



# **SOFTWARE REQUIREMENTS SPECIFICATION**



**Quest for knowledge**

**Revision: 0.1**

**Computer Systems Department**

---

May, 2021



## Contents

<b>1.Introduction</b>	<b>4</b>
1.1 Purpose	5
1.2 Scope	5
1.3 Personnel involved	5
1.4 Definitions, acronyms and abbreviations	6
1.5 References	7
1.6 Document overview	7
<b>2.General Description</b>	<b>7</b>
2.1 Product perspective	7
2.2 Product features	8
2.3 User characteristics	8
2.4 Restrictions	9
2.5 Assumptions and dependencies	9
<b>3.Specific requirements</b>	<b>9</b>
3.1 List of user requirements	9
<b>4. Requirements for external interfaces</b>	<b>12</b>
4.1 User interfaces	12
4.2 Hardware interfaces	12
4.3Software interfaces	13
4.4 Communication interfaces	13
<b>5. System requirements</b>	<b>13</b>
5.1 Functional requirements	13
5.2 Non-functional requirements	20
5.2.1 Performance	20
5.2.2 Design constraints	21
5.2.3 System attributes	21
5.2.4 Other requirements	21
<b>5.3 Appendices</b>	<b>21</b>



## Document tab

Date	Revision	Description	Author
13/05/2021	0.1		

Document validated by the parties on date:

Customer	Supplier
<i>Juan Lopez</i>	<i>Daniel Villanueva</i>

## 1.Introduction

In this document that is a Software Requirements Specification (SRS) for the case study of Knowledge Search, which consists of searching for typical together with its annexes, and being able to visualize the content as well as downloading it locally. This specification is structured according to the standards established by IEEE, being more specific the recommended standards for Software Requirements Specification ANSI/IEEE 830 -1998.



## 1.1 Purpose

The purpose of this document is to define the functional and non-functional specifications, which are intended to provide an overview of the development of the web system for searching, viewing, downloading, as well as uploading and deleting topics and their attachments. These will be used entirely by the administrator and partially by the user.

## 1.2 Scope

The requirements specifications are mainly directed to the actions that the administrator can perform, since he has the task of uploading the topics and annexes that are needed or in certain cases delete those that are no longer needed or are obsolete.

## 1.3 Personnel involved

Name	Rodríguez Báez Vanessa Marlenne
Role	Development team
Professional category	Computer systems engineer
Responsibilities	In charge of developing the product requested and established by the client, taking their knowledge to the development area.

Name	Soria Márquez Guillermo
Role	Development team
Professional category	Computer systems engineer
Responsibilities	In charge of developing the product requested and established by the client, taking their knowledge to the development area.

Name	Renteria Sanchez Hector Ivan
Role	Scrum Master



Professional category	Computer systems engineer
Responsibilities	In charge of leading the team establishing the rules and system requirements, in the same way managing the project accompanied by the Product Owner and the development team.

Name	Villanueva Mercado Daniel Alejandro
Role	Product Owner
Professional category	Computer systems engineer
Responsibilities	In charge of project business with clients using the system, the system is also in charge of bringing proposed ideas from clients to the development team.

## 1.4 Definitions, acronyms and abbreviations

Definition
RUS: User requirement.
SRS: Software Requirements Specification.
DB: Data Base.
FTP: File Transfer Protocol.
RF: Functional requirement.
CPU: Central Processing Unit.
PHP: Hypertext Preprocessor.
HTML: HyperText Markup Language.
Kb: Kilobyte.
SQL: Structured Query Language.
ASP: Active Server Pages.
Mb: Megabyte.



GHz: Gigahertz

HUT: Higher University Technician.

DB: Database

## 1.5 References

Reference	Title
IEEE	<i>Standard IEEE 830 - 1998</i>

## 1.6 Document overview

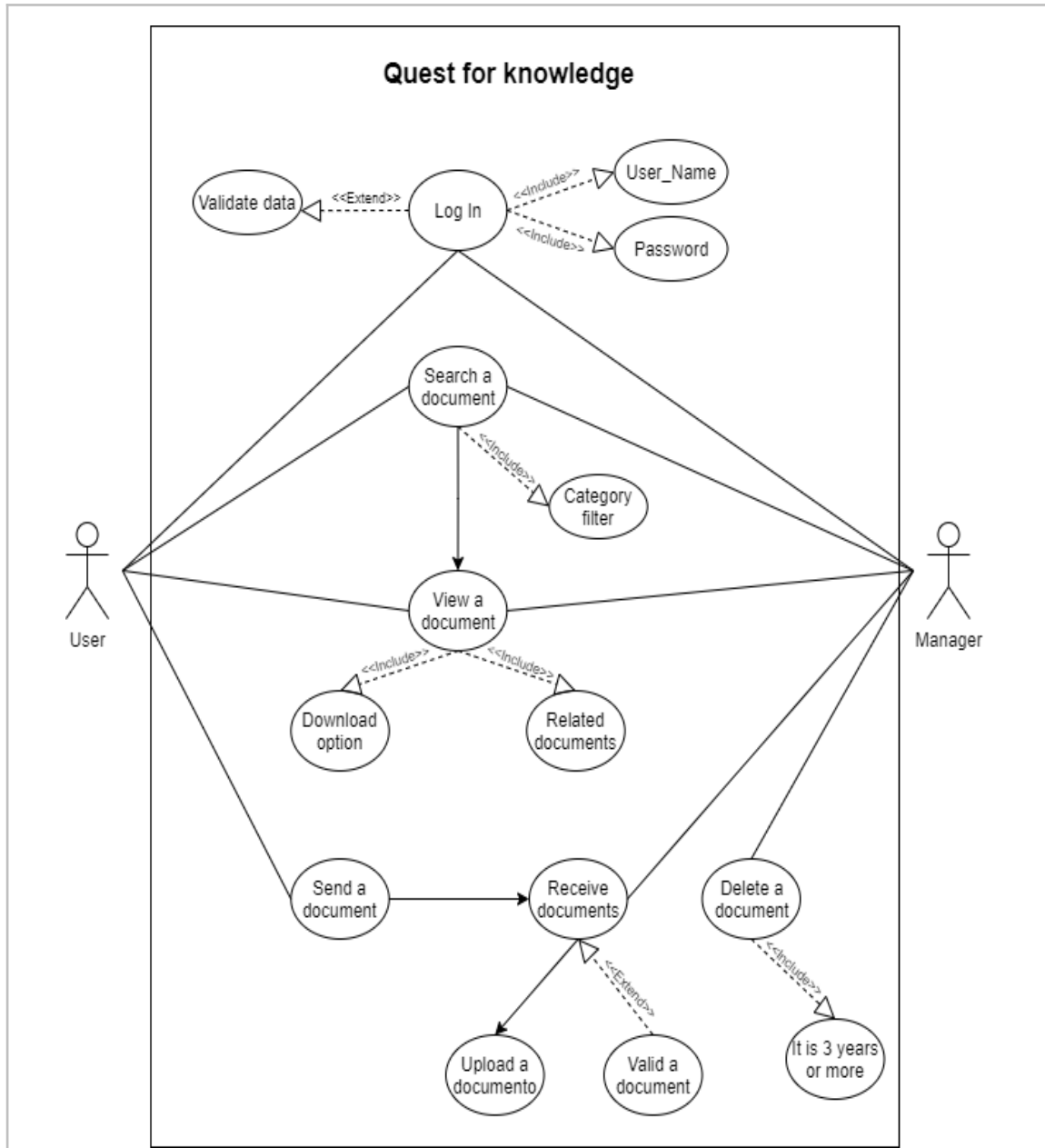
In this document the functional and non-functional requirements of the case study will be presented and explained. As well as the necessary requirements for its operation, such as the user interface, hardware and software that will be needed for the correct use and without complications that the system requires.

# 2.General Description

## 2.1 Product perspective

The case study is a system that will be in a web environment, which aims to be available at all times. So that if a user needs to search for a topic can do so without restrictions of equipment or schedule.

## 2.2 Product features



## 2.3 User characteristics

User type	Administrator
Training	HUT in computer science



Activities	Overall system control and management
------------	---------------------------------------

User type	User
Training	Depends on position
Activities	Search for topics, view their content and download them

## 2.4 Restrictions

- You must have a device with an internet connection.
- Only persons working in the company may enter.
- Only the administrator can upload or delete topics and attachments.
- The system shall be programmed by the established programming languages.
- The system must have a simple and intuitive design for the user.
- The system must support multiple users connected at the same time.
- A specific domain will be used for the web page.

## 2.5 Assumptions and dependencies

- The system must be available at all times.
- The system must be connected to the company's user DB.
- The annexes will be linked to their corresponding topics.

## 3. Specific requirements

### 3.1 List of user requirements

Number	RUS-001	
Name	Document storage	
Type	<input checked="" type="checkbox"/> Requirement	<input type="checkbox"/> Restriction
Description	The system must be capable of storing all the documents that users upload.	





Priority	<input checked="" type="checkbox"/> High / Essential	<input type="checkbox"/> Average / Desired	<input type="checkbox"/> Low / Optional

Number	RUS-002		
Name	Security		
Type	<input checked="" type="checkbox"/> Requirement	<input type="checkbox"/> Restriction	
Description	The system must keep the information of the users as well as that of the documents in a secure way.		
Priority	<input checked="" type="checkbox"/> High / Essential	<input type="checkbox"/> Average / Desired	<input type="checkbox"/> Low / Optional

Number	RUS-003		
Name	User Registration		
Type	<input type="checkbox"/> Requirement	<input checked="" type="checkbox"/> Restriction	
Description	The system must allow to register only the employees of the company with their email.		
Priority	<input checked="" type="checkbox"/> High / Essential	<input type="checkbox"/> Average / Desired	<input type="checkbox"/> Low / Optional

Number	RUS-004	
Name	Administrator role	
Type	<input checked="" type="checkbox"/> Requirement	<input type="checkbox"/> Restriction
Description	The system must have an administrator role that has functions superior to the user such as uploading, deleting and editing documents.	



Priority	<input checked="" type="checkbox"/> High / Essential	<input type="checkbox"/> Average / Desired	<input type="checkbox"/> Low / Optional
----------	--	--	---

Number	RUS-005		
Name	Backup copy		
Type	<input checked="" type="checkbox"/> Requirement	<input type="checkbox"/> Restriction	
Description	The system should perform a backup at least once a week.		
Priority	<input checked="" type="checkbox"/> High / Essential	<input type="checkbox"/> Average / Desired	<input type="checkbox"/> Low / Optional

Number	RUS-006		
Name	Scope of documents		
Type	<input checked="" type="checkbox"/> Requirement	<input type="checkbox"/> Restriction	
Description	The system must allow viewing all the topics stored in the different areas of the company.		
Priority	<input type="checkbox"/> High / Essential	<input checked="" type="checkbox"/> Average / Desired	<input type="checkbox"/> Low / Optional

Number	RUS-007	
Name	Intuitive system	
Type	<input checked="" type="checkbox"/> Requirement	<input type="checkbox"/> Restriction
Description	The system must be intuitive for all kinds of users, thus ensuring their easy adaptability.	



Priority

☐ High / Essential☒ Average / Desired☐ Low / Optional

## 4. Requirements for external interfaces

### 4.1 User interfaces

The user interface will consist of a set of windows with buttons, lists and text fields. It shall be built specifically for the proposed system and shall be visualized from a web browser.

- Buttons
- Peel-off menus
- Informational messages
- Error messages
- Dialog boxes
- Forms for entering, modifying, updating and deleting data. As well as for the operations and the aids mentioned above.

### 4.2 Hardware interfaces

It will be necessary that the user has computer equipment in perfect condition with the following characteristics:

- Network adapters.
- Processor of 1.66GHz or higher.
- Minimum memory of 512 Mb.
- Mouse.
- Keyboard.



### 4.3 Software interfaces

- Operating System: Windows XP or higher
- Browser: Mozilla or Chrome

### 4.4 Communication interfaces

Servers, clients and applications communicate with each other using standard Internet protocols whenever possible. For example, existing protocols should be used to transfer files or documents.

Communication protocols

- POP
- SMTP
- TCP / IP
- FTP
- HTTP

## 5. System requirements

### 5.1 Functional requirements

Number	RF-001	
Name	Search for topics.	
Description	The system will allow more than one search on a topic at a time.	
Preconditions	1) The login requirement must be met. 2) There must be Topics in the database.	
Normal sequence	Step	Action



	1	The user must locate the search bar.	
	2	Locate the name of the topic.	
	3	The topic and related topics are displayed.	
	4	The user will have the option to download the topic or save it.	
Post-condition	1	The system gives you the option to download the topic, save it or return to the main menu.	
Exceptions	Step	Action	
	1	The system should display a message on the screen informing if the topic download was unsuccessful.	
Priority	<input checked="" type="checkbox"/> High/Essential		<input type="checkbox"/> Medium/Wanted <input type="checkbox"/> Low/ Optional

Number	RF-002	
Name	User registration	
Description	Users will register through a platform generating their user names.	
Preconditions	1) The user will be sent a page. 2) The user will register. 3) It is registered in the database.	
Normal sequence	Step	Action
	1	The user will enter his personal data.
	2	The user chooses his or her user name.
	3	The user chooses his password.
	4	The user presses the register button.
Post-condition	The user can correct his personal data.	
Exceptions	Step	Action



	1	Each user may only have one account.	
Priority	<input checked="" type="checkbox"/> High/Essential	<input type="checkbox"/> Medium/Wanted	<input type="checkbox"/> Low/ Optional
Number	RF-003		
Name	User deleted		
Description	The system will delete users who are not active after a certain period of time.		
Preconditions	1) The administrator must be logged in. 2) Login to the user database. 3) Removes inactive users.		
Normal sequence	Step	Action	
	1	The administrator enters the user database.	
	2	Verify that the users are working in the company..	
	3	If the user is inactive for 45 days.	
	4	The administrator deletes inactive users.	
Post-condition	1	Return to the main page.	
Exceptions	Step	Action	
	1	The user will not be removed if he/she is on vacation or incapacitated.	
Priority	<input type="checkbox"/> High/Essential	<input checked="" type="checkbox"/> Medium/Wanted	<input type="checkbox"/> Low/ Optional

Number	RF-004		
Name	Topic downloads.		
Description	The system will allow the user to download any desired topic.		
Preconditions	1) The user must log in. 2) The user must access the storage section. 3) The user will search for a topic..		



Normal sequence	Step	Action		
	1	The user will see a previously saved topic.		
	2	The user will search for a topic.		
	3	By viewing the topic the user will have the option to download.		
	4	The user will press the download button and the download will start.		
Post-condition	1	Once the topic has been downloaded, you will return to the topic display if you wish to download it again.		
Exceptions	Step	Action		
	1	Only one topic can be downloaded at a time.		
Priority	<input checked="" type="checkbox"/> High/Essential		<input type="checkbox"/> Medium/Wanted	<input type="checkbox"/> Low/ Optional

Number	RF-005		
Name	Administrator		
Description	The administrator will be a user with privileges to manage the topics.		
Preconditions	1) The administrator must be registered. 2) The administrator will enter his username and password. 3) The administrator will enter the main page.		
Normal sequence	Step	Action	
	1	The administrator enters his username and password.	
	2	The administrator presses the login button.	
	3	The system verifies the data.	
Post-condition	4	The administrator accesses the main page.	
	1	It will have its own home page.	
	Step	Action	



	1	If the data is wrong, the administrator will have the option to re-enter it.	
Priority	<input checked="" type="checkbox"/> High/Essential	<input type="checkbox"/> Medium/Wanted	<input type="checkbox"/> Low/ Optional

Number	RF-006		
Name	Controlled access		
Description	The system will have verification of each user so that only registered users can log in.		
Preconditions	1) The user enters his data 2) They validate themselves to know if they are employees 3) They enter the platform.		
Normal sequence	Step	Action	
	1	User enters their username.	
	2	User enters their password.	
	3	The system validates the user's data.	
	4	Allows login to the platform.	
Post-condition	1	Enables login to the user's home page.	
Exceptions	Step	Action	
	1	Only allowed to have one user with the same name.	
Priority	<input checked="" type="checkbox"/> High/Essential	<input type="checkbox"/> Medium/Wanted	<input type="checkbox"/> Low/ Optional

Number	RF-007
Name	Modification of topics





Description	The Administrator will be able to modify the topics registered in the platform, actions such as adding a topic, deleting it, among others.		
Preconditions	1) Administrator must be logged in. 2) Enter the topic database. 3) Selects the topic to be modified.		
Normal sequence	Step	Action	
	1	Administrator enters the topic manager.	
	2	Checks if a topic is 3 years old or more published.	
	3	If yes, delete the topic.	
	4	Upload a new topic.	
Post-condition	1	Button back to topic manager.	
Exceptions	Step	Action	
	1	Modifications are at the administrator's discretion.	
Priority	<input type="checkbox"/> High/Essential	<input checked="" type="checkbox"/> Medium/Wanted	<input type="checkbox"/> Low/ Optional

Number	RF-008		
Name	Save a topic		
Description	The user may save any desired topics in storage.		
Preconditions	1) User logs in. 2) User searches for a topic. 3) On the display of a topic will have a save button.		
Normal sequence	Step	Action	
	1	User enters the main page.	
	2	Enter the name of the topic to search for.	
	3	Selects the topic of interest.	



	4	Press the save button.	
Post-condition	1	User returns to the search bar or home page.	
Exceptions	Step	Action	
	1	The system will have a capacity of 500 MB , If the user has no more capacity a notification is sent.	
Priority	<input type="checkbox"/> High/Essential	<input checked="" type="checkbox"/> Medium/Wanted	<input type="checkbox"/> Low/ Optional

Number	RF-009		
Name	Login		
Description	Users must log in to the system with a username and password.		
Preconditions	1) User Must be logged in. 2) Users will enter their username. 3) The user will have to enter his password.		
Normal sequence	Step	Action	
	1	The user will enter his username and password.	
	2	User presses the Login button.	
	3	The system verifies that the data is correct.	
	4	The user accesses the main page of the platform.	
Post-condition	1	On the main page will be the option to logout.	
Exceptions	Step	Action	
	1	In case the user validations are incorrect, you will have an option to re-enter the validations.	
Priority	<input checked="" type="checkbox"/> High/Essential	<input type="checkbox"/> Medium/Wanted	<input type="checkbox"/> Low/ Optional

Number	RF-010
--------	--------



Name	Related topics		
Description	The system shall allow to display topics related to the search title.		
Preconditions	1) Users shall be logged in. 2) On the main page the user will identify the search bar. 3) Once the search bar is identified the user will enter the topic name.		
Normal sequence	Step	Action	
	1	The user will perform a search.	
	2	Select a topic and the system will provide similar topics.	
	3	The user will be able to select any related topic.	
	4	The system will show related topics again.	
Post-condition	1	The user will always have the search bar option.	
Exceptions	Step	Action	
	1	Related topics will depend on the topic of interest while on the platform.	
Priority	<input checked="" type="checkbox"/> High/Essential	<input type="checkbox"/> Medium/Wanted	<input type="checkbox"/> Low/ Optional

## 5.2 Non-functional requirements

### 5.2.1 Performance

At the moment of performing a process, it should not exceed 50% of CPU usage, the memory load should not exceed 20 Kb, 30 Kb.

95% of searches should be performed in less than 10 seconds.

The use of hard disk, CPU, percentage of CPU performance, memory and the optimization of the resources to the maximum, help the performance of the system.



### 5.2.2 Design constraints

**Design Constraints** This section of the software requirements specification document details the requirements related to existing regulations or standards. The design constraints detail what are the limits to perform the application design. The purpose of this set of requirements is not to supplant the design process, they only specify the conditions demanded by the customer either by the project, the environment or other circumstances.

- Application colors based on the company logo.
- User-friendly interface.
- C# programming language.

### 5.2.3 System attributes

The most important attribute that we have decided to give to our system is security, so when a user tries to use the system, he/she must enter his/her name and password, and the system must verify that he/she is an authorized user. Otherwise, if the data entered does not correspond to an authorized user or the password does not match the one stored, an error message will be displayed and this user will not be allowed to enter the system.

### 5.2.4 Other requirements

**Non-functional requirement access:**

- Allows the administrator to restrict access to folders, documents and metadata to certain system users.
- Allows to veto access to the system when an accepted authentication mechanism is not applied and attributed to the user's profile.

## 5.3 Appendices

Web pages are a tool that is coded in a language that is supported by browsers and runs on them. That is, they are a kind of software that you can use by accessing a certain web server through the Internet or an Intranet via a browser that will run the application. But, if you want to know more, stay with us. At Einatec we show you how web applications work in detail. The first thing you should keep in mind is that because web applications run on a web server everything you do in them is processed and stored inside a database by a browser. This way, you don't need to install them on your computer or mobile device.



A website can be used so that the user can access the information it contains in an interactive way. In fact, web applications are specially designed to store data in the cloud. This information is kept stored on web servers and when you need to use it the application sends that data to your computer or mobile devices. For this purpose, it makes temporary copies on the computer or device you are using.

Web applications are composed of three parts:

- **A database:** the database stores just that, all the data, permissions, users, content, information of interest....
- **The application code:** the application itself is hosted on a server in the application cloud, in some cases it can be stored on a local server.
- **Access through the browser:** you can access using a computer or a mobile device through a browser. It includes the administrator or manager who is the end user. He/she will be able to access different sections depending on the permissions he/she has.

To develop web applications, one of the following technologies is usually used:

- SQL Server or MySQL is used for the database.
- ASP.NET or PHP is used for the application.
- Your browser receives the information in HTML5 format.