**Modification of Koha through Online Public Access Catalogue: An Experimental Based Study**

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***Abstract***

**Objective:** A library's whole collection of books, documents, and other resources can be found in an online database called an OPAC. Now, OPAC has replaced the outdated card catalog system as a tool for assisting library patrons in finding the information or resources they need. The primary goal of the study is to investigate various facets of Koha OPAC modification.

**Methodology:** For the study to customize the OPAC, an experimental research methodology was adopted. To alter the front or face view of the OPAC, CSS, HTML, and Java coding have been utilized as commands.

**Findings:** The Koha OPAC is divided into six sections: the header, right navigation, left (upper and lower) navigation, main user block (the region in the middle of the OPAC where content will be written), and footer. An editing tool that is very interactive is available to library professionals who lack extensive programming experience.

**Originality:** The customization process allows fellow professionals to become familiar with new features to fully utilize Koha, while also assisting users in finding relevant open access e-resource links on a single platform. This saves users' time because they don't have to remember the URLs for these e-resource platforms or databases.

**Introduction**

A particular library's resources and items are listed in an online database called an OPAC, or online public access catalogue. It may be viewed using a computer or other electronic devices and is kind of like a catalogue. OPAC may eventually take the role of the traditional card catalogue as a tool for assisting library patrons in finding the materials they need. The database may be searched electronically by users, giving them a quicker and more thorough way to get the information they need. The fact that an OPAC is user-friendly and open to all parties is one of its distinctive features. If assistance is required during a search, the system is set up to provide such aid through a variety of prompts, suggestions, and help whenever necessary, themes, FAQs, and even error messages. Search results are presented in 3 methods, i.e. standard view, MARC display and ISBD display, which is easy to read and understand. In the 1960s, online catalogues first grown in popularity.

However, it took until the 1970s for the first major scale catalogues to be created (specifically at Ohio State University in 1975 and Dallas Public Library in 1978).

With the advent of the first commercial systems throughout the 1980s, a growing number of online catalogues were created. After that, though, enthusiasm dwindled, and during the 1990s, the allure of the online public access catalogue all but disappeared. With online catalogues now being offered at the bulk of libraries across the nation, new techniques and tools have recently brought attention back to OPAC development. Many universities and colleges today use some form of OPAC to aid students in obtaining the data housed in their libraries.

The majority of public library have also created their own OPACs, which give library users easy access to information.

 A library user or college/university student must first click into the OPAC after accessing the library's link online or offline. The title, author, date, and even subject can all be used as search criteria.

Results provide a link for rapid digital access or by indicating the exact location of each item.

**1.1 Objectives**

Following objectives has been considered for the study

• To customize the Koha OPAC by using HTML, Java and CSS commands;

• To check the output after applying the commands.

**1.2 Research Methodology**

For some people, research consists of reading books or searching the internet for data.

In actuality, these tasks represent only a small portion of the whole job.

This study investigates several facets of Koha OPAC modification.

The project to alter the OPAC has used an experimental research approach.

The whole front look of the OPAC can be customized using HTML, Java, and CSS coding.

**2. Review of Literature**

Dr. Tripathi noted that Koha allows the Koha admin to edit the OPAC to make it more appealing and instructive in an essay he wrote for his blog about customizing the Koha OPAC. The Koha administrator will benefit from knowing HTML, Java, or CSS coding, although it is not essential to be an expert as these codes can be found online using any search engine, or the ideal method is to use the Koha documentation.

The installation of Koha Web-OPAC: A Study of Assam Don Bosco University Library was the subject of a 2018 paper by Bareh & Chanda.

The purpose of this article is to demonstrate the detailed process of Koha Web-OPAC modification phases at Assam University Library. Their work was based on the collective collection of individual experiences made during the implementation phase. The GNU licence was a factor in the decision to use Koha ILMS (Open Source).

In their study titled "Koha Web OPAC-Customizing it to Make a Library Portal -A Case Study of Assam University Library," Sharma, Tripathi, and Mishra (2016) noted that Koha is one of the most well-liked open-source programmes worldwide because of its usability, availability for free, and regular updates.

The Web-OPAC customization function of Koha can be used by librarians and Koha administrators without them needing to know anything about HTML coding or web page design. The Web-OPAC of Arni University's Central Library is the subject of a case study in the current paper.

In this paper, an effort has been made to share Arni University's experience so that other librarians can personalize their Web-OPAC and make their library materials available to users on their desktops.

In his research paper "Using Search Engine Technology to Improve Library Catalogs," Lewandowski (2010) discussed how search engine technology could be used in online public access library catalogues (OPACs) to enhance user experiences, identify users' intents, and indicate how it can be applied from the perspective of the library, as well as how sophisticated ranking criteria can be applied to the online library catalogue. It is believed that before adding further features, OPAC development should become search-focused.

However, the suggestions regarding user intentions and ranking functionality are still hypothetical and have not yet been implemented in a library catalogue.

**3. About Koha**

The Horowhenua Library Trust in New Zealand commissioned Katipo Communications to develop Koha, an open-source library automation system. The first installation was made live in January 2000.

Koha is an ILS that is available over the web and has a SQL database back end (MariaDB or MySQL are preferable). The cataloguing data is saved in MARC and is accessed via Z39.50 or SRU. Perl, JavaScript, and HTML are all used in the creation of Koha. Koha is the sole operating system that it supports.

The most recent stable release of Koha is 20.05.02, which was made available on July 22, 2020. Many libraries utilise Koha, and its development is guided by a growing user community that works together to achieve their technological objectives. The feature set of Koha is constantly developing and growing to suit the demands of its user community.

Circulating, Clients, Advanced Search, List, Cataloging, Permissions, Serials, Acquisitions, Statistics, Tools, Koha administration, and About Koha are the modules that are offered by Koha.

Label printing, notices in many formats, offline circulation for times when internet connectivity isn't accessible, and many other Koha features are very appealing.

Koha can be used for multi-branch and single-branch libraries, as well as consortia of any size. There are numerous languages supported by Koha, and new ones are added yearly. Koha has a full-text, robust search feature and an improved catalogue display that can access content from a variety of sources, including Ebay, Google, LibraryThing, Open Library, and Syndetics.

While supporting current workflows and tools, Koha is developed utilising library standards and protocols including MARC 21, UNIMARC, z39.50, SRU/SW, SIP2, and SIP/NCIP. This ensures interchange between Koha and other systems and technologies. Because Koha is built using standards-compliant World Wide Web technologies (XHTML, CSS, and Javascript) for its OPAC, circulation management, and self-checkout interfaces, it is a true cross-platform solution.

The Free Software General Public License (GPL) version 3 or later governs the distribution of Koha. Most crucially, there is no vendor lock-in; libraries are free to install and use Koha on their own if they have the necessary internal competence or to hire the best providers of support or development services.

Make sure your support provider permits libraries to export their data and switch support providers at any moment.

(<https://koha-community.org/about/>).

**3.1 Koha OPAC**

The Koha OPAC is divided into four sections: the header, right navigation, footer, main user block (the region in the middle of the OPAC where information will be written), and left navigation.

You can use HTML, Java, and CSS in any of the aforementioned OPAC sections.

See the illustration below:

  ***Table 1. Block-wise Partitioning of Koha OPAC.***

|  |
| --- |
| **Header** (*opacheader*) |
| **Left Navigation** (*OpacNav*) | **Main User Block** (*OpacMainUserBlock*) | **Right Navigation** (*OpacNavRight*) |
| **Footer** (*opaccredits*) |

Koha Administration - Global system preferences - OPAC can be used to change the aforementioned regions (available in the left navigation menu). One needs to be a super librarian in Koha with access to all library features and a working knowledge of HTML, Java, and CSS coding in order to edit OPAC. Knowing HTML, Java, and CSS will make OPAC customization simple.

**4. Customization of Koha Online Public Access Catalogue (OPAC)**

The first step in customizing Koha OPAC is to log in as a superlibrarian using the username and password. All the modules in Koha will show following a successful login; click on the Koha administration module, then select Global System Preferences, and finally select OPAC from the left navigation menu. After selecting OPAC, all of the OPAC choices will be displayed; however, only a small number of preferences need to be changed in order to personalize the OPAC page.

Every time an HTML command is entered into a field that is necessary, the Koha administrator must save the command in order for the effects to show up on the Koha OPAC page. The "Save all OPAC preferences" tab, which is located directly below the OPAC preferences, must be clicked by the administrator in order to save the commands.

**4.1 Library Name:**

First, we must modify the LibraryName so under "Appearance" submenu.

Whenever anyone opens the OPAC in a browser, the name of the library will be displayed in the header. Click the "Save all OPAC preferences" tab, which is located immediately below the OPAC preferences, after altering the library name.

**4.2 Opac Credits**

**Table 2. OPAC Credits Commands**

|  |
| --- |
| <p align="center">Central Library<br><a href="https://www.arni.in/" target="\_blank">Arni University</a></br>Kathgarh, Himachal Pradesh</p><p align="right"> </br></p><p align="right">OPAC Customized by Mr. Amit Kumar, Librarian, Arni University <br>Email:: amit.arni@rediffmail.com</br></p> |

Click on the ‘Save all OPAC preferences’ tab which is available just below the OPAC preferences. <hr size=10>

|  |
| --- |
| **Central Library**[**Arni University**](https://www.arni.in/)**Kathgarh, Himachal Pradesh****OPAC Customized by Mr. Amit Kumar, Librarian, Arni University Email:: amit.arni@rediffmail.com** |

**Figure 1. OPAC Credits Output**

**4.3 Opac Header**

OPAC headers may include a header image and a few URL links for the users' use.

The picture needs to be a banner with the library's name, address, emblem, etc. on it. First, create an image, rename it, and use the same name in the HTML command to set the picture in the header section of the OPAC. Next, copy the image and place it in the 'htdocs' folder.

Following are the procedures to paste the image in the htdocs folder:

*•* Press Ctrl+Alt+T to open the terminal. • Type sudo su - enter the Linux password (same password which has been set up during linux installation)

In the window that appears, click on home-usr-share-koha-opac-htdocs folder and then paste the image there.

They enter the following command in Koha's opacheader menu: Modify height and width as necessary.

**Table 3. OPAC Header Command for Inserting Image in the Header**

|  |
| --- |
| *<style type="text/css">**#lib-logo{**background:#CC0000;**padding-left: 5px;**margin:-10px -10px 0 -10px;**font-weight:bold;**font-size: 0px;**color: #550000;**}**</style> <div id="lib-logo"><center>.</center>**<img src="http://172.16.7.24/jspui/image/dspace-blue.png" width="25%" height="10%" align="center">* |

Type the following command in the "opacheader" box and add the URL link as needed to add helpful links to the OPAC header.



**Figure 2. OPACheader Output**

**Table 4. OpacMainUserBlock Command for Inserting Useful URL Links in the block**

|  |
| --- |
| This website contains useful information about library services. The website is updated regularly in order to cater for the needs of the users.<br><strong><font color="Red"><p align="justify">Quick Links </strong></font color><br> <br> <li><a href="https://www.pdfdrive.com/" target="\_blank"><font color="black"> PDF Books </font></a></li><br><br><li><a href="http://www.indiancitationindex.com/ici.aspx" target="\_blank"><font color="black"> India Citation Index </font></a></li><br><br> <li><a href="http://nptel.ac.in" target="\_blank"><font color="black"> NPTEL </font></a></li><br><br><li><a href="https://www.delnet.in/" target="\_blank"><font color="black"> DELNET </font></a></li><br><br> |

To display the name of the library or institution type the following command which will move in the OPAC header.

*Table 5. OPAC Header Command for Inserting Welcome Message in the Header*

|  |
| --- |
| <h1 id="libraryname"><a href="/cgi-bin/koha/opac-main.pl">ARNI UNIVERSITY</a></h1>background:transparent url(../../images/koha-logo.gif) no-repeat scroll 0 500%; |

After adding each HTML command to the "opacheader," select "Save all OPAC Preferences" from the menu that appears immediately underneath the OPAC Preferences.



**Figure 2. OPAC Header Output**

**4.4 Opac Main User Block**

The administrator can also insert photographs in the online public access main user block area. The OPAC main user block area can contain information about the library or any other relevant information. You can add the following command to the "OpacMainUserBlock."

The picture name must match the name specified in the command for the image to appear in the OPAC. The administration is free to include as many photos as they choose. You can modify the front's size, width, and border as necessary.

**Table 6. OPAC Main User Block Command for Inserting useful links and Library Information in the OPAC Main User Block**

|  |
| --- |
| <!---Welcome section Begins--><font size="5" color="#FF0000"><center><b>WELCOME TO CENTRAL LIBRARY</b></center></font><hr><left><h6 align="justify"><justify><strong><font color="Red"><p align="justify">ABOUT THE LIBRARY</strong></font color><br />Library functions as the Primary Information Resource Centre and repository of printed and electronic resources for teaching and research activities at the University. The library has a rich collection of Books and Journals in the field of Engineering & Technology, Life Sciences, Basic Sciences, Arts & Humanities, Commerce & Management, Pharmacy, Hotel management etc.<br><br><strong><font color="Red"><palign="justify">LIBRARY TIMINGS</strong></font color><br />Monday – Saturday 9:00 AM – 5:00 PM<br><br><strong><font color="Red"><p align="justify">COLLECTION</strong></font color><br />The main collection consists of more than 18,500+ volumes, catalogued on ERP: Library Management System, 50+ print periodicals, Back volumes of journals, newspapers, access to a full range of electronic resources e-journals and a collection of CDs/DVDs.<br><br><strong><font color="Red"><p align="justify">COMPUTER SECTION </strong></font color><br />40 Computer systems with Internet connectivity are available in the Digital Section of Library-II for academics and accessing online resources. Besides, a wireless network (Wi-Fi) is also provided inside the Library premises.LIBRARY NETWORKING AND RESOURCE SHARINGThe library is an Institutional Member of DELNET (Developing Library Network, New Delhi), which allows faculty and students to physically access the collection and databases of more than 5000 libraries in India and other countries. <br><br><br><strong><font color="Red"><p align="justify">DELNET</strong></font color><br />Library is a member of DELNET(Developing Library Network). This will help the faculty and researchers to procure those books, articles and documents from other educational Institutions through DELNET which are not available at our University. Library users can access DELNET by using User Name: hpauk and Password: auk8822.<br><br><li><a href="https://www.delnet.in/" target="\_blank"><font color="black"> DELNET </font></a></li><br><br><br><strong><font color="Red"><p align="justify">OPAC (Online Public Access Catalogue)</strong></font color><br />The Online Public Access Catalogue (OPAC) which is in the public domain enables users to search documents in possession of the library. It helps the users to search documents from the library holding and guides them to their location on stacks.<br><br><strong><font color="Red"><p align="justify">LIBRARY WEBSITE</strong></font color><br />The library has its own webpage. The address of this webpage is http://172.16.7.24:9000/ access within the campus.This website contains useful information about library services. The website is updated regularly in order to cater for the needs of the users.<br> <strong><font color="Red"><p align="justify">Quick Links </strong></font color><br> <br><li><a href="https://www.pdfdrive.com/" target="\_blank"><font color="black"> PDF Books </font></a></li><br><br> <br><li><a href="http://www.indiancitationindex.com/ici.aspx" target="\_blank"><font color="black"> India Citation Index </font></a></li><br><br><li><a href="http://nptel.ac.in" target="\_blank"><font color="black"> NPTEL </font></a></li><br><br><li><a href="https://www.delnet.in/" target="\_blank"><font color="black"> DELNET </font></a></li><br><br><li><a href="http://community.worldlibrary.in/?AffiliateKey=NDL-WC1724" target="blank"><font color="black"> World eBook Library</font></a></li><br><li><a href="http://shodhganga.inflibnet.ac.in/" target="\_blank"><font color="black"> Shodhganga </font></a></li><br><li><a href="http://www.southasiaarchive.com/unauthenticated" target="\_blank"><font color="black"> South Asia Archive</font></a></li><br><br><li><a href="http://www.nationallibrary.gov.in/" target="\_blank"><font color="black"> National Library</font></a></li><br><li><a href="http://ndl.iitkgp.ac.in//" target="\_blank"><font color="black"> NDL : National Digital Library </font></a></li><br><li><a href="https://swayam.gov.in/About" target="\_blank"><font color="black"> Sawyam </font></a></li><br><br><li><a href="https://journals.sagepub.com/home/vik" target="\_blank"><font color="black"> Vikalpa: The Journal for Decision Makers </font></a></li><br><li><a href="http://172.16.7.24/jspui/" target="\_blank"><font color="black"> My Institutional Repository </font></a></li><br><br><li><a href="https://www.biospectrumindia.com//" target="\_blank"><font color="black"> BioSpectrum </font></a></li><br><br><li><a href="http://172.16.2.9/40/Library/WebOpac.aspx"target="\_blank" target="\_blank"><font color="black"> OPAC Search </font></a></li><br><br><li><a href="https://epgp.inflibnet.ac.in/" target="\_blank"><font color="Black"> E-PG-Pathshala</a></li><br><br><li><a href="https://www.gutenberg.org/" target="\_blank"><font color="black"> Project Gutenberg is a library of over 60,000 free eBooks </font></a></li><br> |

**Click on the ‘Save all OPAC preferences’ tab which is available just below the OPAC preferences.**



**Figure 3. OPAC Main User Block Output**

**4.5 Opac Left Navigation Upper (OpacNav)**

This section of the Koha OPAC is mostly used for significant links, and the admin can add some helpful links that are simple to access by library customers. These links may include links to open access e-resources, databases, and other resources.

The administrator is free to insert any number of links.

You can use the following commands to add links to the 'OpacNav' section.

**Table 7. OPAC Rightt Navigation Command for Inserting Useful Links in the OPAC Rightt Navigation Upper**

|  |
| --- |
| <li><a href="http://myeducationpath.com/providers/24/MIT+OpenCourseWare+%28OCW%29.htm//" target="\_blank">MIT OpenCourseWare</a></li><br><li><a href="http://mhrd.gov.in//" target="\_blank">MHRD</a></li><br><li><a href="http://www.inflibnet.ac.in///" target="\_blank">INFLIBNET</a></li><br><li><a href="http://vidwan.inflibnet.ac.in//" target="\_blank">VIDWAN (INFLIBNET) </a></li><br><li><a href="http://knowledgecommission.gov.in//" target="\_blank">National Knowledge Commission</a></li><br><li><a href="http://www.sakshat.ac.in///" target="\_blank">SAKSHAT PORTAL</a></li><br><br><li><a href="http://http://www.juit.ac.in/lrc/Expert\_ServicesSubject.php///" target="\_blank">Expert Services-Subject Support</a></li><br><li><a href="http://www.ibtindia.com//" target="\_blank">IBT Coaching</a></li><br><li><a href="http://www.competitiontime.com//" target="\_blank">Competition Time</a></li><br><li><a href="http://www.sciencedirect.com/science/article/pii/S0927025612005538/" target="\_blank"><font color="black">Useful Links</font></a></li><br><li><a href="http://www.allconferences.com/" target="\_blank"> Directory of Conferences</a</li><br><div id="opacrightsidebar" class="container"><form action="http://dictionary.cambridge.org/search/british/" method="post"><table style="border-style: solid; border-width: 1px;" width="10" border="0" cellpadding="0" cellspacing="0"><tbody><tr><td><img src="http://dictionary.cambridge.org/external/images/sitesearch\_header\_new.gif" alt="Cambridge Dictionaries Online" width="130" border="1" height="31"></a></td></tr><tr><td><table width="135" border="0" cellpadding="3" cellspacing="0"><tbody><tr><td nowrap="nowrap"><input name="q" size="8" style="width: 60px; font-size: 10px;" type="text"></td><td><input src="http://dictionary.cambridge.org/external/images/search\_FFFFFF.gif" type="image" border="0"></td></tr></tbody></table></td></tr></tbody></table></form></div></div><form method="get" action="http://www.google.com/search"><div style="border:"1" solid;padding:4px;width:15em;"><table border="0" cellpadding="0"><tr><td><input type="text" name="q" size="19"maxlength="130" value="" /><input type="submit" value="Google Search" /></td></tr><tr><td align="center" style="font-size:75%"><input type="checkbox" name="sitesearch"<br /></td></tr></table></div></form> |

**Click on the ‘Save all OPAC preferences’ tab which is available just below the OPAC preferences.**



**Figure 4. OPAC Left Navigation Block Output**

**4.6 Opac Left Navigation (OpacNav)**

The OPAC left navigational bottom is identical to the OPAC left navigation upper; with HTML coding, the administrator can also include some helpful links as well as any other type of information, such as library hours and circulation policies. You can adjust the backdrop colour, height, and width as necessary.

**Table 8. OPAC Left Navigation Buttom Block Command for Inserting Useful Links in the OPAC Left Navigation Bottom**

|  |
| --- |
| <li><a href="http://www.arni.in/" target="\_blank">Arni University</a></li><br><li><a href="http://arni.in/OldQuestionPaper.aspx#/" target="\_blank">Old Question Paper</a></li><br><li><a href="http://172.16.2.9/40/Library/WebOpac.aspx"target="\_blank"> Opac Search</a></li><br><li><a href="http://classify.oclc.org/classify2/" target="\_blank"> Dewey Browser</a></li><br><li><a href="http://employmentnews.gov.in/" target="\_blank"> Employment News</a></li><br><li><a href="http://himachalpr.gov.in/" target="\_blank"> Giriraj Saptahik</a></li><br><li><a href="http://rojgarsamachar.gov.in/" target="\_blank"> Rojgarsamachar News</a></li><br><li><a href="https://onlinenewspapers.com/index.shtml" target="\_blank"> E-NewsPapers</a></li><br><li><a href="https://onlinenewspapers.com/magazines/index.shtml" target="\_blank"> E-Magaziness</a></li><br><hr size=1><b>Open Access</b><hr size=1><br><li><a href="https://www.ias.ac.in/Journals/Overview/"target="\_blank"> Indian Academy of Sciences Online Journals</a></li><br><li><a href="http://nopr.niscpr.res.in/" target="\_blank"> NISCAIR Online Journals</a></li><br><li><a href="http://www.wileyopenaccess.com"target="\_blank"> Wiley Open Access</a></li><br><li><a href="http://www.dli.gov.in/" target="\_blank"> Online Digital Library</a></li><br><li><a href="http://www.intute.ac.uk/sciences/engineering/" target="\_blank">A-Z Engineering & Technology</a></li><br><li><a href="http://www.scirp.org/journal/Index.aspx" target="\_blank">Scientific Research Pub</a></li><br><li><a href="http://doaj.org/" target="\_blank">Directory of Open Access Journals</a></li><br><li><a href="http://www.advocatekhoj.com/library/index.php" target="\_blank"> AdvocateKhoj Law </a></li><br><li><a href="http://lu.com/odlis/odlis\_g.cfm" target="\_blank"> Online Dictionary for Library and Information Science </a></li><br><li><a href="http://www.onlinecourses.com/lectures//" target="\_blank">Lecture Fox</a></li><br><li><a href="http://nroer.gov.in/home//" target="\_blank">National Repository of Open Education Resources </a></li><br> |

**Click on the ‘Save all OPAC preferences’ tab which is available just below the OPAC preferences.**



**Figure 5. OPAC Left Navigation Bottom Block Output**

**5 Suggestion**

One needs to understand the fundamentals of HTML, Java, and CSS to customise the Koha OPAC interface; without this knowledge, customization is not recommended. Administrators must save their commands after inputting them, then run the instructions by refreshing the OPAC page after returning to ensure that the commands were correctly inserted. The output will not be accurately shown if the instructions are not successfully input. Please thoroughly review the commands before making any modifications because they can be different for upgraded versions of Koha.

**6 Conclusion**

An editing tool that is very interactive is available to library professionals who lack extensive programming experience Knowing the user's intent in full is crucial for optimizing the OPAC. OPAC should have a clean, appealing design so that users are able to find the information they need.

The personalization method enables the fellow professional to become familiar with new features to utilise Koha's potential, and it also assists the users in finding the helpful open access e-resource links in one platform. Users can easily search through a single click, which will save them time and eliminate the need for them to recall the URL for these e-resource portals or databases. Finally, if the OPAC has a good appearance, it will draw in more and more people.

The fundamental benefit of Koha that it is Open Source Software. Anyone who is familiar with HTML, Java, and CSS may customise and configure any Koha module. The administrator can set up anything in Koha, including the OPAC, the Patrons card, the Barcode generator, the Spine Label creator, etc. Koha is among the most popular library management systems in the world because of these features.

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