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CHAPTER-1

1.0 INTRODUCTION

**1.1 Purpose**

The purpose of this document is to familiarize reader with software. Specification describes all hardware and software requirements for product, behaviour of it and its components. Software Requirements Specification (SRS) allows to verify the customer that all his requirements are observed and implemented correctly by developer.

The intended audience for the SRS reading consists of system end-users (patrons), customer engineers, software developers.

**1.2 Scope**

The software will reflect all the requirements defined by the customer. College Library Management System will allow to perform all necessary procedures for librarians and patrons. According to customer requirements the software to be developed will consist of three databases:

• Item’s database (books, journals, magazines, newspapers, diploma thesis, etc)

• Patron’s database

• a small Access-based database with information about digital items, that College has (software, music) integrated with Item’s database

Library Management System will also provide all necessary services for databases such as creating, deleting, updating and searching information. Patrons will be able to access to the library site (web-based) through the Internet, scattered throughout the library for sending request, receiving information about current status of the books or renewing them. User interfaces will be easy-to-use.

**1.3 Definition, Acronyms, Abbreviation**

JAVA: Java is**a high-level, class-based, object-oriented programming language that is designed to have as few implementation dependencies as possible.**

SQL: SQL (Structured Query Language) is used to perform operations on the records stored in the database, such as updating records, inserting records, deleting records, creating and modifying database tables, views, etc.

DFD: **DFD** (**Data Flow Diagram**), the flow of data of a system or a process. It also gives insight into the inputs and outputs of each entity and the process itself.

CFD: CFD (Context data flow diagram), also called Level 0 diagram.It uses only one process to represent the functions of the entire system. It does not go into details as marking all the processes. The purpose is to express the system scope at a high level as well as to prevent users from deep down into complex details.

ER: ER(Entity Relationship)A relationship between two entities signifies that the **two entities are associated with each other somehow.**

**1.4 References**

An Integrated Approach Software Engineering Third Edition by Pankaj Jalote.

Java Balaguru swamy

SQL :- Joseph L Jorden

**1.5 Overview**

The implementation of Library Management starts with entering and updating master records like book details, library information. Any further transaction like book issue, book return will automatically update the current books.

CHAPTER-2

2.0 OVERALL DESCRIPTION

**2.1 Product Perspective**

Library Management System is a replacement for the ordinary library management systems which depend on paperwork for recording book and users’ information.

Library Management System will provide an advanced book search mechanism and will make it easy to borrow, insert and index a book in the library.

**2.2 Software Requirements**

Front end:

•Android developer tool

•Advance java

Back end:

•MySQL

**2.3 Hardware Requirements**

•Android version 2.3

•2GB Ram

•1.2GHz processor

• Intel I5

• Windows 7/8/8.1/10

**2.4 PRODUCT FUNCTIONS**

**2.4.1 Administrator**

• Admin should be able to insert, modify and delete books.

• Can accept or reject a new user according to the library policy or payment methods.

• Increase the period for borrowing a book for specific type or group of users.

• Can get the information (status report) of any member who has borrowed a book.

• Add and edit book categories and arrange books by categories.

• Add and edit authors and publishers information.

• Can send lateness warnings to people who have exceeded deadline date.

• Can record books returned by users.

**2.4.2 Users**

• The member should be provided with the updated information about the books catalog.

• Members are given a provision to check their account’s information and change it.

• Members have the ability to search through books by subject, title, authors or any information related to the book.

• Can extend the period of borrowing books according to the library policy.

• The customer may suggest a book to be brought to the library book collection.

**2.5 User Characteristics**

We have 3 levels of users:

* User module: In the user module, user will check the availability of the books.

-Issue book

-Reserve book

-Return book

-Fine details

* Library module:

-Add new book

-Remove books

-Update details of book

* Administration module: The following are the sub module in the administration module.

-Register user

-Entry book details

-Book issue

**2.6 General Constraints**

• The information of all users, books and libraries must be stored in a database that is accessible by the website.

• MS SQL Server will be used as SQL engine and database.

• The Online Library System is running 24 hours a day.

• Users may access LMS from any computer that has Internet browsing capabilities and an Internet connection.

• Users must have their correct usernames and passwords to enter into their online accounts and do actions.

**2.7 Assumptions and Dependencies**

The success of this system depends on

• Existence of an Internet service to all people in Gaza Strip.

• Are librarians and users comfortable with computers and have enough ability to work with the product?

• Website interface must be friendly and easy-to-use.

• The search mechanism should be simple and fast.

CHAPTER-3

3.0 FUNCTIONAL REQUIREMENTS

**3.1 Functional Requirements**

**R.1 Register**

Description: First the user have to register/sign up.

There are two different types of users:

\* Library Head/Manager: The library manager have to provide details about the name of library, Address, Phone number, email id.

\* Regular person/student: The user have to provide his/her details like Name, Address, Phone number, email id.

**R.1.1 Sign up**

Input: Detail about the user as mentioned in the description.

Output: Confirmation of Registration status and a membership number and password will be generated and mailed to the user.

Processing: All details will be checked and if any error are found then an error message will be displayed else membership number and password will be generated.

**R.1.2 Login**

Input: Enter the membership number and password provided.

Output: User will be able to use the features of software.

**R.2 Manage books by user**

**R.2.1 Books issued**

Description: List of books will be provided along with the date of return.

**R.2.2 Search**

Input: Enter the name of the Author/book to be issued.

Output: List of books related to the keyword.

**R.2.3 Issues book**

State: Searched the book user wants to issues.

Input: click the book user wants.

Output: conformation for book issue and apology for failure in issue.

Processing: if selected book is available then book will be issued else error will be displayed.

**R.2.4: Renew book**

State: Book is issued and is about to reach the date of return.

Input: Select the book to be renewed.

Output: conformation message.

Processing: If the issued book is already reserved by another user then error message will be send and if not then conformation message will be displayed.

**R.2.5: Return**

Input: Return the book to the library.

Output: The issued list will be updated and the returned book will be listed out.

**R.2.6: Reserve book**

Input: Enter the details of the book.

Output: Book successfully reserved.

Description: If a book is issued by someone then the user can reserve it ,so that later the user can issue it.

**R.2.7 Fine**

Input: check for the fines.

Output: Details about fines on different books issued by the user.

Processing: The fine will be calculated, if it crossed the date of return and the user did not renewed if then fine will be applied by Rs 10 per day.

**R.3 Manage book by librarian**

**R.3.1 Update details of books**

**R.3.1.1 Add books**

Input: Enter the details of the book such as name, author, edition, quality.

Output: confirmation of addition.

**R.3.1.2 Remove books**

Input: Enter the name of the book and quantity of books.

Output: Update the list of the books available

CHAPTER-4

4.0 NON-FUNCTIONAL REQUIREMENTS

**4.1 Performance Requirements**

• The system shall accommodate high number of books and users without any fault.

• Responses to view information shall take no longer than 5 seconds to appear on the screen.

**4.2 Safety Requirements**

• System use shall not cause any harm to human users.

**4.3 Security Requirements**

• System will use secured database

• Normal users can just read information but they cannot edit or modify anything except their personal and some other information.

• System will have different types of users and every user has access constraints.

**4.4 Error Handling**

• LMS product shall handle expected and non-expected errors in ways that prevent loss in information and long downtime period.

CHAPTER-3

3.0 FUNCTIONAL REQUIREMENTS

EEE. IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements

Specifications. IEEE Computer Society, 1998

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3.1 Scope of the work

There are several motivations to order new computer-based College LMS:

• To modernize College Library database, where data was stored in a card-based catalog.

• To optimize librarians’ work and time

• To join small Access-based database, where library has stored information about digital items (software, music)

• To expand services of library and patron’s possibilities

• To check ability of commercial using of library management systems.

The LMS will allow remote access to library database via Internet only for patrons after authorization proce- dures. The patrons could search, renew items, send requests. The College LMS will provide remote access to other databases.

3.2 Scope of the product

Features provided by the library management system:

• Store necessary information about items in the library:

– Author;

– Item’s title;

– Call number;

– Year of publication

– Location in the library;

– Number of copies

– Current status

• System will provide librarian to add, modify, and remove items to/from the library database, and check availability of the item.

• System will allow patron to get information about his/her status after authorization procedures:

– User name

– User address

– Student number

– Number and information about checked out items

– Requested items information

• Possibility to search and request items in the inter library loans, online databases through Internet.

3.3 Functional Requirements

Functional requirements are the following:

• The LMS should store all information about librarians and patrons, their access keys, priority and etc.

• The LMS allow searching items by author, title or keywords

• The LMS should support 500 patrons and 1000 requests/min simultaneously.

• The LMS should allow librarians to add, delete and modify items in database, and check availability of the items.

• The LMS should generate request’s reports for librarians every day, on base of which librarians could make decisions about acquiring or retirement the item

• The LMS should create notification and send to patrons by e-mail automatically after item’s overdue

• The LMS should provide to search, request and renew items either from the library computers (LMS application) or from outside the library through College site(web-based) though the Internet.

• The LMS should provide access to previous Access-based database, online databases.

CHAPTER-4

4.0 NON-FUNCTIONAL REQUIREMENTS

4.1 Performance Requirements

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• Responses to view information shall take no longer than 5 seconds to appear on the screen.

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• System use shall not cause any harm to human users.

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