**Learning Hub Web Application**

**Software Requirements Specification**

Version 3.3

**Information Technology Institute- ITI**

**Software Testing and Quality Assurance**

**Smart Village**

Contents

[**Revision History** 4](#_Toc133425194)

[**Document Approval** 4](#_Toc133425195)

[**1. Introduction** 5](#_Toc133425196)

[**1.1 Purpose** 5](#_Toc133425197)

[**1.2 References** 5](#_Toc133425198)

[**2. Specific Requirements** 6](#_Toc133425199)

[**2.1 External Interface Requirements** 7](#_Toc133425200)

[**2.1.1 User Interfaces** 7](#_Toc133425201)

[**2.1.2 Hardware Interfaces** 8](#_Toc133425202)

[**2.1.3 Software Interfaces** 8](#_Toc133425203)

[**2.1.4 Communications Interfaces** 8](#_Toc133425204)

[**2.2 Design and Implementation Constraints** 8](#_Toc133425205)

[**2.3 Operating Environment** 8](#_Toc133425206)

[**3. System Features** 9](#_Toc133425207)

[**3.1 Technical Requirements** 9](#_Toc133425208)

[**3.1.1 Registration feature** 9](#_Toc133425209)

[**3.1.2 Login Feature:** 10](#_Toc133425210)

[**3.1.3 Navigation feature** 11](#_Toc133425211)

[**3.1.4 Add Feature** 12](#_Toc133425212)

[**3.1.5 Delete Feature** 13](#_Toc133425213)

[**3.1.6**  **Follow Feature** 14](#_Toc133425214)

[**3.1.7 Notification Feature** 15](#_Toc133425215)

[**3.1.8 Add User** 16](#_Toc133425216)

[**3.1.9 Delete User** 17](#_Toc133425217)

[**3.1.10 Logout** 18](#_Toc133425218)

[**3.2 Classes / Objects** 19](#_Toc133425219)

[**3.2.1. Attributes** 19](#_Toc133425220)

[**3.2.2 Functions** 19](#_Toc133425221)

[**3.3 Non-Functional Requirements** 19](#_Toc133425222)

[**3.3.1 Performance Requirements** 19](#_Toc133425223)

[**3.3.2 Security Requirements** 19](#_Toc133425224)

[**3.3.3 Software Quality Attributes** 20](#_Toc133425225)

[**3.4 Legal Requirements** 20](#_Toc133425226)

[**3.5 Design Constraints** 20](#_Toc133425227)

[**3.6 Logical Database Requirements** 20](#_Toc133425228)

[**4. Analysis Models** 21](#_Toc133425229)

[**4.1 Use Case Diagram (UML)** 21](#_Toc133425230)

[**5. Change Management Process** 22](#_Toc133425231)

[**A. Appendix** 22](#_Toc133425232)

# **Revision History**

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Description** | **Author** | **Comments** |
| 19/2/2023 | Version 1 | Alaa | Initial Draft |
| 24/2/2023 | Version 2 | Hasnaa | No Comments |
| 2/03/2023 | Version 3.0 | Moataz Ashraf | New version is added as per coach Comments (see Appendix for the **Review Comments Document** link) |
| 16/4/2023 | Version 3.1 | Mohamed mazrouaa | adding validations to add user and del user |
| 22/4/2023 | Version 3.2 | Mohamed mazrouaa | Update navigation feature |
| 26/4/2023 | Version 3.3 | Mohamed mazrouaa | Update delete feature |
|  |  |  |  |

# **Document Approval**

The following Software Requirements Specification has been accepted and approved by the following:

|  |  |  |
| --- | --- | --- |
| **Printed Name** | **Role** | **Date** |
| Moataz | Tester, Developer | 23/4/2023 |
| Hasnaa | Team Leader | 24/4/2023 |
| Alaa | Developer | 25/4/2023 |

# **1. Introduction**

Learning Hub Web Application is a e-Learning project aims to create an engaging and informative online articles, videos, and records. that helps learners achieve the desired learning outcomes, but this is from the macro perspective. This release will have limited features. Over a period of time, new and new functionalities will be added to the site.

Learning hub is a web platform that will act as an online free encyclopaedia hosting tons of information so the users can explore and receive knowledge in different life domain and to be part of the community to contribute and share their knowledge.

## **1.1 Purpose**

*The Purpose of this document is to outline the requirements for the learning hub web application to be developed for Tech.*

*This document provides a detailed description of a software development project. The SRS outlines the technical requirements of the proposed system, defines the purpose of the system and its components, and includes sufficient detail for technical teams to build the system. The SRS should provide a complete overview of the project and will be used by everyone involved in the project to aid in its successful completion. Once the SRS is complete, a PPD would be produced that summarizes the findings of the SRS. The PPD would be presented to the customer for approval.*

*This document will be used by all stakeholders including developers and testers.*

## **1.2 References**

***1.4.1*** *Customer requirements specification.*

***1.4.2*** *Sample in Question (SIQ).*

# **2. Specific Requirements**

The Learning Hub will have 2 roles.

1. Admin
2. User

Following features will be available to these 2 different roles.

|  |  |
| --- | --- |
| User | Admin |
| Register | **Register** |
| Login | **Login** |
| Navigate | **Navigate** |
| Add | **Add** |
| Delete | **Delete** |
| Follow | **Follow** |
| Notification | **Notification** |
| - | **Add User** |
| - | **Delete User** |
| Logout | **Logout** |

**Description of the features**

|  |  |  |
| --- | --- | --- |
| **Feature Name** | **Applicable**  **Roles** | **Description** |
| **Register** | Admin  User | **Admin:** Admin can create new account using email, unique username, Strong password.  **User:** User can create new account using email, unique username, Strong password. |
| **Login** | Admin  User | **Admin:** Admin can login using unique admin username and password.  **User:** User can login with unique username and the strong password. |
| **Navigate** | Admin  User | **Admin and User** can Navigate from Home page to Categories page |
| **Notification** | Admin  User | Followed Categories send notification when articles added.  **Admin and User** can get notification whenever a new article is added. |
| **Follow** | Admin  User | Followed Categories send notification when articles added.  **Admin and User** can follow any of the existed categories. |
| **Add** | Admin  User | **Admin and User** can add articles, videos, recordings. |
| **Delete** | Admin | **Admin:** Admin can delete all articles, videos, and recordings. |
| User | **User:** User can delete his own articles, videos, and recordings. |
| **Add User** | Admin | **Admin:** Admin can add new User. |
| **Delete User** | Admin | **Admin:** Admin can delete an existing User. |
| **Logout** | Admin  User | **Admin and User** can logout. |

## **2.1 External Interface Requirements**

These requirements include user interfaces (interaction logic between software and user), screen layouts, buttons, functions on every screen, hardware interfaces (here a team describes what devices the software is created for), and other relevant particularities.

### **2.1.1 User Interfaces**

* Register Screen
* Login Screen
* Home Page
* Navigation Bar
* Profile Screen
* Categories Screen

### **2.1.2 Hardware Interfaces**

* Keyboard
* Mic / Sound System
* Mouse

### **2.1.3 Software Interfaces**

* Database
* Server
* Operating System

### **2.1.4 Communications Interfaces**

* Web browser
* Communication Standards (HTTP, HTTPS, FTP)
* Message Formatting (Video, Image, Record)
* End-to-End Encryption

## **2.2 Design and Implementation Constraints**

* Web-based system/pc based.
* Unique user-ID
* Admin features needed.

## **2.3 Operating Environment**

* Operating system: Windows.
* platform: HTML, CSS, java script.

# **3. System Features**

## **3.1 Technical Requirements**

### **3.1.1 Registration feature**

**Description**

Users must have an account in order to be able to view the home page. Users who don’t have an account will not be able to view any of the website articles. Users' accounts will hold information about their username, email, password, confirm password. Users can view and login to their accounts anytime in the future after their registration.

**Response Sequences**

In the login page, users can login if they already have an account and if not, there would be a sign-up button in “Don’t have an account? Sign up” to register his/her information. Upon matching the required criteria, “Registration successfully “message will appear to the user, and he will be able log in to his/her account from the login page.

**Front End Details**

* Email
* Username
* Password
* Confirm Password
* Register (Button)

**Functional Requirements**

**SRS- REGS -001** Username must be at least one character.

**SRS- REGS -002** Username must not contain Special characters.

**SRS- REGS -003** Username must not contain Numbers.

**SRS- REGS -004** Email must be in valid format Ex: example @example.com.

**SRS- REGS -005** Password must be at least five characters.

**SRS- REGS -006**Password must have least one numeric value.

**SRS- REGS -007** Password must have least one special character

**SRS- REGS -008** Confirm password must match the password in password field.

**SRS- REGS -009** If valid data entered “Registration successfully “message will appear to the user.

**Feature Validation**

**SRS- Val-REGS -001**If the field entered be the user are not valid according to the requirement (SRS-ADD-USR-002 ‎to SRS-ADD-USR-009)

a message will be appeared saying “the data entered are not valid” with type of error.

**SRS-Val-REGS -002** If username is already existed in database, system displays an error message saying, “Username is already taken. Please choose a different username.”.

### **3.1.2 Login Feature:**

**Description**

Login feature will help in authentication of user and admin accounts. Users who have valid email and password can only login into their accounts. After that users will be able to navigate to the home page successfully.

**Response Sequences**

In the login page, users and admins can login, if they already have an account. Upon matching the required criteria, the account will let the user log in to his/her account and the home page is displayed. For the users who don’t have a registered account, there would be a sign-up button to register his information.

**Front End Details**

* Username
* Password
* Login button

**Functional Requirements:**

**SRS\_LOGIN\_001:** user/admin must enter a valid username and password.

**SRS\_ LOGIN \_002**: If the username or the password are in-valid (not in database), it’s an error that must be reported to the user/admin and this message should appear “invalid username or password”.

**SRS\_ LOGIN \_003**: If the mail and password exist in the database, the system should log you in and navigate you to the “home page”.

**Feature Validation**

**SRS-VAL- LOGIN -001:** If username is not existed in database, system displays an error “invalid username or password”.

**SRS-VAL- LOGIN -002:** If the password is not correct, system displays an error “invalid username or password”.

**SRS-VAL-LOGIN—003:** If either of the text fields is blank, it is an error that

must be reported to the user/admin and this message should appear “please

fill in this field”.

### **3.1.3 Navigation feature**

**Description**

Users can navigate between the various learning categories located in the navigation bar, which is three categories’ Languages, Mathematics, Technology. Users can navigate through the navigation bar upon selection, page of the selected category will load containing various articles, recordings and videos related to that category.

Users can navigate to profile page where they can see their:

1. Username
2. Role (User/Admin)
3. Email
4. Followed categories.
5. Add user and Del user buttons (in case of admin only).

**Stimulus/Response Sequences**

In the home page, users and admins can navigate to choose from the available learning categories in the navigation bar.

Also, they can choose to go to their profile page from the drop downlist in the homepage.

**Front End Details**

* Navigation Bar (Categories)
* Back (Learning hub Icon button)
* Drop downlist.
* Profile button.
* Categories pages.
* Profile page.

**Functional Requirements**

**SRS\_NAV\_001:** the user should click on the selected category to choose from the available learning categories.

**SRS\_ NAV \_002:** user can click on learning hub icon to navigate to home page**.**

**SRS\_ NAV \_003:** user can click on profile button from the drop downlist in the home page navigation bar to navigate to profile page**.**

**SRS\_ NAV \_004:** user can click on notification button from the drop downlist in the home page navigation bar to navigate to notification page**.**

### **3.1.4 Add Feature**

**Description**

User/Admin can find in homepage Text Input Field Labelled by “What do you want to share? “When he clicks on it a pop up window will show up where he will find drop down list (to choose the category) , Article button and Upload button.

Also, he can navigate to certain category and click on Input Text Field “What do you want to share?” in this case user cannot find drop down list and will be able to choose between uploading videos or records from upload button or article from article button.

**Response Sequences**

User/Admin have to login first to be navigated to homepage and choose category or to navigate to certain category to share from it, in pop up window would be drop down list, an upload button and article button.

if he clicked on article button a Text input Field and add button will appear so users can add different articles and click the add button.

If he clicked on upload button a choose file button and upload button will appear so users can choose a mp3 audio or mp4 video from their computer and click the upload button to upload.

**Front End Details**

* Pop Up Window.
* Dropdown list (Languages, Mathematics, Technology).
* Two Buttons (Article / Upload).
* Two Buttons (Choose file / Upload).
* Text field and add button.

**Functional Requirements**

**SRS-ADD-001:** user can publish an article from home page or any category page.

**SRS-ADD-002:** Article should not exceed 1000 character maximum.

**SRS-ADD-003:** User can upload a video from home page or any category page.

**SRS-ADD-004:** Video should not exceed 35 Mb.

**SRS-ADD-005:** Video should be with mp4 extension.

**SRS-ADD-006:** User can upload a record from home page or any category page.

**SRS-ADD-007:** Record should not exceed 35 Mb.

**SRS-ADD-008:** Record should be with mp3 extension.

**SRS-ADD-009**: Only registered users can add articles, records and videos.

**Feature Validation**

**SRS- Val-ADD -001:** If the video or record uploaded not with mp4-mp3 extensions an error message will appear which says "Invalid file , files must be mp3 or mp4 and with size <35 MB".

**SRS-Val-ADD -002:** If the video or record uploaded with size more than 35 MB an error message will appear which says"Invalid file, files must be mp3 or mp4 and with size <35 MB".

**SRS-Val-ADD -003:** If article is empty an error message will appear which says "Error: Content is empty".

**SRS-Val-ADD -003:** If article is more than 1000 characters an error message will appear which says " Error: Content must not exceed 1000 characters".

### **3.1.5 Delete Feature**

**Description**

**User**

A delete icon shaped Delete - Free interface iconsWill appear in front of all his own Articles, Videos, Records in Home page and categories pages which if he clicked on it this content will be deleted.

**Admin**

A delete icon shaped Delete - Free interface iconsWill appear under all Articles, Videos, Records in Home page and categories pages which if he clicked on it this content will be deleted.

**Response Sequences**

User/Admin have to login first to be navigated to home page or to a category page there would be A delete icon shaped Delete - Free interface iconswhen pressed content will be deleted.

**Front End Details**

* Delete icon.

**Functional Requirements**

**SRS-DELETE -001:**  **user can delete his published articles only.**

**SRS-DELETE -002:**  **user can delete his uploaded videos only.**

**SRS-DELETE-003:**  **user can delete his uploaded records only.**

**SRS-DELETE -004:**  **Admin can delete any published articles.**

**SRS-DELETE -005:**  **Admin can delete any uploaded video.**

**SRS-DELETE-006:**  **Admin can delete any uploaded record.**

**SRS-DELETE-007:**  **Users cannot delete other users articles, videos and records.**

**SRS-DELETE-008: Deleted document must be removed from the website for all users and admins.**

### **3.1.6 Follow Feature**

**Description**

User/Admin can follow a category or more from the three existed categories.

**Response Sequences**

User/Admin have to login first to access categories pages, there would be a follow and unfollow buttons under the category name each category page.

when follow button is clicked user/admin will be following this category and will receive notifications if any file added to this category.

when unfollow button is clicked user/admin will not be following this category anymore and will not receive notifications if any file added to this category.

**Front End Details**

* Follow button.
* Unfollow button.

**Functional Requirements**

**SRS-FOLLOW-001:**  **Users/Admins can follow category by clicking the follow button.**

**SRS-FOLLOW-002:**  **When a user follows a category, he** **will receive notifications if any article, video, or record added to this category.**

**SRS-FOLLOW-003:**  **Users can follow up to three categories.**

**SRS-FOLLOW-004:**  **Users/Admins can unfollow category by clicking the unfollow button.**

### **3.1.7 Notification Feature**

**Description**

User/Admin should view a notification in the notification page when a new article or video or record is added to categories that he follows.

**Response Sequences**

User/Admin have to login first to access notifications, in homepage there would be a drop-down list in navigation bar include notification button when pressed user/admin will be redirected to notifications page to view notifications from different categories.

**Front End Details**

* Name of Publisher
* Category
* Name of content
* Type of content (Article, Video, Record)

**Functional Requirements**

**SRS-NOTIFI-001:**  **When users get into notifications page, they can view all their notifications from different categories.**

**SRS-NOTIFI-002:**  **Users get Notification when a new article or video or record added in one of his followed categories.**

**Feature Validation**

**SRS-VAL-NOTIFI -001:**  If Article, video, or a record is deleted its notification will be deleted.

**SRS-VAL-NOTIFI -002:**  If a user unfollowed a followed category, it’s related notifications will be deleted.

### **3.1.8 Add User**

**Description**

Admin should be able to add new user to the database system.

**Response Sequences**

Admins have to login first with valid admin account to be able to access add new user button, when admin clicks on drop down menu in navigation bar in home page. Then admin should press on profile, admin will find add user button to add new user the system redirects to the form and after filling all required fields and pressing Add button, the new user is added successfully to the database.

**Front End Details**

* Username
* Password
* Confirm Password
* Email
* Role (Radio button)
* Add

**Functional Requirements**

**SRS-ADDUSR-001:** Username must be at least one character.

**SRS-ADDUSR-002:** Username must not contain Special characters.

**SRS-ADDUSR-003:** Username must not contain Numbers.

**SRS-ADDUSR-004:** Email must be in valid format Ex: example @example.com.

**SRS-ADDUSR-005:** Password must be at least five characters.

**SRS-ADDUSR-006:** Password must have least one numeric value.

**SRS-ADDUSR-007:** Password must have least one special character

**SRS-ADDUSR-008:** Confirm password must match the password in password field.

**SRS-ADDUSR-009:** admin can add user.

**SRS-ADDUSR-010:** admin can choose if user is admin or normal user.

**Feature Validation**

**SRS-VAL-ADD-USR-001**If the field entered be the admin are not valid according to the requirement (SRS-ADDUSR-001 ‎to SRS-ADDUSR-008)

a message will be appeared saying “the data entered are not valid and hint about the invalid data” and the user will not be added to the database.

**SRS-VAL-ADD-USR-002** If username is already existed in database, system displays an error message saying “Username is already taken. Please choose a different username.” and the user will not be added to the database.

### **3.1.9 Delete User**

**Description**

Admin should be able to delete an exist user from the database system

**Response Sequences**

Admins have to login first with valid admin account to be able to access delete user button, when admin clicks on drop down menu in navigation bar in home page. Then admin should press on profile, admin will find delete user button to delete existing user the system redirects to the form and after filling all required fields and pressing delete button, the user is deleted successfully to the database.

**Front End Details**

* Username text field.
* Email text field.
* Delete button.

**Functional Requirements**

**SRS-DELUSR-001:** admin can delete user.

**SRS-DELUSR-002:** admin can delete another admin.

**Feature Validation**

**SRS-VAL-DELUSR-001:** If username is not existed in database, system displays an error message saying, “User does not exist.”. and the user will not be deleted.

**SRS-VAL- DELUSR-002:** If email is not attached to the entered username the system displays an error message saying “User does not exist.”.‎and the user will not be deleted

### **3.1.10 Logout**

**Description**

Admin and user should be able to logout from the system by pressing on logout button from navigation bar and then the system redirect them to the login page of the system with no authorizations to the system functions.

**Response Sequences**

Admin and user must be logged in first to be able to logout from the system by pressing on logout button from navigation bar and then the system redirect them to the login page of the system with no authorizations to the system functions.

**Front End Details**

* Logout button

**Functional Requirements**

**SRS-LOGOUT-001:** Pressing logout button the system must redirect to the login page.

## **3.2 Classes / Objects**

### **3.2.1. Attributes**

Nil

### **3.2.2 Functions**

Nil

## **3.3 Non-Functional Requirements**

### **3.3.1 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.

### **3.3.2 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.

### **3.3.3 Software Quality Attributes**

1. Usability

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

1. Reliability

* The system's downtime should not be more than 60 minutes per month.

1. Portability

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

1. Compatibility

* The system should support almost all the operating systems due to it is PC based.

1. Availability

* The Encyclopaedia System should be available 98% at 24 hours per day.

## **3.4 Legal Requirements**

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

## **3.5 Design Constraints**

Nil

## **3.6 Logical Database Requirements**

Nil

# **4. Analysis Models**

## **4.1 Use Case Diagram (UML)**

Diagram

Description automatically generated

# **5. Change Management Process**

Changes to the SRS either from the development, testing team or the client side will be communicated to the project sponsor.

Any change made to the SRS will require a sign off from the Development lead, QA lead and the client.

Once approved changed will be made to the SRS and the new SRS will be circulated to all stakeholders

# **A. Appendix**

*Nil*