COS 301 Final year project

Post-Doctoral management System

Project Management Document

October 17, 2014
Version 3.0 (Final)
Iteration 6

Prepared for
Client: Ms. Cathy Sandis (UP DRIS)
Supervisor: Prof. Stefan Gruner (SSFM Group)
by
SoftServe Group

Group members

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Change log			
Date	Version	Description	Person
23/05/2014	v 0.0	Created Project Management Document and created project time line	Carlo Machaba
23/05/2014	v 0.1	Added to project time line	Mathys Ellis
30/05/2014	v 0.2	Added to project time line and added July recess work plan	Mathys Ellis
16/10/2014	v 2.0	Added outstanding items	Carlo Machaba
17/10/2014	v 3.0	Revised and finalised	Mathys Ellis

Contents

List of Figures

1 Project Repository

https://github.com/mox1990/Project-Postdoc.git

2 Document description:

This document provides the documenting of how the project will be managed.

2.1 Document purpose:

The Project Management provides the details of how the project will be managed by Software. It will contain the time schedule and the list of tasks that still need to be completed.

3 References

IEEE Std 1058-1998, IEEE Standard for Software Project Management Plans.

4 Project Organization

4.1 External Interfaces

The external interfaces for this project will be the Stakeholders: Ms Cathy Sandis, Prof S. Gruner and the members of the COS 301 staff. The University of Pretoria are the acquiring organization for the software to be developed.

4.2 Internal Interfaces

- Mathys Ellis
- Tokologo "Carlo" Machaba
- Kgothatso Phatedi Alfred Ngako

5 Managerial Process

5.1 Project Start Up Plan

5.1.1 Division of use cases

This section provides the use cases each of the team members selected to do for the recess work plan. The selection process was as follows Kgothatso Phatedi Alfred Ngako and Tokologo "Carlo" Machaba selected which use cases they wished to do. Lastly Mathys Ellis selected the remaining use cases. It should be noted that the division of the use cases also relate with the expected work hours of each member.

- Mathys Ellis
    1. Post-doctoral fellow-ship management system use cases
    2. Application services use cases
    3. User account management services use cases
    4. Grant holder application finalisation service use cases
    5. HOD Approval service use cases
    6. Dean endorsement service use cases
    7. DRIS approval service use cases
- Tokologo "Carlo" Machaba
    1. User gateway use cases
    2. Application progress viewer service use cases

3. New fellowship application service use cases
4. Application renewal service use cases
5. Referees' report service use cases

- Kgothatso Phatedi Alfred Ngako

1. Report services use cases
2. Notification services use cases
3. Audit-Trail services use cases
4. Archival services use cases
5. Imports and exports services use cases
6. Meeting management service use cases

5.1.2 Tasks to be completed for each use case

This section lists and describes the tasks that should be completed for each of the use cases specified above.

- Create interface diagram within the Model.eap file. In order to provide the expected APIs for other members, Document this in the Functional requirements document. This must be complete before the 12/06/2014.
- Document initial unit and integration tests in the functional testing document. This must be complete before the 30/06/2014.
- Complete the implementation of the back-end
- If the use case provides a front-end it must be implemented. Document the user work flow and UI design also.
- Develop JUnit tests alongside actual implementations
- Document any extra use case diagrams if new sub services are developed.
- Document any process specification of an implemented functionality.
- Document any additional unit and integration tests while implementing

5.1.3 Additional tasks

This section lists and describes the additional tasks that should be completed by each member. These revolve around the awe factors that the SoftServe group wishes to implement. The tasks were divided according to the background and skill level of each member in terms of AI and 3D graphics.

- Mathys Ellis
    1. Research webGL and 3D user interfaces
    2. Help with design of interactive UI
    3. Research data mining and neural network techniques
    4. Identify data sources that can be used to gather data.
    5. Provide support in both the AI and 3D related topics.
    6. Editing of documentation
- Tokologo "Carlo" Machaba
    1. Research WebGL and 3D user interfaces
    2. Design UI, standard and interactive
    3. Research and develop innovative user interaction mechanisms
    4. Initial documentation of 3D UI awe factor
- Kgothatso Phatedi Alfred Ngako
    1. Research data mining and neural network techniques with regards to evaluation, prediction, background check.
    2. Design viable data mining techniques.
    3. Identify valuable indicators in data.
    4. Identify data sources that can be used to gather data.
    5. Initial documentation of AI awe factor

5.2 Work Plan

5.2.1 Project Timeline

Timeline		
Task	Date	Description
First Demo	23/05/2014	Demo 1

User Acceptance Tests	23/05/2014 - 10/06/2014	Create and finalise User Acceptance Tests
API and interface design	30/05/2014 - 12/06/2014	Create the APIs and interfaces to be expected from each use case per the clients specification
Research into possible awe factors for project	30/05/2014 - 24/07/2014	Research into Data mining and 3D interactive user interface in order to add awe to project
Unit and integration tests	12/06/2014 - 05/09/2014	Create unit and integration tests alongside development
Group meeting	20/06/2014	Discuss and finalise july holiday implementation details and tasks
Unit and integration tests	30/06/2014	Initial unit and integration tests per use case is documented
Implementation of functionality	20/06/2014 - 23/07/2014	Create and finalise the back end to beta level before the client demo
Holiday report back 1	04/07/2014	First holiday work report to be completed and sent to Stacy
Holiday report back 2	22/07/2014	Second holiday work report to be completed and sent to Stacy
Beta version is completed	24/07/2014	Beta version is ready and shown to the client
Client Demo 1	25/07/2014	Meeting with the client to demo full beta application and functionality and discuss the requirement of awe factor of project
Implementation of final functionality	26/07/2014 - 15/08/2014	Finalise the front and back end to clients specification before the second demo
Off-line testing phase	25/07/2014 - 14/08/2014	Testing and debugging of beta version.
Client Demo 2	01/08/2014	Meeting with the client to demo any new or improved functionality
Second Demo	01/07/2014	Demo 2
Phase one of project completed	14/08/2014	Final version of application according to client specifications is ready to be shown to the client
Third Demo	15/08/2014	Demo 3
Client Demo 3	15/08/2014	Meeting with the client to demo complete functionality and discuss on-line testing phase

On-line testing phase	19/08/2014 - 04/10/2014	Testing with the client and potential end users in order to improve and debug application. To run concurrently with Awe factor implementation
Awe factor Implementation phase	16/09/2014 - 04/10/2014	Complete and improve any functionality and add awe factor elements to project
Client Demo 4	22/08/2014	Meeting with the client to demo any new or improved functionality
Client Demo 5	29/08/2014	Meeting with the client to demo any new or improved functionality
Client Demo 6	05/09/2014	Meeting with the client to demo any new or improved functionality
Fourth Demo	05/09/2014	Demo 4
Client Demo 7	12/09/2014	Meeting with the client to demo any new or improved functionality
Beta version of awe factor phase ready	18/09/2014	The awe factor's beta version needs to be complete
Client Demo 8	19/09/2014	Meeting with the client to demo any new or improved functionality
Client Demo 9	26/09/2014	Meeting with the client to demo any new or improved functionality
Fifth Demo	03/10/2014	Demo 5
October recess	04/10/2014 - 12/10/2014	October recess. Use time to do final touch ups of the system and complete it
Post Doctoral System final version ready	13/10/2014	The system is complete according to client specification and awe factor specification
Client Demo 10	13/10/2014	Meeting with the client to demo the final system and hand it over to her
Project Day Preparation	10/10/2014 - 20/10/2014	Maintenance and preparation for Project day
Project Day	20/10/2014	Project Day and system is presented.

5.3 Control Plan

5.3.1 Requirements Control Plan

Requirements will be added to the documentation and if necessary each document will be revised with each stakeholder updated with the new version.

5.3.2 Schedule Control Plan

SoftServe will measure the progress during the development by comparing the end products with the new version of the documentation.

5.3.3 Quality Control Plan

The software will be developed under the following specifications:

- V-Model Development model which is document driven and allows for the final product to be of high quality.
- All documentation will follow IEEE Standards, to ensure we follow and International Standard.
- SoftServe will conduct a number of tests.

5.3.4 Reporting

The following reporting will be used for communication:

- Formal Meetings - Used to discuss the requirements of the software, review of completed tasks and input from the client
- GitHub - Used for source code collaboration and issue-tracking.
- Scrum reports and log file

5.4 Risk Management Plan

Risk Factors will be managed as follows:

- Loss of a group member due to unforeseen circumstances. This will be managed by redistributing the tasks among the group members
- Schedule being followed will allow for sufficient time for minor changes and clean up at the end of the project.
- Creating different branches on GitHub during development to ensure that there is no disruptions once the prototype is ready.

6 Project Deliverables

- **Vision and scope document**
- **Software architecture document**
- **Functional requirements and application design document**
- **Non-Functional testing document**
- **Functional testing document**
- **User manual**
- **Deployment guide**
- **Project management document**
- **Source code**

7 Technical Process Model

7.1 Process Model

The development of the system will follow the V-Model process. The first phase consists of submission of the Requirements Specifications, which will be approved or revised by the client. If revision of the document is necessary, the required changes will be made to the document and revised version will be sent out.

The steps mentioned above will be implemented for all the following phases, namely the Architectural Document, User Acceptance Test Document, Non-functional Testing Document(Usability Tests and User Acceptance Tests), Functional Testing Document(Unit Tests and Integration Tests).

7.2 Methods, Tools and Techniques

The V-Model will be implemented as the Development Process of this software as it implements testing from the beginning of the software development life-cycle.

Static Testing techniques such as inspections and walk-throughs will be implemented through the development of prototypes. This will allow for validation and verification of each subset of the software.

Testing will be implemented at each development stage, allowing SoftServe to deliver a final product that is reliable, maintainable and error free. SoftServe strives to create a product that fulfils the client's requirements and goes above their expectations.

7.3 Product Acceptance Plan

A number of tests will be drawn up throughout the development process whereby different stakeholders will be testing the product for malfunctions:

- **User Acceptance tests will be performed by the client**
- **Usability tests will be performed by various stakeholders**
- **Unit tests will be performed by programmers**
- **Integration Tests will be performed by programmers**
- **Final Product Tests will be performed by all stakeholders**

8 Supporting Process Plan

8.1 Configuration Management Plan

All project deliverables are considered to be configuration items. The configuration items as well as it's documents would be named after the document title and will be followed by the version number.

8.2 Verification and Validation

Each test plan and meeting will allow the client to provide feedback regarding their satisfaction with the requirements implemented in terms of valid implementation as well as verification of the implementation.

8.3 Documentation Plan

All documents will follow IEEE standards. Each document will ve discussed and reviewed before it is submission for assessment by the lecturers and client.

8.4 Quality Assurance Plan

SoftServe will ensure that each member produces work of a standard expected by the rest of the group, COS 301 lecturers and the client.

8.5 Reviews and Audit Plan

Peer reviews will be conducted in order to ensure that each members contribution is suitable.

8.6 Problem Resolution Plan

8.7 Process Improvement Plan

Following the Agile development model and V-Model development process will allow Soft-Serve to periodically assess the project using the test plans. This will help us determine areas for improvement and reduce any disruptions during development phases later in the V-Model process.

9 Glossary:

- **Activity diagram** - A UML diagram that depicts the flow of actions or activities in the process.
- **API** - Application Programming Interface
- **Application** -Both renewal applications or new fellowship applications are seen as applications by this project.
- **CV** - Curriculum Vita
- **Domain objects** - Are the objects that are present in the system being modelled.
- **EAI** - Enterprise Application Integration
- **NRF** - National Research Foundation
- **Spreadsheet** - A special type of computer document that is used to represent data in rows and columns.
- **GlassFish** - GlassFish is a web server software package that is very flexible and compatible with Java EE applications.
- **HTML** - Hyper Text Mark-up Language
- **HTML Scrpping** - technique of extracting information from websites
- **HTTPS** - Hyper Text Transfer Protocol Secure is a higher level network oriented communication rule set that is highly secure and is used by all web browsers.
- **Java EE** - Java Enterprise Edition
- **MySQL** - Is a relational persistence database package that provides all the necessary management tools to run and manage a database server.
- **Object-Oriented** - A programming language style that encapsulates everything as an object instance of a particular class of attributes and methods.
- **JDBC** - Java Database Connection
- **MVC** - Model View Controller
- **PDF** - Portable Document Format file
- **Peoplesoft** - A management system designed by oracle.

- **Spreadsheet** - A special type of digital document that is used to represent data in rows and columns
- **UI** - User Interface
- **Use case diagram** - A UML diagram that gives a visual depiction of a service or group of services.
- **UML** - Unified modelling language. A commonly used model standard to provide technology neutral models of different aspects of software.
- **UP** - University of Pretoria
- **Work Flow** - Describes the tasks, procedural steps and tools needed for each step in a business process

10 Appendix: Images

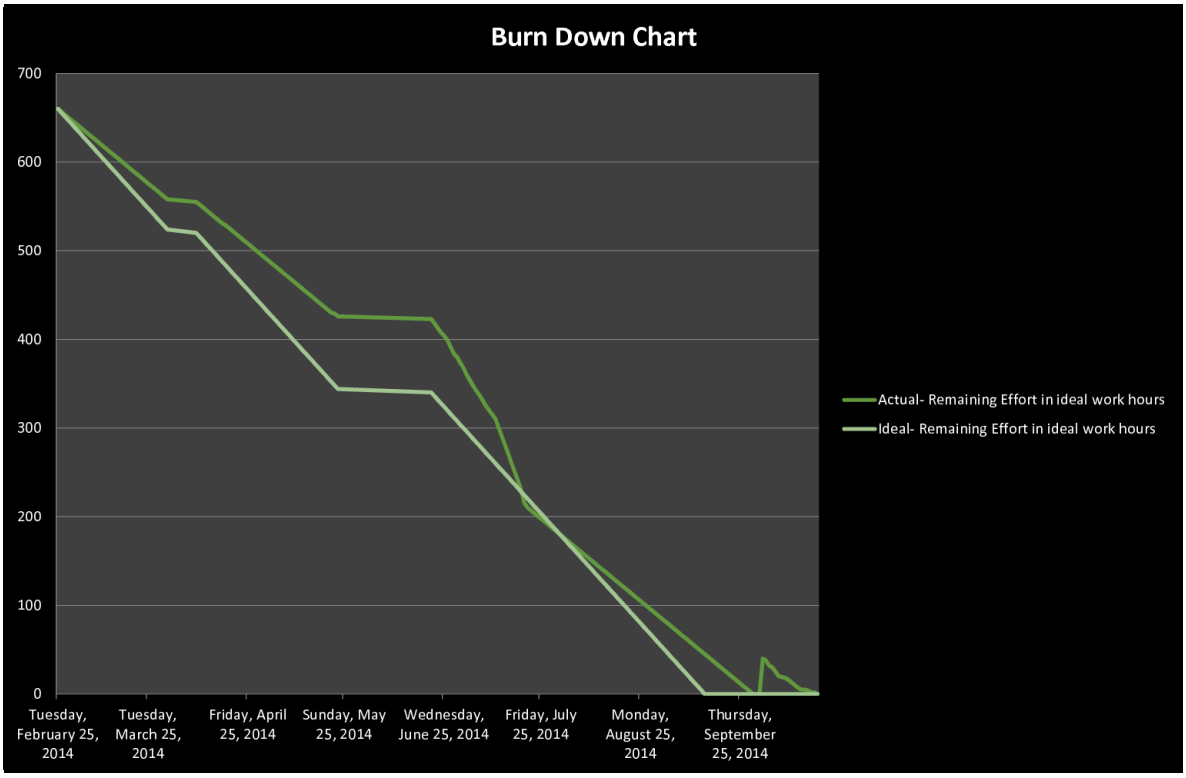

Figure 1: Burn Down Chart

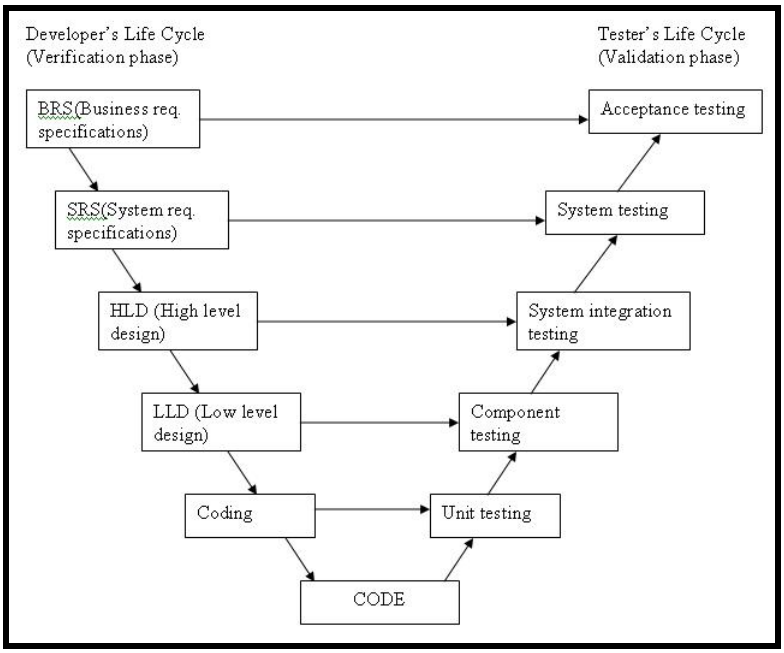

Figure 2: V-Model Development Model