COS 301 Final year project
Post-Doctoral management System

Non-Functional Testing document

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Iteration 6

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

Group members

Kgothatso Phatedi Alfred Ngako (12236731)

Tokologo "Carlo" Machaba (12078027)

Mathys Ellis (12019837)

Change log			
Date	Version	Description	Person
17/10/2014	v 1.0	Revised and finalised	Mathys Ellis

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1 Document description:

1.1 Document purpose:

This non-functional testing document serves the purpose of providing a detailed testing plan and test cases for non-functional testing of the system. Therefore the user acceptance testing of the system is covered by this document. Thus this document serves as a contract between SoftServe and the client, Mrs Cathy Sandis of the DRIS of the University of Pretoria in terms of non-functional quality assurance.

1.2 Documentation methodology

The documentation and software development methodology used by the project adhere to the guidelines set out by the agile method. Thus this document has undergone and will undergo various iterations that may extend or reduce the contents of the document.
The document was formualated using techniques described by Ammann P. and Offutt J..
Also used were techniques and skills obtained from the COS 301 course.

1.3 Document conventions:

- Documentation formulation tool: LaTeX

1.4 References:

- Ammann P., Offutt J., 2009, *Introduction to software testing*, Cambridge university press, New york.

- Yvonne Rogers, Helen Sharp, Jenny Preece, *Interaction Design: Beyond Human–Computer Interaction, 3rd ed.*, John Wiley, Sons Ltd., 2011 ISBN 0-470-66576-9

2 User acceptance tests

As specified in the V-model for testing user acceptance tests are developed alongside the requirement engineering ans is a quality assurance activity by which the new system is tested for compliance with the actually requirements in terms of quality and functional. It allows the SoftServe group to detect deviations between the implementation of the system and the specified requirements. The test cases are essentially derived from the quality and functional requirements provided by the requirement engineering process. Thus to resolve it the system or requirements need to be changed (Pohl 2010).

This section tests items and identifiers with regards to the systems behaviour. All the steps entailed below are added to the audit log.

2.1 User Accounts

2.1.1 Creating prospective fellow user account

Step	Action	Expected System response
1	The user enters the required information such as names and email address to the system.	The system will check that all fields were filled as expected and that no necessary fields were skipped. If all fields are valid the user is allowed to continue
2	Once all the fields are checked as valid by the system the user can now submit their account.	The system will now create the users account in the system database.

2.1.2 Creating stakeholder user account

Step	Action	Expected System response
1	The administrator enters the required information such as names, security level required by the user account and email address to the system.	The system will check that all fields were filled as expected and that no necessary fields were skipped. If all fields are valid the user is allowed to continue
2	Once all the fields are checked as valid by the system the user can now submit their account.	The system will now create the users account in the system database.

Preconditions

The administrator is logged on to the system.

Postconditions

The user account is now created in the system identified as a prospective fellow.

2.1.3   Modifying user account

Step	Action	Expected System response
1	The user alters all the fields they want to change such as email and names.	The system will check that all fields were filled as expected and that no necessary fields were skipped. If all fields are valid the user is allowed to continue.
2	Once all the fields are checked as valid by the system the user can now submit their account.	The system will now create the users account in the system database.

Preconditions

The administrator is logged on to the system.

Postconditions

The user account is now created in the system identified as one of the stakeholders.

2.1.4   Generating On Demand user account

Step	Action	Expected System response
1	The user specifies the email and details of their referee who does not have account on the system.	The system will check that all fields were filled as expected and that no necessary fields were skipped. If all fields are valid the user is allowed to continue.
2	Once all the fields are checked as valid by the system the user can now submit their account.	The system will now create the users account in the system database. An email notification will be sent to the specified user.

Preconditions

The administrator is logged on to the system.

Postconditions

The user account is now created in the system identified as a referee.

2.2 New Application

2.2.1 Prospective Fellow Creates new application

Step	Action	Expected System response
1	The user enters their relevant details in CV form.	The system will check that all fields were filled as expected and that no necessary fields were skipped. If all fields are valid the user is allowed to continue
1	The user specifies their intended supervisor.	The system will check that all fields were filled as expected and that no necessary fields were skipped. If all fields are valid the user is allowed to continue
2	The user enters the details/documents of their referees.	The system will store the documents or check the validity of the referes details binding them to the applicants application. If all fields are valid the user is allowed to continue
3	The user enters their previous academic experience(s), attaching the supporting documents.	The system will store the documents binding them to the applicants application. If all fields are valid the user is allowed to continue
4	The user enters their previous work experience(s), attaching the supporting documents.	The system will store the documents binding them to the applicants application. If all fields are valid the user is allowed to continue
5	Once the user has completed all the above steps they will be allowed to submit the application.	The system will now process the application to the specified supervisor and let the user know that the application is under way.

Preconditions

The user is on the website through a supported web client and logged on to the system.

Postconditions

The user is on the website through a supported web client and logged on to the system.

2.2.2 Referees submit Motivation

Step	Action	Expected System response
1	The user enters their relevant details in CV form.	The system will check that all fields were filled as expected and that no necessary fields were skipped. If all fields are valid the user is allowed to continue
1	The user specifies their intended supervisor.	The system will check that all fields were filled as expected and that no necessary fields were skipped. If all fields are valid the user is allowed to continue
2	The user enters the details/documents of their referees.	The system will store the documents or check the validity of the referes details binding them to the applicants application. If all fields are valid the user is allowed to continue
3	The user enters their previous academic experience(s), attaching the supporting documents.	The system will store the documents binding them to the applicants application. If all fields are valid the user is allowed to continue
4	The user enters their previous work experience(s), attaching the supporting documents.	The system will store the documents binding them to the applicants application. If all fields are valid the user is allowed to continue
5	Once the user has completed all the above steps they will be allowed to submit the application.	The system will now process the application to the specified supervisor and let the user know that the application is under way.

Preconditions

The user is on the website through a supported web client and logged on to the system.

Postconditions

The user is on the website through a supported web client and logged on to the system.

2.2.3 Grant holder validation of application

Step	Action	Expected System response
1	Grant holder verifies and finalizes the application.	The systems accepts the verifications
2	Once all the reports and referrals have been submitted the application can now be sent through	The system now sets the application to be processed. A notification is sent to the DRIS.

Preconditions

The grant holder is logged on to the system. The application has instantiated by the prospective fellow.

Postconditions

The application is now available to the stakeholders.

2.2.4 Application approval by stakeholder

Step	Action	Expected System response
1	Stakeholder verifies and finalizes the application or leaves suggestion for the application.	The systems accepts the verifications.
2	Once all the reports and referrals have been submitted the application can now be sent through	The system now sets the application to be processed. A notification is sent to the DRIS.

Preconditions

The stakeholder is logged on to the system. The application has been approved and finalized by the grant holder.

Postconditions

The application is now available to the DRIS consideration.

2.2.5 Application approval by HOD

Step	Action	Expected System response
1	The HOD of the department, decides whether or not recommend the report. The HOD will create a recommendation report.	
2	Once all the reports and referrals have been submitted the application can now be sent through	The system now sets the application to be recommended. A notification is sent to the DRIS.

Preconditions

The HOD is logged on to the system. The application has been approved and finalized by the grant holder and prospective fellow.

Postconditions

The application is now available to the Dean's approval.

2.2.6 Application approval by Dean

Step	Action	Expected System response
1	A member of the Dean's office will endorse or deny the applications as they wish and give motivation as well as providing motivation.	
2	Once all the reports and referrals have been submitted the application can now be sent through	The system now sets the application to be endorsed. A notification is sent to the DRIS.

Preconditions

The a member of the Dean's office is logged on to the system. The application has been approved and finalized by the HOD.

Postconditions

The application is now available to the DRIS consideration.

2.2.7 Application approval by DRIS

Step	Action	Expected System response
1	A member of the DRIS will check the eligibility of the application and approve or deny the application. The DRIS member should also be able to create meetings to discuss the pending applications and funding.	
2	Once all the meetings and the applications are approved or denied, all the stakeholders will be sent notifications and the application will be set to Funded.	

Preconditions

The a member of the DRIS is logged on to the system. The application has been approved and endorsed by the Dean.

Postconditions

The application has been funded.

2.3 Application Renewal

2.3.1 Fellow applies of Renewal

Step	Action	Expected System response
1	The user creates a progress report.	The system will check that all fields were filled as expected and that no necessary fields were skipped. If all fields are valid the user is allowed to continue

Preconditions

The user is logged on to the system and is a fellow.

Postconditions

The application renewal is created and available to be viewed by all the parties involved in the application process.

2.3.2 Referees submit Motivation

Step	Action	Expected System response
1	The user enters their relevant details in CV form.	The system will check that all fields were filled as expected and that no necessary fields were skipped. If all fields are valid the user is allowed to continue
1	The user specifies their intended supervisor.	The system will check that all fields were filled as expected and that no necessary fields were skipped. If all fields are valid the user is allowed to continue
2	The user enters the details/documents of their referees.	The system will store the documents or check the validity of the referes details binding them to the applicants application. If all fields are valid the user is allowed to continue
3	The user enters their previous academic experience(s), attaching the supporting documents.	The system will store the documents binding them to the applicants application. If all fields are valid the user is allowed to continue
4	The user enters their previous work experience(s), attaching the supporting documents.	The system will store the documents binding them to the applicants application. If all fields are valid the user is allowed to continue
5	Once the user has completed all the above steps they will be allowed to submit the application.	The system will now process the application to the specified supervisor and let the user know that the application is under way.

Preconditions

The user is on the website through a supported web client and logged on to the system.

Postconditions

The user is on the website through a supported web client and logged on to the system.

2.3.3 Grant holder validation of application

Step	Action	Expected System response
1	Grant holder verifies and finalizes the application.	The systems accepts the verifications
2	Once all the reports and referrals have been submitted the application can now be sent through	The system now sets the application to be processed. A notification is sent to the DRIS.

Preconditions

The grant holder is logged on to the system. The application has instantiated by the prospective fellow.

Postconditions

The application is now available to the stakeholders.

2.3.4 Application approval by stakeholder

Step	Action	Expected System response
1	Stakeholder verifies and finalizes the application or leaves suggestion for the application.	The systems accepts the verifications.
2	Once all the reports and referrals have been submitted the application can now be sent through	The system now sets the application to be processed. A notification is sent to the DRIS.

Preconditions

The stakeholder is logged on to the system. The application has been approved and finalized by the grant holder.

Postconditions

The application is now available to the DRIS consideration.

2.3.5 Application approval by HOD

Step	Action	Expected System response
1	The HOD of the department, decides whether or not recommend the report. The HOD will create a recommendation report.	System will accept the changes
2	Once all the reports and referrals have been submitted the application can now be sent through	The system now sets the application to be recommended. A notification is sent to the DRIS.

Preconditions

The HOD is logged on to the system. The application has been approved and finalized by the grant holder and prospective fellow.

Postconditions

The application is now available to the Dean's approval.

2.3.6 Application approval by Dean

Step	Action	Expected System response
1	A member of the Dean's office will endorse or deny the applications as they wish and give motivation as well as providing motivation.	System will validate and accept the changes
2	Once all the reports and referrals have been submitted the application can now be sent through	The system now sets the application to be endorsed. A notification is sent to the DRIS.

Preconditions

The a member of the Dean's office is logged on to the system. The application has been approved and finalized by the HOD.

Postconditions

The application is now available to the DRIS consideration.

2.3.7 Application approval by DRIS

Step	Action	Expected System response
1	A member of the DRIS will check the eligibility of the application and approve or deny the application. The DRIS member should also be able to create meetings to discuss the pending applications and funding.	System will create a Eligibility report
2	Once all the meetings and the applications are approved or denied, all the stakeholders will be sent notifications and the application will be set to Funded.	

Preconditions

The a member of the DRIS is logged on to the system. The application has been approved and endorsed by the Dean.

Postconditions

The application has been funded.

2.4 Application progress viewer

2.4.1 Fellow

Step	Action	Expected System response
1	The research fellow will review the progress of the application.	The system will show the progress of the application

Preconditions

A fellow is logged on to the system.

Postconditions

The application progress is shown.

2.5 Application progress viewer

2.5.1 Fellow

Step	Action	Expected System response
1	The research fellow will review the progress of the application.	The system will show the progress of the application

Preconditions

A fellow is logged on to the system.

Postconditions

The application progress is shown.

2.5.2 Grant Holder

Step	Action	Expected System response
1	The Grant Holder will review the progress of the application.	The system will show the progress of the application

Preconditions

A Grant Holder is logged on to the system.

Postconditions

The application progress is shown.

2.6 Progress Reports

2.6.1 Fellow

Step	Action	Expected System response
1	The research fellow will check if there are any pending reports.	The system will show the pending progress reports
2	The research fellow will create any pending reports.	The system validate the report and save it

Preconditions

A fellow is logged on to the system and they have pending reports.

Postconditions

The fellow will have no pending reports.

2.7 Forward and Rewind of Application

2.7.1 DRIS

Step	Action	Expected System response
1	A DRIS will forward a application.	The system will move an application further into the application process
1	A DRIS will rewind a application.	The system will move an application further back the application process

Preconditions

A DRIS member is logged on to the system.

Postconditions

The application will have a new state.

2.8 Reporting

2.8.1 DRIS

Step	Action	Expected System response
1	A DRIS will access the report generating tool and specify the type of report required.	The system will generate the report from the specified input.
1	A DRIS will have the choice to export the report.	The system will export the report in the required format

Preconditions

A DRIS member is logged on to the system.

Postconditions

The application will have a new state.

2.9 Notifications

The system will need to generate automated notifications that are sent internally and to the corresponding email of the recipient. To prevent spamming the system will only allow users with the correct security roles to make use of the service. It is important that this service runs asynchronously after it has been engaged since the service makes use of external systems that may be un-responsive. In case where the external systems fail this services needs to handle it.

- The system must be able to create a new notification.

- The system must be able to send notifications.

- The system must be able to allow the user to specify the recipients and senders.

- The system must be able to send batch notifications.

2.10 Audit-Trail

2.10.1 System Administrator or DRIS member

Step	Action	Expected System response
1	Users will access the system.	The system will record all actions done by all the users.
2	A DRIS and/or system administrator will request for a report record all actions done in the system required.	The system will generate the report via reporting services.

2.11 CV Management

2.11.1 Prospective Fellow, Grant Holder and Research Fellow

Step	Action	Expected System response
1	Any one of the specified users will be able to create and/or update their CV.	The system will validate the CV and save it.

Preconditions

The user is the owner of the account.

Postconditions

The CV will be created or updated.

3 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