Software Requirements Specification

for

Library Management System

Contents

Chapter 1

Introduction

1.1 PURPOSE

The purpose of this document is to familiarize reader with software. Specification describes all hardware and software requirements for product, behavior 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

LMS 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 ergonomical and easy-to-use.

1.3 Definition, Acronyms, Abbreviation

1.3.1JAVA -> platform independence

1.3.2SQL -> Structured query Language

1.3.3DFD -> Data Flow Diagram

1.3.4CFD -> Context Flow Diagram

1.3.5ER -> Entity Relationship

1.3.6IDE -> Integrated Development Environment

1.3.7SRS -> Software Requirement Specification

1.3.8LMS -> Library Management System

1.4 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

Overall Description

2.1 Product Perspective

LMS is a replacement for the ordinary library management systems which depend on paper work for recording book and users' information.
LMS will provide an advanced book search mechanism and will make it easy to borrow, insert and index a book in the library.

2.2 Product Functions

2.2.1Administrator

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

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

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

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

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

2.2.1.6 Add and edit authors and publishers information.

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

2.2.1.8 Can record books returned by users.

2.2.2Users(Library Members)

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

2.2.2.2 Members are given a provision to check their account's information and change it.

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

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

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

2.3 User Classes and Characteristics

We have 2 levels of users

- User module: In the user module, user will check the availability of the books.
  - Book return
- Administration module: The following are the sub module in the administration module.
  - Register user
  - Entry book details
  - Book issue

2.4 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.

2.5 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

Functional Requirements

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 procedures. 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

Nonfunctional 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

4.3.1. System will use secured database

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

4.3.3. 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.