Learning Hub Web Application

Software Requirements Specification

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Revision History

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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.

1.4   Naming convention

Abbreviation	Stand for	Meaning
FRXX_U	Functional Requirement S.N_User	Functionality that can only be performed by registered user
FRXX_A	Functional Requirement S.N_Admin	Functionality that can only be performed by system admin
FRXX_AU	Functional Requirement S.N_Admin User	Functionality that can only be performed by system admin & registered user
FRXX_G	Functional Requirement S.N_Guest	Functionality that can only be performed by guest (unregistered user)
FRXX_AUG	Functional Requirement S.N_Admin User Guest	Functionality that can only be performed by system admin, registered user & guest (unregistered 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 Guest

- Functional Requirement 1 (Navigate website) -> The user navigate the website without registration.

2.2.1.2 User

- Functional Requirement 2 (Register) -> The user creates anaccount to perform specific functionalities.

- Functional Requirement 3 (Login) -> The user login to the system by entering his/her username and password.

- Functional Requirement 4 (Logout) -> The user log out from his/her own account in the system.

- Functional Requirement 5 (Choose a Category) -> The user choose a

specific category from a drop-down list.

- Functional Requirement 6 (Publish an article) -> The user can publish his/her own article in a specific category, but he must log in first.

- Functional Requirement 7 (Upload Video) -> The user can upload video in a specific category, but he must log in first.

- Functional Requirement 8 (Upload Voice) -> The user can upload voice recordings on the web application.

- Functional Requirement 9 (Follow Specific Category) -> The user can follow specific categories and so later he can receive notification if any

- Functional Requirement 10 (Get Notified About New Article) -> The user receives notification when any new article is added to any of the categories that he followed.

- Functional Requirement 11 (View content) -> The user can view any content under specific category.

2.2.1.3   Admin
- Functional Requirement 12 (Delete User Account) -> The admin can delete any user account.

- Functional Requirement 13 (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_AUG	None
FR2_G	None
FR3_AU	FR2_G
FR4_AU	FR3_AU
FR5_AUG	None
FR6_U	FR3_AU
FR7_U	FR3_AU
FR8_U	FR3_AU
FR9_U	FR3_AU

FR10_U	FR9_U,FR3_AU
FR11_AUG	FR5_AUG
FR12_A	FR3_AU
FR13_A	FR3_AU

3. System Features [Functional Requirements]

3.1 Guest

3.1.1 System Feature 1

ID	FR1_AUG
Title	Navigate website
Description	The guest shall navigate through the website without registration
Stimulus Sequences	1. Guest will navigate to the Encyclopedia website. 2. Guest tries to access the specific functionality without creatingan account and the system alerts that the user should register first if he/she does not have an account. 3. Guest navigates through the website and choose specific Category to read more about it.
Response Sequences	None
Dependency	None
Functional Requirements	FR1_AUG1.1→Guest should be able to open any category in thewebsite. FR1_AUG1.2→ Guest User should be able to read any article on thewebsite. FR1_AUG1.3→ Guest User should be able to watch any video on thewebsite. FR1_AUG1.4→ Guest User should be able to hear any voice record on thewebsite.

3.1.2 System Feature 2

ID	FR2_G
Title	Register
Description	The guest 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).
Stimulus Sequences	1. Guest will navigate to the Encyclopedia website. 2. Guest 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 using this message "you should register first". 3. Guest navigates through the website and clicks on the register button. 4. Guest enters the required fields. 5. Guest clicks on the submit button.
Response Sequences	1. If the required fields are valid the system will respond with a message "the account is created successfully". 2. In case any Invalid field is entered the system shall alerts the user to enter a valid data with message "please enter valid data". 3. In case of poor connection, the system may give an error message "sign up process failed please try again".
Dependency	None
Functional Requirements	FR2_G2.1→Register with valid email FR2_G2.2→Register with valid and unique username without special characters FR2_G2.3→Register with valid password with specific pattern (not less than 8 characters, at least one special character, upper and lower cases, and numbers) ("^(?=.\d)(?=.[a-z])(?=.*[A-Z]).{8,20}$") FR2_G2.4→Register with valid confirm password with the same specific pattern of the password

3.2   User

3.2.1   System Feature 3

ID	FR3_AU
Title	Login
Description	The user shall be able to login to the system by entering his/her valid Username and password.
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 with message "please login first". 3. User/Admin navigates through the website 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 "the user is logged in successfully" and user will be directed to the home page. 2. In case any Invalid field is entered the system shall alerts the user to enter a valid data with message "please enter valid data". 3. In case of poor connection, the system may give an error message that "login process failed please try again".
Dependency	FR2_G
Functional Requirements	FR3_AU3.1→Login with valid and unique username FR3_AU3.2→Login with valid password

3.2.2   System Feature 4

ID	FR4_AU
Title	Log out
Description	The user shall be able to log out from his/her own account out of the system.
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 and directed to the home page. 2. In case of poor connection, the system may give an error message that "log out process failed".
Dependency	FR3_AU.
Functional Requirements	FR4_AU4.1→Logout from an existed account or a logged in user/admin

3.2.3   System Feature 5

ID	FR5_AUG
Title	Choose a Category
Description	The user/admin shall navigate through the system to choose a Specific Category by choosing the category name from a drop-down list through the website.
Stimulus Sequences	1. User/Admin opens the Encyclopedia website. 2. Click on the category drop-down list. 3. Choose the category name. 4. Click on the required category.
Response Sequences	1. After clicking on the `required` category, the system shall open the category page that the user/admin chooses. 2. In case of poor connection, the system may give an error message "the process failed please try again".
Dependency	-
Functional Requirements	FR5_AUG5.1→Click on a valid drop-down list that opens different categories FR5_AUG5.2→Click on one of the available categories

3.2.4   System Feature 6

ID	FR6_U
Title	Publish an article
Description	The user shall login into his/her account to be able to publish his/her own Article in a specific category.
Stimulus Sequences	1. User opens the Encyclopedia website. 2. User log into his/her own account by entering valid username and password. 3. User clicks on post button in navigation bar. 4. Drop-down list open and user choose publish article and click on it. 5. Directed to another page to publish article on it. 6. User chooses on the category that he wants to publish article under it from category drop-down list. 7. User type the article in the required field. 8. User click on Submit.
Response Sequences	1. When the article is submitted, the system shall give a message "the article is published successfully" and appears on the system. 2. In case of poor connection, the system may give an error message "The process of publishing the article failed please try again".

Dependency	FR3_AU (for users only).
Functional Requirements	FR6_U6.1→Click on valid post button to choose from the drop-down list publish article. FR6_U6.2-> Click on valid drop-down list to choose from the drop-down list category. FR6_U6.3→publish an article that is appropriate to the website policies.

3.2.5   System Feature 7

ID	FR7_U
Title	Upload Video
Description	The user shall login into his/her account to be able to upload video in a Specific category, also the video should not exceed two minutes.
Stimulus Sequences	1. User opens the Encyclopedia website. 2. User log into his/her own account by entering valid username and password. 3. User clicks on post button in navigation bar. 4. Drop-down list open and user choose upload video and click on it. 5. Directed to another page to upload video on it. 6. User chooses on the category that he wants to upload video in it from category drop-down list. 7. User choose the video he/she want to upload. 8. User click on Submit.
Response Sequences	1. When the video is uploaded, the system shall give a message "the video is uploaded successfully" and appears on the system 2. In case of poor connection, the system may give an error message "the process of uploading the video failed please try again". 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	FR3_AU (for users only).
Functional Requirements	FR7_U7.1→Click on valid post button and from drop-down list choose upload video. FR7_U7.2→Click on valid drop-down list to choose from the drop-down list category. FR7_U7.3→Upload a video that is appropriate to the system policies. FR7_U7.4→Upload Video size is 1min minimum and 2 mins max with no Specific extensions.

3.2.6   System Feature 8

ID	FR8_U
Title	Upload Recorded Voice
Description	The user shall login into his/her account to be able to upload Voice record in a Specific category, also the Voice record size uploaded must be a 30 sec to 1 min with ("mp3") extension
Stimulus Sequences	1. User opens the Encyclopedia website. 2. User login into his/her own account by entering valid username and password. 3. User clicks on the category that he wants to upload Voice record in it. 4. User clicks on post button. 5. Drop-down list open and user choose upload voice record and click on it. 6. Directed to another page to upload voice record on it. 7. User chooses on the category that he wants to upload video in it from category drop-down list. 8. User choose the voice record he/she want to upload. 9. User click on Submit.
Response Sequences	1. When the Voice record is uploaded, the system shall give a message "the video is uploaded successfully" and appears on the system. 2. In case of poor connection, the system may give an error message "the process of uploading the video failed please try again". 4. 3. In case the Voice record exceeds 1 min, the system shall alert the user by giving him two options either by cutting the Voice record in to several records or by canceling the uploading process.
Dependency	FR3_AU (for users only).
Functional Requirements	FR8_U8.1→Click on valid post button and from drop-down list choose upload voice record. FR8_U8.2→Click on valid drop-down list to choose from the drop-down list category. FR8_U8.3→Upload a record that is appropriate to the system policies FR8_U8.4→Uploaded Voice record size must be from 30 second to 1 minute with ("mp3") extension.

3.2.7 System Feature 9

ID	FR9_U
Title	Follow specific categories.
Description	The User shall be able to follow specific categories and receive a notify Message after specific article added to the followed category.
Stimulus Sequences	1. User is logged in the system. 2. User navigates through the website 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 "There is something wrong with the system".
Dependency	FR3_AU (for users only).
Functional Requirements	FR9_U9.1→Click on valid follow button for following specific category

3.2.8 System Feature 10

ID	FR10_U
Title	Get Notified About New Article
Description	The User shall receive notification about any new articles that are added to the categories that this user is following.
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 website. 2. If the user after logged in cannot show the notification message that There is a new article added to the website the system shall alert message "There is something wrong with the system".
Dependency	FR9_U, FR3_AU (for users only).
Functional Requirements	None

3.2.9 System Feature 11

ID	FR11_AUG
Title	View content
Description	The user shall be able to view & navigate throw any content available under specific category.
Stimulus Sequences	1. User will navigate to the Encyclopedia website. 2. User navigate to the category that he wants . 3. User navigate throw category page to the content he wants. 4. User clicks on the content overview.
Response Sequences	1. If the user clicks on article overview the user should be directed to content page where the content is displayed to the user. 2. If the user cannot access a specific article in the system shall alert message "There is something wrong with the system due to poor connection".
Dependency	FR5_AUG
Functional Requirements	FR11_AUG11.1→Click on a valid drop-down list that opens different categories FR11_AUG11.2→Click on one of the available categories FR11_AUG11.2→Click on one of the available content available under specific category.

3.3 Admin

3.3.1 System Feature 12

ID	FR12_A
Title	Delete user Account
Description	The admin shall be able to delete any user account
Stimulus Sequences	5. Admin will navigate to the Encyclopedia website. 6. Admin should be logged in to the system. 7. Admin chooses a specific user account to delete it. 8. Admin then click on the delete button.
Response Sequences	3. If the admin logged in and chooses to delete a specific user account a message should appear "This user deleted successfully from the website". 4. If the admin after logging in cannot delete a specific user the system shall alert message "There is something wrong with the system due to poor connection".

Dependency	FR3_AU (for admin only).
Functional Requirements	FR12_A12.1→Click on valid delete button for deleting specific user account

3.3.2   System Feature 13

ID	FR13_A
Title	Delete user Content.
Description	The admin shall be able to delete any content that the user adds to the website like (videos, records, published article) that violates the rules of The system.
Stimulus Sequences	1. Admin will navigate to the Encyclopedia website. 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 "this content is deleted successfully". 2. If the admin after logged in cannot delete specific content for a specific user the system shall send an alert message "There is something wrong With the system due to poor connection".
Dependency	FR3_AU (for admin only).
Functional Requirements	FR13_A13.1→Click on valid delete button for deleting a published article FR13_A13.2→Click on valid delete button for deleting an uploaded video FR13_A13.3→Click on valid delete button for deleting an uploaded voice record

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.