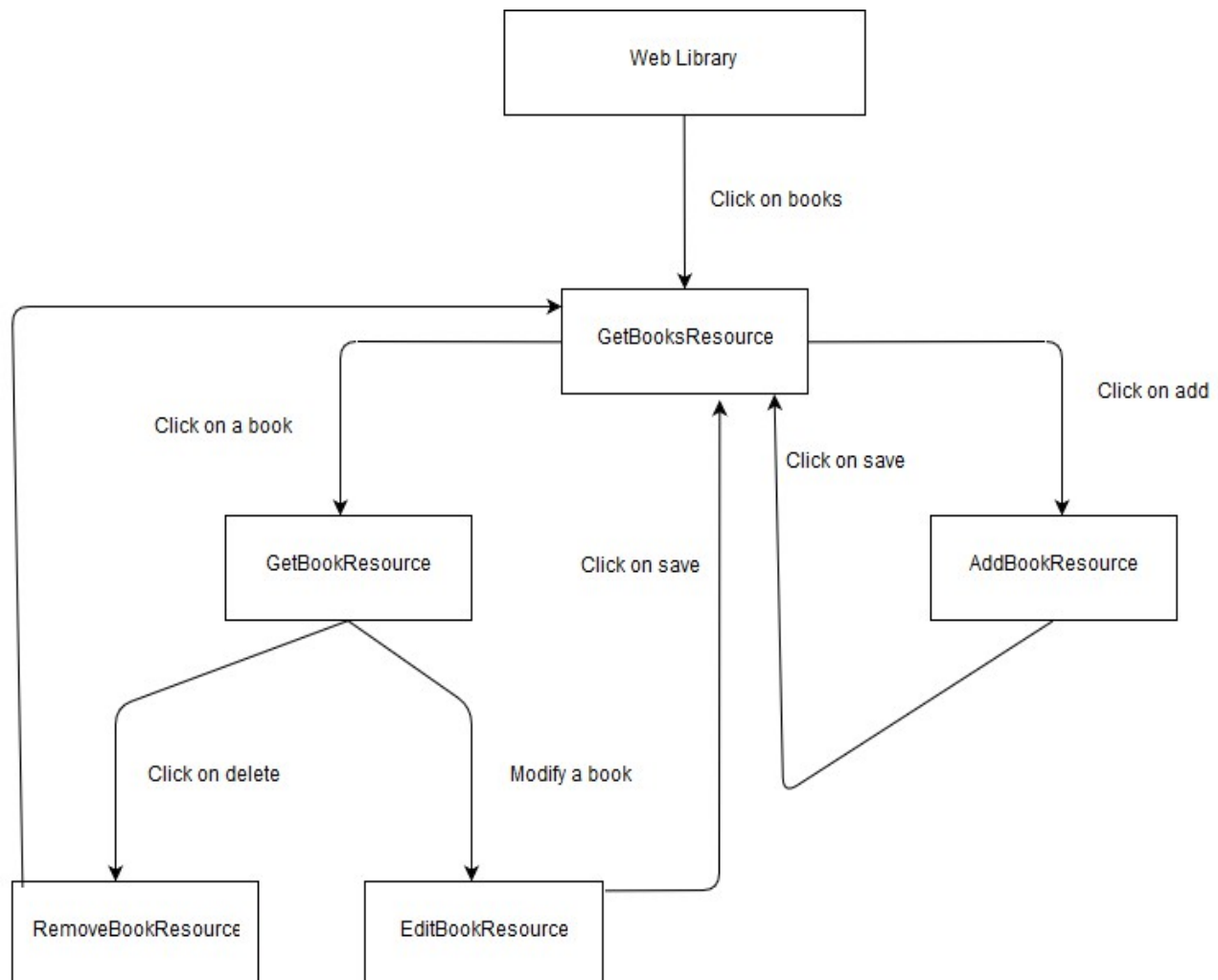
Well there is no special risks here, because it's not a high level project, but still really important when it's a huge project. For example a risk can be to not complete the test within the deadline fixed in the schedule, so it will delayed final testing and finally the entire project.
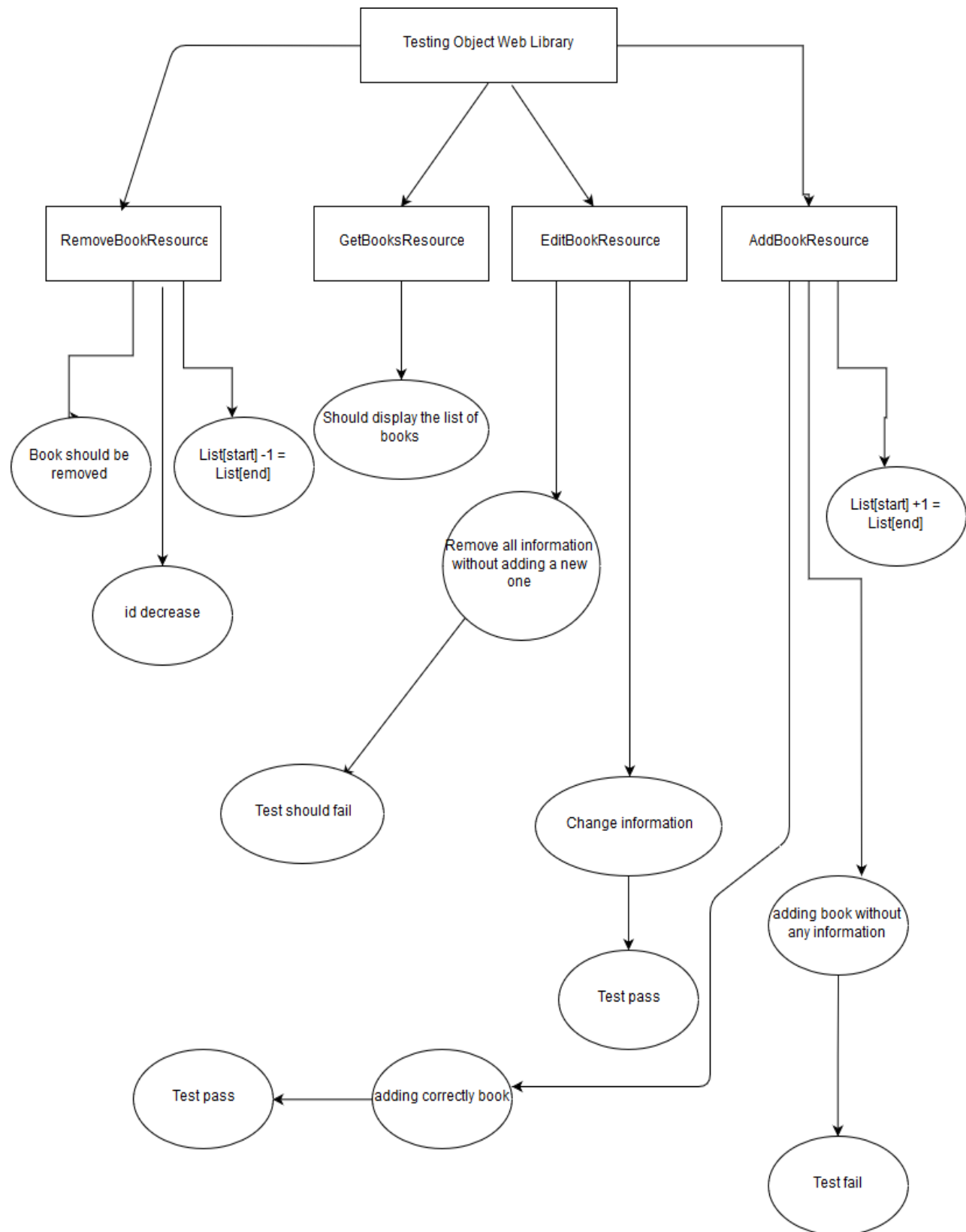
XIII – Objectives and objects

Objects	Objectives
AddBookResource	Add a book to the xml file so we can display the new list.
RemoveBookResource	Remove a book from the xml file so we can display the new list.
EditBookResource	Modify a book from the xml file.
GetBooksResource	Display a list of book
GetBookResource	Display a book

XIV – Work Breakdown

As far as I understand, it's pretty hard to do the work breakdown without make the test first. But I'm not sure to fully understand, if it's the process of our test, or the process of what we will test.

Well I'll make another one also because I'm not sure of what the assignment asking.

Testing Object Web Library

RemoveBookResource

GetBooksResource

EditBookResource

AddBookResource

Book should be removed

List[start] -1 = List[end]

Should display the list of books

id decrease

Remove all information without adding a new one

List[start] +1 = List[end]

Test should fail

Change information

adding book without any information

Test pass

Test pass

adding correctly book

Test fail

XV – Static test process vs dynamic test process
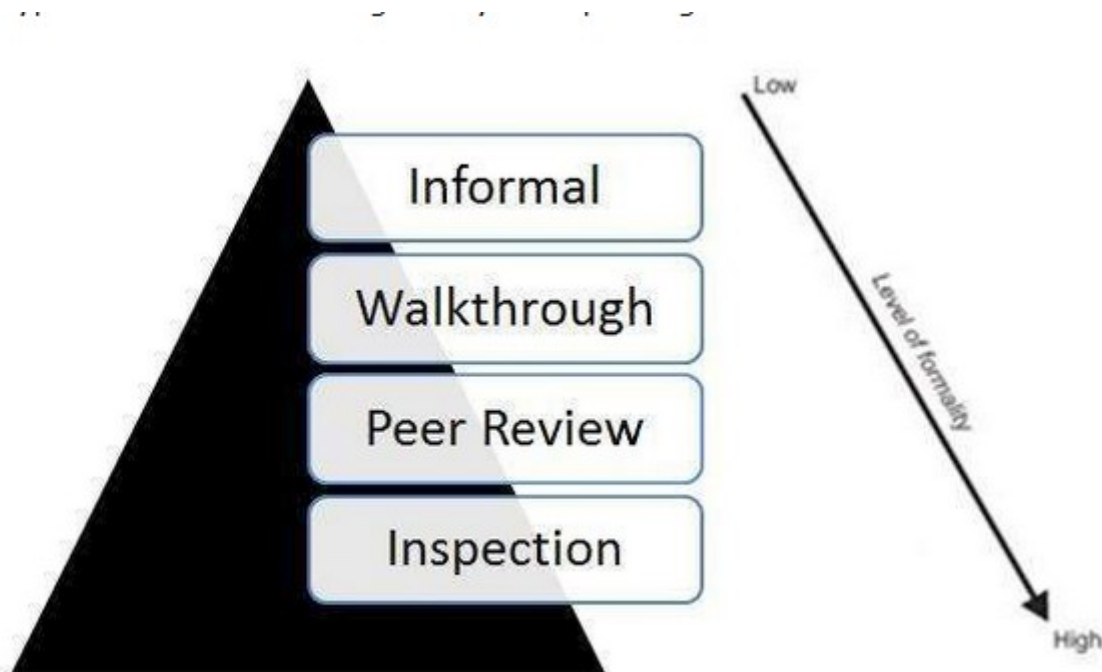
1. Introduction

Definition :
Static testing : Under Static Testing code is not executed. Rather it manually checks the code, requirement documents, and design documents to find errors. Main objective of this testing is to improve the quality of software products by finding errors in early stages of the development cycle. This testing is also called as Non-execution technique or verification testing.

Dynamic testing : Under Dynamic Testing code is executed. It checks for functional behavior of software system , memory/cpu usage and overall performance of the system. Main objective of this testing is to confirm that the software product works in conformance with the business requirements. This testing is also called as Execution technique or validation testing.

So far I understand, Static testing must be realised before any code implementation, at contrary Dynamic testing is realise when code is executed. That's why we call **verification vs validation**.

2. Static testing

What I must do is checking my code, and discuss what error can be output, this step is clearly one thing we should do in meeting, it's a part of having a discussion of what could be the error. I think it can also be related with the work breakdown that I have done before.

Static testing is a way to analyse the code written which may lead to errors. Here is some types of defect I (and can be) found during a static analysis :
- A variable with an undefined value
- Variables that are declared but never used
- Unreachable code (or) Dead Code, an infinite loop for example.
- Syntax violations

And there is more I think, this kind of testing is to perform your program, make it faster to run, and avoir useless code before executing code.

<u>Conclusion</u> : This step is a way to find error and trying to design all the case that could lead to an error before running the code. This step should be organise as a meeting with the person who develop the application. For this project, I analyse my code and all the error who could lead to an error, but I made it in the work breakdown diagram, that's why I'm a little bit confuse.

3. Dynamic testing

Contrary to the static testing, dynamic testing is another step of testing but after executing the code. Dynamic testing involves testing the software for the input values and output values are analyzed. Dynamic testing is the Validation part of Verification and Validation. But for realise this step I must make running the test before. And that's what I'm going to do in the task 3/4. It's also about performing, because programming is performing, how long take this test, what we could improve to make it faster, those kind of question we should ask after executing the code.

Dynamic testing is the validation portion of verification and validation. Some of dynamic testing methodologies include :
- Unit Testing
- Integration Testing
- System Testing
- Acceptance Testing

Dynamic Testing involves working with the software, giving input values and checking if the output is as expected.

4. Conclusion

Both of those types of testing are really interesting and I said they are opposites, but also complementary. What I mean by this, is that if you only do one of this two "method", you can miss something, for example if I'm just executing my code and all test pass, I can say ok perfect, but the test will also pass even if I let some unreachable code in the implementation or variable declared but never used. So in that way both type of testing are complementary.

XVI - Approvals

Description : Captures all approvers of the document, their titles and the sign off date.

Approvers	Title	Date
Me, myself and I.	Team manager	03/05/17