Software Requirements for a School Library

Ms. Shveta

NET in Library & Information Science
Email : mini04058@gmail.com

ABSTRACT :

School library is a collection of sources of information and knowledge for students, employees and other members of library. For providing fast and current services to users, library requires appropriate software, based on requirements. So to study the requirements is an important aspect. It determines specific features expectations, resolution of ambiguity in requirements as demanded by the various users. The objective of my study is to know about software requirements for a school library.

KEYWORDS: School Library, Information, Software, Users.

INTRODUCTION :

Library plays an important role in learning and development of human beings. In case of school Library we cannot ignore the role of its in physical, mental and social development of children. If school is a centre point for knowledge and learning then Library is a core for dissemination of information. Library is a trinity of documents, users and personnel. Now a days it is not easy to fulfill the information need of users. Users require current, timely and accurate information. Automation is helpful in reducing the complexity of time, accuracy and updation regarding information. But it is also hard to select the software for fulfilling the requirement. For modifying existing system or adding new system in a school library there are number of factors we have to consider first. Our new system or modified system must be based on the requirement of users. If we want to take maximum output it must be able to fulfill the requirements/need of the users. So the first step is software requirement analysis. It consists all the requirements that should be considered in developing a software for school

library. Software requirement analysis decide the success or failure of a software.

SOFTWARE REQUIREMENTS :

Software is a collection of programs that is necessary for hardware to perform the different jobs.

According to IEEE (Institute of Electrical & Electronics Engineers)

"Software is the collection of computer programs, procedure rules and associated documentation and data."

Software requirements are the conditions or capability that are needed by uses for solving a problem/complexity or completing on objective. For fulfilling the software requirements we have to convert the requirements of uses into a software for providing a concrete form. For developing a software there are number of phases to follow. Every phase acts as an output for another phase. Basic phases are following :

   a)   Requirement Analysis
   b)   Software design
   c)   Coding
   d)   Testing

International Journal of Research

Available at https://edupediapublications.org/journals

e-ISSN: 2348-6848
p-ISSN: 2348-795X
Volume 04 Issue 17
December 2017

e)   Maintenance

All these phase are ended at definite output. Output of each phase play crucial role in another phases. So first and foremost step is to understand the software requirements. Software requirement analysis consists following phases :

1) **Requirement Analysis :** In this phase we understand the problem or requirement in complete manner.

2) **Requirement Specification :** After understanding the problem or requirement completely, we prepare specification,. It is called software requirements specification (SRS). This is based on output of requirement analysis.

3) **Requirement Validation :** Validity of all the given specification in SRS are checked in this phase. This phase is based on the output of phase of requirement validation.

SOFTWARE REQUREMENTS FOR A SCHOOL LIBRARY :

School library is one of academic library. Order of academic library is school library, college library, university library.   Complexity of functions also increase in same order. Requirements of school library may be vary school to school. Because there are number of criteria on which we can differentiate school library. Like Rural / Urban, National / International, Primary / Secondary etc. Besides this size of school, number of students, subjects etc. also matters. All these factors have role in requirement Analysis.

"A Library is the delivery room for the birth of ideas, a place where history comes to life" – Norman Cousins

Because these are responsible for varying the requirements school to school. But we are studying a normal school library. For developing a software for school library first we should have the specifications for software on which designing of software is based. For deciding about specification we should first analysis the requirements or problem defined. So for collection of requirements we divide the requirements into two :

1) Functional requirements
2) Non-functional requirements

1) **Functional requirements :**
For collecting functional requirements we have to study the functions of a school library. Understanding of each section of school library is helpful in collecting functional requirements. Basic sections are :

➢ Circulation Section
➢ Periodical Section
➢ Technical Section
➢ Reference Section
➢ Maintenance Section

(a) **Circulation Section :**
Library documents are issued for home reading for a fix time period. After this fix period documents have to be returned to the library. So circulation section do the job of circulating the documents between library and users. It is quite possible that besides issuing and returning documents, documents may be late returned or lost by user. So norms of this section are related with following :

- **Registration :** Only authorized person is allowed to become the member of a library. Membership of users are very important from security point of view. All the students, employers and faculty members are eligible for membership of library. Membership of library is act as authority in itself for using library.

- **Issue Book :** Documents are issued to the users or members of library. But there are some norms on number of books to be issued, time to issue, date of issue, total days for which book is issued, time period etc. Besides this detail of members including name, address, phone no., registration number etc. and detail of all documents of library.

- **Return Book :** Norms related with returning include date of issue with the due date for book return. It must be precise, after due date or in case of lost what must be next step.

- **Charging of Overdues :** After how many days dues should be charged and last limit of dues, procedure in case of lost of book must be clear.

- **Reservation of Book :** Some books are limited in number in the library. But these books are frequently demanded by users. So procedure and norms for reserving book must be clear.

- **Renewal of Book :** Users may demand to continue issue of book, he/she already kept. So norms must be clear.

- **Maintenance of Records :** Last but not least consistency in all above described actions can not be possible without proper maintenance of records.

(b)   Periodical Section :

In this section journal subscribed by Library are displayed like magazine, national journal, international journal, newspaper in hindi, English or regional language. Besides these it may consist non-book material section like CD, DVD, Video, Cassettes, etc. Periodical are primary source of knowledge and awareness. But documents of periodical section are not allowed to issue for home reading. Users are allowed to read in the library premises.

(c)   Technical Section :

Before issuing of books, processing is must. All documents of library is processed. It is important from security and easy functioning point of view. Processing means to differentiate every document of library so that easy to classify and easy to search. Classification and cataloguing are two tools of technical section and these tools are followed by other routines like stamping, tagging, date lebelling, label writing fixing of pockets and ownership slips. Classification numbers are given according to classification scheme and books are catalogued according to cataloguing rules.

(d)   Reference Section :

This section is used to provide the broad overview of facts and topics. Dictionaries, Bibliographics, Encyclopedias, Almanacs, Atlases, Gazetteers, yearbooks, annuals, handbooks etc. are some fo the most common references materials. Reference material helps to identify and locate information. Normally reference

International Journal of Research

Available at https://edupediapublications.org/journals

e-ISSN: 2348-6848
p-ISSN: 2348-795X
Volume 04 Issue 17
December 2017

books cannot be taken out the library but can be used in library.

(E)   Maintenance Section :
Maintenance section is responsible for taking care of documents of library and make them available to the user. So organization of stockrooms and shelf arrangement of books and conservation of book is major jobs of maintenance section. Maintenance section is responsible for physical condition of the documents.

2)   Non-Functional requirements :
Non functional requirements are as important as functional requirements. These are not directly concerned with the specific functions. These are related with the characteristics of the system according to software point of view basic non-functional requirements are given below :

(a)   Completeness :
Software requirements should be complete. Incomplete requirements lead to incomplete system and unsatisfaction. Requirments should be related with every aspect and complete in all sense like requirements relating to functionality, performance, design, constraints, attributes, human interface, external interface etc.

(b)   Correctness :
Requirements should be correct from all point of view. Only correct requirements lead to correct statements and correct statements lead to correct programs that further lead to correct software. Finally all these lead to success of a system. Incorrect set of

requirements cannot satisfy the users' needs.

(c)   Consistent :
Consistent means acting in same way consistency is possible only if there is no conflict among requirements. For efficient working there must be consistency in all the requirements, functions based on requirements and output of functions.

(d)   Capacity :
To consider capacity is very important. A system is not able to give efficient and timely results without required capacity. There must be balance between needs and capacity and options to extend the capacity.

(e)   Constraints :
Constraint means limitation or restriction. Constraint means to force to follow a particular course of action. It is essential to specify and identify all the constraints. In case of software requirements –

- **Hardware Compliance :** Software must be able to operate on some predetermined existing hardware. So that it possess the capability to operate on the existing type of machine.
- **Software Compliance :** It must be specified that requirement are derived from existing standards or regulations.

(f)   Cost :
Cost is very important non-functional requirement. Cost directly and indirectly in both senses effect our decisions. Decisions about quality, number of systems, type of systems etc.

In low budget we have to confine the requirements, we only can stress on priorities. But in high budget there is no need to confine the requirements of users. We can stress on fulfilling the software requirements.

(f) Human Interface :
Human interface is a non-verifiable requirements. Because it cannot be verified, it is impossible to define the team "good", "well" etc.

(g) Legal :
There are several legal areas on which we have to give attention like copyright, intellectual property right etc. In case of software requirements it may be found to infringe on any legal area so we should take care of.

(h) Modifiable :
There must be provision for any change or modification. Designing and structure, based on requirements should be flexible. Any type of change in the requirements should be easy to make.

(i) Performance :
Performance can be judge with the help of efficient functionality. All the functions should be able to fulfill the requirements efficiently and effectively. In case of software there are two criteria.

- **Response time :** Response time is the expected time for the completion of an operation under specified circumstances. So response time should be as small as possible, that lead to efficient working.

- **Throughput :** Through put is the expected number of operations that can be performed in a unit time. It must be maximum.

(j) Unambiguous :
Unambiguous is possible when there is no two ways to interpret one thing. All the statements, that are made to fulfill the requirements must be unambiguous statements must be written in such way that interpreted by different people in same meaning. Different interpretation leads to failure of a system.

(k) Traceable :
Future development of each requirement should be possible traceability is only possible f origin of each requirement is clear and it facilitates the referencing of each requirement.

(l) Verifiable :
Verification of requirements is a necessary task. It is possible if there is some process with which a person or machine can check the functioning of a software, that is required or meet the need of users.

SOFTWARE REQUIREMENTS IN BRIEF:

1. **Sign up and Login :** It is essential to provide security to software to access the resources of library. Software must contain password or other system of security so that only authorized member is allowed to sign up and login.

2. **Search :** Searching is first step not only for issuing the book but also for reading the documents in library premises. Software must contain number of options to search the documents of library.

3. **Maintenance of record of documents :** Software must contain updated

records. Users must be able to check whether required document is available in library or not. It is only possible when updated and current record is available. Updation, insertion and deletion are main actions that are applied for maintenance of record. Software must be capable to apply all these actions on record consistently.

4. **Issue Book :** Complete record of all the members with basic details and complete record of all the documents of library with details must be available on software. There must be simple program to issue the book of authorized member of library with all essential entries like date of issue, due date etc.

5. **Fine :** There must be a program to charge a fine after due date of returning the book. There must be clear cut steps to charge fine and increasing upto a particular limit with other formalities.

6. **Return the book :** There must be a program to accept the book returned with updation of record.

7. **Renew the book :** There must be a program to renew the issued book before the due date and even after due date with fine.

8. **Reserve the book :** There must be a program for reserving the book for issuing. In a library some books are limited in number but have great demand. So there must be process to book a book in advance.

CONCLUSION :

Moving toward automation, software works as a right hand. Application software can easily replace a number of manual functions. Software is a crucial factor in disseminating updated, timely and accurate information. But the most important thing is matching requirements with software. So software requirement analysis must contain those tasks that got into determining the needs or condition to meet the satisfaction of user and efficient outputs. Requirements analysis critical to success or failure of a system.

REFERENCES :

[1] Goel, Sushil. *Software Engineering*. 1st edition, Karnal : Aarti Book Co., 2014. Print

[2] http://www.academia.edu/2

[3] http://www.tutorialspoint.com

[4] https://ebookfriendly.com

[5] https://en.m.wikipedia.org

[6] Jalote,Pankaj. *An integrated approach to software engineering*.N.P.:Narosha Publishing House, n.d. print.

[7] Krishan, Gopal. "CIRCULATION SECTION AND MAINTENANCE SECTION." *B.Lib. & Inforamtion Science*. Directorate of Distance Education. N.P. : n.p., n.d. print.

[8] Mittal, R.L. *Library Administration : Theory and Practice*. 5th edition, New Delhi : Metropolital Book Co. n.d. print.