

Individual Report

Unit Test Visualisation Project

Author: Xoliswa Ngxanga

Team: Group 4

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Source & Documentation:

<https://github.com/KeaganPhillips/Wit-Group-4-project>

Abstract

Project management and business analysis may be viewed as the softer unimportant aspects IT projects, as the value of the roles are not expressed in any working software that can be delivered to the customer but these roles are vital. They give the project team direction and guidance throughout the project to ensure that the team delivers what is required of them. The two roles require a high level of interpersonal skill and organization. This report details how these two roles were executed in the unit test visualization project. It also details the framework in which the roles had to be carried out. It discusses the highlights and the shortfalls experienced in the system. Suggestions are made on how certain aspects might have been handled differently, for more efficiency. We also detail the lesson learned from the project experience.

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1 Introduction

A clear objective sets the terms for a project; it is the business analysts duty to clearly define what the boundaries of the project are, and what it means when we say that the project was a success. On the other hand, the role of the project manager is of key importance to the success or failure IT projects. The project manager steers the project in the direction that it should go and facilitates the project.

The following report will report on these two key roles and how they applied in Group 4s Test Visualization project. It explains the artefacts produced by the business analyst. It also justifies the choice of methodology for the project.

The remainder of the report will pay attention to our business analysis and project management approaches. We will also critique our efforts, and suggest what could be improved. We will also carry out an extensive post project implementation review that highlights the good and bad areas of the project. We will conclude the report by detailing the lessons learnt.

2 Business Analysis

The role of the IT business analyst is to assess the business requirements and document for business users and developers to understand them clearly [1]. The analyst talks the business users to find out how the users interact with their current technology, and evaluate what can be improved within in the scope of the project, to make their interaction more profitable to them. One of my key roles in the project was an analysis role, where I did the requirements elicitation and documenting. As a supplementary analysis role I did the testing to support the requirements

2.1 Requirements

The key requirements of the system can be summarised as, a system that takes in another projects code as input and reflects upon it to

- Visually displays the
 1. Classes within the project and their public classes and methods
 2. The tests cases within the project , including the different test scenarios for the cases
 3. A detailed description of the test scenarios in given, when, then fashion.

- Produce a detailed report with all the classes in the project , including the tests , scenarios and details

The system also had to comply with the project specifications that stipulated that the project must address visualization with an element of education.

The purpose of the system is to assist developers that are new to a project with familiarizing themselves to the test in the project. It also assists them to get a more global view without being caught up in the details of the code. A secondary purpose of the system is to act as a didactic tool for new developers to grasp the concepts of test driven development and unit testing.

2.2 Testing

The testing methodology was inspired by a format prescribed by most test driven development practitioners. The template is structured in a format that identifies the user types, the benefits that the user can accomplish when the functionality is achieved and the test conditions.

An example of such a test case is:

As a user
I want to be able to upload a file of my code
So that I do not have to read it line by line
Given that the file being uploaded is in the correct coding standard
When a person A uploads their file on to the system
Then the system should display the classes found in the file

The business goal is to decrease the time that a developer spends scanning the code to discover the tests within a particular project.

2.3 Analysis

The requirements document provided a starting point for communication with the pseudo user of the system and the developers. It provided a clear understanding what had to be developed and what the benefits were. It contained use cases to emphasise the functionality of the system.

The requirements document could have been supplemented with more UML diagrams like a use case diagram, sequence diagrams, domain diagrams and the likes. Due to the simplified requirements of the system and the familiarity of the development team these diagrams would have been mere documentation that would not have added any more understanding.

The test case documentation was a fairly new concept to us and it was interesting to try and realise a benefit from all the functionality that was being built into the system. The test documentation style has its benefits, but it also has disadvantages. One of these disadvantages is that the style does not allow for intensive testing, like testing the input, validations, and what would happen if a clue less developer were to work the system scenarios

3 Project Management

Project management is planning, organizing, coordinating, leading and controlling resources to accomplish the project objective. The project management process involves planning the work and then working the plan [2]. Project management is universally broken down into initiating, planning, performing and closing.

The project was initiated as a requirement for the course. The team was made up class mates who had not worked together before. The initial meetings of the group were used to brainstorm ideas for projects that we could undertake to meet the assignment brief. The choice of the project was influenced by the group's combined understanding of the concept that we were going to model.

Even though we had a clear understanding of the concept that we would be visualizing we were dealing with a technology stack that was totally new for most of the members of the team. This meant that it was very difficult to make tight estimations that kept to the time constraint given to us. Another aspect that made it difficult to estimate our tasks and task times was that we had never worked on such a project before [3].

Our project had clear objective which gave it direction. This objective was clearly documented on the systems requirements document.

3.1 Methodology

Kanban is a software methodology that is inspired by a methodology that was initially used in the manufacturing industry by Toyota. Toyota used the method to reduce their cost and manage machine utilization [4]. The methodology places an emphasis on just-in-time delivery; it works on the principle of displaying work items or task in a sign- board [5].

We choose this methodology because it is a lightweight lean agile methodology. We needed this type of methodology because all the other methodologies seemed like they had too many roles, processes and artefacts that we wouldnt be able to fulfil.

The methodology is rooted on the principles that you should start with what you have, as there is no prescribed roles or processes. The team should respect the current processes, roles, responsibilities and titles. This makes initial adoption of this method easier.

Proponents of the methodology suggest that it is very important that the team should design their own signboard, train everyone, audit and maintain the board, and constantly improve their board. We used the task on our project plan as work items in our Kanban board. These are the tasks we identified.

1. Develop Coding standard (for input files)
2. Layout browser
3. Integrate application browser with JSON objects
4. Data bind diagrams
5. Ability to capture click on class diagram
6. Render tree view control (list tests and scenarios)
7. Tree view click and details panel integration
8. Render details in details panel
9. Render a pdf report
10. Build test application
11. Develop Home page
12. Add styling to application

These tasks were moved along the Kanban board with the stages defined as backlog, coding, testing and done.

3.2 Tools

We used two tools help us facilitate the project management function in our project. We used the Kanbanery to help us visualize the work flow and OpenProj to facilitate tracking of resource allocation.

3.2.1 Kanbanery

The Kanbanery tool is available in two versions, the limited free version, and the premium version that has more features. This tool is most user friendly tool of its kind in the set that we had surveyed. It is customizable and easy to use. It offers extra functionality like reporting and logging to track the times of the project. The board is the main function of the tool, a screen shot is displayed in Figure 1.

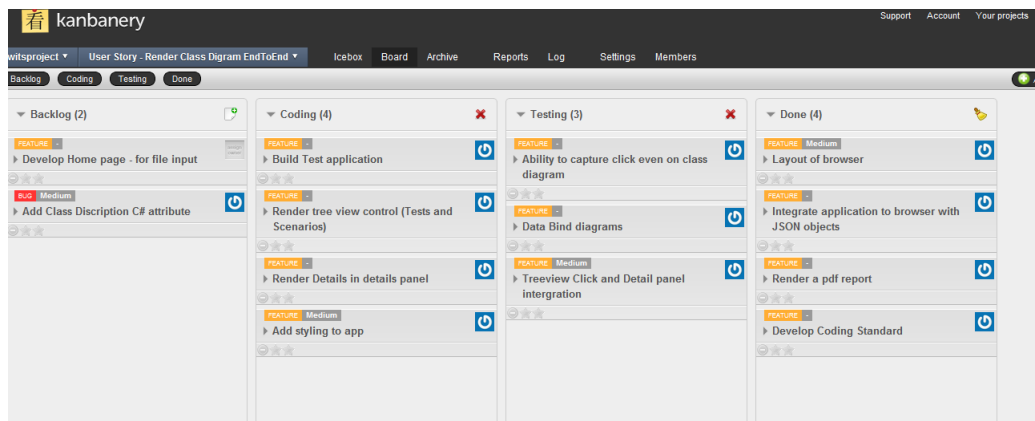


Figure 1: Figure 1 Kanban Board

3.2.2 OpenProj

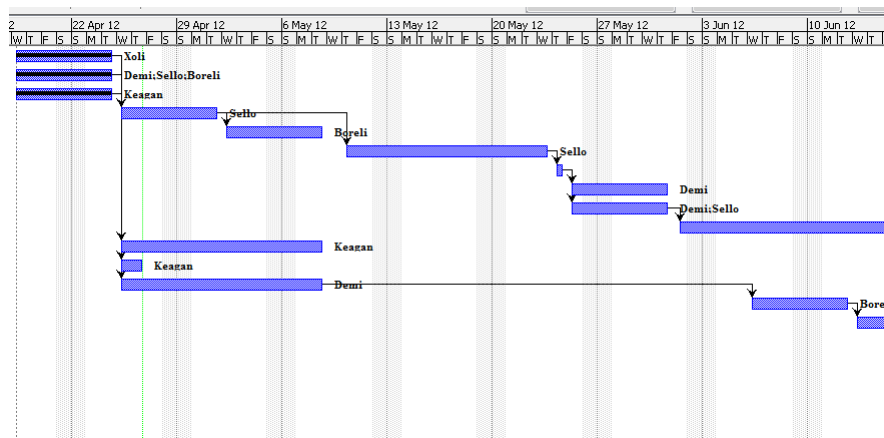


Figure 2: Figure 2 - OpenProj Gantt Chart

3.3 Personal Skills

The responsibilities of planning, organizing and controlling are expected from the project manager. Successful project managers display these key skills.

1. Leadership ability
2. Ability to develop people
3. Communication skills
4. Interpersonal skills
5. Ability to handle stress
6. Problem-solving skills
7. Negotiating skills
8. Time management skills

During the project my key personal success skills were tested and developed. There were times when my skills failed and other team members stepped up to assist. The technical lead has the most experience in the team, and he was willing to share his knowledge and he helped everyone in the team grow. One of the developers has very strong natural leadership ability , and he managed to pull the team together when things got a little out of hand.

3.4 Analysis

The methodology that we selected allowed great flexibility. This flexibility came at price, because there were no clear processes that guided us. There wasn't constant evaluation, and this made it difficult to spot our slack on time.

We had a lot of team meetings, but most of them didn't have a status review aspect. During status review meetings we should have been focusing on the accomplishments, schedule, the risks, opportunities, and action item assignment. We didn't do this as often as necessary.

Both the free-ware tools that we used for our project were good for tracking the tasks in the project , but they didn't prove all the functionality required to support the project management function.

4 Overall Project Analysis

Post Implementation Review	
Project Title	Test Visualization – Group 4
Project Manager	Xoli
Project Team	Demi Keagan Sello Boreli
Start Date	18 April 2012
End Date	20 April 2012
Project Achievements	We managed to develop a system that can display The classes in a project with the public members and functions The tests within a particular project The scenarios associated with the tests The conditions of the scenarios A report detailing all the test , scenarios and conditions that are documented in the projects
Components that were not complete	A home page that provides a space for the user to input a project file that will be reflected upon Skinning the application to make it attractive Making the help video file

PROJECT MANAGEMENT

Project Planning	Our planning on the project management was poor, as we did not sit and think about all the things that could happen and what we had to do. We thought that we just had to start working and we would sort out the logistics as we went along.
Resource Management	The team we had was formed as part of the course brief. Our team had a number of members that were unfamiliar with the tasks and technologies they had to deal with. The team was very committed and willing to learn. Other tasks dragged on because of lack of experience but through collaboration with our technical lead they went back on track.
Risk Management	Not much attention was paid to risk during the project , this led to risks that we hadn't bargained for slowing up our schedule
Change Control	There wasn't much change to the scope of the project because it was jointly defined by the group and there was no customer who could change their mind
Quality Control	Our technical lead paid special attention to ensuring that each of the components of the system met stringent quality specifications
Project Status Reports	We didn't have enough status report meeting because for a substantial amount time as the project manager, I had family crises that I had to deal with. During that time the team was aware of the status , but it wasn't being properly managed

TECHNOLOGY MANAGEMENT

Business Requirements	The business requirements were sufficiently documented and that aided communication and understanding amongst the team
Design Specifications	During the initial stages of the project we worked the design specification that was the driver of our development efforts
Test Planning	Our test packs were developed with the requirements document, these documents added insight to the project. However these test documents were incomplete to guarantee total system quality
Development	Our Development was characterised by intense peer programming, because of the steep learning curve that most of our developers were under. This had a positive spin off of increased learning and quality
Testing	Most the development over ran the estimated time , and because we had scheduled system testing for the final stage , testing was done and all but one of the test passed, but the testing wasn't as thorough as we would have liked it to
Rollout/Implementation	We have detailed the installation guidelines in our supporting technical documentation

RESOURCE MANAGEMENT

Project Communi- cation	Communication in the team was mainly in the form of face to face communication as we had two meetings a week. For times when we couldn't see each we used emails and instant message applications to communicate. Our code and project assets were stored in Git hub and Google groups. Our communication was effective and we built good interpersonal relationships.
Team Experience	There was lot of learning in the project, and a lot of skills transfer. There were times when there was conflicts or misunderstandings , but these were sorted and we never allowed them to get in the way of us delivering the end product
Quality of Meetings	We met a lot of time but sometimes we didn't make a huge emphasis on the project status , that led to us not being aware of the closeness of the project deadline until later on in the project

OVERALL PROJECT SUMMARY

Technical Success	We didn't meet all the requirements that we had set out to meet , but we got all the core functionality of the application working	
Quality Product	The product of the project is one that is bug free and fit for purpose, but it has some usability factors that were not met.	
Project On Time	The core functionality was delivered on time , but the entire project missed the deadline	
Business Objectives Met	The business objectives have been met	
Recommendation and other issues to the overall project		
Problems Encountered		
Project plan was not produced in time	More attention should be placed on planning and the team shouldn't be overwhelmed by the unfamiliarity of the task . Provision for initial learning should be made , but it shouldn't distract from proper project planning	
Unanticipated Risks	Proper risk planning should be done, and risk like resource unavailability should be catered for with a contingency plan. The contingency plan should empower the team members to be able to step in carry out other team members tasks	

5 Lessons Learnt

During the project I learned a lot about the nature of the Information Technology project space and how I can best fit into it. I was exposed to new technologies that provided a steep learning curve, that I might use one day make my work easier. The biggest lesson I learned is that one has to have

the correct personal skills to be an effective project manager.

6 Conclusion

There are some aspects of the project management effort that could have been improved on, but the whole project was an intense learning experience. Flexibility is not always a good characteristic for a methodology. The lack of definition makes tracking the project more difficult. There were good and bad aspects, but the project was a success. We may not have delivered all the functionality as we had set out to but we delivered the key functionality and we learned a lot as a group and as individuals

7

References

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