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Rounak Biswas

University of Kalyani, rounak.biswas124@gmail.com

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Biswas, Rounak, "Use of Customized MARC Framework for Recording Books in KOHA: With Special References to Public Libraries of West Bengal" (2020). *Library Philosophy and Practice (e-journal)*. 3842. <https://digitalcommons.unl.edu/libphilprac/3842>

Use of Customized MARC Framework for Recording Books in Koha: With Special References to Public Libraries of West Bengal

Rounak Biswas

Ex-Student

University of Kalyani

E-mail: rounakbsws@gmail.com

Abstract:

Library automation means a high degree of mechanization of various routine and repetitive tasks to be performed by library staffs. Presently, public libraries of West Bengal are moving towards automation with koha. Koha, being open source software, allows extensive customization. Most of the libraries are now use their own bibliographic framework for recording different type of documents to save the time of data entry work. This paper highlights the need of customized MARC framework for books in libraries with an instance of use of customized MARC framework in Public libraries of West Bengal.

Keywords: Automation, Open Source LMS, KOHA, KOHA – features, UNIMARC, MARC-21, Customized MARC framework, Import,Example.

Introduction:

Today libraries are faced to adopt new technology due to the advancement of technology. The appearance of computer has greatly increased the automation of libraries. The library automation is nothing but application of computers to perform the different routines, repetitive and clerical jobs which involve various functions and services of the libraries such as acquisition, serial control, cataloguing and circulation. So, the computerization of library operation is known as library automation.

Library automation starts in a library with the adoption of library management software. An integrated library management software (LMS) designed especially to handle the housekeeping tasks of a library. LMS requires only one time data entry (bibliographic and user data) and the same can be made use for all other functions of the system. We can also say that, it is an enterprise resource planning system of a library.

Though there are many commercial library management software are used by different type of libraries, but now a days open source library management software has created lots of interest among library professionals.

Open Source Software:

Open source software (OSS) is refer to any computer software that is released free of cost and whose source code is available under a license for users to look at and change and improve the software freely and redistribute it in modified or unmodified form. Open source software provides no restriction on its use and it also reduces dependence on software vendors .The term ‘Open Source’ was coined by Christine Peterson in 1998 .Today, open source is setting a new trend in libraries. Lots of open source LMS are now available to make automation of basic library functions affordable. Small and medium size libraries in developing countries choose open source software to automate their libraries because of its economic feasibility i.e. free availability.

Commercial vs. Open Source LMS:

Commercial LMS is costly and copyright protected with restrictions on use and distribution. Whereas open source LMS is free and available with source code and if necessary libraries can create changes in the software. There is no remarkable difference between features and functions of proprietary and open source LMS .The basic difference between two types of LMS is visible in the development and distribution process of software. A group of peoples and institutes are engaged into development of open source LMS and they also contribute their resources (time, money and skill) in this development process. Open source LMS are distributed under open licenses. So open source LMS are free to edit, modify and it can be redistributed to any other members. The open source LMS also provides security and technological independence to the libraries .Thus, the open source LMS is more reliable than closed source commercial software.

KOHA Software:

Koha is an open source integrated library management system, used world-wide by public, schools and special libraries. Koha created by Katipo Communication for the Horowhenua Library Trust in New Zealand in 1999.The name ‘Koha’ comes from Maori language. The term means as ‘Gift or Donation’. Koha is web-based LMS with a SQL database (MySQL preferred) backend with cataloguing data stored in MARC and accessible via Z39.50 or SRU. The user interface of the system is very configurable and adoptable and has been translated into many languages. The software is released under the free open source General Public License (GPL).

KOHA Features:

KOHA is designed specifically to work with a minimum hardware requirements. It runs on both Windows and Linux operating system. As the software is constantly growing and improving, it is difficult to ascertain all the features of the software. Kamila (2008) listed major features of KOHA as below:

Technical

- Available for both Unices (Unix-like operating systems) and Windows platform
- Fully Web-centric in architecture
- Supports Unicode for processing multiscript bibliographic records
- Uses MySQL as backend RDBMS, PERL as programming environment and Apache as Web server (all these dependency software are also open source)
- Supports two separate interfaces – one for librarian and another for end users
- Inbuilt Web-OPAC
- Supports ISO-2709, EDIFACT, Z39.50 standards

Generic

- Free to download, no license fees, and fully customizable
- Environmentally friendly (one can recycle those old PCs)
- Establishing an international community of users and developers giving libraries the freedom to do it themselves or work directly with the system builders
- Generating an international spirit of co-operation and collaboration
- Easy staff training, supports
- Supported by IRC, Discussion forum, Mailing list etc

Bibliographic standards

- MARC 21 and UNIMARC bibliographic format
- MARC 21 Authority format
- Supports pickup list for control, number and code fields of MARC 21 bibliographic format
- Includes Z39.50 client for distributed cataloguing
- Includes thesaurus support
- Supports different bibliographic framework for different library materials
- Easy editing of MARC 21 tags and subfields
- Supports linking of authority files (export of standard authority records)

Functional

Acquisition

- Multiple book budgets
- Suppliers database support
- Real time budget information
- Vendor-specific orders
- Fund utilization information
- Real time accounting
- E-mail based order

Catalogue

- Updates fast and slick
- Support for MARC 21 and UNIMARC
- Z39.50 copy cataloguing
- ISO-2709 based export/import
- Can be linked with vocabulary control device
- Supports FRBR (Functional Requirements for Bibliographic Records) partially
- Supports designing different bibliographic frameworks
- Supports Yaz toolkit

Circulation

- Issues (including rentals), renewals, returns and fines
- Uses barcode scanners or keyboard
- Can generate a list of over dues for a phone reminder system
- Borrower photo display in circulation panel
- Flexible circulation rules
- Overdue notice generation (in one click)

Other Features

- Searching by keyword, author, title, subject, class number or combinations, customize to suit need of individual library
- Memberships – one-stop-shop with all member information on one page
- User driven reservation facility from OPAC interface (Do-it-yourself reserves, in the Library or via the Internet)
- OPAC in the Library or via the Internet and stock rotation through branch libraries
- Work in progress: Z39.50 searching, Virtual Bookshelves, French and German versions, NIP self checking, Port to other operating systems so that it will run natively, New themes, Additional book information (e.g. covers), Web based reports,

Mozilla chromed OPAC integrated with Greenstone digital library system, Integration with Internet “gateway” system and bill to patron card, printing spine labels etc.

UNIMARC and MARC 21 Formats:

In 1977 IFLA brought out UNIMARC (THE UNIversal MARC format) to facilitate the description, retrieval and control of bibliographic items for data exchange and also for local bibliographic format (Mortaza, 1996). It is a communication format. The main purpose behind UNIMARC is that it would serve as the common ‘Vocabulary’ that would function as a means of conveying data that had originally been enclosed in the national format of the sender in a commonly recognized form that would subsequently be converted into the national format of the receiver. Each national bibliographic agency would therefore have to develop and maintain only one conversion program to convert from their national format to UNIMARC and one to convert from UNIMARC to the national format, rather than multiple programs to convert from one national format to another on a one-to-one basis. Books, periodicals, maps, globes, music, scores, sound recordings, motion pictures, video-recordings, pictures, drawings, sculptures, artifacts, computers files and other related forms of materials have been covered by this standard. Non-roman scripts are also accommodated in this format.

The MARC 21 format is a standard format for the representation and communication of bibliographic and related information in machine - readable form. MARC 21 is the redefinition format of original MARC record for 21st century. It is created in 1999 as a result of the harmonization of the USMARC and CAN/MARC. The National Library of Canada and Library of Congress work together as a maintenance agency for this format. The MARC 21 format has five types of data such as bibliographic, holdings, authority, classification and community information. The format basically designed for providing specifications for the exchange of bibliographic and related information between systems. It is based on ANSI Z39.2, an information interchange format, which permit users of different soft ware to connect with each other and exchange their data. MARC 21 has also provision for bibliographic data.

KOHA supports both UNIMARC and MARC 21 bibliographic formats for automated cataloguing of different type of materials.

Essential MARC tags/ subfields for bibliographic framework of books:

KOHA cataloguing comes with default data entry framework (biblio framework) containing a set of MARC 21 tags/subfields. In this framework, all the tags and subfields of MARC 21 bibliographic format are arranged and the librarian can create required bibliographic framework by selecting appropriate tags and subfields as per need. It is a tough work to prescribe a set of tags and subfields for different type of library materials which can satisfy any type of libraries. Mukhopadhyay (2008) selected some MARC tags and subfields for designing the bibliographic framework for books are as follows:-

Leader	24 characters fixed-length field	
00X group	Control Fields	
005	Date and time of latest transaction (NR)	
006	Books - (00-17) – Fixed –length field (R)	
007	Physical description fixed field-Text-(00-01) (R)	
008	Fixed –length data elements- General information (NR)	
0XX group	Number and Code Fields	
020	ISBN (R)	[##; \$a (NR)]
040	Cataloguing Source (NR)	[##; \$a (NR)]
041	Language Code (NR)	[0#; \$a (NR)]
082	DDC (R)	[0#; \$a (R), \$b (NR), \$2(NR)]
1XX group	Main Entry Fields	
100	Main Entry – Personal Name (NR) [1#; \$a (NR), \$d (NR), \$q (NR)]	
110	Main Entry – Corporate Name (NR) [00; \$a (NR), \$b(R)]	
111	Main Entry – Meeting Name (NR)[20; \$a (NR),\$c(NR),\$d(NR),\$e(R)]	
2XX group	Title Related Fields	
240	Uniform Title (NR) [10; \$a (NR), \$k(R), \$I (NR), \$n(R), \$p(R)]	
245	Title Statesmen (NR) [00; \$a (NR), \$b (NR), \$c (NR)]	
250	Edition Statement (NR) [##; \$a (NR)]	
260	Publication, Distribution etc. [00, \$a(R), \$b(R), \$c(R)]	
3XX group	Physical Description etc. Fields	
300	Physical Description (R) [##, \$a(R), \$b (NR), \$c(R), \$e (NR)]	
4XX group	Series Statement Fields	
440	Series Statement/Added Entry- Title (R) [#0; \$a (NR), \$n(R), \$p(R), \$v (NR), \$x (NR)]	

490	Series Statement (R) [0#; \$a(R), \$v(R), \$x(R)]
5XX group	Note Fields
500	General Note (R) [##; \$a (NR)]
6XX group	Subject Access Fields
650	Subject Added Entry-Topical Term (R) [#0; \$a (NR), \$v(R), \$x(R)]
653	Index Term-Uncontrolled (R) [##; \$a(R)]
7XX group	Added Entry Fields
700	Added Entry – Personal Name (R)[1#;\$a(NR),\$d(NR),\$q(NR)]
710	Added Entry – Corporate Name (R)[1#;\$a(NR),\$b(R)]
711	Added Entry – Meeting Name (R)[1#;\$a(NR),\$c(NR),\$d(NR),\$e(R)]
841-88X group	Holdings, Location, etc. Fields
852	Location/Call Number (R) [##; \$a (NR), \$b(R), \$c(R)]
856	Electronic Location and Access (R) [##; \$u (NR), \$z(R)]

Non- MARC fields like home branch, holding branch, accession number etc. are handled by KOHA .So we need not assign those fields. An example of bibliographic data of a book converted into code is given below (Pic.1):-

```

LDR      *****nam##22*****#a#4500
001      <control number>
003      <control number identifier>
005      19920331092212.7
007      ta
008      820305 |s1991#### |nyu#### |##### |#001#0# |eng##
020      ##   $a0845348116 :$c$29.95 (£19.50 U.K.)
020      ##   $a0845348205 (pbk.)
040      ##   $a<organization code>$c<organization code>
050      14   $aPN1992.8.S4$bT47 1991
082      04   $a791.45/75/0973$219
100      1#   $aTerrace, Vincent,$d1948-
245      10   $aFifty years of television :$ba guide to series and pilots, 1937-1988 /$cVincent
                Terrace.
246      1#   $a50 years of television
260      ##   $aNew York :$bCornwall Books,$cc1991.
300      ##   $a864 p. ;$c24 cm.
500      ##   $aIncludes index.
650      #0   $aTelevision pilot programs$zUnited States$vCatalogs.
650      #0   $aTelevision serials$zUnited States$vCatalogs.

```

Pic.1: Example of a book record in Code

In the above example, the first three digits are the tag and the next two digits are indicators. Tag, which appear more than once in a bibliographic record, is called as Repeatable (R) and if the tag is used only once this is denoted as Non-Repeatable (NR). The indicators are the

two spaces which is a number from 0 to 9. Some fields have only one indicator and some would have no indicators. Each subfield is preceded by a subfield code (a, b & so on) and delimiter (\$) is used to separate each subfield within a field.

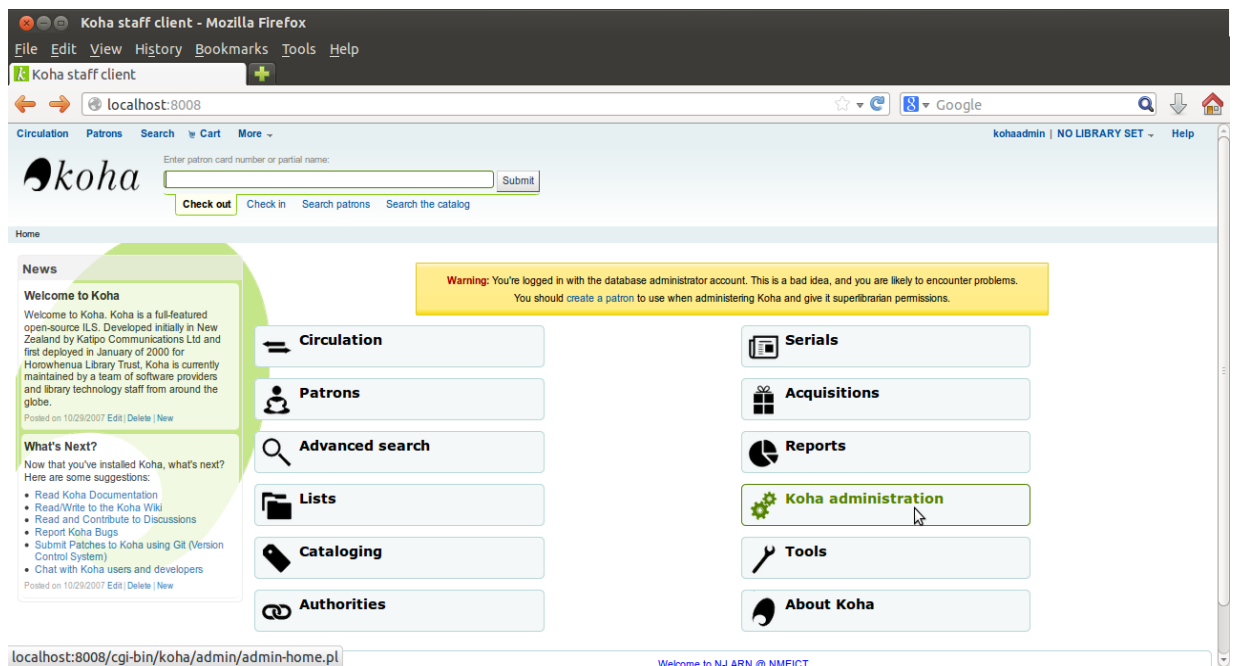
Customized MARC framework for books - Importance:

‘Customization’ refers to modify or create anything according to individual or personal specifications or preference. The facility of customization is an important characteristic of any open source software. In Koha, the record is entered through MARC framework. This framework (called default framework) includes all the tags and subfields of MARC-21 which are scattered into various tabs (0 to 9) but all the tags and subfields of default framework are not required for bibliographic record of books (as discuss earlier) and some tags and subfields are not available in default framework (e.g. Leader and Control Fields).By importing a new MARC framework ,we can include all the required tags and subfields for books in the framework and also can save the time of cataloguer or data entry operator. Because, while doing the data entry, if the data entry operator goes through all the tabs, it will take minimum 10 minutes for a book .whereas the customized MARC framework gather all the required tags and subfields into one tab, the same work can be done in 2-3 minutes which will definitely save the time of data entry operator.

Importing customized MARC framework for books in KOHA: Procedures

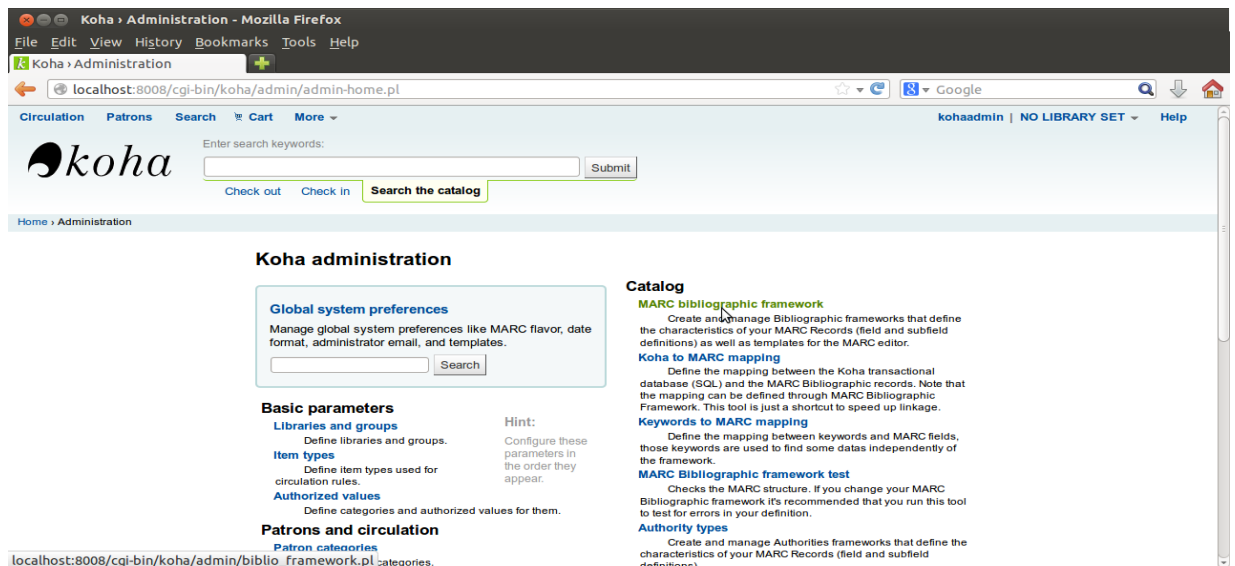
To import customized MARC framework in Koha, following steps should be followed –

- 1) First, we create a New Framework with required MARC tags and subfields for bibliographic record of books .The new created framework must be created in .csv, .xml or .ods format .Then login into Koha system with appropriate user name and password. After completed the login, we come to the main page (Pic.2)



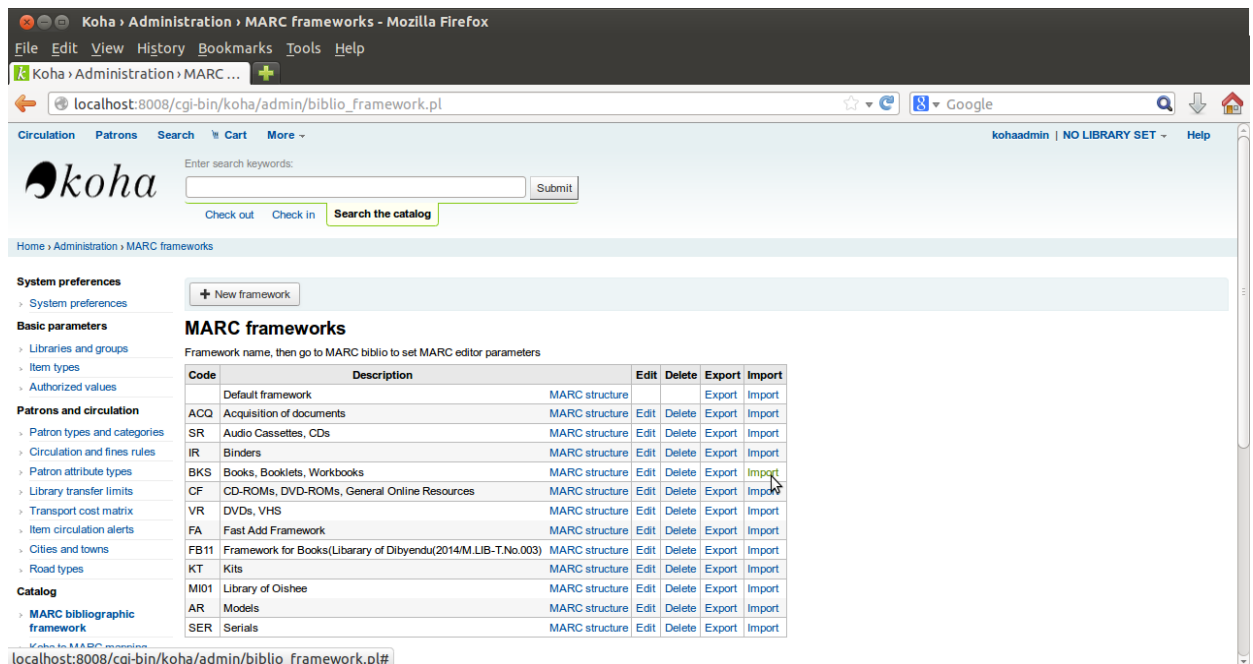
Pic.2: Home Page of Koha

- 2) Then, click on Koha Administration option for Koha Administration page. Koha Administration deals with administration and maintenance part of Koha. Normally the Librarian, Administrator or person of similar designation can hold access right to this module. Among various Koha administration module, we click on the 'MARC Bibliographic Framework' option (Pic.- 3)



Pic.3: Koha Administration module

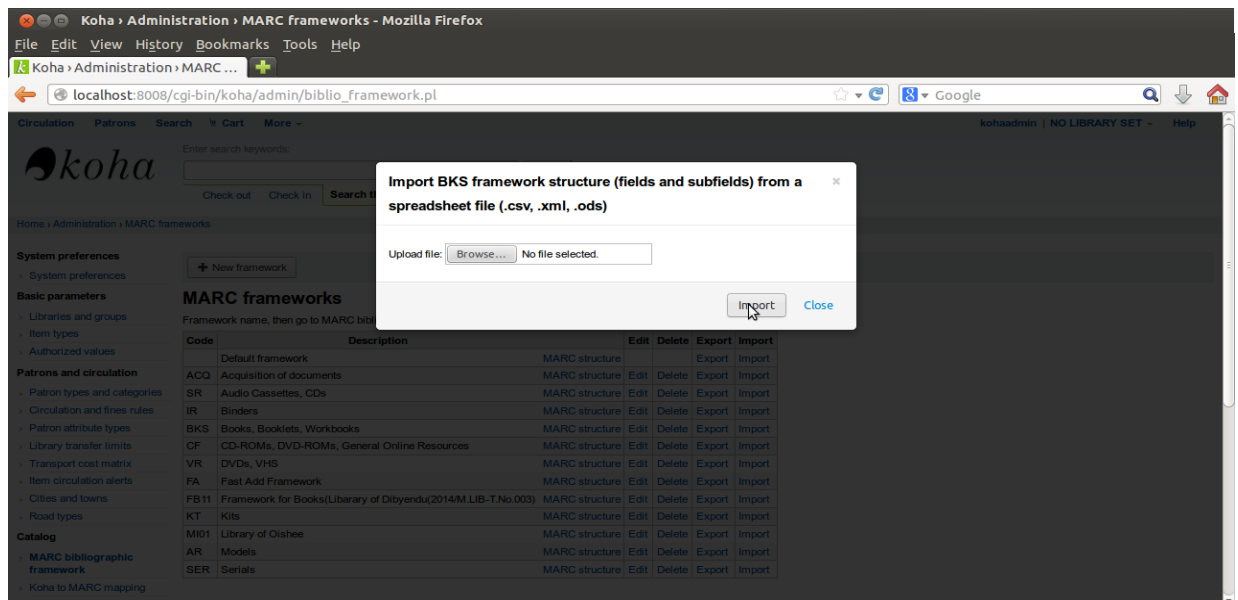
- 3) To import the created 'New framework for Books' in the system, we should click on the 'import' option to the right of the book framework (pic.4)



Pic.4: MARC frameworks

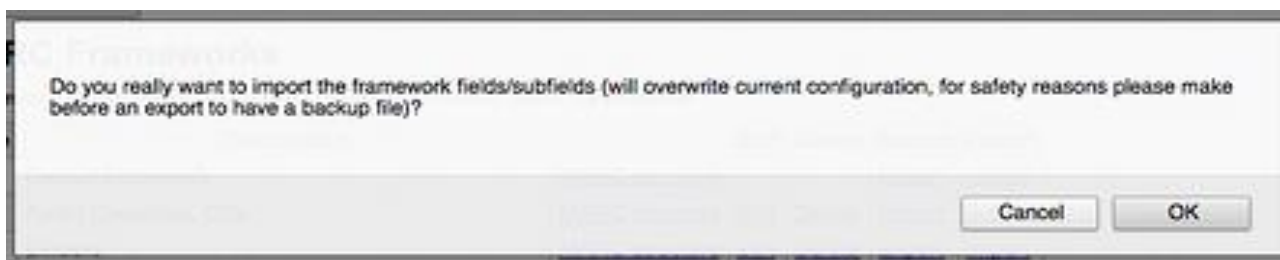
4) Now, we will be asked to upload the customized MARC framework file (Pic.5).

After upload the file, we must click on 'Import' button.



Pic.5: Uploading the MARC file

5) At last, we will be asked to confirm our action (pic.6).



Pic.6: Confirmation Message

Thus we can change the default framework with a new customized MARC framework.

Use of customized MARC framework in public libraries of Malda district – A view:

Presently, There are 2480 no. of Govt. sponsored public libraries in the state of West Bengal. Twelve Govt. libraries, 2460 Govt. Sponsored libraries and a state central library at the apex are the components of public library system of West Bengal working under the Mass Education Extension Department with a Minister in charge of Library Services. There are also seven state Govt. aided libraries. The government of West Bengal started automation of public libraries with the assistance of Raja Rammohun Library Foundation. At first, the libraries have been provided with computers after that the automation started in those libraries. The libraries use customized MARC framework for recording their books in Koha. The complete bibliographic data of a book through customized MARC framework (as used by the libraries) is shown here by five parts of snapshots (pic.7 to 11):-

Add MARC record

☒ Show MARC tag documentation links

Save

Z39.50 Search

Change framework: Books and Monographs for TL

0

000 ? - LEADER

00 fixed length control field * nam a22 7a 4500

003 ? - CONTROL NUMBER IDENTIFIER

00 control field * Birampur Kusum Smrity R L

005 ? - DATE AND TIME OF LATEST TRANSACTION

00 control field * 20151201203943.0

008 ? - FIXED-LENGTH DATA ELEMENTS--GENERAL INFORMATION

00 fixed length control field * 151201t ii ||||| |||| 00| 0 eng d

020 ? ☐ ☐ - ISBN | আই এস বি এন

a ISBN | আই এস বি এন

c Price | দাম তিরিশ টাকা

040 ? ☐ ☐ - CATALOGING SOURCE

a Original cataloging agency Birampur Kusum Smrity R L

b Language of cataloging

c Transcribing agency

041 ? ☐ ☐ - LANGUAGE CODE

a Language code Bengali

Pic.7: Recording of a book in KOHA – Part I

041 ? ☐ ☐ - LANGUAGE CODE

a Language code Bengali

082 ? ☐ ☐ - DDC | ডিউই

a Classification number | বঙ্গসংখ্যা 891.44

b Book Number | গ্রন্থক ১১১১-৩০৭

084 ? ☐ ☐ - OTHER CLASSIFICATION NUMBER | অন্য বঙ্গসংখ্যা

a Classification number | বঙ্গসংখ্যা

b Book Number | গ্রন্থক

100 ? ☐ ☐ - MAIN ENTRY--PERSONAL NAME | মুখ্য সংলেখ - ব্যক্তির নাম

a Personal name | ব্যক্তির নাম ১১১১১১ ১১১১১

c Titles and other words | সমন্বিত উপাধি

d Dates of Birth / Death | জন্ম / মৃত্যু সন


q Fuller form of name | পূর্ণ নাম

110 ? ☐ ☐ - MAIN ENTRY--CORPORATE NAME | মুখ্য সংলেখ - সংস্থার নাম

a Corporate name | সংস্থা নাম

b Subordinate unit | অধীনস্থ সংস্থা


Pic.8: Recording of a book in KOHA – Part II

245 ? ☐ ☐ - TITLE STATEMENT | আখ্য বিবরণী 

▲ a Title | আখ্যা



▲ b Sub title | উপআখ্যা



▲ c Statement of responsibility | লেখকের নামের বিবরণ



250 ? ☐ ☐ - EDITION STATEMENT | সংস্করণ কেন্দ্র 



▲ a Edition statement | সংস্করণ



▲ b Remainder of edition statement



260 ? ☐ ☐ - IMPRINT | প্রকাশের কেন্দ্র  

▲ a Place of publication | প্রকাশ স্থান  



▲ b Name of publisher | প্রকাশকের নাম  

▲ c Date of publication | প্রকাশ কাল  

300 ? ☐ ☐ - PHYSICAL DESCRIPTION |  



▲ a Page / Vol. No | পৃষ্ঠা / খন্ড সংখ্যা  

▲ b Other physical details | অন্যান্য বহির্বিবরণ



▲ c Dimensions  



▲ e Accompanying material | আনুসঙ্গিক সামগ্রী

Pic.9: Recording of a book in KOHA – Part III

505 ? ☐ ☐ - CONTENTS NOTE | সূচীসংক্রান্ত টীকা  



▲ a Contents note | সূচীসংক্রান্ত টীকা



▲ f Statement of responsibility | লেখকের নামের বিবরণ  



600 ? ☐ ☐ - SUBJECT ADDED ENTRY-PERSONAL NAME | বিদ্যা পিঠের নাম - ব্যক্তিকাল  



▲ a Personal name | ব্যক্তিকাল



▲ d Dates of Birth / Death | জন্ম / মৃত্যু তারিখ



▲ v Form subdivision | রূপবিন্যাস বিভাগ  



▲ x General subdivision | সামগ্রিক বিভাগ  

610 ? ☐ ☐ - SUBJECT ADDED ENTRY-CORPORATE NAME | বিদ্যা পিঠের নাম - সংগঠনকাল  

▲ a Corporate name | সংস্থা নাম  

▲ b Subordinate unit | অধীনস্থ সংস্থা  

▲ v Form subdivision | রূপবিন্যাস বিভাগ  

▲ x General subdivision | সামগ্রিক বিভাগ  

Pic.10: Recording of a book in KOHA – Part IV

The screenshot shows the KOHA MARC entry form with the following sections:

- 651 ?** ☐ ☐ - SUBJECT ADDED ENTRY--GEOGRAPHIC NAME | বিষয় শিরোনাম - ভৌগোলিক নাম
 - a Geographic name | ভৌগোলিক বিষয়
 - v Form subdivision | রূপগত বিভাগ
 - x General subdivision | সাধারণ বিভাগ
 - y Chronological subdivision | কালগত বিভাগ
 - z Geographic subdivision | ভৌগোলিক বিভাগ
- 653 ?** ☐ ☐ - INDEX TERM--UNCONTROLLED | অনিয়ন্ত্রিত বিষয়
 - a Uncontrolled term | অনিয়ন্ত্রিত বিষয়
- 700 ?** ☐ ☐ - ADDED ENTRY--PERSONAL NAME | অতিরিক্ত সংলেখ - ব্যক্তিনাম
 - 4 Relator code | দায়িত্ব নির্দেশক
 - a Personal name | ব্যক্তিনাম
 - d Dates of Birth / Death | জন্ম / মৃত্যু সন
- 710 ?** ☐ ☐ - ADDED ENTRY--CORPORATE NAME | অতিরিক্ত সংলেখ - সংস্থানাম
 - 4 Relator code | দায়িত্ব নির্দেশক
 - a Corporate name | সংস্থা নাম
 - b Subordinate unit | অধীনস্থ সংস্থা
- 942 ?** ☐ ☐ - ADDED ENTRY ELEMENTS (KOHA)
 - c Koha item type * Books

Pic.11: Recording of a book in KOHA – Part V

After complete the process of recording of a book, it will display like Normal view, MARC view, ISBD view. The Normal view displayed like Master card. This card displayed bibliographic detail of a book. MARC view displayed with each MARC tag number and details and ISBD view like AACR card format. A snapshot of above three formats of a book is shown below (pic.12)

The screenshot shows the KOHA interface with three views of a book:

- Normal view:** Displays bibliographic details in a master card format, including fields for Title, Author, Date, and Subject.
- MARC view:** Displays the MARC record with tag numbers and details.
- ISBD view:** Displays the book details in the AACR card format.

Pic.12: Snapshot of Normal, MARC, ISBD views of a book

Conclusion:

Open source software are available free of cost. But there are many reasons for what people are moving towards open source software. One of the most important reasons is the freedom of customization. Koha allows extensive customization. Though there are many advantages of using customized MARC framework for recording books, it has also some drawbacks –

- i. As all the required MARC tag and subfields are accumulated under one tab, it unnecessarily increased the length of the framework.
- ii. As all the tabs of default framework are merged into one tab in customized framework, it will be difficult to edit the value of a tag or field of an existing book record because the tabs are worked as the indexer in a framework.
- iii. The tags and subfields, which are omitted in the process of customization, may be required for some cases of bibliographic records of books.

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