**EGERTON**  **UNIVERSITY**

**ONLINE LIBRARY SYSTEM PROJECT**

**SRS**

**S13/02367/19**

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# **Chapter 1**

## **Introduction**

Online library system is a system that has been developed to solve the problem of accessing traditional library resources. There have been several necessities that has contributed to this idea and hopefully this online library system will be a viable solution.

Problems ranging from access to acquiring knowledge is a great challenge, especially in this error where a lot of information keeps coming up every single day. It is very hard for physical libraries to keep up with the demand of readers who require physical books, articles and other kinds of resources found in a library.

This document outlines the system requirement specifications for the library system. It will describe the system’s overview, various features of the online library system and user problem statements.

Requirements like operating environment of the system is also outlined and other dependencies the system will require.

## **Overall description**

The system is an online library system. Similar to physical library setup, this system has several features that work in the same principles, except in a more user friendly and interactive manner.

The online library system offers a platform where users can find all kinds of library resources ranging from books, articles, newspapers and many others. Users can register to the platform and access any required resources based on their areas of interest. User can also request any resource they want ant it will be availed too then as soon as possible.

The system is managed by an administrator who manages the contents of the online library system. The administrator is responsible for managing users, setting fields of interest, managing categories of items uploaded into the system and signup new users or assign role for user level in the system.

This system is an online library system. That means it is an online based application that is accessed through a web browser.

The system has a responsive design achieved by the use of Bootstrap which is a framework for frontend CSS and JavaScript design. This makes the website accessible and usable on any type of device that has a browser. All that is required is a browser and internet connection since the resources are online based.

### **User problem statement**

Access to personalized content in the library – in the physical library setup, a user has to manually find what they are interested in from going through the entire library. This may be very hard if the library is big and people always have limited time to spend in the library searching for items.

Requesting book – physical library has restricted people to use only what is available in the library, and requesting for a book may be very difficult sometimes. This online library system will give users an easier way to request for a material without need to wait for a queue or being there physically every time, they need a new material.

Concurrent access – physical library has limited number of materials, if several users were to use same material at a time, the number of the materials accessed at once will be limited forcing other users to wait.

Borrowing book – physical library requires borrowed books to be returned after a specified duration while in the online library system, the system allows you to access any material at any time.

Users can also download the materials if they wish to use them outside the platform which is totally convenient than borrowing

Pricing – most physical libraries charge fees for borrowing or using the libraries. This online library gives free access to resources and they are fully accessible at any time.

# **Chapter 2**

## **System Features**

### **User features**

**Signup:** Users of the system need to sign up to use the system. Signup requires user to specify their field of interest thus the user can always get relevant content from the website.

**Login:** All the users of the system plus the administrator can log into the system through a login page and will be redirected appropriately based on their role in the system.

**Navigation:** There is a landing page were logged in user can interact with the latest content of the website. The users can also navigate to other pages through a user-friendly navigation bar. The navigation bar has links to named pages where user can find any item page from the drop-down item menu.

**Profile:** Users can update their profile details such as username and password.

**Google books:** The system has integrated google books through google books API thus enabling the users to access even more resources without need for looking them up from other places. Google books provide a very large data set of books from every field of interest.

**Pages:** Every content is categorised into pages that enables users to get specifically what they want without having to check manually through the system

**Search:** The system enables users to serach for books in the website. Google books API also enables the users to search for the books from google sources that has a vast collection of materials.

**Articles:** The website has articles page that will show the user articles that are of their field of interest. The articles can also be downloaded.

**Books:** The site presents a books page that contain several books that the user can find on the website. The books can be filtered based on the category that the user wishes to find that giving the user a more customizable interface.

**Newspapers:** The site gives users a page for accessing newspapers that have been uploaded to the system by the administrators.

### **Admin features**

**Login:** Administrator can login to the system through the login page. The login age checks the user level and redirects the admin appropriately to the admin dashboard page.

**Admin dashboard:** The administrator gets a dashboard page where they can see a summary of the overall system features like total users and total items uploaded in the website.

**Manage users:** Amin has a manage users tab in the dashboard where they can see the registered user details like username and email. This enables the admin to update the user details and manage the user records.

**Manage items:** Administrator can manage the items uploaded in the platform. They can edit, delete or change the items details whenever needed.

**Manage categories:** The admin is able to manage the categories for uploading items. The categories will help users filter the content they see based on the selected categories. The categories also enable users to get personalised content.

**Manage fields:** The user can add, edit and manage fields of interest. These are the options the users can choose from when signing up so that they can get relevant content based on their field of interest.

# **Chapter 3**

## **Operating Environment**

This system is an online library system. That means it is an online based application that is accessed through a web browser.

The system has a responsive design achieved by the use of Bootstrap which is a framework for frontend CSS and JavaScript design. This makes the website accessible and usable on any type of device that has a browser. All that is required is a browser and internet connection since the resources are online based.

It is not limited to online use only as users are able to download resources for later use.

**Hardware:** The website is responsive on any size of device based on the screen size. User can comfortably interact with the website on small screens, medium screens and large screen devices ranging from mobile phones, tablets, iPad, laptops, desktops etc.

**Software:** The website uses bootstrap 5, and PHP scripts that is supported on almost all web browsers. The website does not need any additional software to operate.

**Users:** Any user can access the website; all the user needs to do is sign up and specify the field on interest to get a more personalised content.

# **Chapter 4**

## **Functional requirements**

**Programming Languages**

**PHP:** PHP is a language that handles the backend functionalities of the system. User requests are processed and managed by PHP. Functions managing the system and running scripts are done through PHP for backend processes such as form validation and user authorisation.

The system is secured through password management for user authentication. Users are required to log into the system using a password that they created during the sign-up process. The users can manage their profiles to and update their passwords appropriately. All the passwords are hashed before being stored into the system.

Form inputs are sanitized thus are safe to use and any illegal attempt of hacking are prevented from happening.

**Bootstrap 5:** Bootstrap 5 is responsible for the design of the system. By use of components and predefined classes, it enables rapid development of resources of the website. It provided an easy-to-use implementation.

Bootstrap is responsible for the styling and JavaScript codes that are used in the system. There is also a custom style applied to the system making bootstrap more customizable.

The system is developed to give a user-friendly interface. The design is very appealing and easy to use. The navigations are explicitly descriptive and the user can easily find what they are looking for in the online library system

## **Non-functional requirements**

**Performance and scalability.** The system is highly scalable and handle large amount user requests. Activities such as download are optimized such that every downloadable content is made available to the client side as soon as is it rendered.

**Portability and compatibility.** The project uses PHP version 8 which is compatible with almost all browsers’ and can handle request and process user data correctly. The website also uses Bootstrap 5, which is a class bases framework that uses JavaScript and CSS. These are supported on every browser.

Since it is a web-based application, any operations system and device can access the website. All that is needed is a web browser.

**Usability.** The website is very user-friendly and gives a very speedy response to user requests. Pages are easily loaded and the content is highly descriptive. This gives the users easy time for finding any resources they are looking for.