



SOFIA SADIQ

01-235152-044

NAINA KHUSHLEEM

01-235152-034

Integrated Library System for Web and Mobile devices using Koha platform

Bachelor of Science in Information Technology

Supervisor: Dr. Muhammad Asfand-e-Yar

Department of Computer Science
Bahria University, Islamabad

April 2019

Abstract

The main objective of our project is to develop an integrated library management system that uses a Web Application and Android Application for the library management system using KOHA. The Web Application helps the administration to manage the records of books, students and other related entities while Android Application helps the members to search the books available in libraries with their details. This system will overall increase the performance of library system and integrate one library branch with other.

Contents

Abstract

i

1	Introduction	1
1.1	Introduction	1
1.2	Problem Statement	2
1.3	Problem Description	2
1.4	Project Objective	2
1.5	Summary	3
2	Literature Review	4
2.1	Overview	4
2.2	CDS/ISIS	4
2.3	Aleph	5
2.4	KOHA Library Software	6
2.5	Literature Review Table	8
2.6	Summary	9
3	Requirement Specifications	10
3.1	Existing System	10
3.2	Proposed System	10
3.3	Back-end Interface Requirements	11
3.4	Functional Requirements	11
3.4.1	<i>User login</i>	11
3.4.2	<i>Search book</i>	11
3.4.3	<i>Checking Book Status</i>	12
3.4.4	<i>Hold a book</i>	12
3.4.5	<i>Catalog update by Admin</i>	12
3.4.6	<i>User approval by admin</i>	13
3.5	Non-Functional Requirements	13
3.5.1	<i>Speed</i>	13
3.5.2	<i>Internet Availability</i>	13
3.5.3	<i>Efficiency</i>	13
3.5.4	<i>Device Portability</i>	13
3.6	Resource Requirements	14
3.7	Use Case	14
3.7.1	<i>User Use Case</i>	14
3.7.2	<i>Admin Use Case</i>	18
3.8	Summary	21

4 System Design	22
4.1 System Architecture	22
4.2 Process Model	24
4.3 Entity Relation Diagram	25
4.4 Class Diagram	26
4.5 Sequence Diagram	27
4.6 Admin Activity Diagram	28
4.7 User Activity Diagram	29
4.8 GUI	30
4.9 Database Design	33
4.10 Summary	33
5 System Implementation	34
5.1 System Architecture	34
5.2 Tools And Technology	34
5.2.1 KOHA Library Software	34
5.2.2 MYSQL Database	34
5.2.3 Android Studio	35
5.2.4 VMware Workstation	35
5.3 Development Environment/Languages Used	35
5.3.1 PHP	35
5.3.2 JavaScript	35
5.3.3 Bootstrap	35
5.3.4 HTML/CSS	36
5.3.5 Java	36
5.4 Methodology	36
6 System Testing and Evaluation	38
6.1 Introduction	38
6.2 Function Testing	38
6.2.1 Unit Testing	38
6.2.2 System Testing	39
6.3 Installation Testing	39
6.4 Graphical User Interface Testing	39
6.4.1 Test Case for User Log-in Screen	39
6.4.2 Test Case for Home Page	41
6.4.3 Test Case for User Profile Interface	42
6.4.4 Test Case for Book Issuance to Member	43
6.4.5 Test Case for Administration Profile Screen	43
6.5 Usability Testing	44
6.5.1 Usability Test Case for User Log-in Screen	44
6.5.2 Usability Test Case for Insert / Update / Delete Record	44
6.6 Performance Testing	44
6.6.1 Test Case for Application Performance	45
7 Conclusion	46
7.1 Major Accomplishment	46
7.2 Future Enhancement	47

CONTENTS

vi

A	48
References	51