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ORIGINAL ARTICLE

Customization of KOHA Web-OPAC of the University Library, DUVASU Mathura: A Study

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ABSTRACT

In libraries, KOHA is a well-known name in the field of library management system open-source software used worldwide due to its ease of use, dynamic nature, and frequent updates. Furthermore, the need-based customization enhances the software's functionality and usability for both users and librarians. Its Web OPAC can be made more interactive and customized with a little understanding of HTML coding. Koha's Web-OPAC customization function is accessible to librarians who have the least knowledge of HTML code or website design. The University Library of DUVASU Web-OPAC case study is presented in this article. Although Web-OPAC modification is a continuous activity, the University Library's customization is solely focused on necessities and does not take advantage of its extensive capabilities and options to make it more appealing. The Web-OPAC will become more engaging and dynamic after utilizing more possibilities. In this article, we tried to help other library professionals customize their Web OPAC and make it a more dynamic, integrated, and attractive Web OPAC page for its users and discussed the difficulties we've faced to achieve this target.

KEYWORDS

• KOHA • OPOA • Web OPAC • OPAC Web Page • Library Automation • Cloud Computing

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INTRODUCTION

The "Uttar Pradesh Pandit Deen Dayal Upadhyaya Pashu Chikitsa Vigyan Vishwavidyalaya Evam Go Anusandhan Sansthan," or, as it is known by its acronym, "DUVASU,' is the first of its own type of university in the state and the fourth in the country. It was established by the Uttar Pradesh Government vide U.P. Act No. 27 of 2001 on 25.10.2001 with the College of Veterinary Science & AH., the erstwhile U.P. College of Veterinary Science & Animal Husbandry, Mathura, as its main constituent college. With the establishment of Veterinary College in 1947 (About University, 2025). The College Library was started in a small hall of the main building. Thereafter shifted to the present three-story building on 16th January 1977. In 2001 its establishment as the university, the college library was upgraded to the university library. The DUVASU university library is delivering quality library services to the students, teachers & research scholars, supporting research & teaching, and extension programs of the university. In 2024 the university has two more constituted colleges, namely the College of Dairy Science and the College of Fisheries Science, and one self-financed college, the College of Biotechnology. As per the direction of ICAR, all agricultural and allied subjects at central universities, state universities, colleges, and institutes are directed to use only Library Management Software KOHA (open-source software). All housekeeping services are provided by KOHA, so DUVASU has opted for KOHA and automated all its housekeeping services with the help of KOHA in 2020 with an RFID-enabled system. KOHA web OPAC, which is known as an online public access catalog, is widely used in Indian and overseas libraries, and those who are not adopting this marvelous software also switched it rapidly. It was developed by Katipo Communications for the Horowhenua Library Trust in New Zealand in 2001 and is used as an integrated library management system for any type of library, whether it is a public, academic, or special library. It has several modules for completing every task in any type of library as patrons, cataloging, circulation, acquisitions, serials, reports, administration, and tools, along with the OPAC, which can run on either an intranet or the internet (Shaikshavali & Madhuri, 2024). At present, the university library houses a highly specialized collection of over 36,000 documents in areas related to veterinary sciences, biotechnology, dairy, fisheries, animal husbandry, and allied subjects. This diverse collection includes books, theses, periodicals, reprints, and much more.

REVIEW OF LITERATURE

Due to its adaptability, affordability, and customizability, Koha, an open-source Integrated Library Management System (ILMS), has become a popular choice in academic libraries across the globe. Using the University Library of DUVASU as a study, this paper investigates Koha Web-OPAC's customization. It explores user engagement tactics, functionality improvements, UI design, and the wider effects of customizing open-source software in academic libraries. Chang *et al.* (2013) investigated the creation of a standardized data transfer mechanism using the Perl programming language. Based on the seminal work of Chang *et al.* (2013), a primary focus of their study was the mapping of FRBR and MARC21 data items, including the conversion of CMARC4/2021 elements to FRBT. Their contributions covered a number of topics that Zhang and Salaba had previously mentioned in the FRBR research background section. In particular, they created FRBR data models and reusable documentation, suggested rules for encoding FRBR within the CMARC framework, and unveiled the first Koha-based FRBR library system in China. Additionally, they developed a tool to facilitate this process and evaluated the system's usability through an initial user assessment with OPAC users and professional catalogers.Due to its adaptability and customizability, KOHA has become very popular in academic libraries across the globe. According to Ullah *et al.* (2023), the system's versatility makes it especially appropriate for university libraries, and with the right preparation, implementation procedures are not too difficult.(Mishra, 2015) concentrated on the Koha library automation software's Web OPAC component, specifically how it was

implemented at the Indian Institute of Science Education and Research (IISERB), Bhopal. His research emphasized Koha Web OPAC's benefits in offering user-friendly online catalog services and pointed out a number of its unique features. The study contributed to a more comprehensive understanding of Koha's capabilities in a real-world academic context by describing both the basic and advanced search functionalities with patrons' account features.A study of the OPAC system utilized by the Rabindra Library, Central Library of Assam University, was presented by Sharma *et al.* (2016). Their research executed and discussed the university's customization of Web-OPAC was primarily motivated by necessity; the system's full potential was still not being fully utilized, especially when it came to user engagement and visual design. In order to encourage other libraries to similarly modify Web-OPAC systems to better suit user needs, the authors stressed that customization efforts are continuous and urged sharing their institutional experience.Koha was used to create a Web-OPAC portal for the ICAR Library, according to Tella & Oladapo (2016). Their research emphasized the value of ongoing enhancements based on user input, which was proactively requested via the platform. The feedback mechanism reinforced the importance of participatory design in library automation by enabling adaptive improvements to the system. As the main gateway for patrons to access library resources, Koha's OPAC is an essential feature of the library management system. OPAC must be customized to satisfy the unique requirements of libraries and improve user experience. According to studies, Koha's Web-OPAC can be altered in terms of both appearance and functionality by utilizing HTML, CSS, and JavaScript (Kumar Sarma, 2016). For example, librarians can customize the Web-OPAC to meet their needs by dividing it into sections like the header, navigation bars, main content area, and footer. Making the OPAC's front-end view more interactive and user-friendly is a common step in the customization process. From the OPAC interface, libraries can incorporate features like links to open-access e-resources, advanced search filters, and fast search options (Kumar Sarma, 2016). By making pertinent resources easily accessible, these customizations not only increase the system's usability but also save the user's time.

Objectives

- To evaluate the usability and effectiveness of the Koha Integrated Library System, with a particular focus on its Web OPAC (Online Public Access Catalog) interface.
- To identify and analyze various approaches and techniques employed in the customization of the Koha Web OPAC page.
- To assess the impact of Web OPAC customization on user experience, engagement, and accessibility of library resources.
- To examine the challenges and limitations encountered by library professionals during the customization of the Koha Web OPAC.

METHODOLOGY

An experimental approach to research is used in order to customize the OPAC. The OPAC's front view has been customized without using any programming language or commands. In 2020, ILMS KOHA was set up at the university.

Statement of the Problem

Providing seamless access to resources from users' desktops is becoming an increasingly difficult task for librarians as traditional library footfall declines as a result of the massive advancements in information and communication technology (ICT). To solve this, creative solutions must be used to match library services with the behavior of digital users. To enable remote access, digital library systems such as the open-source Koha Integrated Library System (ILS) provide flexible, user-friendly platforms, particularly through customizable Web-OPAC interfaces. Librarian ingenuity and support by the competent authority are essential for the success of such systems. The creation of a tailored Web-OPAC for the ICAR Library is investigated in this study, with constant user input directing advancements.

CUSTOMIZATION APPROACHES

Earlier the KOHA web OPAC home page has basic information and appearance as shown in figure 1.

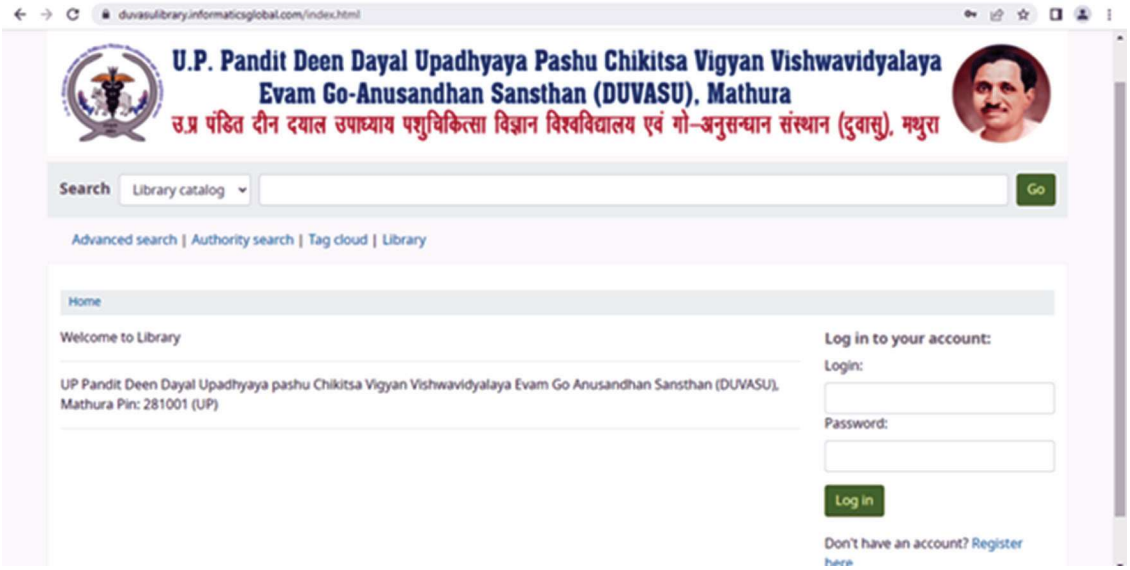

Figure 1: Old KOHA web OPAC Page

The Koha OPAC home page is divided mainly into six parts: Header, Left and Right Navigation pane, Main User Block, which is commonly used for written content for users, and Footer.

KOHA Home Page Header: It is the top part of the web page and contains the university/college/institute logo, name, and main menu items. It is our first task to change the header to be more attractive and create more menu items to add university library information and offer services under those tabs. We have to design the header with open-source Inkscape software that is easy to use and does not need an IT-savvy person to design the vector files and link the header image with the KOHA OPAC home page. The following step is to be followed to complete the header task:

1. Login as KOHA Administrator

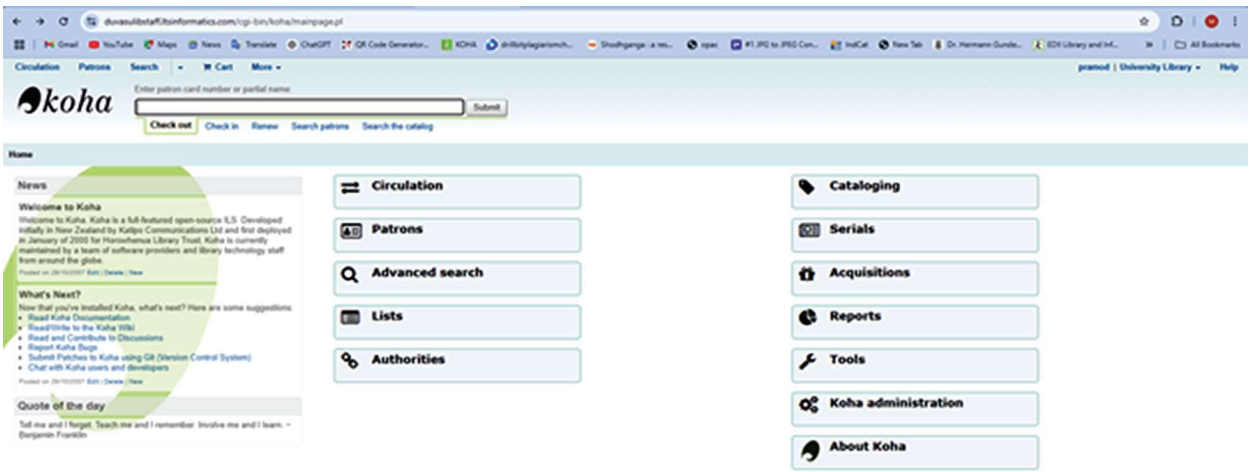

Figure 2: KOHA Admin Panel

2. Tools

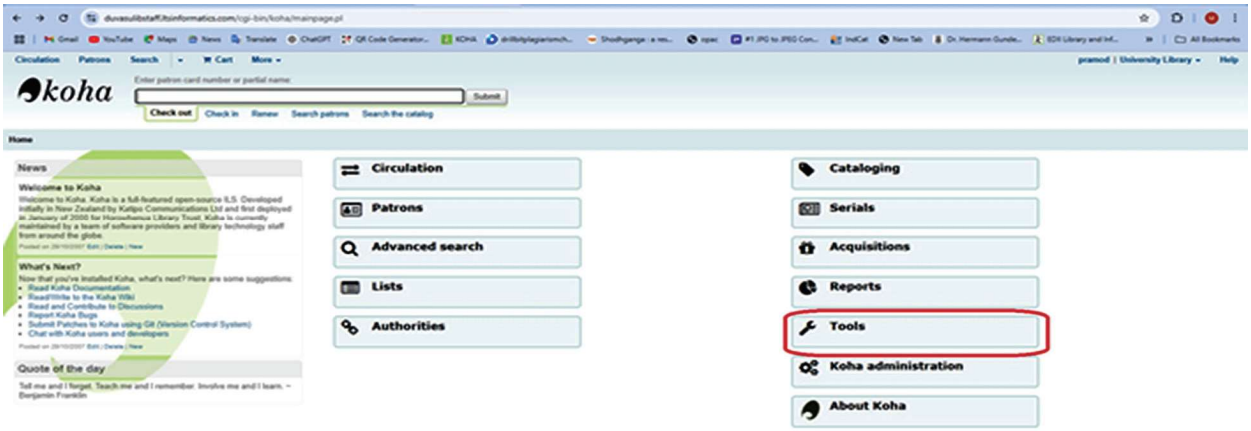

Figure 3: KOHA Admin Panel (Tools)

3. News

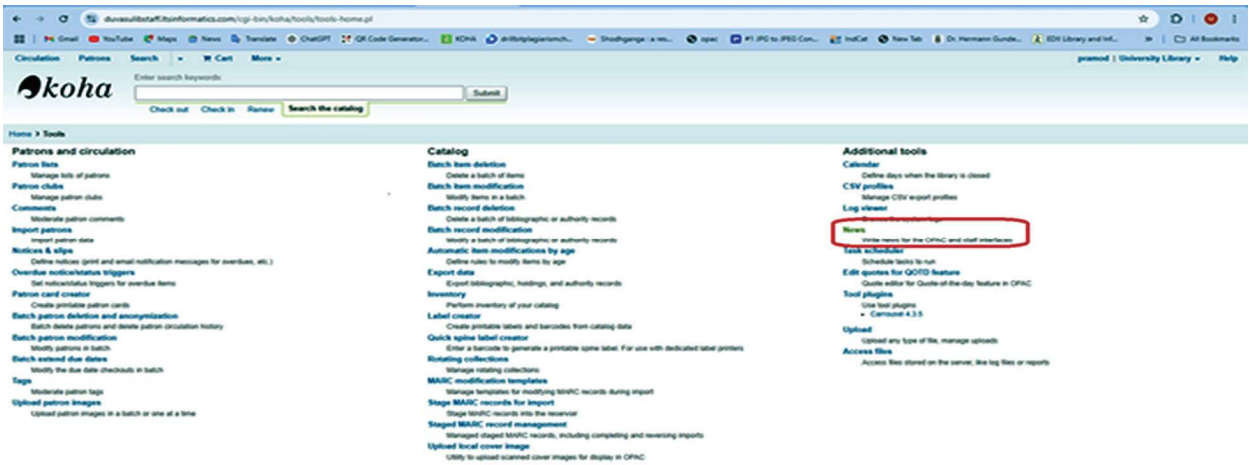

Figure 4: KOHA Admin Panel (News)

4. New Entry

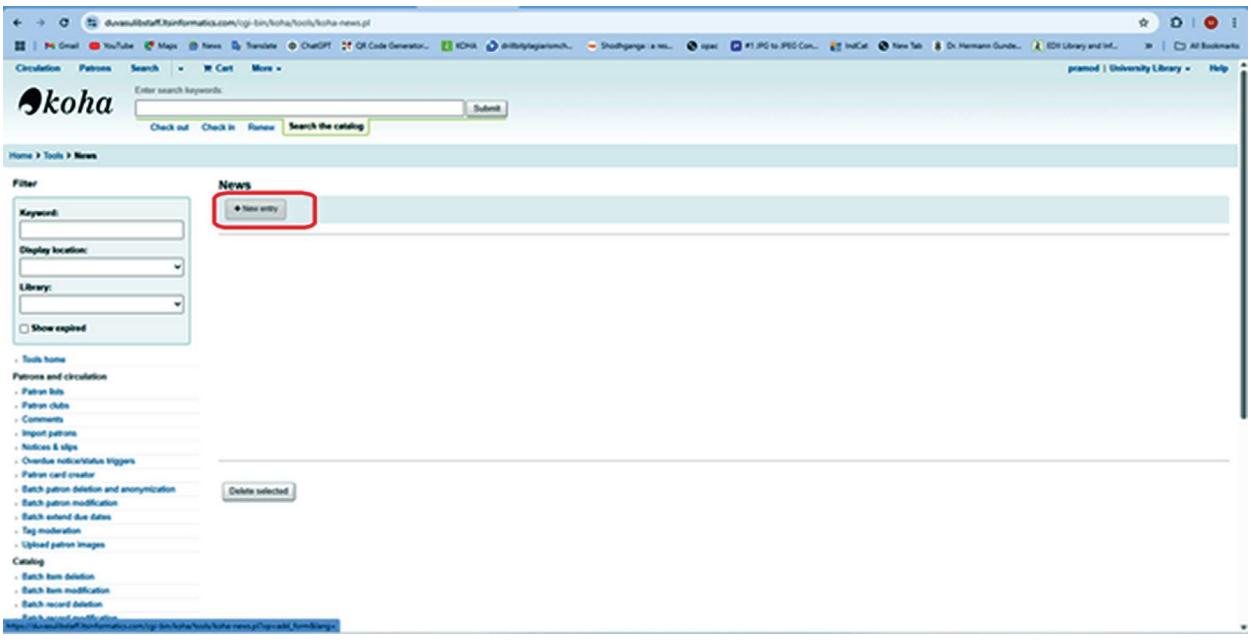

Figure 5: KOHA Admin Panel (New Entry)

5. Display Location-Choose 'opacheader'

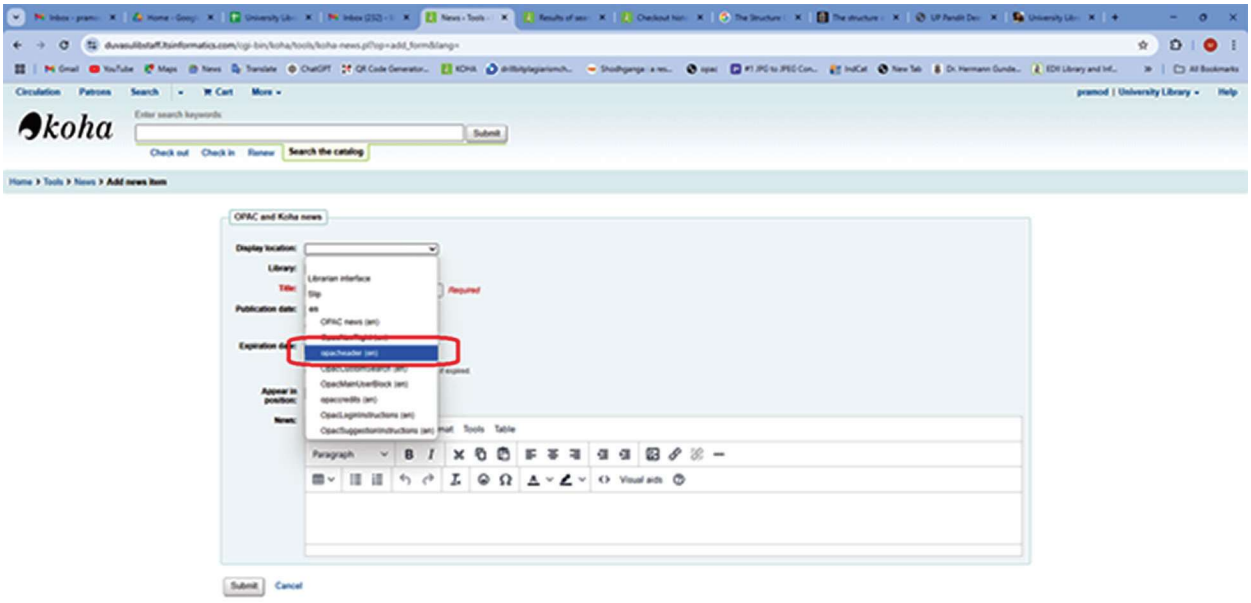

Figure 6: KOHA Admin Panel (opacheader)

6. Give the title, publication date, and expiry date, paste the header image, and insert all menu items and link them with external links or HTML pages

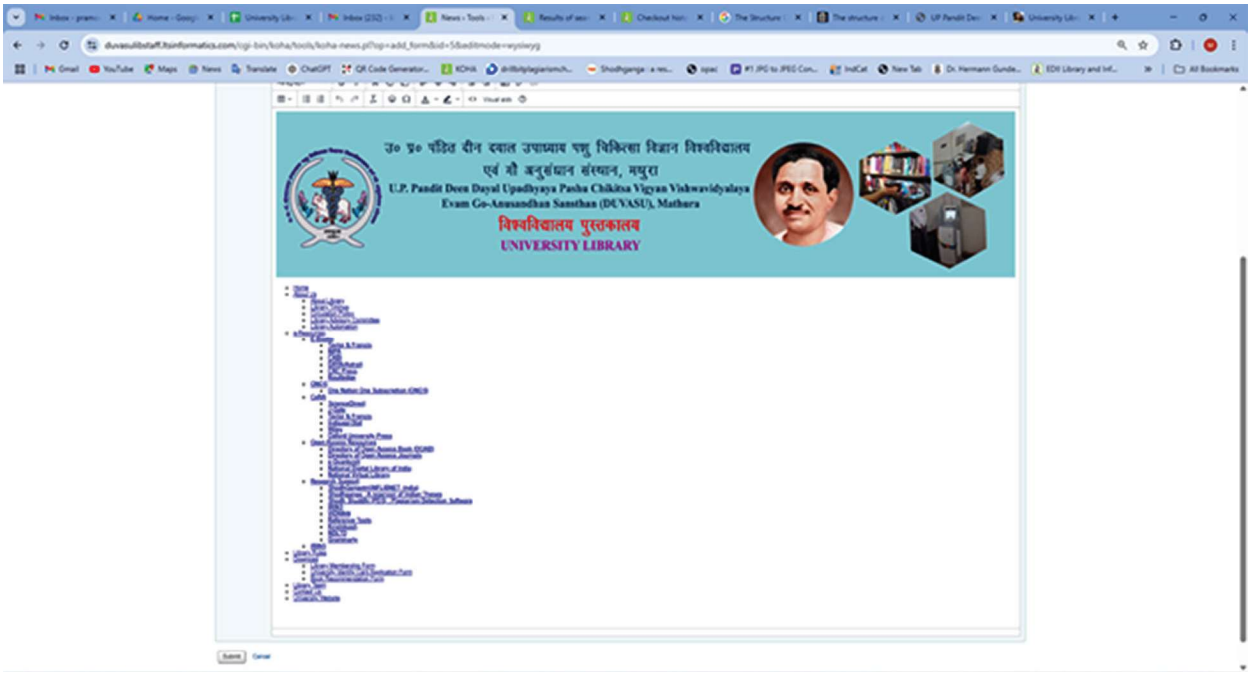

Figure 7: KOHA Admin Panel (Header & Menu Items)

- **KOHA Quick Link:** It generally provides the information about the KOHA but is customized by the librarians with basic knowledge of HTML, Java, and CSS and is quite easy to create the quick links. Quick links are very useful for the user to directly land on the desired page of information windows. It is customized under the opacNAVright option from administrative tools.

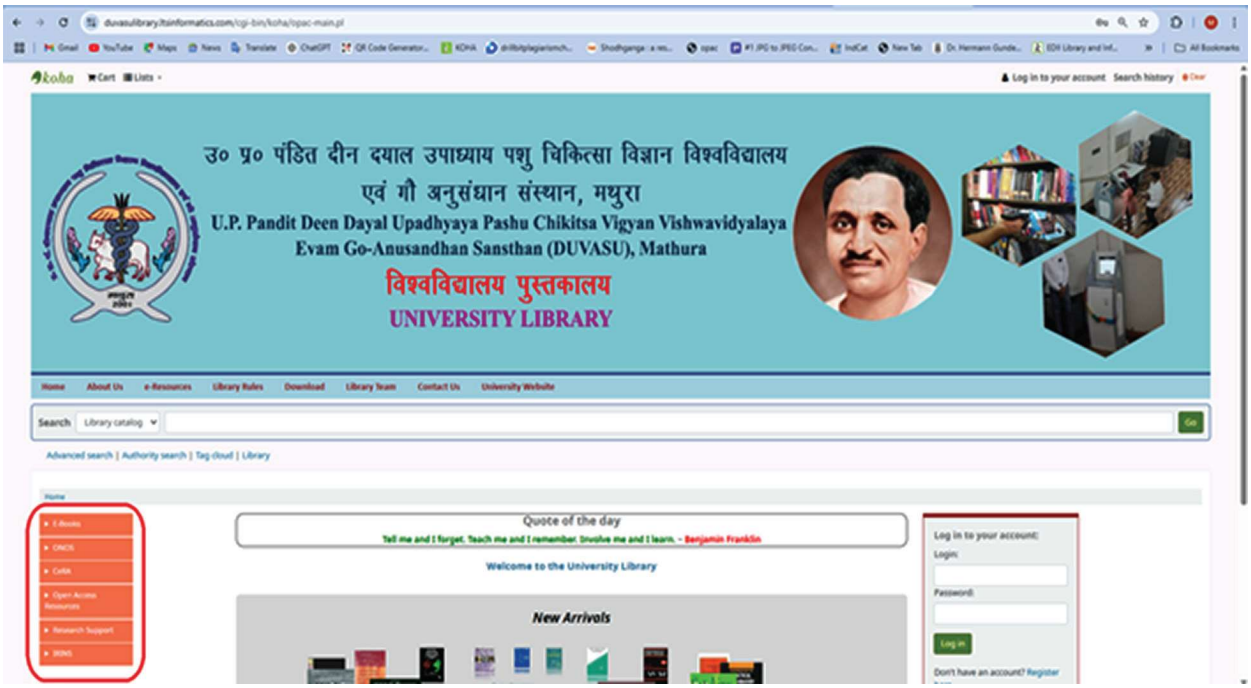

Figure 8: KOHA Web OPAC Home Page (Quick Links)

- **KOHA Main Menus:** It is situated just below the header, and it contains the search bar with search and advanced search options for the users to fetch desired information on the library collection.

Figure 9: KOHA Web OPAC Home Page (Search & Advanced Search)

- **Middle Part:** It is the middle section or main body of the home page and displays the welcome message from the library and daily quotes of famous personalities of the world that is enabled by the Edit Quotes for QOTD feature under the tools option of KOHA.

Figure 10: KOHA Web OPAC Home Page (Daily Quotes)

- **KOHA New Arrival:** It is just below the welcome message and provides the information on new arrivals of the library that is the open-source KOHA plugin, namely Books Carousel (v 4.3.5 2025-02-06). This plug-in uses one of our lists to create a nice dynamic carousel on our library home page.

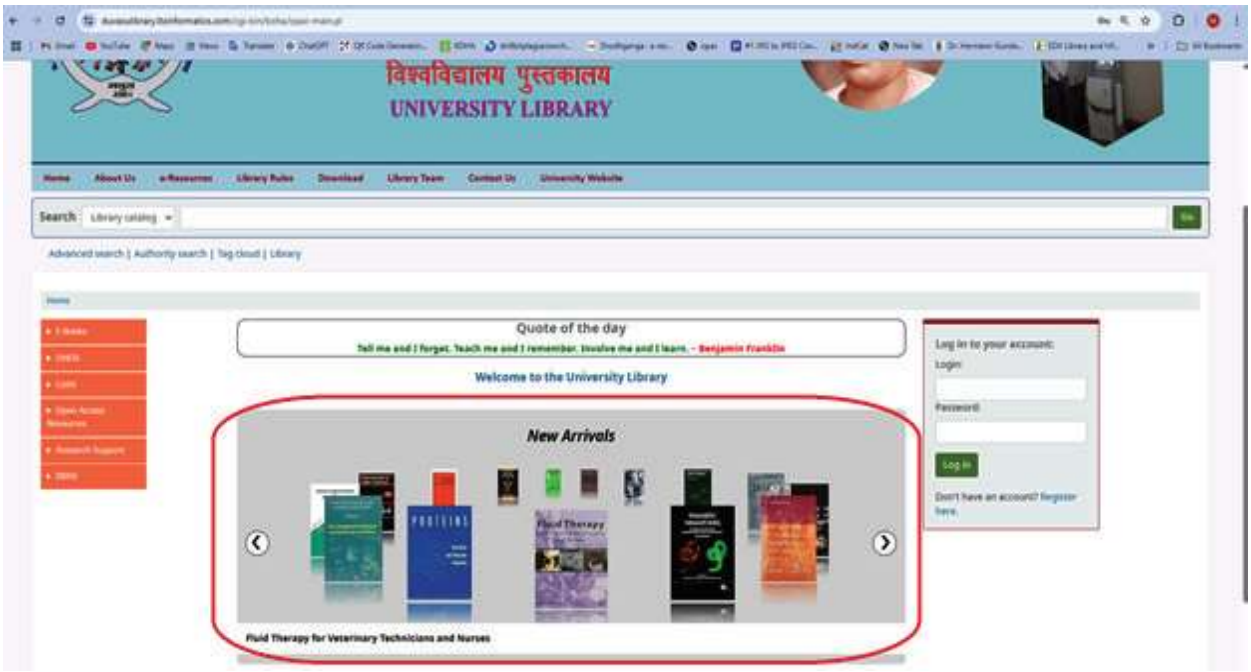

Figure 11: KOHA Web OPAC Home Page (New Arrivals)

- **KOHA Home Page Footer:** It is the bottom part of the page and generally contains the managing person/ department name, contact details, and address. It is published on the OPAC home page through 'opaccredits' under the news option of Tools.

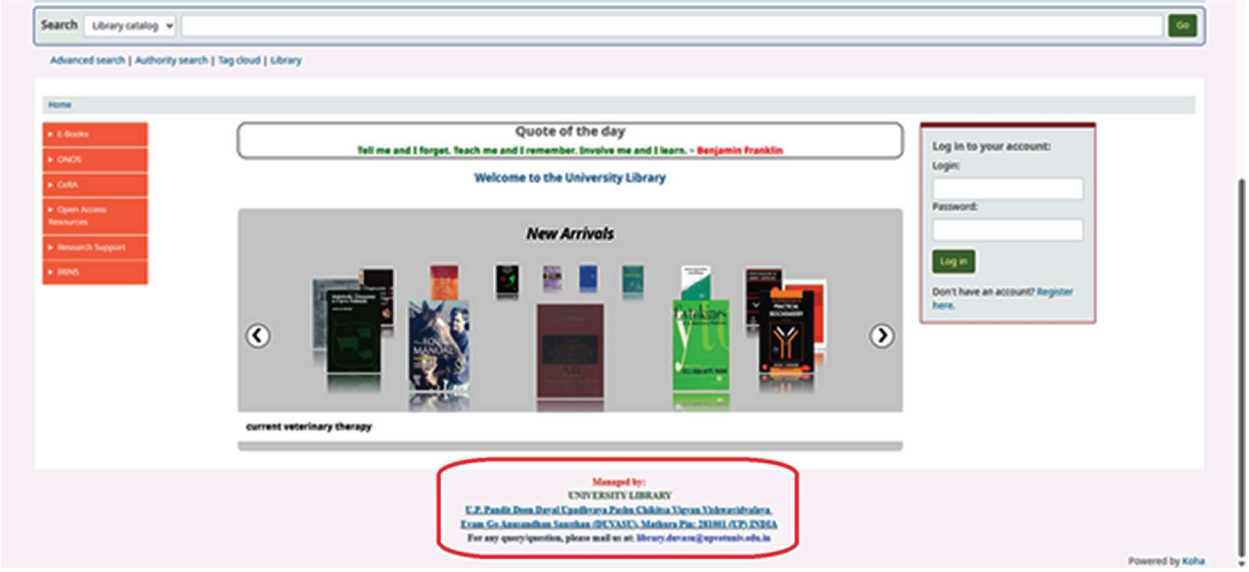

Figure 12: KOHA Web OPAC Home Page (opaccredits)

After all the customization, we've found our new KOHA web OPAC home page as mentioned below:

Figure 13: New Customized KOHA web OPAC

Figure 13 represents a final structured layout of the newly customized KOHA web OPAC page

DIFFICULTIES TO CUSTOMIZE KOHA OPAC

While Koha OPAC offers powerful customization capabilities, the below-mentioned challenges may arise during the customization process:

- **Technical Expertise Required:** Customizing Koha OPAC requires a working knowledge of web technologies such as HTML, CSS, JavaScript, and Template Toolkit (TT). Lack of proficiency in these areas can limit a librarian's ability to make meaningful changes.
- **Complex Template Structure:** Koha uses Template Toolkit-based templates that can create problems to navigate for those users who are unfamiliar with this framework. Making changes without breaking the existing schema can be complex.
- **Limited GUI-Based Customization:** Most customization options require manual code editing. Koha does not provide a highly advanced graphical user interface (GUI) for deep customization of the OPAC.
- **Documentation Gaps:** Although Koha has an active community, documentation on advanced customization is often scattered or outdated, making it harder for beginners to find clear, step-by-step guidance.
- **Version Compatibility Issues:** Customizations made for one version of Koha may not work as expected after an upgrade, requiring constant maintenance and adaptation of custom code.
- **Server Access and Permissions:** Some customizations (e.g., editing CSS files or template files) may require server-level access, which is often restricted in institutional settings due to security policies.
- **Dependency on Community Support:** Being open source, Koha relies heavily on community forums and mailing lists for support. Immediate technical assistance may not always be available, especially for complex issues.
- **Aesthetic Limitations:** Without strong design skills, users may struggle to create a visually appealing interface, potentially affecting user engagement and satisfaction.

CONCLUSION

As an open-source integrated library management system, Koha provides centralized access to a large spectrum of freely available materials. Its strong customizing tools enable library managers to remain current with the most recent system capabilities. Koha's user-friendly and aesthetically pleasing Web OPAC (Online Public Access Catalog) greatly improves the whole user experience by allowing simplified searches and removing the need to recall many URLs. Koha's open-source character is one of its main benefits since it lets people with a basic knowledge of HTML, Java, and CSS change and set different modules. These cover label printing, barcode generation, MARC (Machine-Readable Cataloging) systems, and the OPAC interface. Such adaptability and flexibility help Koha to be widely used and a top library management system in the world. After the Koha Web OPAC was customized, users claimed better visual appeal and simpler access to thorough knowledge about university library collections—including print and digital resources. Using Koha, this paper provides a useful manual for library professionals showing how they might personalize their Web OPAC to draw in more users and more successfully highlight the most recent library offerings.

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