THE VID OF
KNOWLEDGE

# SOFTWARE REQUIREMENTS SPECIFICATION

## Quest for knowledge

## Revision: 0.1

## Computer Systems Department

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# Contents

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Document validated by the parties on date:

| Customer | Supplier |
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| *Juan Lopez* | *Daniel Villanueva* |

# 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 | *Standard IEEE 830 - 1998* |

## 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 compilations 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



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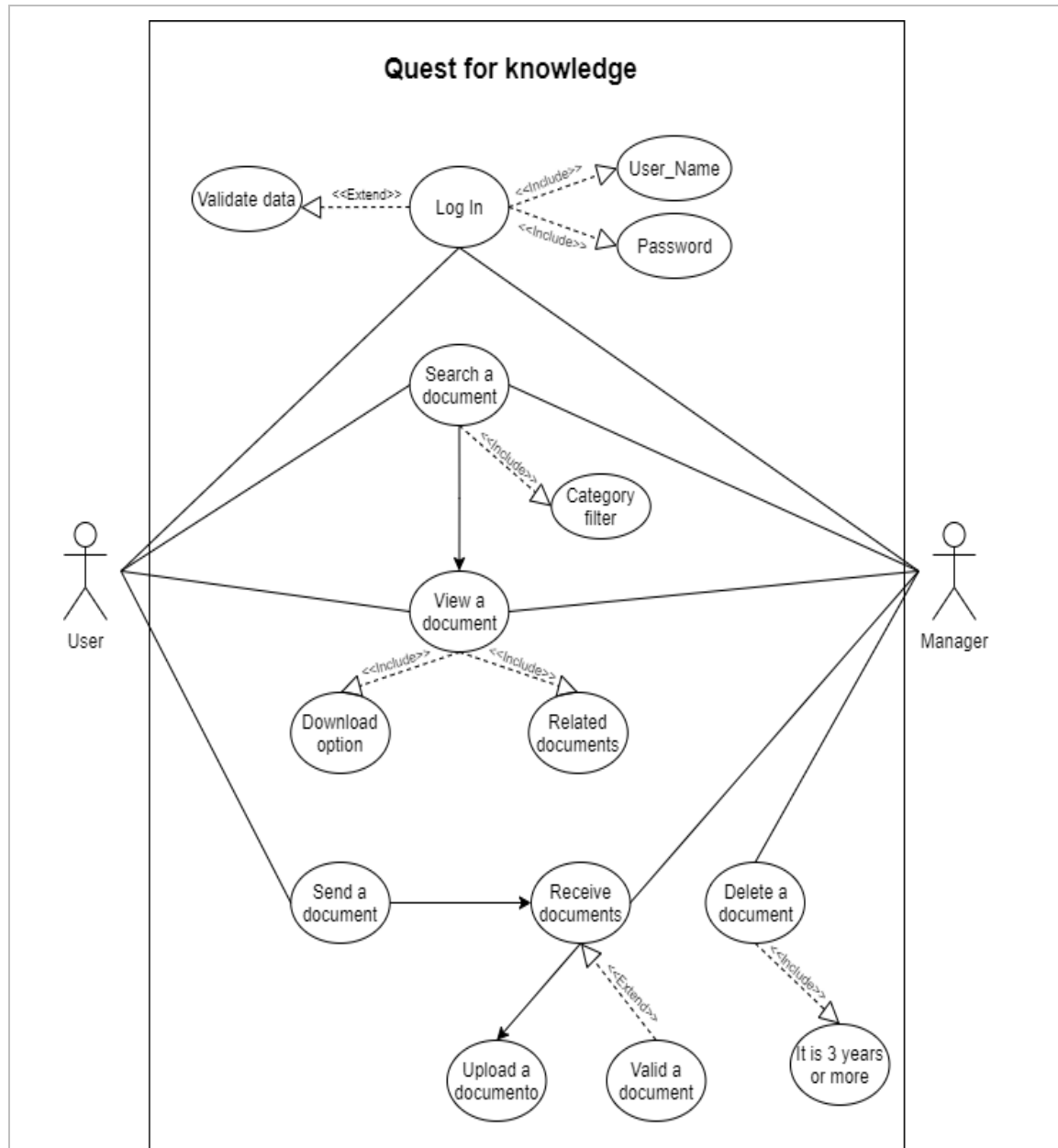
## 2.3 User characteristics

| 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 | ☑Requirement | ☐Restriction | |
| Description | The system must be capable of storing all the documents that users upload. | | |
| Priority | ☑High / Essential | ☐Average / Desired | ☐Low / Optional |

| Number | RUS-002 | |
|---|---|---|
| Name | Security | |
| Type | ☑Requirement | ☐Restriction |
| Description | The system must keep the information of the users as well as that of the documents in a secure way. | |
| Priority | ☑High / Essential | ☐Average / Desired | ☐Low / Optional |

| Number | RUS-003 | |
|---|---|---|
| Name | User Registration | |
| Type | ☐Requirement | ☑Restriction |
| Description | The system must allow to register only the employees of the company with their email. | |
| Priority | ☑High / Essential | ☐Average / Desired | ☐Low / Optional |

| Number | RUS-004 | |
|---|---|---|
| Name | Administrator role | |
| Type | ☑Requirement | ☐Restriction |
| Description | The system must have an administrator role that has functions superior to the user such as uploading, deleting and editing documents. | |
| Priority | ☑High / Essential | ☐Average / Desired | ☐Low / Optional |

| Number | RUS-005 | |
|---|---|---|
| Name | Backup copy | |
| Type | ☑Requirement | ☐Restriction |
| Description | The system should perform a backup at least once a week. | |
| Priority | ☑High / Essential | ☐Average / Desired | ☐Low / Optional |

| Number | RUS-006 | |
|---|---|---|
| Name | Scope of documents | |
| Type | ☑Requirement | ☐Restriction |
| Description | The system must allow viewing all the topics stored in the different areas of the company. | |
| Priority | ☐High / Essential | ☑Average / Desired | ☐Low / Optional |

| Number | RUS-007 | |
|---|---|---|
| Name | Intuitive system | |
| Type | ☑Requirement | ☐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.<br>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 | ☑High/Essential | ☐Medium/Wanted | ☐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.<br>2) The user will register.<br>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 | ☑High/Essential | ☐Medium/Wanted | ☐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 | 1The administrator must be logged in. |

| | 2) Login to the user database.<br>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 | ☐High/Essential | ☑Medium/Wanted | ☐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.<br>2) The user must access the storage section.<br>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 | ☑High/Essential | ☐Medium/Wanted | ☐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. <br> 2) The administrator will enter his username and password. <br> 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. | |
| | 4 | The administrator accesses the main page. | |
| Post-condition | 1 | It will have its own home page. | |
| Exceptions | Step | Action | |
| | 1 | If the data is wrong, the administrator will have the option to re-enter it. | |
| Priority | ☑High/Essential | ☐Medium/Wanted | ☐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<br>2) They validate themselves to know if they are employees<br>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 | ☑High/Essential | ☐Medium/Wanted | ☐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.<br>2) Enter the topic database.<br>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 | ☐ High/Essential | ☑Medium/Wanted ☐Low/ Optional |

| Number | RF-008 | |
|---|---|---|
| Name | Save a topic | |
| Description | The user may save any desired topics in storage. | |
| Preconditions | 1) User logs in. <br> 2) User searches for a topic. <br> 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 | ☐ High/Essential | ☑Medium/Wanted ☐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.<br>2) Users will enter their username.<br>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 | ☑High/Essential | ☐Medium/Wanted | ☐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.<br>2) On the main page the user will identify the search bar.<br>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 | ☑High/Essential | ☐Medium/Wanted ☐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.