**Learning Hub Web Application**

**Software Requirements Specification**

Version 3.0

**Information Technology Institute- ITI**

**Software Testing and Quality Assurance**

**Smart Village**

Contents

[**Revision History** 4](#_Toc130017148)

[**Document Approval** 4](#_Toc130017149)

[**1. Introduction** 5](#_Toc130017150)

[**1.1 Purpose** 5](#_Toc130017151)

[**1.2 References** 5](#_Toc130017152)

[**2. Specific Requirements** 6](#_Toc130017153)

[**2.1 External Interface Requirements** 7](#_Toc130017154)

[**2.1.1 User Interfaces** 7](#_Toc130017155)

[**2.1.2 Hardware Interfaces** 7](#_Toc130017156)

[**2.1.3 Software Interfaces** 8](#_Toc130017157)

[**2.1.4 Communications Interfaces** 8](#_Toc130017158)

[**2.2 Design and Implementation Constraints** 8](#_Toc130017159)

[**2.3 Operating Environment** 8](#_Toc130017160)

[**3. System Features** 8](#_Toc130017161)

[**3.1 Technical Requirements** 8](#_Toc130017162)

[**3.1.1 Registration feature** 8](#_Toc130017163)

[**3.1.2 Login Feature:** 10](#_Toc130017164)

[**3.1.3 Navigation feature** 11](#_Toc130017165)

[**3.1.4 Add Feature** 12](#_Toc130017166)

[**3.1.5 Edit Feature** 13](#_Toc130017167)

[**3.1.6 Delete Feature** 14](#_Toc130017168)

[**3.1.7 Notification Feature** 15](#_Toc130017169)

[**3.1.8 Add User** 16](#_Toc130017170)

[**3.1.9 Delete User** 18](#_Toc130017171)

[**3.1.10 Logout** 19](#_Toc130017172)

[**3.2 Classes / Objects** 19](#_Toc130017173)

[**3.2.1. Attributes** 19](#_Toc130017174)

[**3.2.2 Functions** 20](#_Toc130017175)

[**3.3 Non-Functional Requirements** 20](#_Toc130017176)

[**3.3.1 Performance Requirements** 20](#_Toc130017177)

[**3.3.2 Security Requirements** 20](#_Toc130017178)

[**3.3.3 Software Quality Attributes** 20](#_Toc130017179)

[**3.4 Legal Requirements** 21](#_Toc130017180)

[**3.5 Design Constraints** 21](#_Toc130017181)

[**3.6 Logical Database Requirements** 21](#_Toc130017182)

[**4. Analysis Models** 22](#_Toc130017183)

[**4.1 Use Case Diagram (UML)** 22](#_Toc130017184)

[**5. Change Management Process** 23](#_Toc130017185)

[**A. Appendix** 23](#_Toc130017186)

# **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 | Moataz Ashraf | New version is added as per coach Comments (see Appendix for the **Review Comments Document** link) |
|  |  |  |  |

# **Document Approval**

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

|  |  |  |
| --- | --- | --- |
| **Printed Name** | **Role** | **Date** |
| Moataz | Tester, Developer | 2/3/2023 |
| Hasnaa | Team Leader | 10/3/2023 |
| Alaa | Developer | 17/3/2023 |

# **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** |
| Edit | **Edit** |
| 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. |
| **Edit** | Admin | **Admin:** Admin can edit all articles, videos, and recordings. |
| User | **User:** User can edit his own articles, videos, and 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, the account will let the user log in to his/her account and the home page is displayed.

**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** After filling the mandatory field the user must click on ‎register button which will check conditions mentioned in requirements (SRS-REGS-002 ‎to SRS-REGS-009)

If the fields are valid the account will let the user log in to his/her account and the home page is displayed.

**Feature Validation**

**SRS- 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-REGS -002** If username is already existed in database, system displays an error message saying, “username already exist”.

### **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

**Functional Requirements:**

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

**SRS\_ LOGIN \_002:** Users/admins must enter their emails in the right email format (ex: “[abc@mail.com](mailto:abc@mail.com)”).

**SRS\_ LOGIN \_003**: If the mail or the password are in-valid (see requirements 001 & 002), it’s an error that must be reported to the user/admin and this message should appear “the mail or password isn’t correct”.

**SRS\_ LOGIN \_004**: If the mail and password exist in the database, the system should log you in and navigate you to the “home page”.

**SRS\_ LOGIN \_005**: If either of the text fields is blank, it is an error that must be reported to the user/admin and those two messages should appear “Password is required” and “mail is required”.

**Feature Validation**

User

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

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

Admin

**SRS-VAL- LOGIN -003:** If admin username is not existed in database, system displays an error “username not found”.

**SRS-VAL- LOGIN -004:** F7. If admin password is not correct, system displays an error “password is incorrect”.

### **3.1.3 Navigation feature**

**Description**

Customers 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 and videos related to that category.

**Stimulus/Response Sequences**

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

**Front End Details**

* Navigation Bar (Categories)
* Back (Learning hub Icon button)

**Functional Requirements**

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

**SRS\_ NAV \_002:** Categories are Available and Clickable to navigate to Intended Category page.

**SRS\_ NAV \_003:** user can click on learning hub icon to navigate to home page**.**

**SRS\_ NAV \_004:** Add Categories not allowed.

**SRS\_ NAV \_005:** Delete Categories not allowed.

### **3.1.4 Add Feature**

**Description**

User/Admin can find in homepage Text Input Field Labelled by “What do you want to share? “ and will find drop down list to choose the category or 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; article should not exceed 500 character maximum.**

**SRS-ADD-002:** Article should not be blank.

**SRS-ADD-003:**  **user can upload a video; video should not exceed 3 to 4 minute maximum.**

**SRS-ADD-004:** Video should be related to category.

**SRS-ADD-005:**  **user can upload a record; record should not exceed 3 to 4 minutes maximum.**

**SRS-ADD-006:** Categories page must be existed and can be reached.

**SRS-ADD-007:** all buttons must be existed.

### **3.1.5 Edit Feature**

**Description**

**User**

User can navigate to certain category and choose certain article, video, record from his articles, videos , records. then click on 3 dots icon and drop-down menu will appear include Edit button and then will be redirected to Edit page to Edit them.

**Admin**

Admin can navigate to certain category and choose certain article, video, record from any user articles, videos, records. then click on 3 dots icon and drop-down menu will appear include Edit button and then will be redirected to Edit page to Edit them.

**Response Sequences**

User/Admin have to login first to be navigated to home page and choose category, in Edit page there would be 3 dots icon and drop-down menu include Edit button so user/Admin can Edit different articles, records, videos.

**Front End Details**

* Pop Up Window
* Picture of author
* Name of author
* Category name
* Text Input Field include Article/Video/record.
* Save
* Cancel

**Functional Requirements**

**SRS-EDIT-001:**  **user can Edit his published articles only; article should not exceed 500 character maximum.**

**SRS-EDIT-002:**  **user can Edit his uploaded video; video should not exceed 3 to 4 minute maximum.**

**SRS-EDIT-003:**  **user can edit his uploaded record; record should not exceed 3 to 4 minutes maximum.**

**SRS-EDIT-004:**  **Admin can Edit any articles; article should not exceed 500 character maximum.**

**SRS-EDIT-005:**  **Admin can Edit any uploaded video; video should not exceed 3 to 4 minute maximum.**

**SRS-EDIT-006:**  **Admin can edit any uploaded record; record should not exceed 3 to 4 minutes maximum.**

**SRS-EDIT-007:** Categories page must be existed and can be reached.

**SRS-EDIT-008:** 3 Dot icon button must be existed.

**SRS-EDIT-009:** Drop down list must be existed.

**SRS-EDIT-010:** Edit button must be existed.

**SRS-EDIT-011:** The old version of the edited document must be removed from the website.

### **3.1.6 Delete Feature**

**Description**

**User**

User can navigate to certain category and select certain article or video or record from his Articles, Videos, Records and click on 3 dots icon and drop-down list will appear include delete button to delete it.

**Admin**

Admin can navigate to certain category and select certain article or video or record from any user Article, Video, Record and click on 3 dots icon and drop-down list will appear include delete button to delete it.

**Response Sequences**

User/Admin have to login first to be navigated to home page and choose category, in category page there would be a 3 dots icon when pressed drop down list will appear include delete button to every article, video, record. User/Admin can Delete different articles, records, videos.

**Front End Details**

* Confirm Message
* Delete
* Cancel

**Functional Requirements**

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

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

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

**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:** Categories page must be existed and can be reached.

**SRS-DELETE-008:** 3 dots icon must be existed.

**SRS-DELETE-009:** Drop down list must be existed.

**SRS-DELETE-010:** Delete button must be existed.

**SRS-DELETE-011:** Delete feature can be implemented by user to his articles only.

**SRS-DELETE-012:** Delete feature can be implemented by admin to any article on the website.

**SRS-DELETE-013:** Deleted document must be removed from the website for all users and admins.

### **3.1.7 Follow Feature**

**Description**

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

**Response Sequences**

User/Admin have to login first to access categories pages, there would be a follow radio button(follow-unfollow) in the upper part of each category page when follow is selected user/admin will be following this category and will receive notifications if any file added to this category.

**Front End Details**

* Follow radio button.

**Functional Requirements**

**SRS-FOLLOW-001:**  **Users can select follow from the follow radio button in any category page.**

**SRS-FOLLOW-002:**  **When user selects the follow in the follow radio button,** **will receive notifications if any file added to this category.**

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

### **3.1.8 Notification Feature**

**Description**

User/Admin should get a notification when a new article or video or record is added to categories 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. When users press on notification will be redirected to category page.

**Front End Details**

* Name of Publisher
* Category
* Post Format (Article, Video, Record)
* Date

**Functional Requirements**

**SRS-NOTIFI-001:**  **Users can press notification button from drop down menu from navigation bar in home page.**

**SRS-NOTIFI-002:**  **Users can view notifications page and can view notification table.**

**SRS-NOTIFI-003:**  **Users can view notifications from different categories.**

**SRS-NOTIFI-004:**  **User get Notification when new article or video or record Added.**

**Feature Validation**

**SRS-VAL-NOTIFI -001:**  If notification for Article Deleted, system displays an error “Article is not found may be deleted”.

**SRS-VAL-NOTIFI -002:**  If notification for Video Deleted, system displays an error “Video is not found may be deleted”.

**SRS-VAL-NOTIFI -003:**  If notification for Record Deleted, system displays an error “Record is not found may be deleted”.

### **3.1.9 Add User**

**Description**

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

**Response Sequences**

Admin 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:** After filling the mandatory field the admin must click on add button which will check conditions mentioned in requirements (SRS-ADDUSR-001 ‎to SRS-ADD-USR-008)

If the fields are valid a message will appear the user added to the database

**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 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 “the entered user is already exist in the database” and the user will not be added to the database

### **3.1.10 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:** Username must be at least one character.

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

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

**SRS-DELUSR-004:** Username must be Exist in the database

**SRS-DELUSR-005:** Email must be in valid format Ex: example @example.com.

**SRS-DELUSR-006:** Email must be attached with the entered username in the database

**SRS-DELUSR-007:** After filling the mandatory field the admin must click on delete button which will check conditions mentioned in requirements (SRS-DELUSR-001 ‎to SRS-DELUSR-005)

If the fields are valid a message will appear the user deleted from the database

**Feature Validation**

**SRS-VAL-DELUSR-001:** If username is not existed in database, system displays an error message saying, “the entered username is not existed in the database”. 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 “the entered Email is not attached to the this username”.‎and the user will not be deleted

### **3.1.11 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 home 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 main home page of the system with no authorizations to the system functions.

**Front End Details**

* Confirm Message
* Yes
* Cancel

**Functional Requirements**

**SRS-LOGOUT-001:** Pressing logout button the system must redirect to the main home 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*