Chapter 1

Research Design

1.1 Introduction

Library is the abode of various kinds of information kept in the form of books, serials, recorded media etc. Information/knowledge itself is of no value. It is the use of information that makes it valuable. The libraries carry the grand responsibility of providing the right information, to the right person, in right manner, in right time. The primary objective of any library/documentation centre is to make the latest information on any subject readily available to its users. Due to rapid development of the Information and communication technology (ICT), the way libraries provide its services have undergone drastic changes. There’s a paradigm shift in the role of libraries from mere storehouse of information/knowledge to knowledge disseminator and knowledge providers. This transformation of role has led traditional libraries to change and present it as digital libraries to stay relevant in the new era.

A Library Management Software (LMS) is the backbone of library automation. Integrated library software packages are used in the libraries to increase the efficiency and effectiveness of the library operations and services. It should ideally have all the library housekeeping operations incorporated into it. So it is very important to understand the requirements of the library with respect to availability and usability of all the important features in a LMS Package before going for it.

Serial is a publication in any medium that is issued in successive parts bearing numeric or chronological designations intended to be continued indefinitely. Serials include periodicals, newspaper, annuals (such as reports and yearbooks), journals, memoirs, proceedings, transactions of societies, and numbered monographic series. The serials are one of the most important documents acquired in a library; particularly in University libraries, Special libraries and other Libraries of National Importance. They contain immensely valuable information which is used by the teachers, students and research scholars for academic purpose as well
as research work which ultimately helps in socio-economic progress of the nation. Serial control is an important part of the library. Computerized system makes handling of the library operations easy, quick and economic. It can perform tasks like data entry (title of the serial/journal, periodicity, date of issue, individual article and author, locus, abstract and key words, etc.), order of new serials, renewal of subscription for titles on current subscription list, cancellation of subscription, recording receipt of issue, sending reminders, holding with status (on shelf, on bindery, on circulation, etc.), budget control, binding etc. with minimum user input. Among the housekeeping operations in a library, serial control is traditionally considered as the most difficult operation by the library professionals. Serial control operation is particularly difficult primarily due to unpredictable nature of serial publications. Therefore the problem of effectively controlling serials using computer remains a challenge for a long time among the library professionals.

Serials automation ultimately helps the library users in getting their required information in no time. Even in extreme cases where a user is looking for some particular information buried in back volumes of a serial; the same can be retrieved and displayed on his computer screen within minutes. It is important to note that the usability and effectiveness of serial control module largely depends upon the Library Management Software package in use. Hence LMS software package should be selected based on fair consideration of library requirement, kind of user base of the library, proficiency of the library professionals, and types of books, journals, and serials subscribed by the library.

Idiosyncrasy involved in serial control affects the use of computers in serial control and hence the area is not very well represented at automation scenario. Librarians largely face difficulty in managing subscribed print journal, e-journal and bound journals. Tracking the arrival of journals, managing late/skipped issues, managing claims with the suppliers, managing complex classifications, complexities arising due to delayed publications and out of sequence publications, missing publications etc. are areas of difficulty for library professionals. One more reason is the unsuitability of serial control modules available in most of the Library
Management Software. The procedures developed by the LMS packages are so cumbersome that sometimes it looks easier to use normal method rather than automation. However, this area provides very good stage for use of computers as it can help tracking the missing issues very efficiently and provide the current awareness services and even the SDI services besides budget control.

1.2 Area of study

The Study primarily covers serial control, automated serial control and the use of serial control module of different LMS packages maintained and used by the libraries of Institutes of Higher Learning in Assam.

The Serial system provides control of periodical subscription and subsequently the schedule of arrival of individual issue. It maintains record of budget sanctioned for serials under different categories, amount encumbered and expended, thus providing complete budgetary control. This also handles serials which may be received on grants or exchange.

Serial control package has always been one of the most challenging and intriguing part of the library software systems. The un-predictable nature of serials demands complexity from the software developer as well as data management for the librarian.

Serials are publications in a fixed interval of time. Serials may be devoted in a particular domain of subject, may be in a broader area of knowledge covering a number of broad subject field, different areas of interest of studies etc. Publication of serials may vary from daily, weekly, monthly, bi-monthly, quarterly, bi-annually and annually etc. The term “Serial control” refers to those tasks which support the procurement and management of serial collection in a library. The main purpose of Print and E-journals is to publish recent original research in order to make this information available to other scholars.

Automation refers to the application of machinery to perform work that would otherwise be done by human beings. Library automation means not only entering
and reading the data in to the computer, but also automation of different functional areas of library. Automated serial control system comprises several subsystems. They are:

i. **Inventory**: Preparation of lists of serials and to make entry in to the computer system.

ii. **Ordering and Acquisition**: Selection, ordering and acquisition of newly subscribed serials.

iii. **Cataloguing**: Preparation of catalogues of serials.

iv. **Accessions**: Receiving of serials, checking-in, placing claims if not received, renewal of subscriptions, checking gaps, if any, updating of holding records, placing orders of back volumes, preparation of data files, record maintenance, etc.

v. **Circulation**: Making available serials issues in separate volumes in the bound form, keeping records of circulation, checking and making arrangement for binding, preparation of lists of titles.

To give emphasis on the serial control module, the library automation as well as integrated library management software has been discussed since every step is inter related to each other.

### 1.2.1 Library Management Software (LMS) Packages and Serial Control Module

Software plays an important role in the automation of library. The software is necessary pre-requisite of computing. The role of library services is to facilitate and support the mission of the institute. And this can be fairly fulfilled with the assistance of library management software package. Integrated library management software does all the housekeeping operations of a library which is repetitive in nature. The housekeeping operations include acquisition, cataloguing, circulation, serial control, reference and administrative work. Integrated library management software also provides computerized search facilities for all kinds of resources available in the library through OPAC and Web OPAC. The workings of all the
housekeeping operation modules depend on the software used by the library. The credibility of library software packages is evaluated on the basis of their salient features and the facilities available in the software. Based on the salient features and the facilities provided, the software is ranked by weightage received from the librarians of the libraries under study.

It is the LMS package which backs the librarian most of the times. The software is useful for both users of the library and the library staff. Today the cloud based & online library management system is widely in demand. In this segment there is some software package that has integrated automated system that updates information by scanning the ISBN code.

1.2.2 Checklist for evaluation of LMS

It is a general checklist and can be modified according to the requirement of the library in consideration.

- System features
- Availability of the software in multiple platforms, such as UNIX, Linux, Windows etc.
- Whether the software have different standalone and network version and Internet connectivity
- Data entry and storage
- Performance
- Documentation
- Customer Support
- Security
- Housekeeping operations

For identifying and evaluating software package for library the following criteria suggested by Rhoda Garoogian who is an American librarian cum author in the paper ‘Pre-written software: Identification, evaluation and selection’ are also adopted:
• Capabilities
• Maintenance support
• User friendliness
• Documentation
• Cost
• Flexibility
• Updating and revision

There should be some proper escorts and proper selection means for the selection of the library software. Due to lack of such proper guide it makes the task of evaluation of library software very difficult. Though there are some handbooks available which help the library personnel in selecting library software that is best suited for their library.

Most LMS packages consist of modules covering the following areas:

1. Acquisition
   • Selection
   • Ordering items
   • Order slip preparation
   • Referring orders to suppliers/vendors
   • Confirmation of books with order invoices
   • Accessioning of books and journals
   • Printing of received and non-received documents
   • Control of budget

2. Cataloguing
   • Preparation bibliographic description of the document with subject headings.

   • OPAC helps the users to search the book according author, title, keyword, or systematic order dynamically.

3. Circulation control
   • Creation of registered members
• Issue of cards
• Charging and discharging items
• Creation of overdue notices
• Book reservation system
• Computing of fines for overdue books

4. Serial control

• Selection of list of purchase titles
• Creation of orders
• Receipt issues and claiming non received issues
• Cataloguing of serials
• Possession of details of serials
• Search facility of details of current holdings
• Routing individual issues to various members
• Binding of serials
• Budget control

(Aute, Govardhan Pralhadrao, 2013, p. 21-22)

5. OPAC

• Basic search
• Advanced search
• MARC display
• ISBD display
• AACR2 display
• Book jacket display
• Download/save records
• Print records
• Patron login
• Patrons suggestions via OPAC
• Hold/Reserve via OPAC
• Google books screening
• Link to Amazon books

(Sharma, Gautam Kumar, 2015, p. 60)

6. Web OPAC

Web OPAC is the Online Public Access Catalogue where with the help of internet, users can be benefited by the library services.

1.3 Some LMS packages used in India and their developing agencies

Today there are many library software packages available in the market. The prominent LMS packages widely used in Indian libraries are:

<table>
<thead>
<tr>
<th>SL No</th>
<th>Software packages</th>
<th>Developers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>E-Granthalaya</td>
<td>NIC, Ministry of Communications and Information Technology, Government of India.</td>
</tr>
<tr>
<td>2.</td>
<td>E-lib</td>
<td>Createch Software Pvt. Ltd. (CSPL), New Delhi</td>
</tr>
<tr>
<td>3.</td>
<td>GRANTHALAYA</td>
<td>The Indian National scientific Documentation Centre (INSDOC), New Delhi</td>
</tr>
<tr>
<td>4.</td>
<td>I-Lib</td>
<td>Infobank, Ramnagar, Nagpur.</td>
</tr>
<tr>
<td>5.</td>
<td>KOHA</td>
<td>Kaip Communications for the Horowhenua Library Trust, New Zealand</td>
</tr>
<tr>
<td>6.</td>
<td>Libman</td>
<td>Master’s Software, Nagpur</td>
</tr>
<tr>
<td>7.</td>
<td>LIBRARIAN</td>
<td>M/S Mudra Electronics, New Delhi</td>
</tr>
<tr>
<td>8.</td>
<td>Libsys</td>
<td>M/S LibSys corporation, New Delhi</td>
</tr>
<tr>
<td>9.</td>
<td>Libtech</td>
<td>Libtech Software Developers, Wardha</td>
</tr>
<tr>
<td>10.</td>
<td>MAIFTRAYEE</td>
<td>Commissioned by ISSAT, CMC Ltd.</td>
</tr>
<tr>
<td>11.</td>
<td>SANJAY</td>
<td>National Information System for Science And Technology (NISSAT), India</td>
</tr>
<tr>
<td>12.</td>
<td>SLIM</td>
<td>M/S. Algorithms, Pune, India</td>
</tr>
<tr>
<td>13.</td>
<td>SLIM++</td>
<td>Algorhythms Consultants Pvt. Ltd., Pune</td>
</tr>
<tr>
<td>14.</td>
<td>SOUL</td>
<td>INFLIBNET, Ahmadabad (Now Gandhinagar)</td>
</tr>
<tr>
<td>15.</td>
<td>TROODON</td>
<td>Comteck Services Pvt. Ltd., New Delhi</td>
</tr>
<tr>
<td>16.</td>
<td>VTLS (Virginia Tech Library Systems)</td>
<td>Founded by Dr. Vinod Chachra Acquired by Innovative Interfaces in 2014</td>
</tr>
</tbody>
</table>

Table 1.1: LMS packages used in India and their developing agencies

Although LMS packages used by different libraries in India are diverse, the researcher has taken into consideration only those LMS packages which are used in
the Libraries of Institutes of Higher Learning in Assam. The study hence covers following three LMS packages mainly Koha, Libsys and SOUL.

1.4 Koha

Koha is a feature rich, cost-effective, open source Integrated LMS Package widely used by libraries all over the world. Developed and maintained by Koha Community, its initial release was in January 2000 and its latest stable version is 17.11. The flexibility to choose from features, through the administration of system preferences, offers librarians the opportunity to customised its features according to libraries own needs and requirement. It gives the users of Koha to add features or remove the unwanted one. Koha is the most used advanced open source ILS on the market today.

- Modules Covered
  - Acquisitions
  - Cataloguing
  - Circulations
  - Serials
  - Online Public Access Catalogue
  - Reports

1.5 Libsys

Libsys is a commercial, multiplatform integrated LMS package developed by LIBSYS ltd, a delhi based software company. It is a group of integrated multi user library management system. It runs on platforms such as UNIX, WINDOWS NT, WINDOWS XP etc. With constant advancement, Libsys has produced a Libsys suite comprising various products such as LSEase; Libsys7; LSPremia; LibSysX and LSDigital for different types of libraries. Libsys provides end to end manageability of the library operations through its comprehensive modules. As a web based solution, it provides advanced OPAC.
• **Modules**
  ➢ Acquisition
  ➢ Cataloguing
  ➢ Circulation
  ➢ **Serials**
  ➢ Article Indexing
  ➢ Web OPAC
  ➢ Customizable Reports

### 1.6 SOUL

Software for University Libraries (SOUL) is developed by the INFLIBNET Centre is advanced integrated LMS package designed and based on necessities of college and university libraries. It is easily operated software developed to work under client-server environment. The software meets international standards such as MARC 21 for bibliographic formats, networking and circulation protocols. The software is very useful for all housekeeping operations in library. The software is applicable to all kinds libraries be it academic, special irrespective of size of the library. The first version of software i.e. SOUL 1.0 was released during CALIBER 2000. SOUL 2.0 was released in 2009. The database for new version of SOUL is designed for latest versions of MS-SQL and MySQL.

• **Modules**
  ➢ Acquisition
  ➢ Catalogue
  ➢ Circulation
  ➢ On-line Public Access Catalogue (OPAC)
  ➢ **Serial Control**
  ➢ Administration

The study mainly covers the serial control module of the above mentioned 3 (Three) LMS packages i.e., Koha, Libsys and SOUL.
1.7 Statement of the problem

Serial control is a significant task of the library. Automation makes such library operations easier to handle. To meet with the demands of ICT based services, library professionals should not stick to the conventional serial management and should go with the automated serial control option. Integrated LMS packages are best suited for library automation. An integrated LMS Package uses a single database to perform basic library functions such as cataloguing, circulation, acquisitions and serial control. Serial module of any LMS package is equipped with the entire serial related task which can be done with the help of such software packages. But it is seen that most of the library professionals are reluctant to use the serial control module because they often encounter some trouble while handling this section. The study focuses on the problems faced by the library professionals while using serial control module and tries to suggest some possible solutions.

Most of the software companies claim effective performance of all their LMS modules regarding the library housekeeping operations. But it is seen that many libraries are facing problems while dealing with some of the modules of integrated LMS package. Also it has also been observed that most of the problems arise in serial control module because handling of serials is a difficult and demanding proposition on account of the very nature of their category of publication. They differ in periodicity and the periodicity of a serial itself is liable to changes. In addition, changes of titles, splitting up into two or more publications, merger of two or more serials etc. give rise to unanticipated problems.

Keeping in mind the above problems with LMS packages, the present research problem is conceived under the area “Use of Library Software Packages in the Libraries of Institutes of Higher Learning in Assam with Reference to Serial Control Module: An Evaluative Study”.
1.8 Research Questions

Some research questions are set by the researcher like:

- What is the status of library automation in the libraries of Institutes of Higher Learning in Assam?
- What is the satisfaction level of features and facilities of different LMS packages used by the librarians in the Institutes of Higher Learning in Assam?
- What is the extent of use and performance of serial control module by the libraries of Institutes of Higher Learning in Assam?
- What are the problems encountered in serials control module by the librarian of Institutes of Higher Learning in Assam?
- What are the plans for improving use of serial control module in the Institutes of Higher Learning in Assam?

1.9 Scope

This study focuses on the status of automation and usage of the various LMS package features and their serial control module. There are all total 20 (twenty) Institutes of Higher Learning in Assam (Table 1.2).

Out of the total 20 (twenty) numbers of libraries of Institutes of Higher Learning in Assam, the study covers 6 (six) numbers of Universities’ libraries and 2 (two) numbers of Institutes of national importance libraries namely Assam Agricultural University (AAU), Jorhat; Assam University (AU), Silchar; Cotton University (CU), Guwahati; Dibrugarh University (DU), Dibrugarh; Gauhati University (GU), Guwahati, Indian Institute of Technology Guwahati (IITG), Guwahati; National Institute of Technology (NIT), Silchar; and Tezpur University (TU), Tezpur as libraries of these institutions are automated and six of them are using serial control modules. Private Universities and some of the State Universities are excluded from the purview of the study as libraries of these Universities are at initial stage and in some cases automation is yet to be implemented.

The list of total 20 (twenty) Institutes of Higher Learning in Assam are as follows
<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Central University</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Assam University, (AU) Silchar</td>
</tr>
<tr>
<td>2</td>
<td>Tezpur University, (TU) Tezpur</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>State University</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Assam Agricultural University, (AAU) Jorhat</td>
</tr>
<tr>
<td>2</td>
<td>Assam Rajiv Gandhi University of Co-operative Management, (ARGUCM) Sivsagar</td>
</tr>
<tr>
<td>3</td>
<td>Assam Science and Technology University, (ASTU) Guwahati</td>
</tr>
<tr>
<td>4</td>
<td>Bodo land University, Kokrajhar</td>
</tr>
<tr>
<td>5</td>
<td>Cotton University (CU), Guwahati</td>
</tr>
<tr>
<td>6</td>
<td>Dibrugarh University (DU), Dibrugarh</td>
</tr>
<tr>
<td>7</td>
<td>Gauhati University (GU), Guwahati</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Institutes of National Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Indian Institutes of Technology, Guwahati (IITG).</td>
</tr>
<tr>
<td>2</td>
<td>National Institute of Technology, (NIT) Silchar.</td>
</tr>
<tr>
<td>3</td>
<td>Institute of Advanced Study in Science and Technology (IASST), Guwahati</td>
</tr>
<tr>
<td>4</td>
<td>Omeo Kumar Das Institute of Social Change and Development (OKDISCD), Guwahati</td>
</tr>
<tr>
<td>5</td>
<td>Indian Statistical Institute (ISI), Tezpur</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Private University</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Assam Down Town University, Guwahati</td>
</tr>
<tr>
<td>2</td>
<td>Donbosco University, Guwahati</td>
</tr>
<tr>
<td>3</td>
<td>The Assam Kaziranga University, Jorhat</td>
</tr>
<tr>
<td>4</td>
<td>Mahapurusha Srimanta Shankardeva Viswavidyalaya, Nagaon</td>
</tr>
<tr>
<td>5</td>
<td>Sankardeva University of Health Sciences, Assam, Guwahati</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Open University</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>K. K. Handique State Open University, Guwahati (KKHSOU)</td>
</tr>
</tbody>
</table>

Table 1.2: List of Institutes of Higher Learning in Assam

Year of establishment of the institutes of Higher Learning and their libraries under the study are shown in the table below:
<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Name of the Institutions</th>
<th>Year of Establishment</th>
<th>Name of the Library</th>
<th>Year of Establishment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Assam Agricultural University (AAU) Jorhat</td>
<td>1969</td>
<td>B. M. Pugh Library</td>
<td>1969</td>
</tr>
<tr>
<td>2.</td>
<td>Assam University (AU) Silchar</td>
<td>1994</td>
<td>Rabindra Library</td>
<td>1994</td>
</tr>
<tr>
<td>3.</td>
<td>*Cotton University, (CU) Guwahati</td>
<td>2011</td>
<td>Dr. Surya Kumar Bhuyan Library</td>
<td>1901</td>
</tr>
<tr>
<td>4.</td>
<td>Dibrugarh University (DU) Dibrugarh</td>
<td>1965</td>
<td>Lakshminath Bezbora Library</td>
<td>1965</td>
</tr>
<tr>
<td>5.</td>
<td>Gauhati University (GU) Guwahati</td>
<td>1948</td>
<td>Krishna Kanta Handqui Library</td>
<td>1948</td>
</tr>
<tr>
<td>7.</td>
<td>National Institute of Technology (NIT) Silchar (Formerly REC)</td>
<td>1967</td>
<td>Central Library, NIT, Silchar</td>
<td>1977</td>
</tr>
<tr>
<td>8.</td>
<td>Tezpur University (TU) Tezpur</td>
<td>1994</td>
<td>Central Library, TU</td>
<td>1994</td>
</tr>
</tbody>
</table>

Table 1.3: Libraries and year of establishment

*Cotton College was established in 1901 so as the Dr. Surya Kumar Bhuyan Library in 1901. Since Cotton University (CU) came into being via an Act of the Government of Assam (Act XIX of 2011) in 2011 the Dr. Surya Kumar Bhuyan Library is acting as the library of Cotton University as well.

1.10 Objectives of the Study

This study focuses on various LMS packages used by the libraries of Institutes of Higher Learning in Assam. The following are the main objectives of the research.

1. To know the automation scenario in Institutes of Higher Learning in Assam.
2. To study the features of different library software packages used by the Institutes of Higher Learning in Assam.
3. To study and compare the sub-sections of serial control module of LMS packages.
4. To find out the problems faced by the librarians in serial control module.
5. To suggest ways to improve the current scenario of automation in serial control as well as overall use of Library Management Software Packages based on findings of the study.
1.11 Methodology

The methodology comprises of publication research, interviews, surveys and other research methods. The study includes the following methods:

- **Questionnaire Method:** The survey consists of ‘Questionnaire method’. Opinions on different issues pertaining to the library housekeeping operations were sought from the respondent libraries. Questionnaire has been designed keeping in mind the objectives of the study covering all aspects of the study. The questionnaire includes both open ended and close ended questions.

- **Through Personal Interviews:** The researcher has personally visited and taken interviews with the librarians during the course of the study. Apart from interviews, communication over telephone, email and text messages are maintained to understand the issues and opinions of the librarians working in serial control module.

- **Through phone interviews:** In few cases where personal interviews are not feasible and sometimes to gather additional data subsequent to personal interviews, the researcher has adopted the method of interview over the phone. The information from the respondents are collected over telephone or mobile phones, it also helped in case of gathering the latest information of libraries under study.

- **By observation:** Keen observation of real world scenarios and practical experience are two invaluable tools for any scientific study. The researcher is fortunate enough to learn about different sub-sections of serial control module through in-hand experience while using Libsys4 software. As part of job responsibility, the scholar faced a number of challenges like, missing issues, irregular interval and advanced payment processing for serials. However, the researcher used some innovative techniques and implemented personal ideas to tackle such practical issues in workplace library. Those challenges and solutions are discussed in chapter 6: Conclusion, Summary and Findings under point no 6.2, i.e., Meeting the Objectives.
The present study is a survey research covering 8 (eight) numbers of automated academic libraries in Assam. Primary and secondary information sources are also used for research work. The survey questionnaire contains some questions which are qualitative in nature and required to be converted in to quantitative ones. In order to convert the feedback of the questions which are qualitative in nature Likert weightage scale is used. The conversion of qualitative data to quantitative data is done for convenience of analysis and interpretation.

The questionnaire also includes 24 (twenty four) general attributes for LMS packages with weightage scale as Very Poor (Credit point-1), Poor (Credit point-2), Average (Credit point-3), Good (Credit point-4), Excellent (Credit point -5). The features and facilities of three LMS packages which are being used by the institutes under study are compared by calculating the mean value of scores given by librarians/library staffs for each software package. The total score thus obtained is again divided by the total number of attributes i.e., 24 (twenty four). The value that is achieved is used for comparing the LMS packages under study on the basis of satisfaction of the users.

Likewise the sub section of serial control module is given the weightage as ‘Poor’ (Credit point-1), ‘Very Poor’ (Credit point-2), ‘Average’ (Credit point-3), ‘Well’ (Credit point-4), ‘Excellent’ (Credit point-5) by the library. The same procedure is applied for the comparison of the serial control module on the basis of user satisfaction. Different attributes of the five sub sections namely 1) Acquisition 2) Cataloguing 3) Issue Management 4) Back Volume and 5) Reporting are thus calculated with the help of the Likert Scale.

For drawing of figures and graphs, and creation of bar charts ‘MS Excel’ is used.

1.12 Chapter Plan

The work has been divided in to 6 (six) chapters:

Chapter No.1: Research Design
In this chapter background of research, Research problems, Objectives of research, Scope and limitations, Research Methodology, and Chapter Plan are given.
Chapter 2: Literature Review
In this chapter all the theoretical description which are used in research are briefly discussed. It comprises Introduction and Literature survey. Literature survey includes doctoral research, research articles and research related books.

Chapter 3: Serial Control: Automated Serial control
In this chapter a detailed discussion on Serials, definitions, serial pattern, serial formats, automated serial control system, procedures are discussed. It consists of Introduction, Serial publication pattern, Serial publication in different format, automated serial control system and Serial control procedures.

Chapter 4: Library Software Packages with reference to Serial control module: Koha, Libsys and SOUL
This chapter provides an overview of the software packages i.e. Koha, Libsys and SOUL with special reference to sub sections of each LMS package’s serial control module. This chapter consists of Introduction, Features and facilities of the library management software packages, description of Koha, Libsys, SOUL and their serial control module.

Chapter 5: Data Analysis and Interpretation
This chapter describes data interpretation, the data that are gathered through different research method like questionnaire, personal interview and observation. Library Automation, weightage of features of LMS Packages, Comparison of Library Software Packages, Features of serial control modules, and problems in using serial control module are analysed.

Chapter 6: Findings, Suggestions and Conclusion
In this chapter meeting the objectives, findings, suggestions, conclusions and Scope for further research are discussed Appendices contain the Questionnaire and selected references.