[](https://goo.gl/yEKPVN)**FUNCTIONAL SPECIFICATIONS TEMPLATE**



**FUNCTIONAL SPECIFICATIONS:**

**NIGHTCOREMECH**

**DEVELOPMENT TEAM**

**12/09/2022**

**Version 1.0.0**

| VERSION HISTORY | | | | |
| --- | --- | --- | --- | --- |
| VERSION | APPROVED BY | REVISION DATE | DESCRIPTION OF CHANGE | AUTHOR |
| 1 |  | 11/09/2022 | First Draft | Development Team |
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**Functional Specifications Document**

**Authorization Memorandum**

I have carefully assessed the Functional Specifications Document for the SimiLabs Plagiarism/Stylometry Checker.

MANAGEMENT CERTIFICATION - Please check the appropriate statement.

\_\_\_\_\_\_ The document is accepted.

\_\_\_\_\_\_ The document is accepted pending the changes noted.

\_\_\_\_\_\_ The document is not accepted.

We fully accept the changes as needed improvements and authorize initiation of work to proceed. Based on our authority and judgment, the continued operation of this system is authorized.

Ricus Warmenhoven 2022/09/12

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NAME DATE

Project Manager

NWU Registrar 2022/09/12

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# INTRODUCTION

Provide an overview of the entire Functional Specifications Document including the purpose, scope, definitions, acronyms, abbreviations, references, etc.

### Background

The previous instance of the SimiLabs software was faulty and did not adhere to the NWU Registrar’s requirements. The software failed to produce results as to assist lecturers and the Registrar in identifying contract-cheating among students. The statistics provided by the stylometry functionality failed to implicate any students in contract-cheating, even if it was without a doubt the case. The text comparison functionalities also failed to highlight any texts that was similar between source and comparison documents. The system also lacked a functioning user login and registration form.

## Purpose

Several administrative duties are the responsibility of the Registrar at North-West University. Keeping track of university students' grades and a wide range of other supporting records and documentation are among these duties. In accordance with Gartner's definition of information governance, the university sees it as an all-encompassing framework that gives control over information and the procedures by which it is created, processed, and curated at the institution.

The current demands from the client (the NWU Registrar), with Mr. Zander Janse van Rensburg serving as the project managing manager, requires our company to design and construct a modular workflow system that would assist academic lecturers in identifying and reporting cases of academic misconduct in accordance with the NWU SOPS. To combat contract-cheating, the NWU Registrar must assess each instance separately and employ specialists to provide technical reports. If the technical reports do not self-evidently emphasize the severity of the plagiarism, external subject matter experts (SMEs) are asked to review the technical reports with an additional report that offers a deeper understanding of the suspected plagiarism. The technical need is to manually compare the allegedly plagiarized text in question with the original text used as evidence. It is rather difficult to manually compare text, so the Registrar encouraged the NightcoreMech development team to develop a system that can automatically detect text comparisons and authorship attribution without the need to manually compare documents.

1. **Main Objectives**

* The automation of text comparisons between the question and the supporting material, which must yield a measure of similarity between the two texts. The software should reduce the amount of time required to manually compare two texts and generalize the evaluation of how severe the conjectured copying is using a similarity measure. To produce more accurate reports, better explain academic misbehavior, and facilitate better decision-making, the program must integrate text-comparison capabilities with stylometric analytics.
* The software that is now available has features like a substandard stylometric tool and a primitive text comparison tool. Technical reports use the basic text comparison tool to identify similarities between texts, but the stylometric tool is underutilized despite having significant potential for helping the investigator in authorship attribution.
* The program must be independent, terrestrial-based, and capable of running on numerous platforms simultaneously.
* Data updates must occur every day.
* The system must be able to sustain ongoing database transactions (storing stylometry statistics and document metadata).
* The project management methodology must be followed by the development methodology. The MPMM/Method 123 approach or a Waterfall/Agile hybrid approach should be used.
* As a minimum requirement, the program should be able to identify textual similarities between two sources.
* The program should have stylometric features, including the ability to identify a document's original author.
* Resource overhead should be avoided, and the program should be memory efficient.
* The system should be able to provide extensive reports on the stylometric analysis and text-comparisons between a source document and comparison document, also via the use of corpora. These results should be able to assist the Registrar in the contract-cheating identification process
* The application must be web-based
* During the development phase, statistical analysis and expertise should be essential.
* The development team can build a local corpus of documents to compare and spot contract cheating instead of building a database to store data.

### Interfaces to External Systems

The system shouldn't need to interface with any outside systems at this time. On the other hand, the client's earlier system might be improved upon and given new functionality.

## Points of Contact

Contact the development team:

<https://github.com/ISE-Project-2022/SimiLabs_2022#readme>

For additional information, contact:

Zander Janse van Rensburg: [zander.jansevanrensburg@nwu.ac.za](mailto:zander.jansevanrensburg@nwu.ac.za)

Prof. Neels Kruger: [Neels.Kruger@nwu.ac.za](mailto:Neels.Kruger@nwu.ac.za)

## Reference Documents

The following documents is necessary to gain additional information on the project:

Tender Bid

Project Proposal and Plan

Business Case

Feasibility Study

<https://github.com/ISE-Project-2022/Documentation>

## Abbreviations and Acronyms

## Document Conventions

# GENERAL DESCRIPTION

## Product Context

## User Classes and Characteristics

## Overview of Functional Requirements

## Overview of Data Requirements

## Operating Environment

## General Constraints, Assumptions, Dependencies, Guidelines

## Design and Implementation Constraints

## User Documentation

# REQUIREMENTS

## External Interface Requirements

### User Interfaces

### Hardware Interfaces

### Software Interfaces

### Communications Interfaces

## Functional Requirements

### Template for functional requirements

* **purpose / description**
* **inputs**
* **processing**
* **outputs**

## Performance Requirements

## Security

## Usability

## Other Requirements

1. Analysis Models

List any attached / referenced documentation such as data flow diagrams, class diagrams, state-transition diagrams, entity-relationship diagrams, etc.

| ANALYSIS MODELS | | |
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| DOCUMENT NAME | DESCRIPTION | LOCATION |
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1. Issues List

Detail any unresolved issues.

| ISSUES LIST | | |
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| ISSUE ID | ISSUE DESCRIPTION | STATUS |
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