Learning Hub Web Application

Software Requirements Specification

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Revision History

Name	Date	Version	Revision Date
Yara Emad **Fatma Mekhemer**	9/4/2022	1.0	14/4/2022
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1.   Introduction

1.1   Purpose

This project has been prepared to output as an online free encyclopedia web application. The app aims to help users to get and reach the latest articles, the users can explore and receive knowledge in different life domains, and they can also contribute and share their knowledge

1.2   Intended Audience and Reading suggestions

While the software requirement specification (SRS) document is written for a more general audience, this document is intended for individuals directly involved in the development of Encyclopedia. This includes software developers, project consultants, and team managers. This document need not be read sequentially; users are encouraged to jump to any section they find relevant. Below is a brief overview of each part of the document:

1.2.1   Introduction
This section offers a summary of the encyclopedia project, including goals and objectives, project scope, general system details, and some major constraints associated with the intended platform.

1.2.2   Overall Description
This section describes the overall description of the Encyclopedia system including product perspective, product features, the operating environment, design and implementation constraints, the user documentation and assumptions and dependencies.

1.2.3   System features (functional requirements)
This section covers all the details related to the structure of the functional requirements

1.2.4   External Interface Requirements
This section describes the interfaces requirements which could be user interfaces, Software interfaces, Hardware interfaces.

1.2.5   Non-Functional Requirements

This section covers all the details related to the structure of the non-functional requirements, including performance requirements, safety requirements, security requirements and software quality requirements.

1.2.6   Other Requirements

This section defines any other requirements not covered elsewhere in the SRS. This might include database requirements, legal requirements, design constraints for the project, and so on

1.3   Project Scope

This software system will be a web app that will act as an online free encyclopedia. This system will be designed to host tons of information by providing articles in different categories and navigate between different categories.

More specifically, this system is designed to allow a user to view articles, he can publish an article, upload videos and voice recordings, and he can also follow specific category to get notifications whenever any article is added in that category by any user.

2.   Overall Description

2.1   Product Perspective

It is a web-based system, The encyclopedia System provides a simple mechanism for users to receive and explore knowledge and contribute and share knowledge in different life domain. The following are the main features that are included in encyclopedia System:

- **User account:** The system allows the user to create their accounts in the system and provide features of viewing articles.
- **Publish articles** provides users the accessibility of uploading articles once he logged in.
- **Uploading video and voice recordings:** Allow users to upload videos and voice notes but he must log in first.
- **Following a category:** Allow users to follow specific category to get notifications whenever any article added in that category by any user once he logged in.

- **Number of users being supported by the system:** Though the number is precisely not mentioned but the system is able to support many online users at a time.

2.2   Product Features

2.2.1   Functional Requirements

2.2.1.1   User

- Functional Requirement 1 (User Register) -> The user creates an account to perform specific functionalities.

- Functional Requirement 2 (Login) -> The user login to the system by entering his/her username and password.

- Functional Requirement 3 (Logout) -> The user log out from his/her own account in the system.

- Functional Requirement 4 (Choose a Category) -> The user choose a specific category from a drop-down list.

- Functional Requirement 5 (Publish an article) -> The user can publish his/her own article in a specific category, but he must log in first.

- Functional Requirement 6 (Upload Video) -> The user can upload video in a specific category, but he must log in first.

- Functional Requirement 7 (Upload Voice) -> The user can upload voice recordings on the web application.

- Functional Requirement 8 (Follow Specific Category) -> The user can follow specific categories and so later he can receive notification if any new article is added to those specific categories.

- Functional Requirement 9 (Notify User About New Article) -> The user receives notification when any new article is added to any of the categories that he followed.

- Functional Requirement 10 (Choose Language) -> The user can choose the desired language they needed form the list of language.

2.2.1.2   Admin

- Functional Requirement 11 (Delete User Account) -> The admin can delete any user account.

- Functional Requirement 12 (Delete User Content) -> The admin can delete any content that the user adds to the web application (Videos, Records or Articles) that violates the rules of the system.

2.3   Operating Environment

Operating environment for the Encyclopedia Web Application is as listed below.
- Operating system: Windows/OS.
- Database: phpMyAdmin XAMPP.
- Platform: .Net
- Frontend: HTML, CSS, JavaScript.

2.4   Design and Implementation Constrains

This system is provisioned to be built on the .Net framework which is highly flexible. Decision regarding which database to use should be taken since data being exchanged or stored is large, and the appropriate data management system will yield efficient performance.

No.	Area	Constrains	Comments
1	Project Scope	Project is a web-based application.	Understood and agreed
2	Non-functional Requirements	Project is PC-based only and compatible with all OS of devices	Understood and agreed
3	Database	User IDs are unique and auto generated by DB	Understood and agreed
4	Functional Requirements	2 Admin features are supported and described in functional Requirements.	Understood and agreed

2.5   Assumptions and Dependencies

2.5.1   Assumptions

No.	Assumptions	To Be Validated	Status	Comments
1	User Password must contain more than 8 characters with a pattern ("^(?=.\d)(?=.[a-z])(?=.*[A-Z]).{8,20}$")	Esraa Abdelhallem Maha Mohamed	Closed	Agreed

2	Video size is 1min minimum and 2 mins max with no specific extensions	Esraa Abdelhallem Radwa Kamal	Closed	Agreed
3	Voice recorded size uploaded must be a 30 sec to 1 min with ("mp3") extension	Esraa Abdelhallem Rana Mostafa	Closed	Agreed

2.5.2 Dependencies

Function	Depend on
FR1_U	None
FR2_AU	FR1_U
FR3_AU	FR2_AU
FR4_U	None
FR5_U	FR2_AU
FR6_U	FR2_AU
FR7_U	FR2_AU
FR8_U	FR2_AU
FR9_U	FR8_U, FR2_U
FR10_U	FR1_U
FR11_A	FR2_U
FR12_A	FR2_U

3. System Features [Functional Requirements]

3.1 User

3.1.1 System Feature 1

ID: FR1_U
Title: Register user.

3.1.1.1 Description and Priority

Description: The user shall create an account to perform specific functionalities. The creation of an account requires (Email, username (special characters are not allowed), Strong Password (not less than 8 characters, at least one special character, upper and lower cases, and numbers), Confirm Password).

Priority: High.

3.1.1.2   Stimulus/Response Sequences

Stimulus sequences:

1. User will navigate to the Encyclopedia web application.
2. User tries to access the specific functionality without creating an account and the system alerts that the user should register first if he/she does not have an account.
3. User navigates through the web application and clicks on the register button.
4. User enters the required fields.
5. User clicks on the submit button.

Response sequences:

1. If the required fields are valid the system will respond with a message that the account is created successfully.
2. In case any Invalid field is entered the system shall alerts the user to enter a valid data.
3. In case of poor connection, the system may give an error message that sign up process failed.

Dependency: None.

3.1.2   System Feature 2

ID: FR2_AU
Title: Login

3.1.2.1   Description and Priority

Description: The user shall be able to login to the system by entering his/her username and password**.**

Priority: High.

3.1.2.2   Stimulus/Response Sequences

Stimulus sequences:

1. User/Admin will navigate to the Encyclopedia website
2. User/Admin tries to access the specific functionality without logging in and the system alerts that the user should login if there is a created account.
3. User/Admin navigates through the web application and clicks on the Login button.

4. User/Admin enters the required fields.
5. User/Admin clicks on the submit button.

Response sequences:
1. If the required fields are valid the system will respond with a message that the user is logged in successfully.
2. In case any Invalid field is entered the system shall alerts the user to enter a valid data.
3. In case of poor connection, the system may give an error message that login process failed.

Dependency: FR1_U (for users only).

3.1.3   System Feature 3
ID: FR3_AU
Title: Log out

3.1.3.1   Description and Priority
Description: The user shall be able to log out from his/her own account in the system.

Priority: High.

3.1.3.2   Stimulus/Response Sequences
Stimulus sequences:
1. User/Admin is logged in the system.
2. User/Admin navigates through the website to log out.
3. User/Admin clicks on log out button.

Response sequences:
1. The system will log out successfully.
2. In case of poor connection, the system may give an error message that log out process failed.

Dependency: FR2_AU.

3.1.4   System Feature 4
ID: FR4_U
Title: Choose a Category

3.1.4.1   Description and Priority

Description: The user shall navigate through the system to choose for a specific Category by choosing the category name from a drop-down list through the website.

Priority: High.

3.1.4.2   Stimulus/Response Sequences

Stimulus sequences:
1. User opens the Encyclopedia website.
2. Click on the category drop-down list.
3. Choose the category name
4. Click on Go button.

Response sequences:
1. After clicking on the category, the system shall open the category that the user searched for.
2. In case the user searched for a category that is not found, the system shall alert a message that no such a category found.
3. In case of poor connection, the system may give an error message that the process failed.

Dependency: None.

3.1.5   System Feature 5

ID: FR5_U
Title: Publish an article

3.1.5.1   Description and Priority

Description: The user shall log into his/her account to be able to publish his own article in a specific category.

Priority: High.

3.1.5.2   Stimulus/Response Sequences

Stimulus sequences:
1. User opens the Encyclopedia website.

2. User log into his/her own account by entering username and password.
3. User clicks on the category that he wants to publish the article in it.
4. User clicks on publish article button.
5. User chooses the article.
6. User clicks Submit.

Response sequences:
1. When the article is submitted, the system shall give a message that the article is published successfully and appears on the system.
2. In case of poor connection, the system may give an error message that the process of publishing the article failed.

Dependency: FR2_AU (for users only).

3.1.6   System Feature 6
ID: FR6_U
Title: Upload Video

3.1.6.1   Description and Priority
Description: The user shall log into his/her account to be able to upload video in a specific category, also the video should not exceed two minutes.

Priority: High.

3.1.6.2   Stimulus/Response Sequences
Stimulus sequences:
1. User opens the Encyclopedia website
2. User log into his/her own account by entering username and password
3. User clicks on the category that he wants to upload video in it
4. User clicks on upload video button
5. User chooses the video
6. User clicks Submit

Response sequences:
1. When the video is uploaded, the system shall give a message that the video is uploaded successfully and appears on the system
2. In case of poor connection, the system may give an error message that the process of uploading the video failed

3. In case the video exceeds two minutes, the system shall alert the user by giving him two options either by cutting the video in to several videos or by canceling the uploading process.

Dependency: FR2_AU (for users only).

3.1.7   System Feature 7

ID: FR7_U
Title: Upload Voice

3.1.7.1   Description and Priority

Description: The User should be able to upload voice record on the web application.

Priority: High.

3.1.7.2   Stimulus/Response Sequences

Stimulus sequences:
1. User is logged in the system.
2. User navigates through the web application to show the categories.
3. User clicks on the voice record button to start Upload.

Response sequences:
1. If the user logged in and clicked on the voice record button and start uploading this record shall be added successfully to the web application.
2. If the user after logged in tries to upload voice record and he/she cannot, the system shall alert message that there is something wrong with the system.

Dependency: FR2_U.

3.1.8   System Feature 8

ID: FR8_U.
Title: Follow specific categories.

3.1.8.1   Description and Priority

Description: The User should be able to follow specific categories and receive a notify message after this article added to the system**.**

Priority: Medium.

3.1.8.2 Stimulus/Response Sequences

Stimulus sequences:
1. User is logged in the system.
2. User navigates through the web application to show the categories.
3. User clicks on the follow button to follow specific categories.

Response sequences:
1. If the user logged in and clicked on the follow button for specific categories the user shall receive any new article that is added to this category that he/she follows.
2. If the user after logged in cannot receive notification after a new article is added to his/her following category the system shall alert message that there is something wrong with the system.

Dependency: FR2_U.

3.1.9 System Feature 9

ID: FR9_U.
Title: Notify user about new articles.

3.1.9.1 Description and Priority

Description: The User should receive notification about any new articles that are added to the categories that this user is following.

Priority: Medium.

3.1.9.2 Stimulus/Response Sequences

Stimulus sequences:
1. User is logged in the system.
2. User navigates through the website to show the notifications.
3. User clicks on notification button.
4. User click on the newest article that added to the web application.

Response sequences:
1. If the user logged in and clicked the notification button to show the newest article this article should appear successfully in the web application.

2. If the user after logged in cannot show the notification message that there is a new article added to the web application the system shall alert message that there is something wrong with the system.

Dependency: FR8_U, FR2_U.

3.1.10   System Feature 10
ID: FR10_U.
Title: Choose Language.

3.1.10.1   Description and Priority
Description: The User should be able to switch from English language to Arabic language.

Priority: Low.

3.1.10.2   Stimulus/Response Sequences
Stimulus sequences:
1. User is logged in the system
2. User navigates through the website to show the Language section
3. User clicks on Language button
4. User click on the desired language

Response sequences:
1. If the user logged in and clicked the language button to show the available languages this list should appear successfully in the web application.
2. If the user after logged in cannot show the available languages the system shall alert message that there is something wrong with the system.

Dependency: FR1_U.

3.2   Admin

3.2.1   System Feature 11
ID: FR11_A.
Title: Delete user Account.

3.2.1.1   Description and Priority

Description: The Admin shall be able to delete any user account.

Priority: Medium.

3.2.1.2   Stimulus/Response Sequences

Stimulus sequences:
1. Admin will navigate to the Encyclopedia web Application.
2. Admin should be logged in to the system.
3. Admin chooses a specific user account to delete it.
4. Admin then click on the delete button.

Response sequences:
1. If the admin logged in and chooses to delete a specific user account a message should appear that this user deleted successfully from the web application.
2. If the admin after logging in cannot delete a specific user the system shall alert message that there is something wrong with the system due to poor connection.

Dependency: FR2_U.

3.2.2   System Feature 12

ID: FR12_A.
Title: Delete user Content.

3.2.2.1   Description and Priority

Description: The Admin shall be able to delete any content that the user adds to the web application like (upload videos, upload records, publish article to specific category) that violates the rules of the system.

Priority: Medium.

3.2.2.2   Stimulus/Response Sequences

Stimulus sequences:
1. Admin will navigate to the Encyclopedia web Application.
2. Admin should be logged in to the system.
3. Admin navigate to a specific user account to delete specific content.
4. Admin click delete button on specific content.

Response sequences:

1. If the admin logged in and chooses a specific account to delete specific content from it the system should show a message that this content is deleted.

2. If the admin after logging in cannot delete specific content for a specific user the system shall send an alert message that there is something wrong with the system due to poor connection.

Dependency: FR2_U.

4. Specific Requirements

This section contains the specific requirements of the system, to define completely the system, the requirement should be, when possible:

- **Correct:** the requirement shall represent a real need for the system.
- **Not Ambiguous**: each requirement shall have only one possible interpretation.
- **Complete:** the requirements shall cover all the possible system responses.
- **Consistent:** the requirements shall not be contradictory.
- **Classified:** the requirements shall be classified considering the importance of each of them.
- **Verifiable:** a requirement is verifiable if there is a finite, not expensive process to verify it.
- **Modifiable:** a requirement should be modifiable in an easy, complete and consistent way.
- **Traceable:** a requirement is traceable if its origin is known and is easy to reference it.

5. External Interface Requirements

This section of the SRS describes the interface requirements for the system. Requirements for user, hardware and software interfaces are defined.

5.1 User Interfaces

The application GUI provides menus, toolbars, buttons, containers, grids allowing for easy control by a keyboard and a mouse.

ID: UIR01

Name: Fast information access
Description: The User/Admin shall be able to access all the information in two clicks or less once he/she is logged in.
Priority: Medium
Stability: Stable
Verifiability: Verifiable

ID: UIR02
Name: Familiar input to the user
Description: The input actions shall be the standard web application development actions
Priority: Medium
Stability: Stable
Verifiability: Verifiable

ID: UIR03
Name: Familiar output to the user
Description: The web application output shall be the web application development standard output.
Priority: Medium
Stability: Stable
Verifiability: Verifiable

ID: UIR04
Name: Navigation
Description: The User shall be able to go to the next and previous page in the hierarchy level of the web application.
Priority: High
Stability: Stable
Verifiability: Verifiable

ID: UIR05
Name: Loading Symbol
Description: The User shall be able to show a loading icon if the operation to perform last longer than 1 second.
Priority: Low
Stability: Stable
Verifiability: Verifiable

5.2   Hardware Interface

ID: HIR01
Name: Using Sound System
Description: The User shall be able to hear the voices of the video or voice record after 2 clicks or less on the required button.
Priority: High
Stability: Stable
Verifiability: Verifiable

ID: HIR02
Name: Using Keyboard
Description: The User shall be able to access the keyboard to be able to write articles.
Priority: High
Stability: Stable
Verifiability: Verifiable

5.3   Software Interface

This section describes the software interface specific requirements for the Encyclopedia web application.

ID: SIR01
Name: Database Connectors
Description: The Cloud services shall connect to each database with a specific connector**.**
Priority: NA
Stability: Not Stable
Verifiability: Verifiable

6.   Nonfunctional Requirements

6.1   Performance Requirements

- After writing the correct username and password the login process should take only 10 seconds,
- While in Register it should only take few seconds to make sure that the email isn't already existed before.

- The system shall take no more than 10 seconds to respond to the user.
- System should upload 1000 pictures per second.

6.2   Security Requirements

- The access permissions for system data may only be changed by the system's data administrator.
- All system data must be backed up every 24 hours and the Backup copies stored in a secure location which is not in the same building as the system.
- All Admin and users Data must be encrypted.

6.3   Software Quality Attributes

6.3.1   Usability

- Well-structured user manuals.
- Informative error messages.
- Help facilities.
- Well-formed graphical user interfaces

6.3.2   Reliability

- The system's downtime should not be more than ten minutes per month.

6.3.3   Portability

- The system should support almost all the browsers due to it is Web application (Internet Explorer, Safari, Chrome, and Firefox).

6.3.4   Compatibility

- The system should support almost all the operating systems due to it is PC based (Android, IOS).

6.3.5   Availability

- The Encyclopedia System should be available 99% at 24 hours per day.

7.   Other Requirements

7.1   Database Requirements:

Database will be created on phpMyAdmin XAMPP is an open-source server set up to test the projects on a local server before making it available to everyone over the web. This web app development server comes pre-installed with Apache web server, MySQL database, PHP, and Perl that help you build an offline application with desired features and functions. The disk space on XAMPP Server (phpMyAdmin) should always be at least 10GB available.

7.2   Legal Requirements:

Inappropriate content violates the system rules. Therefore, it will be deleted immediately by the admin and the user will be notified.

7.3   Design Constraints:

The system is provisioned to build A list of compatible browsers are supported by the web application (Chrome, Firefox, Internet E and Internet Explorer).

7.3.1   Client Side:

The installed Memory on each Web Front End server should be at least 32GB using HTML, CSS, and JS technologies.

7.3.2   Server Side:

Backend technologies used are C#, .Net technologies and XAMPP server for database.