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**Software Requirements Specification**

Project: Grade Register System

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| **JEZHE S.E.A.** |  | **June 2024** |

**Document file**

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Content

[document SHEET 3](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[Content 4](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[1 Introduction 6](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[1.1 Purpose 6](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[1.2 Scope 6](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[1.3 Involved staff 6](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[1.4 Definitions, acronyms and abbreviations 6](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[1.5 References 6](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[1.6 Summary 6](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[2 general DESCRIPTIOn 7](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[2.1 Product outlook 7](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[2.2 Product functionality 7](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[2.3 User Characteristics 7](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[2.4 Restrictions 7](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[2.5 Assumptions and dependecies 7](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[2.6 Foreseeable evolution of system 7](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[3 Specific requirements 7](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[3.1 Common interface requitements 8](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[**3.1.1 User interfaces 8**](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[**3.1.2 Hardware interfaces 8**](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[**3.1.3 Software interfaces 8**](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[**3.1.4 Communication interfaces 8**](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[3.2 Functional requirements 8](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[**3.2.1 Functional requirement 9**](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[**3.2.2 Functional requirement 9**](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[**3.2.3 Functional requirement 9**](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[**3.2.4 Functional requirement 9**](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[3.3 Non-functional requirements 9](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[**3.3.1 Perfomance requirements 9**](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[**3.3.2 Security 9**](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[**3.3.3 Reliability 9**](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[**3.3.4 Availability 9**](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[**3.3.5 Maintainability 10**](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

[**3.3.6 Portability 10**](file:///C:\IS1_0809_Paco\webs\is1_web\doc\lab\02\plantilla_formato_ieee830.doc)

# Introduction

This document is a Software Requirements Specification for the recording of academic grades. This specification has been structured based on the guidelines given by the IEEE standard Recommended Practice for Software Requirements Specifications ANSI/IEEE 830, 1998.

## Purpose

The purpose of this document is to define the requirements for the Academic Grade Recording system, which will be used to manage and record student grades at an educational institution.

## Scope

Identification of the product(s) to be developed by name. The product to be developed is the Academic Notes Registration System (ANRS). This system is intended to facilitate the management and recording of student grades in an educational institution, providing specific functionalities for teachers, students and administrators.

## Personnel involved

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## Definitions, acronyms and abbreviations

|  |  |
| --- | --- |
| **Name** | **Description** |
| SRS | Software Requirements Document |
| User | You can be a teacher, student, parent or administrator |
| GUI | Graphical User Interface. |
| BD | Database |
| ANRS | Academic Notes Registration System |

## References

|  |  |
| --- | --- |
| **Tittle** | **References** |
| Standard IEEE 830 - 1998 | IEEE |

## Resume

This Software Requirements (SRS) document for the Academic Note Recording System (SRNA) is structured to provide a detailed description of the functional and non-functional requirements of the system.

Each section of the document is designed to address different aspects of the system, from an overview of the product to the specific technical details necessary for its implementation.

The first section introduces it and provides an overview of the system resource specification.

In the second section of the document, a general description of the system is made, in order to know the main functions that it must perform, the associated data and the factors, restrictions, assumptions and dependencies that affect the development, without going into excessive details.

Finally, the third section of the document is the one in which they define

in detail the requirements that the system must satisfy.

# Overview

## Product outlook

The Academic Grade Registration system is an application that is integrated with the institution's existing student management system. It will allow efficient and centralized management of qualifications, accessible through the program.

## Product functionality

## User characteristics

|  |  |
| --- | --- |
| Type of user | Professor |
| Training | Owner |
| Activities | Control and management of the system in general. |

|  |  |
| --- | --- |
| Type of user | Administrator |
| Training | Supervisor |
| Activities | Management of the student system |

|  |  |
| --- | --- |
| Type of user | Student |
| Training | Client |
| Activities | Provide your information to be registered, view your notes. |

|  |  |
| --- | --- |
| Type of user | Parent |
| Training | Client |
| Activities | View the notes. |

## Restrictions

* The system must be available at all times, except during scheduled maintenance windows.
* Must comply with the institution's security and privacy policies.

## Assumptions and dependencies

It is assumed that all users have access to the Internet and that the institution's infrastructure supports the load of concurrent users.

The computers on which the system will be run must meet the requirements

indicated above to guarantee its correct execution.

# Specific requirements

|  |  |  |  |
| --- | --- | --- | --- |
| Requirement number | RF01 | | |
| Requirement name | Grade Management | | |
| Type | Requirement |  | |
| Description | The system must allow each midterm, task, test, exam and final project to be measured by percentages and managed up to a maximum of 10 points in total. | | |
| Details | The system should automatically calculate the total points obtained by each student based on the percentages entered.  Scores must be in the range of 0 to 10. | | |
| Requirement Priority | High/Essential |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Requirement number | RF02 | | |
| Requirement name | Accuracy in Recording Grades | | |
| Type | Requirement |  | |
| Description | The system must prevent unwanted changes to student grades once they are entered, ensuring that grades do not fluctuate incorrectly. | | |
| Details | Ensure that grades entered remain consistent and are not modified without authorization. | | |
| Requirement Priority | High/Essential |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Requirement number | RF03 | | |
| Requirement name | User Authentication | | |
| Type | Requirement |  | |
| Description | Access to the system must be protected by authentication with a username and password, allowing entry only to teachers and/or administration. | | |
| Details | Implement a secure login system with username and password validation.  Teachers and/or administrators must have access to the system. | | |
| Requirement Priority | High/Essential |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Requirement number | RF04 | | |
| Requirement name | Sending Reports at the End of the Partial | | |
| Type | Requirement |  | |
| Description | The system must send a report on the students' grades at the end of each midterm. | | |
| Details | Generate detailed reports at the end of each partial.  The reports must include all the grades obtained by the students during the midterm. | | |
| Requirement Priority | High/Essential |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Requirement number | RF05 | | |
| Requirement name | Efficiency in the Transfer of Qualifications | | |
| Type | Requirement |  | |
| Description | The system must ensure efficient and rapid transfer of qualifications within the platform. | | |
| Details | Ensure that grades are updated and reflected in real time. | | |
| Requirement Priority | Average/Desired |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Requirement number | RF06 | | |
| Requirement name | Student Data Management | | |
| Type | Requirement |  | |
| Description | The system must allow adding, deleting and editing student data and grades. | | |
| Details | Teachers must be able to add new students to the system.  Teachers must be able to remove students from the system.  Teachers must be able to edit students' grades and personal data. | | |
| Requirement Priority | High/Essential |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Requirement number | RF07 | | |
| Requirement name | Student Capacity | | |
| Type | Requirement |  | |
| Description | The system must be able to handle a capacity of between 20 and 30 students per class. | | |
| Details | The interface and database must be optimized to handle up to 30 students per course. | | |
| Requirement Priority | Average/Desired |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Requirement number | RF08 | | |
| Requirement name | System Performance | | |
| Type | Requirement |  | |
| Description | The system must maintain high performance and fast response times, even with the maximum number of concurrent users. | | |
| Details | The system should respond to rating queries in approximately less than 2 seconds. | | |
| Requirement Priority | Average/Desired |  |  |

## Common interface requirements

### User Interfaces

The user interface shall consist of a simple graphical user interface (GUI) with forms for entering student grades, buttons for saving and generating reports, and basic configuration options. The format of the reports generated will be in PDF document format or plain text, showing the grades for each student and the average for each subject.

### Hardware interfaces

For the proposed system it will not be necessary to have such demanding computers, basic features will be required such as:

- Mouse

- Keyboard

- Minimum 2 gb ram memory

- Processor of 1.66 GHz or higher

### Software interfaces

- Operating System: Windows XP or higher

### Communication interfaces

Standard protocols such as HTTP/HTTPS shall be used for web communications, and database specific protocols if integrating with existing school management systems. The application must be able to handle communication errors, such as timeouts or unexpected server responses, to ensure a seamless user experience.

3.2 Functional Requirements

## Functional requirements

### Grade Management

The system must allow the teacher to enter student grades for each subject.

There must be data validation to ensure that the grades entered are numerical and within the valid range (e.g., 0 to 10).

The system should automatically save the grades entered by the teacher to avoid loss of data.

The modification of grades previously entered by the teacher must be allowed.

The system must automatically calculate the average grade for each subject and display it to the teacher

### Report Generation

At the end of each quarter, the system must automatically generate a grade report for each student.

The report should include the student's name, the individual grades for each subject, and the final average.

The reports generated should be in an easy to read and print format, such as PDF or text document.

The system must allow the teacher to review and verify the generated reports before distribution.

### Student Management

The system should allow the teacher to add new students to the system, including their personal information (first name, last name, etc.).

It must be possible to edit and update existing student information, such as changes in enrollment or contact information.

The system should allow the teacher to delete students from the system when necessary, with the option to archive their information.

### System Configuration

There should be a configuration interface where the teacher can adjust the structure of the system, such as the maximum number of students allowed (between 30 and 40 students).

Options should be provided to customize the format of the reports generated, such as the inclusion of school logos or additional information.

The system should allow the administrator to define evaluation periods (quarters, semesters, etc.) and to set deadlines for grade entry.

## Non-functional requirements

### Performance requirements

• The system must efficiently handle a high volume of queries and simultaneous transactions during peak academic activity periods

### Security

• The system must use a secure authentication mechanism based on passwords and usernames to ensure that only authorized users can access the system

• The system must control access to data and functionalities based on user roles.

### Reliability

• A data backup and recovery system must be implemented to ensure the integrity and availability of information in case of system failures.

### Availability

• The system must be available 24/7, except for scheduled maintenance windows, which will be carried out during periods of low academic activity.

### Maintainability

• The system must have clear and updatable documentation to facilitate maintenance operations.

### Portability

• The system will be deployed on the Windows platform.