UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
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Software Requirements Specification
and
Technology Neutral Process Design

Name of project

Version: 1.0

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1 Introduction

In this document it would be specified how a system would be developed for the department of computer science at the University of Pretoria in order for them to replace their current, not so efficient Microsoft Office Excel spreadsheet, system with a more concurrent and reliable option.

2 Vision

The client requires a system that would allow them to retrieve and submit meta-data about academic papers published by the department of computer science at the University of Pretoria. Certain users would be able to create new papers and the project leader would then be able to control certain properties of the project, like the current progress of the paper. It should also have a web interface where changes can be made and also an Android app.

3 Background

4 Architecture Requirements

4.1 Access channel requirements

The system requires 2 interfaces:

- Web interface
- Android app

4.2 Quality requirements

The following quality aspects needs to be addressed:

- **Scalability:** About a 1000 users will use the system.
- **Security:** Passwords will be hashed with the SHA512 hashing algorithm.
- **Reliability:** An automatic full dump backup will be done everyday at 03:00 and each back up will be kept for a week.
- **Auditability:** Every change should be logged and the person responsable for that log will be recorded. This will allow the administrators to track which users change what.
- **Maintainability:** Data that is deleted will only be moved to another database that might be a little slower. This will help alleviate some pressure off the main database.

- **Cost:** The total hours is estimated to be 120 at a cost of R500 per hour.

4.3 Integration requirements

The system should allow universities to connect to each other using an API. This would allow them collaborate on projects and also to track the papers that is being written. The Android app should also be able to connect to the server via the API.

The protocol that will be used to transfer the data between the server and the clients will be the Hyper Text Transfer Protocol Secure (HTTPS). And the third parties that integrate with the system will access it either through the web interface, the mobile app or the provided API.

Some quality requirements that has to be considered are:

- **Security:** The data that is sent over the internet should be encrypted and it has been decided to use the Secure Socket Layer (SSL) encryption algorithm.
- **Reliability:** The reliability of the transfer of the data is dependant on the reliability of the internet connection.

4.4 Architecture constraints

There are currently no architecture constraints that the client mentioned.

5 Functional requirements and application design

5.1 Use case prioritization

Critical:

- No item should ever be deleted
- The system needs to be able to save that data in some way.

Important:

- Can link with Google Calender
- Item 2

Nice-to-have:

- Show completion of paper in percentage
- Item 2

5.2 Use case/Services contracts

Pre-Conditions:

- Item 1
- Item 2

Post-Conditions:

- Item 1
- Item 2

Request and Results Data Structures:

- Item 1
- Item 2

5.3 Required functionality

5.4 Process specifications

5.5 Domain Model

6 Open Issues

- Item 1
- Item 2