SOFTWARE REQUIREMENTS SPECIFICATION

COURSES AND CERTIFICATIONS

Revision: 1.1

Systems and computing department

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Contents

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Date	Revision	Description	Author
05/06/2021	12/06/2021	Requirements specification documentation and the IEEE830 Standard	-Acosta Noriega Saul Eduardo -Hernandez Fernandez Diana -Garza Aguilar Sergio Alberto -Zazueta Lopez Diana

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Client	Supplier
Jaime Leonardo Enriquez Alvarez	Acosta Noriega Saul Eduardo

1. Introduction

This document provides all the information pertinent to the development of the software of courses and certifications, the components and any necessary specifications for a better understanding of the operation and processes that are carried out in it. This specification has been structured based on the guidelines given by the IEEE Recommended Practice for Software Requirement Specifications ANSI / IEEE 830, 1998.

1.1 Purpose

The main purpose is a web platform that can be accessed at any time, different courses will be made available, and upon successful completion of one, you will be awarded an official certification confirming work and dedication, providing a sense of success . While a user is within the platform, they will be able to consult study materials and share ideas and doubts with others, as well as see their most requested progress and courses.

1.2 Scope

- Information is collected through different teachers.
- Improve the user in certain topics that are to their liking.
- Provides security and support at all times.

1.3 Personnel involved

Name	Acosta Noriega Saul Eduardo
Role	Documenter-Analyst
Professional category	Engineering in TIC
Responsibilities	System administration

Name	Garza Aguilar Sergio Alberto
Role	Scrum master
Professional category	ICT Engineering
Responsibilities	Database administration

Name	Hernandez Fernandez Diana
Role	Software developer
Professional category	Systems engineering
Responsibilities	System administration

Name	Zazueta Lopez Diana
Role	Scrum master
Professional category	Systems engineering
Responsibilities	Software Developer - Designer

1.4 Definitions, acronyms and abbreviations

Definition
• **Scrum**: It is a framework for agile software development that has expanded to other industries. It is a process in which a set of good practices is applied on a regular basis to work collaboratively, as a team and obtain the best possible result from projects. • **Master:** With his literal translation of "teacher", he is a professional prepared to carry out a specialization in a given field of study.

1.5 References

Reference	Qualification
01	IEEE830 standard

1.6 Document overview

This document is organized into three main sections, the first includes a brief description of the problem to be addressed and the general context of the organization: in the second part, the motivators of the platform that are a fundamental part of the project are analyzed and in the third part The architecture of the system is proposed and specified in the different points of view through graphic models.

2. General description

2.1 Product perspective

It is planned to implement a system that allows controlling and distributing the courses that are planned to be handled in the company according to their job position that each employee performs during their free time, also that allows increasing the number of clients by providing the service offered by the company, generating more profit from the competition. The information system to be implemented is independent software, since it will not be related to other systems.

2.2 Product functions

Disae is a platform that will enable its users to be trained through electronic courses which will have educational content for a better learning experience.

Within the interface, users will be able to:

Profile

- Personalize your user profile with an image and personal information (name, email, telephone, etc.).
- Share your favorite areas of study.

Take courses

- They will be able to choose from different learning areas based on the catalog.
- Carry out activities established by teachers.
- Take tests to reinforce the learning obtained.
- They can take the courses they want simultaneously.
- Access the content of each course that the teacher will present (documents, presentation, videos, etc.).
- If you cannot continue, you can unsubscribe at any time.
- Evaluate your experience upon completion.
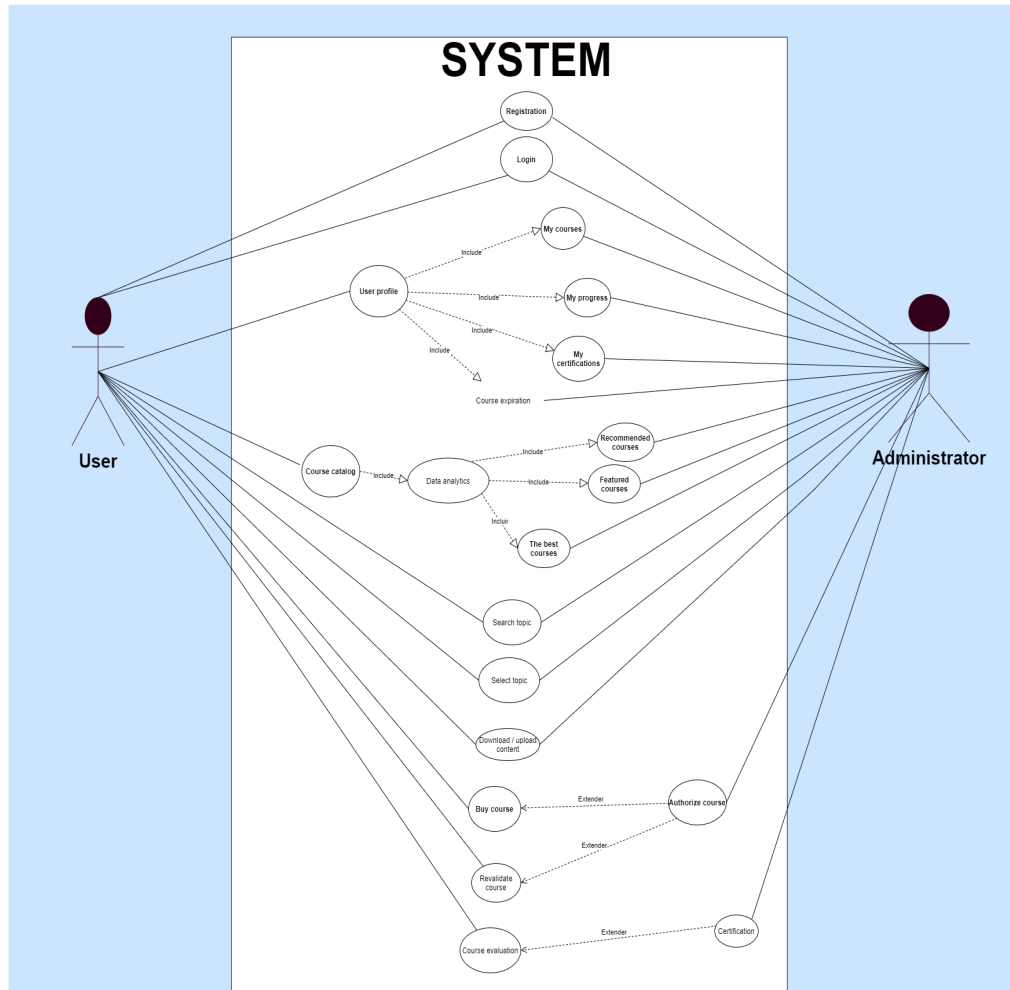- Visualize your progress with metrics that will inform you based on the results obtained.

Participate in forums

- Share knowledge or ideas in a simple way with other users.
- Access the publications of other users to comment.
- Save publications of interest to access them later.
- Search based on date, user, or post title.

Constancy

- The platform will provide you with a certificate of accreditation for each course successfully completed.
- Access to the records for download at any time.

In addition, the system will be available at all times, only by accessing the platform.

2.3 User characteristics

Type of user	Administrator
Training	engineering
Activities	Data manipulation, developer.

Type of user	teacher
Training	Engineering, Teaching.
Activities	Data manipulation, content creation, evaluations.

Type of user	User
Training	Technical
Activities	Use of the system.

2.4 Restrictions

Disae is a platform that requires constant administration due to updating the status of users, so it is necessary to have qualified personnel to carry out these tasks, security is completely managed by the internal control of the company so the User will not have access to course administration options within the platform. The payments made within the platform are based on the prices that the company proposes for its learning services and are not negotiable, the additional charges for the use of cards or electronic wallets are the responsibility of the user.

The content of the platform is managed by the administrator and teachers, so users who publish content within, may only do so in sections established for that purpose and are subject to the rules established by the company, misuse of information or infringement of a rule will be subject to user suspension and content removal.

For the use of the system, prior knowledge in the use of mobile devices and computers is necessary for the user, and teacher, administrators will require the use of programming languages and databases. In order to use the platform, a mobile device or computer with internet access is necessary.

2.5 Assumptions and dependencies

- At the time of delivering the platform, the company has personnel to administer.
- Users have prior knowledge in the use of mobile devices and computers.
- The courses will be owned and administered by the company.
- The content of the platform will be the responsibility of the administration.

## 3.	Specific requirements

3.1 List of user requirements

Number	RUS-001		
Name	Login to the system		
Kind	✅ Requirement	☐ Restriction	
Description	You must enter the system through unique users and passwords; Once the system determines the validity of the user, it will give you access to the platform.		
Priority	✅ High / Essential	☐ Medium / Desired	☐ Low / Optional

Number	RU-002		
Name	Account validation		
Kind	✅ Requirement	☐ Restriction	
Description	The system will send an email to validate the account created on the platform.		
Priority	✅ High / Essential	☐ Medium / Desired	☐ Low / Optional

Number	RU-003		
Name	Print and download the certificate		
Kind	✅ Requirement	☐ Restriction	
Description	The user can print and save his certificate in the device that this is, only if the evaluation is approved.		

Priority	☐ High / Essential	✅ Average / Desired	☐ Low / Optional

Number	**RU-004**	
Name	User register	
Kind	✅Requirement	☐ Restriction
Description	Only users that already exist in the company database can be created.	
Priority	✅High / Essential	☐ Medium / Desired ☐ Low / Optional

4. Requirements for external interfaces

4.1 User interfaces

The user interface must have a defined style, it must also have a simple handling incorporating navbar, buttons, courses, notifications, it must be built with web technologies.

4.2 Hardware interfaces

You must have the minimum requirements for navigation in the interface:

- 4GB RAM
- 3 GHz processor
- 2GB of available hard disk
- Network / Wifi adapter

4.3 Software interfaces

You must have the following software requirements to use the system:

- Windows, Linux, MacOS operating system.
- Firefox, Chrome or internet explorer browser.

4.4 Communication interfaces

An internet connection must be established in order to interact with the system:

- Internet Protocol TCP / IP.

5. System Requirements

It will be a system of easy access to courses that does not require face-to-face contact, it will offer work personnel their own username and password so that they can access the platform and take their respective courses, the progress of the course, certifications will be seen within the platform achieved, progress of the course, notifications of new courses, etc.

There will also be a help section that will be available 24/7 in order to provide support in case of an inconvenience or failure of the platform.

5.1 Functional requirements

Number	RF-001	
Name	Course	
Description	When selecting a course, the user must have the option to: take course, revalidate course, view course progress, upcoming reviews and view course expiration.	
Preconditions	The user logged in successfully and is on the "Catalog" screen	
Normal sequence	He passed	Action
	1	User selects a course from the catalog
	2	The system shows the user the option to: take course, revalidate course, view course progress, upcoming reviews and view course expiration.
	3	The user chooses an option and the system shows him the corresponding according to what he chose.
Postcondition		The system gives the user the option to return to the catalog once they are in a course.
Exceptions	He passed	Action
	1	The system will display the course information if the user does not select it correctly.

	2	The user selects the wrong course and the system gives them the option to return.
Priority	☐ High / Essential	✅ Average / Desired	☐ Low / Optional

Number	RF-002	
Name	User register	
Description	The system must allow the user to fill out a form with personal data.	
Preconditions	The user must enter the necessary data on the platform in order to successfully register.	
Normal sequence	**He passed**	**Action**
	1	When registering a new user in the system, the administrator must previously have the same data
	2	When consulting, updating or deleting a user, the administrator must have their identification number.
	3	The administrator will need to access the user interface.
Postcondition		The platform will notify you if your registration was successful.
Exceptions	**He passed**	**Action**
	1	The administrator does not authorize the user to register.
	2	The user does not enter the data correctly and the system rejects the registration until the data is entered correctly.
Priority	✅ High / Essential	☐ Medium / Desired ☐ Low / Optional

Number	RF-003
Name	Certification
Description	The course teacher must take an exam, which the user must answer and, according to the established qualification, the certification will be given or denied.
Preconditions	The user must finish the course.

Normal sequence	He passed	Action
	1	The teacher adds the course exam to the system.
	2	The user answers the form (Exam) and sends it to be reviewed.
	3	The teacher sends the qualification to the user on his exam, in case of being approved, his certificate is sent to him.
Postcondition		The user successfully completes the course.
Exceptions	He passed	Action
	1	The user did not pass the exam and has the right to repeat the course.
	2	The teacher incorrectly grades the exam and must re-grade the exam.
Priority	✅ High / Essential	☐ Medium / Desired ☐ Low / Optional

Number	RF-005	
Name	Help	
Description	The system will have a help section to offer better customer service.	
Preconditions	The user does not know how to enter a course.	
Normal sequence	He passed	Action
	1	The user has doubts about a course.
	2	The user looks for his question in the most frequent
	3	The user reads the response from the system
Postcondition		The platform solves user doubts

Exceptions	He passed	Action
	1	The system does not have the user's question in its answers.
	2	The user decides not to use the platform again.

Priority	✅ High / Essential	☐ Medium / Desired	☐ Low / Optional

Number	RF-006
Name	User login
Description	The software must be able to output the progress that the user takes in the course they have selected.
Preconditions	The user will have to be active in a course.

Normal sequence	He passed	Action
	1	The user must enter the "user profile" section.
	2	The user must press the button "My progress"
	3	The user will view their progress.

Postcondition		The system gives the user the option to download their progress.

Exceptions	He passed	Action
	1	The user has not registered for a course.
	2	The system should show a message if there is an error in its progress.

Priority	☐ High / Essential	✅ Average / Desired	☐ Low / Optional

5.2 Non-functional requirements

5.2.1 Performance

- Modified data in the database must be updated for all accessing users in less than 2 seconds.
- The system must have a maximum response time of 5 seconds for any query operation.
- Ensure that the design of the queries or other process does not affect the performance of the database, nor significantly the traffic of the network.

5.2.2 Design constraints

The system will be subject to certain provisions for its design, which are the following points:

- It will be developed with an MVC software architecture (view controller).
- Based on the technologies necessary for its development, javascript will be handled.
- As a design tool for html views.

5.2.3 System attributes

Safety

- Guarantee the reliability, security and performance of the system to the different users. In this sense, the information stored or records made may be consulted and updated permanently and simultaneously, without affecting the response time.
- Guarantee the security of the system with respect to the information and data that are handled such as documents, files and passwords, which will be implemented by means of a login and password in the system.

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Reliability

- The system must have an intuitive, attractive and easy-to-use interface with minimalist colors.
- The user interface must conform to the characteristics of the institution's website, within which the system of courses and certifications will be incorporated.

Availability

- The availability of the system must be continuous with a level of service for users of 7 days for 24 hours, guaranteeing an adequate scheme that allows the possible failure of any of its components.
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Maintainability

- The system must have easily updateable documentation that allows maintenance operations to be carried out with the least possible effort.
- The interface must be complemented with a good help system (administration may fall to personnel with little experience in the use of computer applications).

Portability

- The system will be implemented under the Windows platform.

5.2.4 Other requirements

Technical restriction

- The system must be compatible with browsers Firefox, Chrome or internet explorer browser ..

5.3 Appendices

Interview

Interview protocol for the client.

Tijuana Baja California . March 10, 2021. Participant # 1.

Participant demographic data.

Age: 40 years

Gender: Male

Place of residence: Tijuana
Occupation: Professor at the Instituto Tecnológico de Tijuana university.

II.Introduction

Hello good afternoon, we are a work team called Disae and we would like to ask you some questions about what your company would like for an online platform of courses and certifications, in order to gather the necessary characteristics to develop it correctly, meeting expectations of clients, the interview will last approximately 20 minutes.

III. Questions section.

Starting

1. Who would you like this platform to target?

Students or workers from technical levels to engineering and training courses

postgraduate.

2. What purpose would you like us to serve in creating the course and certification platform?

Obtain a certificate or proof of accreditation that you can wear and shine before the

the rest.

3. What are the special features that you would like the platform to have?

Download the pdf files, Possibility to add an alias or a nickname

4. Do you have any specific requirements? Justify your answer.

You must connect to the user records, to obtain the data you already have.

Updates, downloads and user updates. Through requests,

will consider whether to accept it or not.

Interface

5. What aspects do you do to make a platform attractive? Mention a few (for example, elegant, colorful, etc.)

Muted colors, with a minimalist approach.

6. What aspects or information would you like to highlight in the interface?

The most requested courses and the next or next reviews.

7. What information would you like to be visible to users and what information to be visible to administrators?

Administrators will have a database and users will only be able to see the

data desired by administrators.

8. Would you like the course through videos and at the end an exam or all the theoretical ones?

Videos and short documents, mainly power point presentations

9. Based on the way you envision your platform, have you had experience with a similar one?

Yes, ASM Educational Center

Functionality

10. What data do you think is needed to register a user?

Name and surname.

Date of birth.

Email.

Telephone.

Employee ID (active in the company).

11. Register new users?

The system must connect to an existing company database to avoid

re-entering the large amount of data we have internally.

12. Do you think it is necessary to have a deadline to enroll in a course or should it be open to enroll at any time for those who are interested?

If, on the basis that the courses are going to progress, it is necessary to establish deadlines

before they can enter.

13. How do you foresee that the participants in the courses will be evaluated?

Through exams.

14. Do you think it is necessary to show the progress of the course through a percentage? Why?

Yes, so that the user can validate the progress they have

Suggestions

15. Do you have any suggestions or comments to help you achieve the goal of the platform?

That there are no limits on the platform to publish, so that it generates more

knowledge. And that you can comment on the posts of others

users as a thank you that this information has helped you.

Thank you very much for answering these brief questions, your answers will help us a lot in the development stage, we continue in communication, in the same way if you need something we are here to serve you.

6. Conclusions

Name	Conclusion
Acosta Noriega Saul Eduardo	The IEEE 830 standard establishes a considerable improvement when it comes to information overview and display. The organization with which it is developed and the way in which it is reflected is an efficient way of uncomplexing the development process of a software project for a person who is not familiar with the technological field and requires an understanding of the context of this work.
Garza Aguilar Sergio Alberto	This document has the premise of knowing all the points that have been elaborated for the development of the software solution, in this case study it was necessary to take into account various points to specify requirements and functions within the platform, the client will be able to know also the limitations of the system, as well as differentiating the types of users contemplated for the development in which it is disassembled and explained point by point, making known the programming languages and databases that will be used. Everything elaborated here is a set of information that has taken shape based on the case study "courses and certifications".
Hernandez Fernandez Diana	The document was proposed in IEEE 830

	format since it is focused on practical recommendations for the specification of requirements indicating the structure and organization of all the information that must be included so that it is complete, without leaving data out.
Zazueta Lopez Diana	As is known, the good specification of requirements is essential for the correct development of the application, which is why the documentation was developed with the IEEE830 Standard since it is important to help customers to accurately describe what they want in the software and people In charge of receiving this information, establish a standard structure for the specification of software requirements (ERS) in their organizations.

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