Institute Management System

Final Year Project

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*The candidates confirm that the work submitted is their own and appropriate credit has been given where reference has been made to work of others

Plagiarism Free Certificate

This is to certify that, I Fazal Mehboob Khan S/O Abdul Majid Khan, as group leader of FYP under registration no BCSM-F14-308 at Computer Science Department, The Superior College, Lahore. I declare that my FYP report is checked by my supervisor.

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Project Report

Institute Management System

Change Record

Author(s)	Version	Date	Notes	Supervisor's Signature
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APPROVAL

PROJECT SUPERVISOR

Comments: _____

_____

Name:_____

Date:_____ Signature:_____

PROJECT MANAGER

Comments: _____

_____

Date:_____ Signature:_____

HEAD OF THE DEPARTMENT

Comments: _____

_____

Date:_____ Signature:_____

Dedication

We dedicate this project to ALLAH Almighty our creator, our strong pillar, our source of inspiration, wisdom, knowledge and understanding. He has been the source of my strength throughout this program and on His wings only have I soared. We also dedicate this work to our parents and teachers who always taught us to be honest, & do hardworking if you want to achieve something in your life.

Acknowledgement

WE would like to express my deep gratitude to my honorable supervisor Professor **Mr. Fawad Nasim**, for their patient guidance, enthusiastic encouragement and useful critiques of this research work. I would also like to thank the head of FYP Zaman Aziz who gave us the golden opportunity to do this wonderful project 'Institute management System' which also helped us in doing a lot of Research. Finally, I wish to thank my parents, teachers and friends for their support and encouragement throughout my study.

Executive Summary

We are making a cloud based system with a name Institute Management System.The simple affordable and professional solution with multi branches and multi users that has everything of user's need to manage His|Her institute.Our idea is basically a Web base portal where users can easily get help to maintain their records. And can have their own web Based software and management system just with a single Login, where they can get to manage their Employees, Students, Attendance, Courses as well as their Finance.User can also get free android mobile app(ionic framework 3.0 Source code) for students,Where students can download assignment,can view their fee and attendance detail.Easy reporting with multiple options and in different formats.

The idea is very simple & unique and has not been fully implemented yet, so we are having a great chance to bring something that can be the part of our Market.

Table of Contents

List of Figures

List of Tables

Chapter 1

Introduction

Chapter 1: Introduction

Basically the idea of our project is to develop ‘‘Institute Management System’’ (IMS). This system will Web base system or it will be good to say Web application. This management system will be a cloud System and can be used as a ‘‘SaaS’’ Software as a Service, with different packages as per the requirement of the Institute. Web base system will be develop on ‘‘Caravel’’ which is the frame work or ‘‘Hp’’. The simple, affordable and professional solution with multi branches and multi users that has everything you need to manage your institute. You can also get free Android Mobile App (Ionic frame work 3.0 source code) in future for students, where students can download Assignment, can view their fee and attendance details. Easy reporting with multiple options and in different formats. Here is some amazing reason to choose IMS for your Institute.

1.1. Background

Based on the Manage accounts, Library system, Staff Management and Documents Search Portal web application requirements, I have made the choice of frameworks to be used. This application primarily consists of main component are web application that allows user for manage accounts, Library system, Staff Management and Documents with required information for which can view and apply according to their interests. The web application is developed on MySQL database with the php’s framework “Caravel”. The front end is developed using HTML, CSS, JavaScript, conquer and Bootstrap.

1.2. Motivations and Challenges

The purpose of developing IMS provide Online Management system. Comes from our idea to make the search efficient and handy. It will help user to search Manage accounts, Library system, Staff Management and Documents at a single point. Therefore, we can say that IMS Portal act as a bridge of communication between organizations and applicants. With the

evolution of technology and internet being the main source of information for the applicants, these search portals and have become an excellent method to reach wide range of audience. Initially, when I am unaware of these portals, I used to do research about companies and their technology stack through their respective websites and.This requires lots of effort and time. However, later when I realized the importance of IMS portal,.The Challenges we facing are it is difficult to adjust all things in a single platform. Difficult to manage whole data in single database. Convene users to use our web applications.

1.3. Goals and Objectives

Following features we will provide, & following goals we will try to achieve:

Our goals are to compete all existing management software one by one and become a no.1 searching web based application in Pakistan and our objectives are.

a. To provide 24/7 service to all our users.
b. To store all information of our employees, users, their Staff and other functions.
c. Easy to maintain and provide better performance.
d. User can easily Register himself and search from category.
e. To provide secure login all the users.
f. To provide a uniform look to website.
g. To provide many help frames so that user can easily use this product.
h. To provide a portable product, this is available to all.
i. To keep track of the data using database.
j. Easy to update and delete Document and can manage other productive stuff.

1.4. Literature Review/Existing Solutions

Different websites provide services like our website and in the market these are our competitive for example www.UMS**.pk** and SAT.pk provide a good services to our use to see the result. Our third competitor are SMS**.com** in this website teacher upload our results and attendance for all students.

Our product different from this we are going to combing all features in one website and this is our unique feature.

1.5. Gap Analysis

Currently we are going to target Pakistan first then we are planning to expand it in international market.

Planned Strategy:

Our main focus is on users and their requirements. We have also planed to register more and more clients and customers.

1.6. Proposed Solution

Institute management system is an integrated web application that handles various academic and non-academic activities of a college academic institute .The system can be access by ever student | Faculties | Employees of the institution through internet contacted computer or internet enabled mobile devices with the aid of his user name and password. Every student will have a customize home page with his\her profile management facilities.Through links that display in the home page the user can access different options of the web site, assigned to him. Thought the system allow access to every one there is the significant security risk, involved in this project. A self-driven module in the proposed system will accomplish the automated tasks such as email alerts, SMS alerts, notifications to the administrator etc.

- STUDENT ADDMISSION
- STUDENT FEE MANAGEMENT
- STUDENT ATTENDENCE MANAGEMENT
- STAFF ATTENDANCE MANAGEMENT
- STAFF PAYROL MANAGEMENT
- LIBRARY MANAGEMENT
- USER MANAGEMENT

1.7. Project Plan

Phases	**Description of Work**	**Start and End Dates**
Phase One	Documentation	Max. 3 Months
Phase Two	Develop Website	Max. 3 Months
Phase Three	Testing & remove Error	Max. 1 Month

1.7.1. Work Breakdown Structure

1. **Project Management**
   - 1.1. Work Breakdown Structure (WBS)
   - 1.2. Roles & Responsibility Matrix
   - 1.3. Change Control System
2. **Reports / Documentation**
   - 2.1. Final Documentation Introduction
   - 2.2. Literature / Market Survey
   - 2.3. Requirements Analysis
   - 2.4. System Design
   - 2.5. Implementation
   - 2.6. Testing & Performance Evaluation
   - 2.7. Conclusion & Outlook
   - 2.8. End User Documentation
   - 2.9. Application Administration Documentation
   - 2.10. System Administrator Documentation
3. **System**
   - 3.1. Development Environment
     - 3.1.1. IDE
     - 3.1.2. Version Control
     - 3.1.3. Server
     - 3.1.4. Database
   - 3.2. Presentation Layer
     - 3.2.1. Wire-frames
     - 3.2.2. Front End Designing
   - 3.3. Business Logic Layer
     - 3.3.1. ER Diagram

3.3.2. Database Design and Implementation

3.4. Data Management Layer

3.4.1. Server Side Scripting

3.4.2. Front End Integration

3.5. Physical Layer

3.5.1. Deployment on Test Server

3.5.2. Testing & Bug Fixing

1.7.2. Roles & Responsibility Matrix

With such a limited amount of personal to accomplish the project, each team member will be responsible for multiple roles in order to complete the project on time.

#	Roles	Member names	Responsibility
01	Team Leading	Fazal Mehboob	Responsible to manage the whole the project.Contact the supervisor about update any issues that occur throughout the project.
02	Report and documentations	Adnan Ahmad	Responsible for the whole project documentation.
03	Requirements Analysis	Adnan Ahmad	Collect and Analysis the Requirements of the Persons by using feedback.
04	Front-End	Fazal Mehboob Adnan Ahmad	Work on responsive User Interface.
05	Database	Fazal Mehboob	Work and manager database.
06	Back End	Fazal Mehboob	Backhand Programming to make the whole project.

1.7.3. Gantt Chart

The Gantt Chart below is a tentative schedule of our plans for the remainder of the current semester and next semester. We will be using this schedule to make sure we stay on focus,

however plans are not set completely and therefore might be changed before spring semester begins.

IMS				
#	**Tasks**	**Start Date**	**Duration(Days)**	**End Date**
1.0	Planning/Design	11/2/2019	35	15/4/2019
1.1	Project Definition	17/5/2019	07	24/5/2019
1.2	Finish Web Page	27/5/2019	23	20/6/2019
1.3	Project Design	22/6/2019	28	20/7/2019
2.0	Coding	24/07/2019	88	22/10/2019
2.1	Phase 1	25/10/2019	42	22/11/2019
2.2	Phase 2	24/11/2019	12	2/12/2019

1.8. Report Outline

Introduction

What we are going to do?

- Background
  - What currently happening in the market
- Motivation & Challenges
  - Discussed in detail
- Goals and Objectives
  - Discussed how to achieve our goals.
- Existing System
  - Discussed what unique we are having, how could survive in a market
- Gap Analysis
  - Discussed Gap Analysis & Discussed what is our planned strategy?
- Proposed Solution

  - Discussed the solutions of the problems

- Project Plan
  - Made a project plan so we could complete our project in a time.
- Work Breakdown Structure
  - Discussed in detail
- Rules & Responsibility
  - Divided task in team members
- Gantt Chart
  - Made a chart so could complete our project in a time.

Chapter 2

Software Requirement Specifications

Chapter 2: Software Requirement Specifications

Revision History

Name	Date	Reason For Changes	Version
Fazal Mehboob Khan Adnan Ahmad	11-12-19	Initial Version	1.0

2.1. Introduction

2.1.1. Purpose

The purpose of the IMS is to collect and analyze all assorted ideas that have come up to define the system, its requirements with respect to consumers.

This document describes the software requirements for a web based Application that is IMS.It is meant to be used to maintain a shared understanding of the requirements between the developers and the clients of the system.This document describes the project's user interface, hardware and software requirements.It helps any designer and developer to assist in software delivery life-cycle (SDLC) processes.

2.1.2. Document Conventions

This document uses the following conventions.

SQL Lite: Android Database

Main Heading Titles

- Font: Caliban
- Face: Bold
- Size: 20

Sub Heading Titles

- Font: Calibre
- Face: Bold
- Size: 14

Other Text Explanations

- Font: Calibre
- Face: Normal
- Size: 12

2.1.3. Intended Audience and Reading Suggestions

This document is written for requirement engineer, developer and project manager. Before reading this document it is highly recommended to read the vision document to get an overview of the product. The developer and the project manager need to become intimately familiar with the SRS.

2.1.4. Product Scope

The requirement of the user is to

- Access/ search info.
- Login to the system, though first page
- Change the password after login the system
- Student can give feedback on Institute / staff / and other student
- The admin is the God Father of the system

2.1.5. References

The following websites are referred :

www.w3school.com

www.laravel.com

www.stackoverflow.com

www.youtube.com

www.github.com

www.learningaccadmy.com

www.develperspoint.com

2.2. Overall Description

2.2.1. Product Perspective

It is a web based system implementing client-server Application. IMS portal System provides simple mechanism for users to share and acquire Documentations, buying books.

The following are the main features that are included in IMS

a. User account: The system allows the user to create their accounts in the system and provide features of updating and viewing profiles.

b. Search: search is simply local search engine based on key words.

c. Discussion Forum: Provides users with a platform to discuss and help each other with their problems

2.2.2. Product Functions

IMS provides online real time information about the Books, Student,Staff, Accountant, Librarian information and any type of documents. The functions of the system include

2.2.2.1 Account Registration

The registration function shall allow users to create secure accounts. The account will track the user's name, email address and password.

2.2.2.2 Account Login

The account login function shall allow account members to enter their username and password.

2.2.2.3 Reset Password

User can reset our Password by using our email address.

2.2.2.4 See and search Items

User can see and search different type of things without login. User can find Books and documentations without login. If user can preform any task like upload Results, Books information or documentation the they must be login.

2.2.2.5 Upload

User and clients can upload our Documents and books, they can also upload our books and importance documents for free and premium. User can also upload post for need of Books and tags for any user who is register in the system.

2.2.2.6 Update and delete post

If user can upload Document,Books and different things then they can be able to update and delete our post.

2.2.2.7 Update Account Information

The update account information function shall give account members access to edit their stored information.

2.2.2.8 Buy and sale

User can buy and sale using shopping cart.

2.2.2.9 Account Logout

The account logout function shall allow account members to exit their account for security purposes.

2.2.3. User Classes and Characteristics

The system will support three types of user that are admin, Students, and Employee/Team. Students will have access to Students functions, and the employees will have access of the system management And admin who maintain the system.

The customer should be able to do the following functions:

a. Customer can also upload post for all users and tags them.

They can also update and delete our post.

2.2.4. Operating Environment

In operating environment we need of a system which is connect with internet. The application begin developed is running in all latest web browser like Google Chrome, Opera etc. And fully support to Window xp, Window 8 and Window 10, MAC Operating system.Also run in any mobile phone.

2.2.5. Design and Implementation Constraints

The software will operate with following software components:

IMS only requires Apache server, MySQL and PHP to setup which can be easily done using the XAMPP in local computers. Which is free and open source cross platform web server packages consisting mainly of the Apache HTTP server, MySQL database.

Following tools are used in it:-

- ✓ XAMPP Server
- ✓ Phone Gap Application
- ✓ Sublime Text
- ✓ Hp Restroom

Following languages are used in it:-

- ✓ PHP (Caravel Framework) MVC.
- ✓ CSS 3.
- ✓ Bootstrap 4
- ✓ HTML 5
- ✓ JavaScript

2.2.6. User Documentation

Users of the website must know how to navigate in a website.

- We will organize help-line for customer support in the future.

2.2.7. Assumptions and Dependencies

Website IMS is only accessible through the Internet, it is assumed that the user has a connection to the Internet. It is also assumed that the user has a web browser able to display the website. (I.E. Chrome, Microsoft Internet Explorer 4+ or compatible browser).It also Assumption that every things related to IMS are working correct with another operating system and another browser because it is a web application and they rum where the device connect to internet.

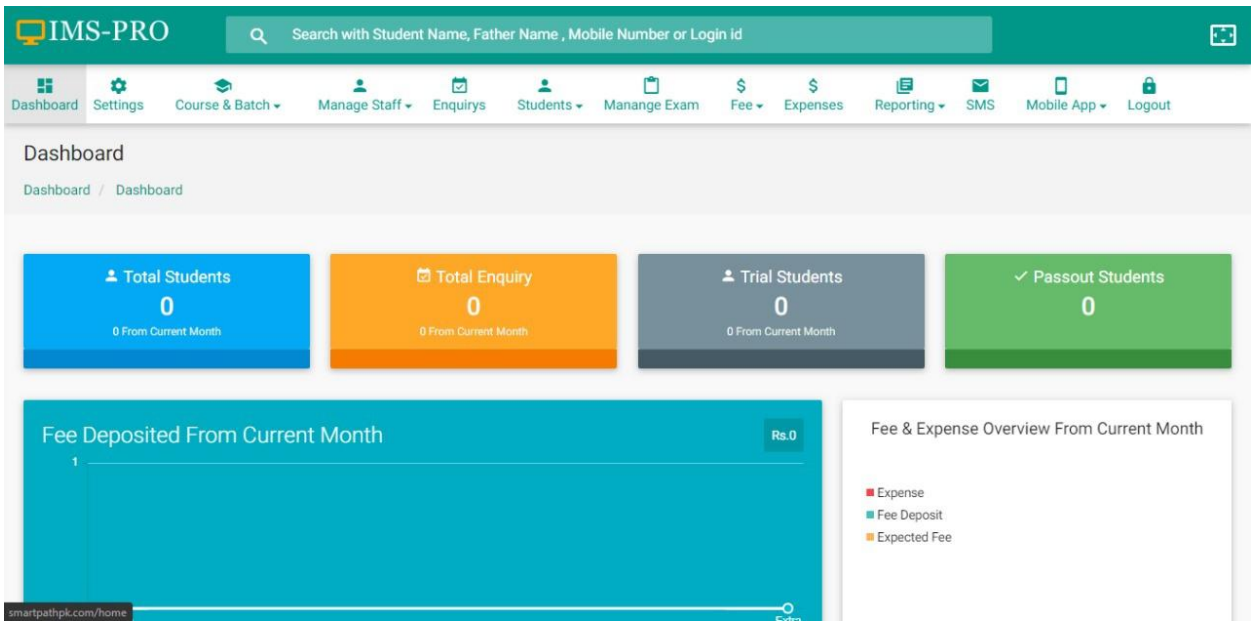
2.3. External Interface Requirements

2.3.1. User Interfaces

IMS has been specifically designed with keeping their user in mind. The home screen offers a menu with a list of function that system performs.The system will provide the ability for users to access our website via the Internet.User are able to see and search products jobs and different types of documents without login.User also can login, create account and able to logout to IMS.

User Interface:

- Front-end software: HTML , CSS, JavaScript, Bootstrap, conquer
- Back-end software: PHP (Caravel Framework)MCV



2.3.2. Hardware Interfaces

Interactions between the software and the hardware. It can also access web page to computer system.

- ✓ Processor: Pentium 4 or Higher.
- ✓ RAM: 1GB or Higher.

2.3.3. Software Interfaces

The SRS is compatible with window, LINUX and MAC operating system. In this system database containing image, text and video. The database can be updated with additional language.In this system we shall allow the users to complete secured communication with each other.

- ✓ Operating System: Unix, Linux, Mac, Windows
- ✓ Development tool: HTML, CSS, Bootstrap, PHP, JavaScript
- ✓ Database: MySQL

2.3.4. Communications Interfaces

IMS supports most of the web browsers. E.g. Chrome, Internet Explorer, Opera etc.

The protocol used shall be HTTP.

2.4. System Features

IMS is fully equipped with all the newly acquired features.It has adopted all characteristics of managing IMS in efficient manners. It is excellent for managing all the functions which relates with the system..

2.4.1. System Feature 1

2.4.1.1. Description and Priority

Our system will maintains information of different Users, different category and different types of orders for buy and sales. This project has a high priority for everyone because we divided into different category by country, by city , free and premium and also introduce rating base user and company's.

2.4.1.2. Stimulus/Response Sequences

Click "Register" Button: Account Registration

1. The system shall allow a non-registered user to create a secure account.

2. The system shall require the following information from the user: Name, Email, Phone, Password etc.

4. The system shall confirm the username and password are acceptable.

5. The system shall store the information in the database.

Click "Login" Button: Account Login

1. The system shall allow a registered user to log-in to their account.

2. The system shall require a username and password from the user.

3. The system will verify the username and password, and the user will be considered “logged-in”.

Click "Search" Button: Searching

1. The system shall allow a user to searching for documents, books,results and other-things else without login and registered in this applications.

2. The system shall allow a user to filter your searching.

3. Different types of category user see while searching.

Click "upload" Button: Upload for buy and sale

1. The system shall allow a user to upload there things free and premium.

2. The system shall allow a user to upload a post for get jobs and tags to different company’s.

Click "Edit/Update/Delete" Button: to edit or delete items

The system shall require a username to edit, update or delete products.

1. User can edit, update, and delete our product.

Click "Update profile" Button: to edit or delete items

1. The system shall require a username to update our profile.

2. Update verification sent to email.

3. If user can verify this email then user profile are updated otherwise user profile not updated.

2.4.1.3. Functional Requirements

REQ-SF1-1: User can able to register himself in IMS

REQ-SF1-2: Only authentication user can login to application.

REQ-SF1-3: User can search anythings in this application no problem user are login or not login, authentic user or not.

REQ-SF1-4: Authentic user can upload our product free and premium.

REQ-SF1-5: Authentic user can update our product.

REQ-SF1-6: Authentic user can edit our product.

REQ-SF1-7: Authentic user can update our profile.

2.4.2. System Feature 2

Admin can access the whole system. He can update & delete items.

2.4.2.1. Description and Priority

Admin can login & after logged in he can add other admin, he can add new items into website he can also update & delete items as well. He can add new categories & he can delete them as well.

2.4.2.2. Stimulus/Response Sequences

Click "Login" Button: Account Login

1. The system shall allow an admin to log-in.
2. The system shall require a username & id.
3. The system will verify the username and id, and the admin will be considered “logged-in”.

Click "add sub-admin": for add & remove admin

1. The system shall allow registered admin to add new admin.
2. The system shall allow registered admin to delete registered admin.
3. The system shall require the following information from the user: Name, id.
4. The system shall ask the admin username and id.
5. The system shall confirm the username and id which is acceptable.
6. The system shall store the information in the database.

Click "categories" Button: add & remove categories

1. The system shall allow an admin to add categories.
2. The system shall require a username & id to add & remove categories.

3. The system shall allow an admin to remove categories.

Click "add products" Button: to add products

The system shall require a username & id to add products.

Click "Edit/Delete" Button: to edit or delete products

The system shall require a username to edit or delete products

2.4.2.3. Functional Requirements

REQ-SF2-1:Admin Can Login and logout.

REQ-SF2-2:Add & remove sub-admins

REQ-SF2-3:Adding and removing items categories.

REQ-SF2-4:Adding new products.

REQ-SF2-5:Edit and delete product.

2.5. Other Nonfunctional Requirements

2.5.1. Performance Requirements

For making a Website it is very necessary to improve speed, accuracy & performance of website.Hope that system responses no more than 2 second or transaction rates are good and throughput are less.We apply normalization rules and the basic objective of normalization is to reduce redundancy which means that information is to be stored only once. Storing information several times leads to wastage of storage space and increase in the total size of the data stored.

2.5.2. Safety Requirements

If there is extensive damage to a wide portion of the database due to catastrophic failure, such as a disk crash, the recovery method restores a past copy of the database that was backed up to archival storage and reconstructs a more current state by reapplying or redoing the operations of committed transactions from the backed up log, up to the time of failure.

2.5.3. Security Requirements

Security must be ensure that a programmer or a hacker not break your password.Security systems need database storage just like many other applications. However, the special requirements of the security market mean that vendors must choose their database partner carefully.

2.5.4. Software Quality Attributes

Software must be easy to maintain.it must be reliable and reusable and easy to use and its interface are easy to understand and easy to use all menus be easy. Components or modules are designed, as well as factors such as coding style and variable naming.

2.5.5. Business Rules

We applying different marketing stagey to market out product and business from this.

Chapter 3

Use Case Analysis

Chapter 3: System Analysis

The purpose of creating Use Case to describe the whole scenario how it is going to work. Describing actors and their purposes. How users, our clients and admin will login, make registration, add post, search. Users can edit their post and their profile information and user can delete their edit within the time limits. Users also can manage their account.

3.1. Use Case Model

According to this use-case user can login to our site user can add posts Staff Management ,Account Manager,books or any type of documentation. User can search any type of books and documentation.User can logout our account also cancel order and manage our account.Admin can login and logout to our website.Admin can manage website and manage our account.Accountant also login, logout, manage account, add post delete post and edit post and also search things.Librarian can login and logout add post search post manage account and also cancel account. If any one wants to search anythings then it will not need to compulsory to login to this web application.If any one can add post delete post etc. Then it will compulsory to login.

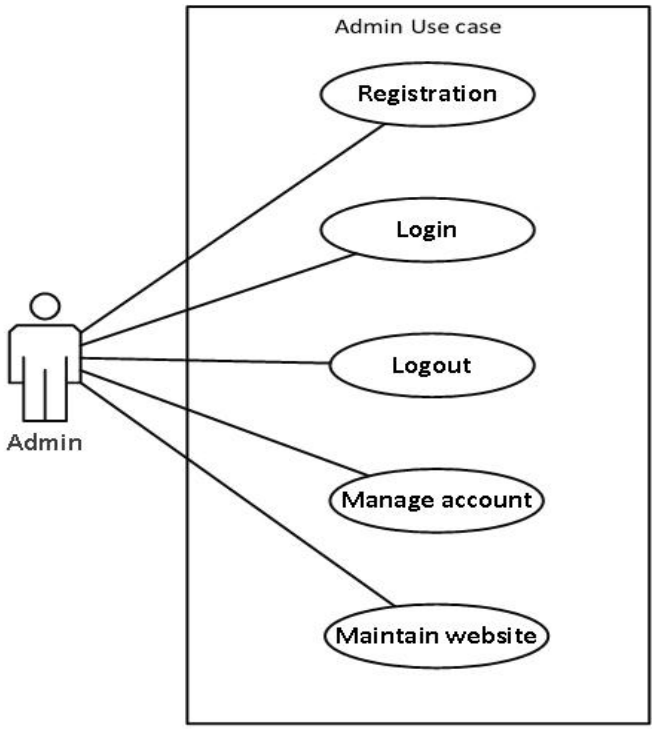


Figure 3.1.0 Admin Usecase

A admin can register our account, he can login or logout also manage account and maintain website.

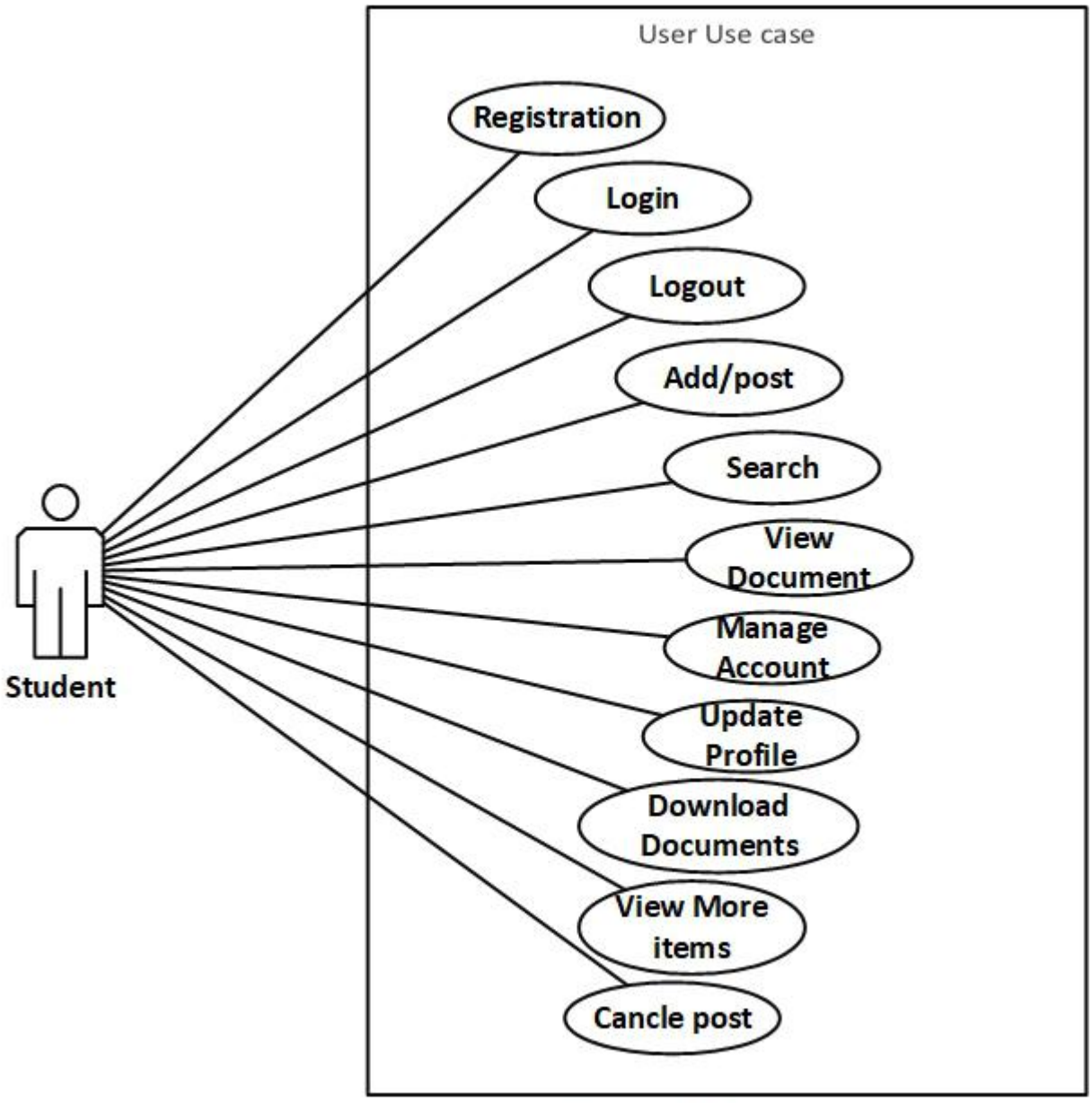


Figure 3.1.1 User Usecase

This use case define the functionality of users, that user can register our account and login to site. They upload post for getting Documents or search different items for view and buy books, they can download document and also can logout from this website.

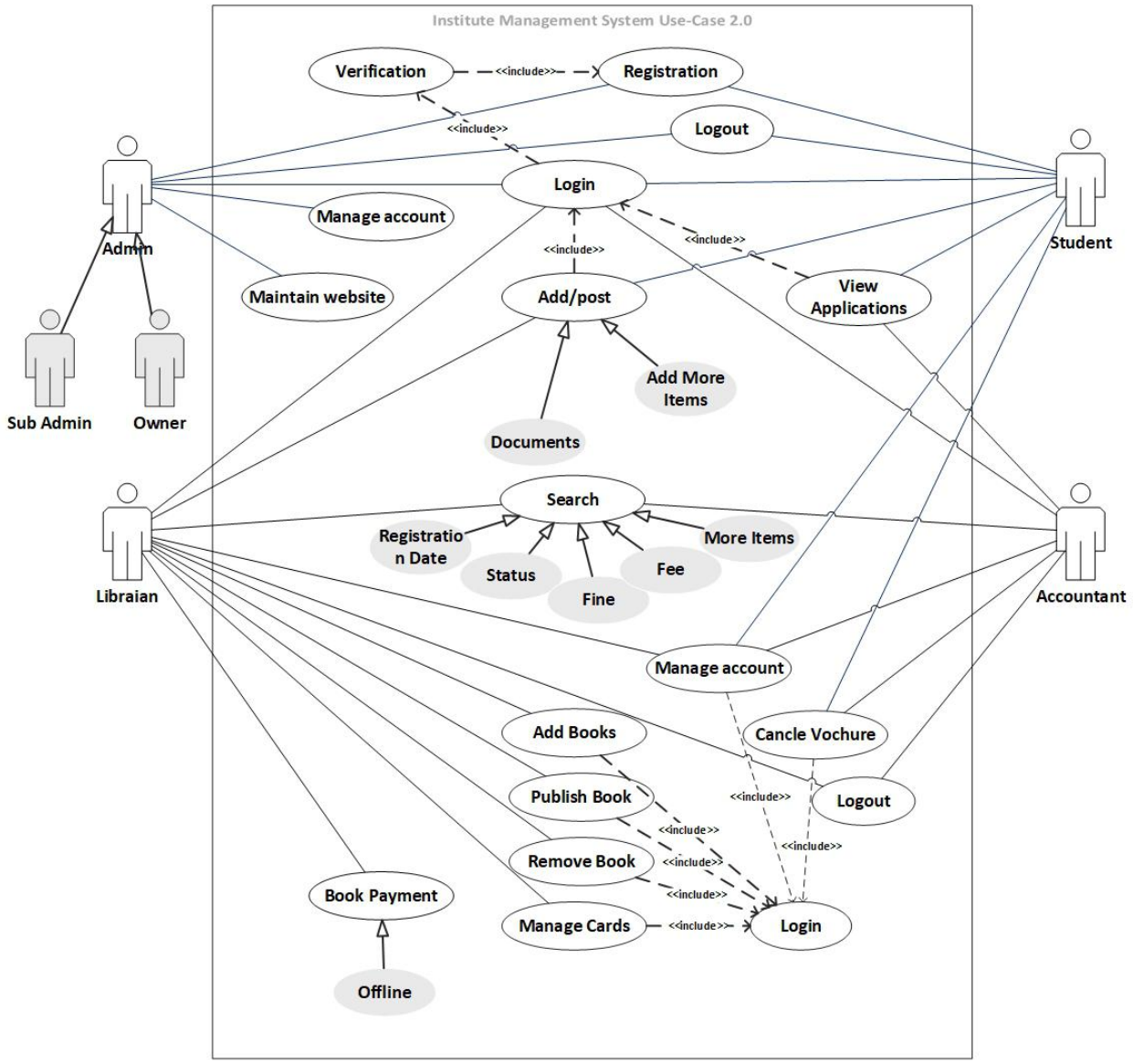


Figure 3.1.3 whole system usecase

3.2. Fully Dressed Use Cases

Fully dressed use cases show more detail and are structured, they dig deeper. According to figure 3.1.3 we write the fully dressed use case for IMS system.

Table 3.2.0 : Login

Use Case:	Login
Actors:	Admin, User, Accountant, Staff
Type:	Primary and essential
Description:	Initiated when a user attempts an action that is restricted. The user is then Prompted to enter in their username and password in order to proceed.
Includes:	Verification, Registration
Extends:	None
Cross Ref:	
Use-Cases:	None

Table 3.2.1 : Logout

Use Case:	Logout
Actors:	Admin, User, Accountant, Staff
Type:	Primary and essential
Description:	All the user will have the option to logout form this website.
Includes:	None
Extends:	None
Cross Ref:	
Use-Cases:	User must have completed the Log In use case.

Table 3.2.2 : Add Post

Use Case:	Add Post
Actors:	Users, Accountant, Staff
Type:	Primary and Essential
Description:	All user can add post it may be a Books,or all types of documents and search papers etc.
Includes:	login
Extends:	None
Cross Ref:	
Use-Cases:	User must be login to add post.

Table 3.2.3 : Search items

Use Case:	Search Items
Actors:	Users, Accountant, Staff
Type:	Primary and Essential
Description:	All user can add post it may be a Books,or all types of documents and search papers etc.
Includes:	None
Extends:	None
Cross Ref:	
Use-Cases:	Not login compulsory.

Table 3.2.5 : Teacher Notes

Use Case:	Teacher Notes
Actors:	Users
Type:	Primary and Essential
Description:	User can Buy Books but it compulsory to login.
Includes:	login
Extends:	None
Cross Ref:	
Use-Cases:	User must be login to add post.

Table 3.2.7 : Download Documentation

Use Case:	Download Documentation
Actors:	Users
Type:	Primary and Essential
Description:	User can download files, research papers and all types of books and documentation free and premium.
Includes:	login
Extends:	None
Cross Ref:	
Use-Cases:	User must be login to add post.

Table 3.2.8 : Manage Account

Use Case:	**Manage Account**
Actors:	Users, Accountant, Staff, Admin
Type:	Primary and Essential
Description:	All actors can easily manage our account.
Includes:	login
Extends:	None
Cross Ref:	
Use-Cases:	User must be login to add post.

Table 3.2.9 : Cancel Post

Use Case:	**Cancel post**
Actors:	User,Accountant, Staff, Admin
Type:	Primary and Essential
Description:	If user, Accountant, Staff, Admin can upload any post then it will write to delete or edit our post.
Includes:	login
Extends:	None
Cross Ref:	
Use-Cases:	User must be login to add post.

Table 3.2.10 : Maintain website

Use Case:	Maintain Website
Actors:	Admin
Type:	Primary and Essential
Description:	Admin can maintain the whole website block unblock account etc.
Includes:	login
Extends:	None
Cross Ref:	
Use-Cases:	User must be login to add post.

Table 3.2.11 : View Application

Use Case:	View Applications
Actors:	Users,Accountant, Staff, Admin
Type:	Primary and Essential
Description:	All the users are able to see these applications.
Includes:	login
Extends:	None
Cross Ref:	
Use-Cases:	User must be login to add post.

Table 3.2.12 : Manage Account

Use Case:	Manage Account
Actors:	Users,Accountant, Staff, Admin
Type:	Primary and Essential
Description:	All actors can easily Register in this website only main admin can make the sub admin.
Includes:	None
Extends:	None
Cross Ref:	
Use-Cases:	Login not compulsory

Table 3.2.13 : Verification

Use Case:	Verification
Actors:	Accountant, Staff, Admin, Users
Type:	Primary and Essential
Description:	If users,are not registered and try to login the his information verified in our database.
Includes:	Registration
Extends:	None
Cross Ref:	
Use-Cases:	Login not compulsory.

Table 3.2.14 : Payment

Use Case:	**Payment**
Actors:	Users
Type:	Primary and Essential
Description:	Payment method are online and offline
Includes:	Login
Extends:	None
Use-Cases:	Login compulsory.

Chapter 4

System Design

Chapter 4: System Design

We are designing the whole system conceptually, just to clear out how our system will look like. We have made different diagrams, different designs, Model, ER- Diagram to see how our system will work& how we will manage it.

4.1. Architecture Diagram

It is very simple & clear in the diagram that n number of users can simply login to IMS web page through a internet connection and find any type of data related to the Staff management, Accountant, Librarian or any types of books to our database server.

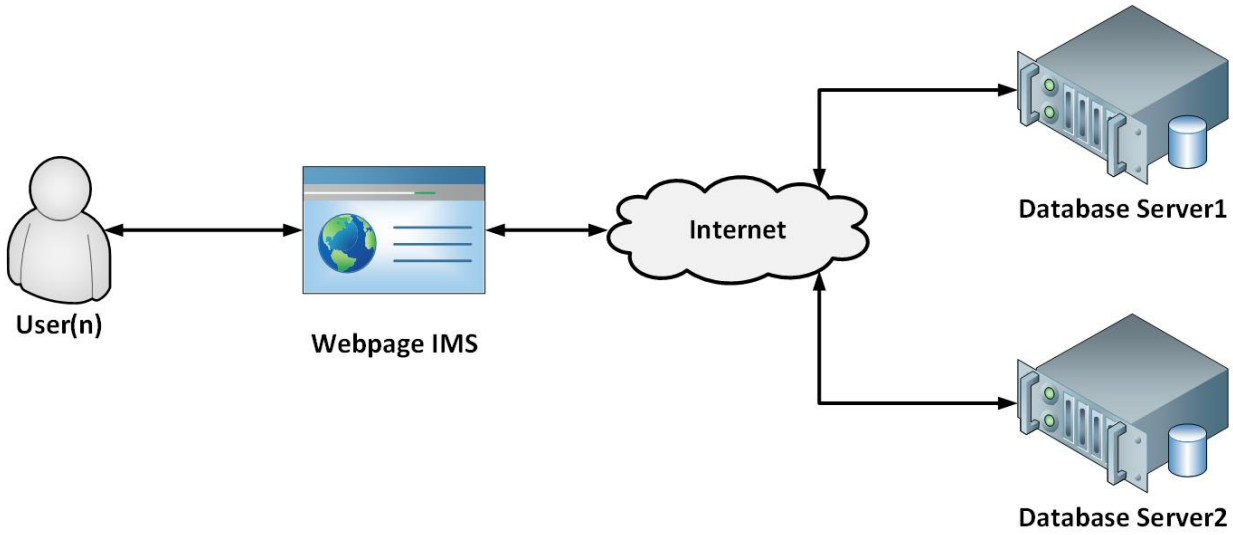


Figure 4.1 Architecture Diagram

4.2. Domain Model

In this little more clear that how a system are work.User have two options that once user can upload any post then user is able to remove or edit it.And the second option is User can see all the books and details about document and Able to buy it. Payment method can be offline and

online.

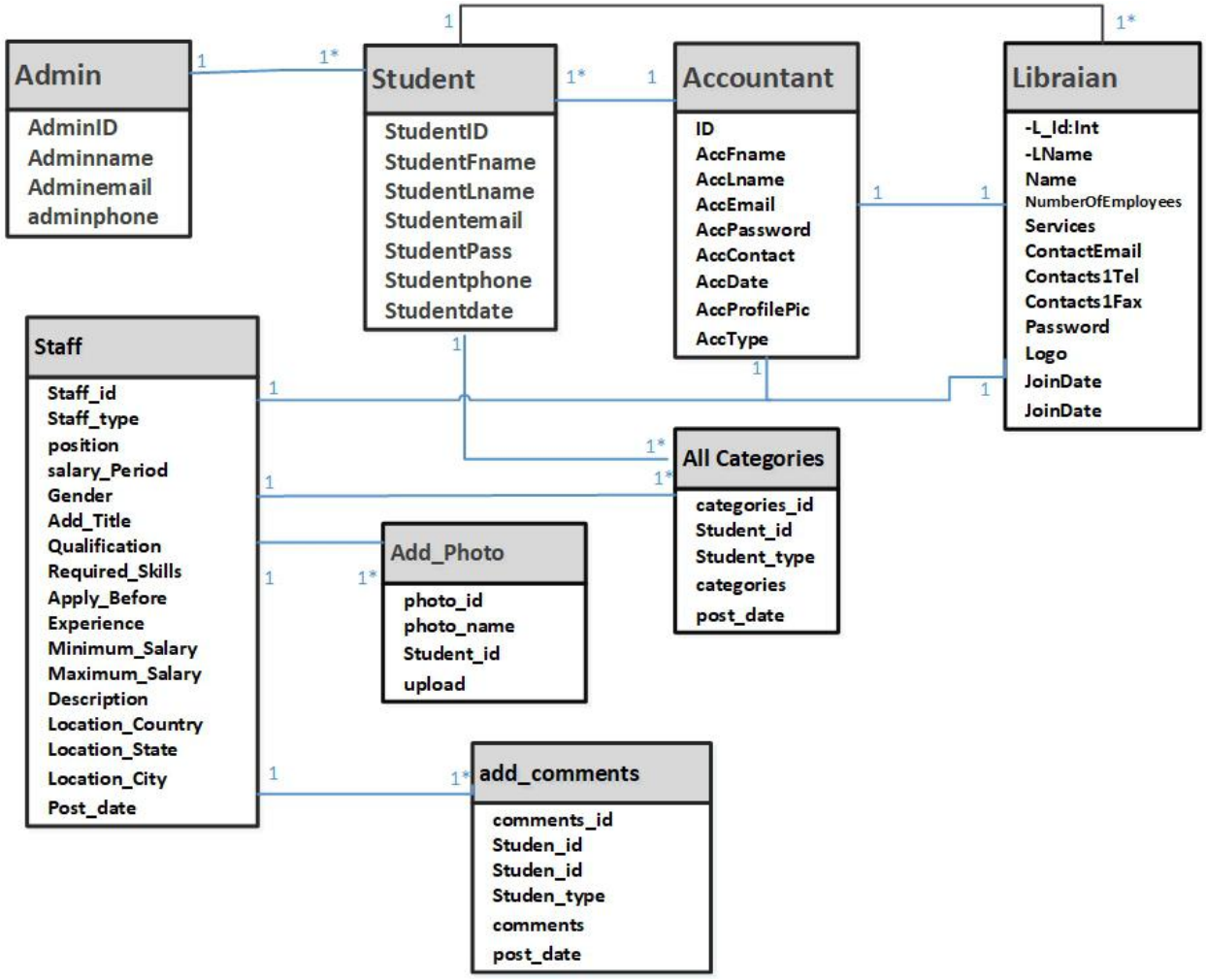


Figure 4.2 Domain Model

4.3. Entity Relationship Diagram with data dictionary

ERD explain the simple all the processes that we perform in IMS. A user can register our account with attribute user_id(p.k), user name, phone, user email and user address.The user attribute are user_id(p.k), user name, phone number, user email and address of the user.User can login with attribute user_name and password.1 to 1 and one to many relationship are used in. Then user relationship link show between Accountant,Staff and

Librarian.Clients

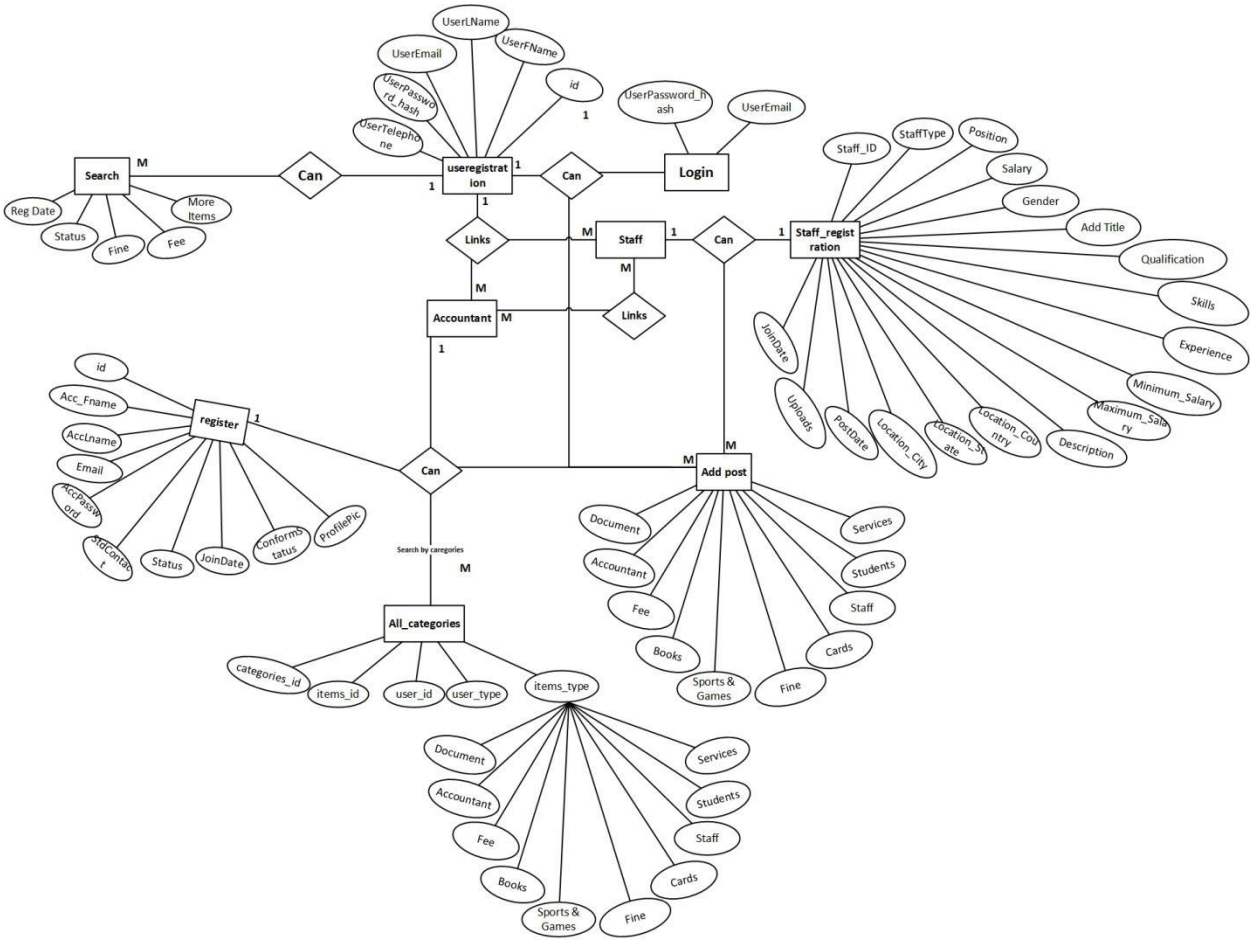


Figure 4.3 Entity Relationship Diagram

4.4. Class Diagram

Class diagram simply explains how our system will work.Admin, user, Accountant and Librarian are login with his username and password And they are connected withe each other with one to one and one to many relationship.We make association between user and product if user not exist then who seen the product.And we make association between order and payment for example if payment not completed then order completed.We have two type of payment are online and offline.User can pay online payment with his credit card and buy Books and also have offline that user order product and pay cash in

Accounts.

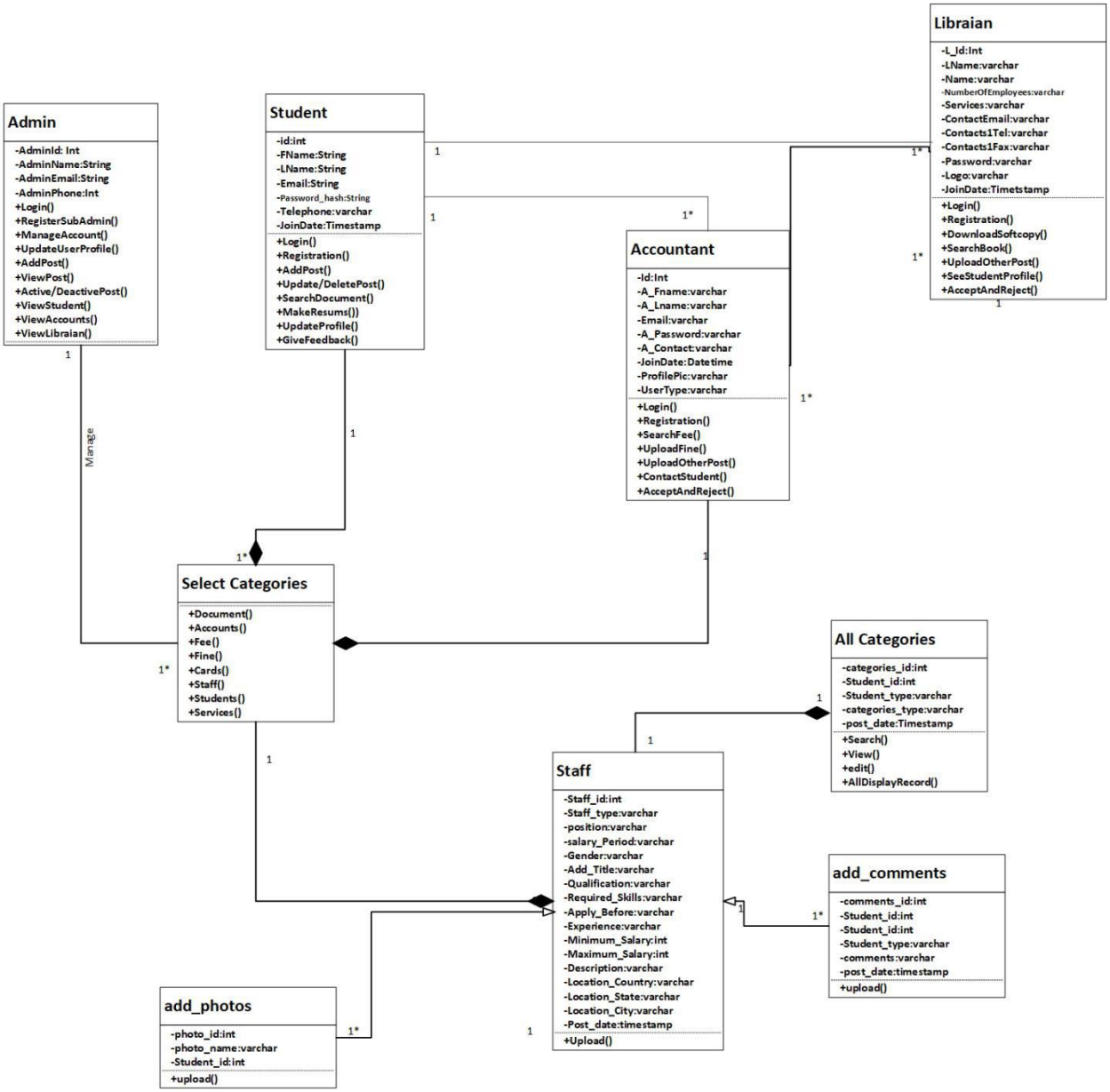


Figure 4.4 Class Diagram

4.5. Sequence / Collaboration Diagram

Sequence diagram is a type of an interaction diagram. We use Sequence diagram in IMS to interaction how to user, Accountant and admin are interact with our website.Users and Accountant send method for registration and the web portal send success message against the registration request and login request.The diagram show that after login and registration process user and select function for add post and web portal send message to post successfully upload.And the Admin are download user data and see user post.Admin can manage the whole account.

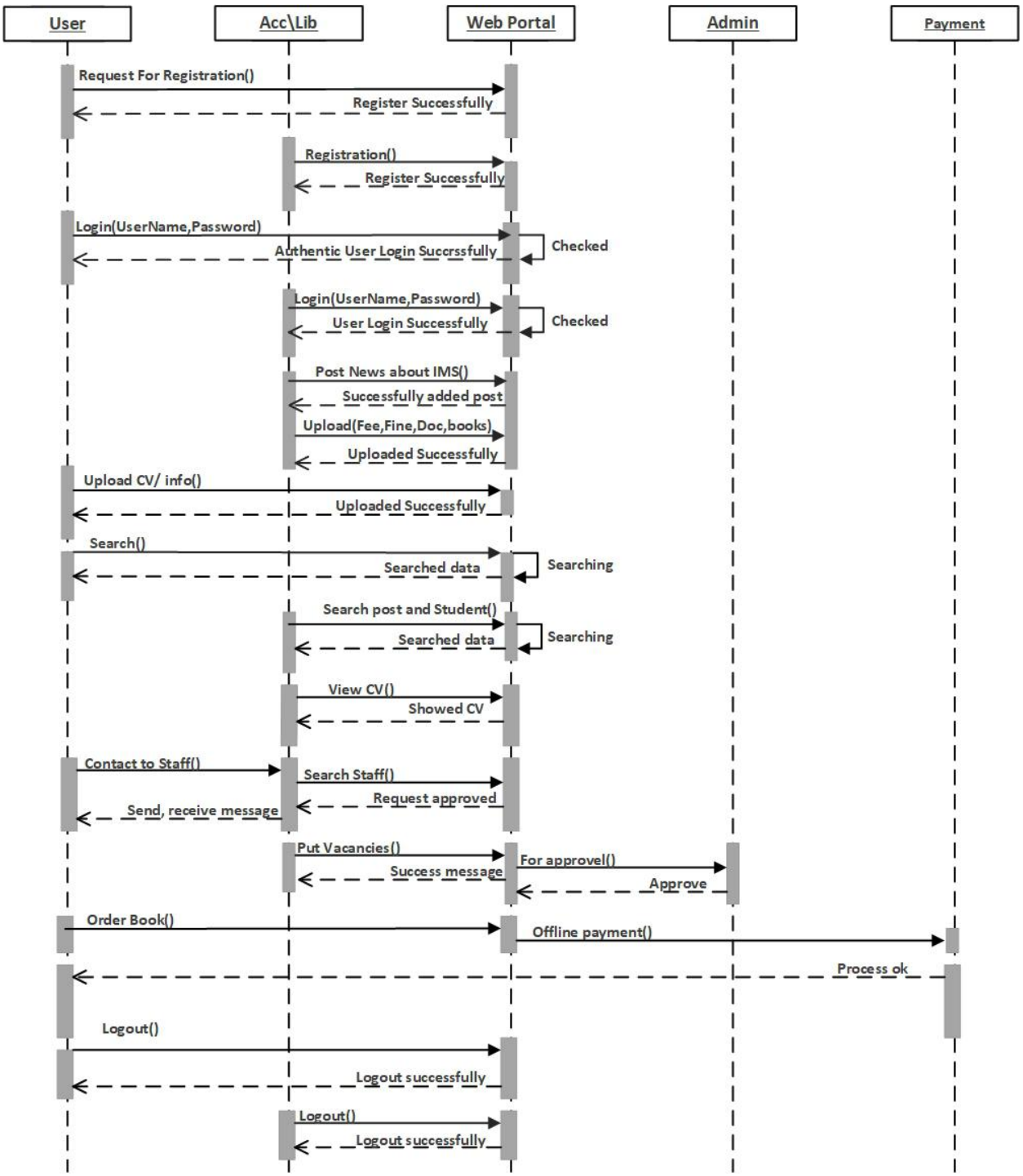


Figure 4.5 Sequence Diagram

4.6. Operation contracts

4.6.1. Authentication

Operation#1:	Login(username,password)
Cross reference:	Use Cases: login
Pre-Conditions:	valid login page.
Post-Conditions:	User must be valid for login. Username and password compulsory to login.

Operation#2:	Registration (R-id, name, password,phone,email)
Cross reference:	Use Cases: Registration process
Pre-Conditions:	Register new user
Post-Conditions:	R-id is created (instance creation) R-id was associated with current registration process. R-id was associated with a username , user password and other current user detail.

4.6.2. Add New Post

Operation:	AddNewPost(PostId,PostName)
Cross reference:	Use Cases: Add Post process
Pre-Conditions:	Valid Account
Post-Conditions:	AddNewPost ItemSale instance issale was created successfully (instance creation) Isale with associated with current sale (association formed) Isale became quantity (attribute modification). Isale was associated with a productDescription, based on Isale match (association formed).

4.6.3. End Post

Operation:	EndPost(PostId,PostName)
Cross reference:	Use Cases: Add Post process
Pre-Conditions:	There is an under underway and items has been posted
Post-Conditions:	post complete become true.(attribute modification)

4.6.4. Make Payment

Operation:	MakePayment(amount:Number)
Cross reference:	Use Cases: Process Payment (Buy item)
Pre-Conditions:	The sale underway and all items have been entered
Post-Conditions:	A payment instance p was created.(instance creation)
	Set amount p(attribute modification)
	P was associated with current sale.(association form)
	Complete sale(association form)

4.7. Activity Diagram

It is very simple & clear in the diagram that after open the website we have two option that one user can go for search and other user can go for add post, search student and view application. If we select the first one that after search item when user try to contact the Accountant and Librarian and other customer then user are need to login. If user are already login then it move to success dealing otherwise it automatically send to login page if user have IMS account the they simply login otherwise first he can register our account.Payment method are online and offline and then shipping order and then go for logout or end.

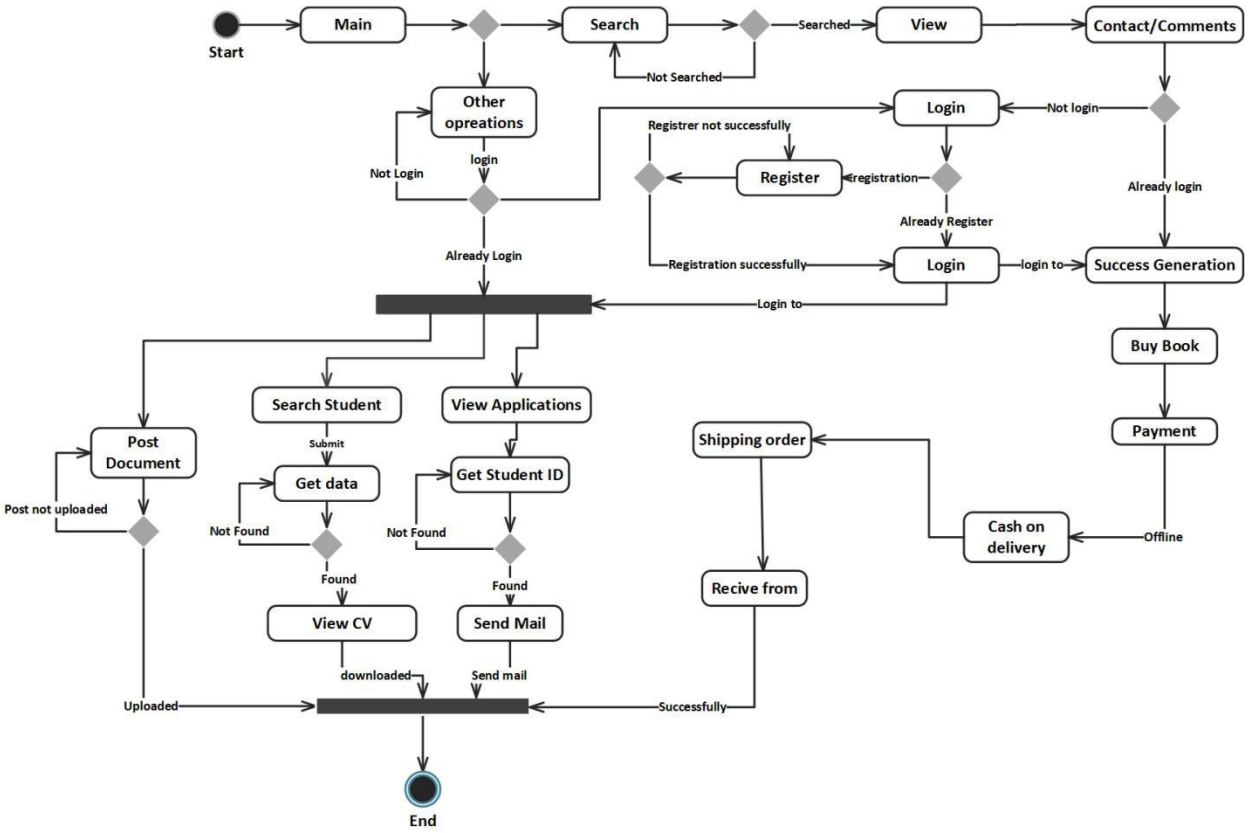


Figure 4.7 Activity Diagram

4.8. State Transition Diagram

The state diagram simply show that if user Buy an item then he simply registration then login if username and pass not exist then portal demand for re enter username and pass.Then search item if search item not find use can easily search again and the view product and buy product.

Student can search candidate, view application of searched Student and also get Student ID for using send email.

Admin can view feedback manage account after the registration and login process and then (final state)logout.

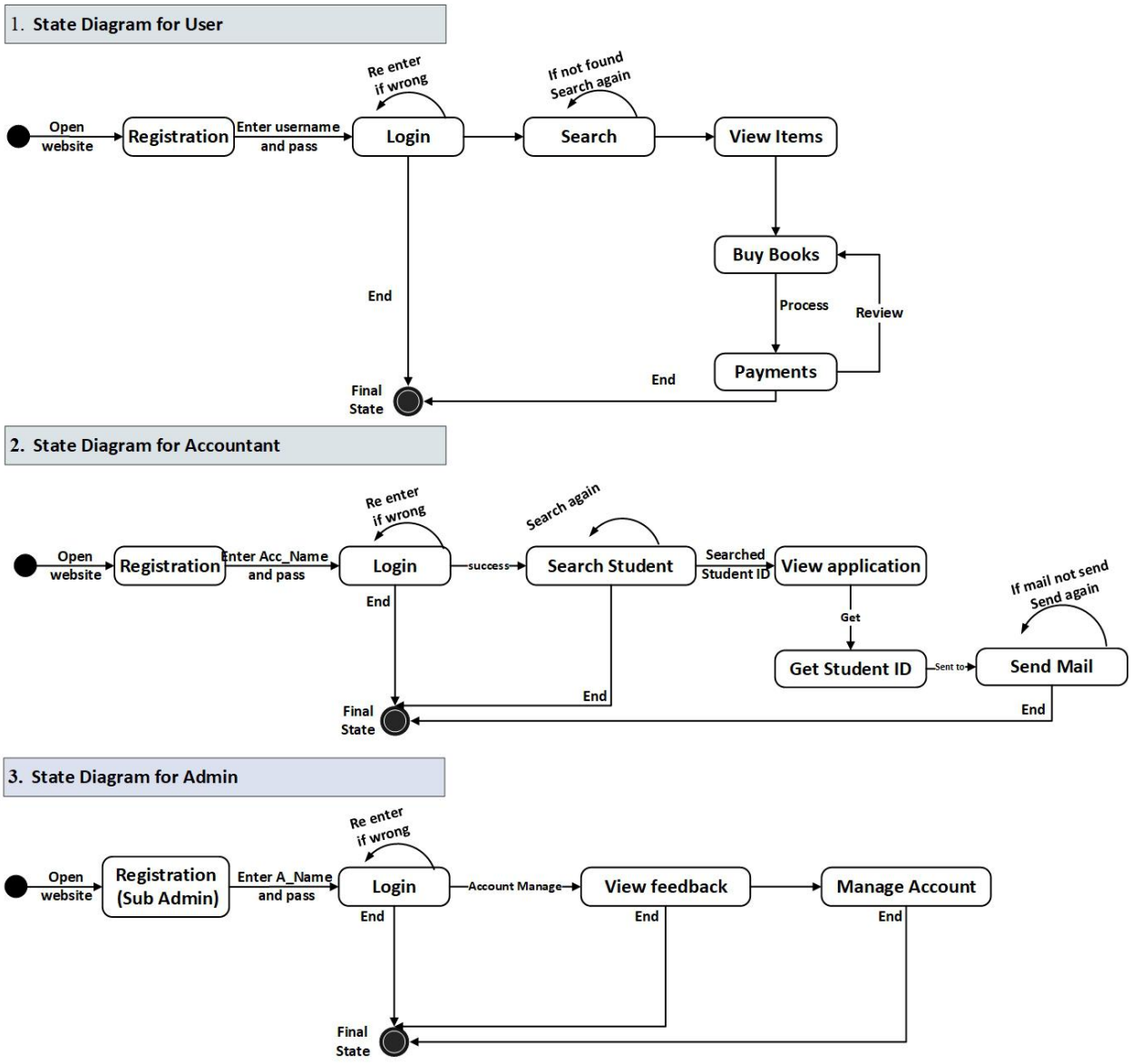


Figure 4.8 State Diagram

4.9. Component Diagram

Component diagram give physical view of the whole system.Means that how different component use each other.It not describe the functionally but it also describe the component of the system.IMS our main component that are connected with all sub components

Using dependency.We use the interface between sub components and persistence and security for access control and encryption.These components connected to the database with db connector through interface.

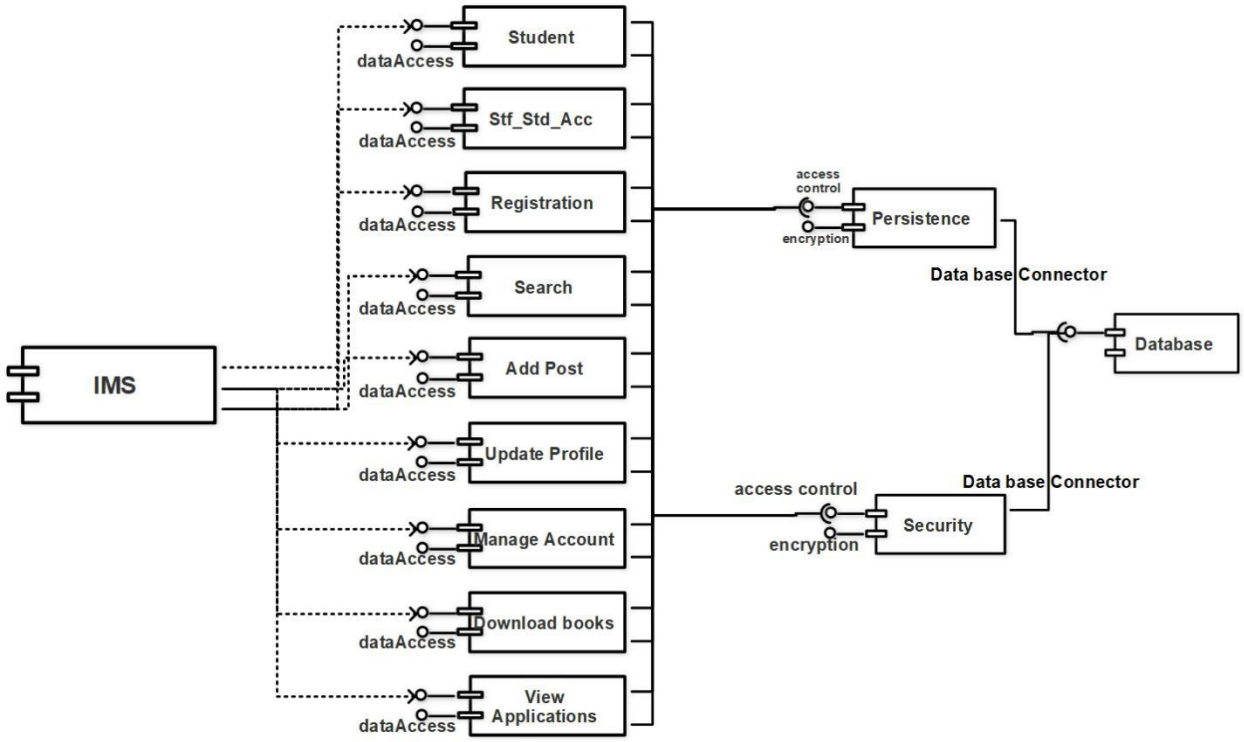


Figure 4.9 Component Diagram

4.10. Deployment Diagram

Our website IMS is stored in a web-server, all other data of users & our items are stored in our database server, user can search items, add post, cancel post and any other operation perform in web browser HTML5 page with connected the HTTP network server.

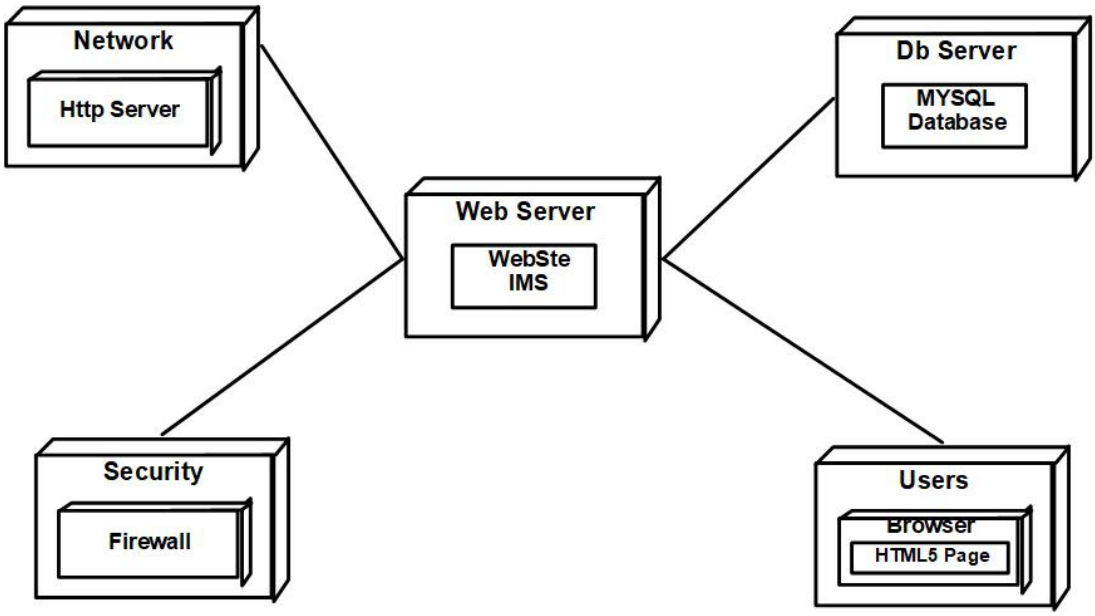


Figure 4.10 Deployment Diagram

4.11. Data Flow diagram [only if structured approach is used - Level 0 and 1]

Data flow diagram used to show that how information pass from one process to another process these all things we get from DFD.In DFD we have different External Entity, Data flow, Process and data store.In IMS we use Data Flow Diagram for two levels are level0 and level1.

Level 0

In Level zero we make a single process diagram (0.0) with four external entities and different data flow.Admin, users, Accountant and Librarian our external entities who wants to communicate with system or process.

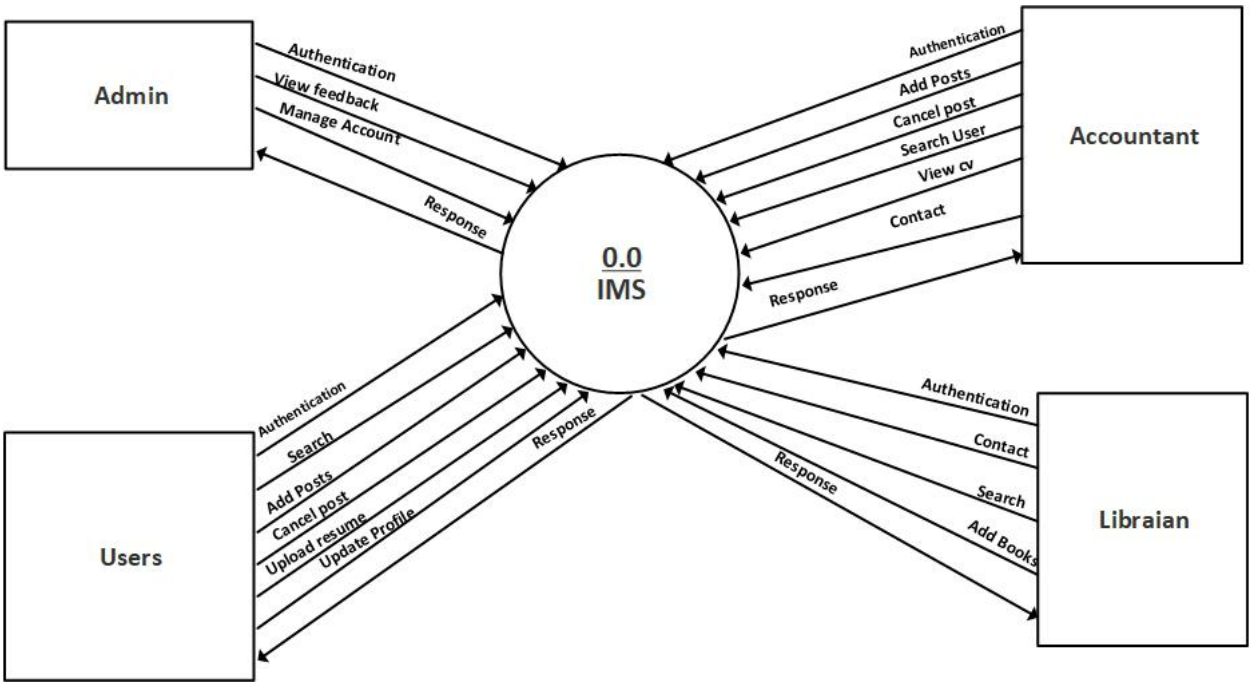


Figure 4.11.1 Data Flow Diagram (Level 0)

Level 1

In **Authentication** process if Any user **(Admin,user,Accountant and Librarian)** wants to login or registration our account then **Authentication process** send a request to user auth database after response from database process will login or cancel request. **Add_post(items)** process store data into **Items_info db**.Users can add post for getting jobs and tags to company. Accountants

And Librarian are also upload our post into **Add_post** process for buy or upload Books.They also cancel this post user can search, order and send payment offline and online then system generate a receipt.you can give feedback and the feedback send to Admin. The admin response them according to feedback.

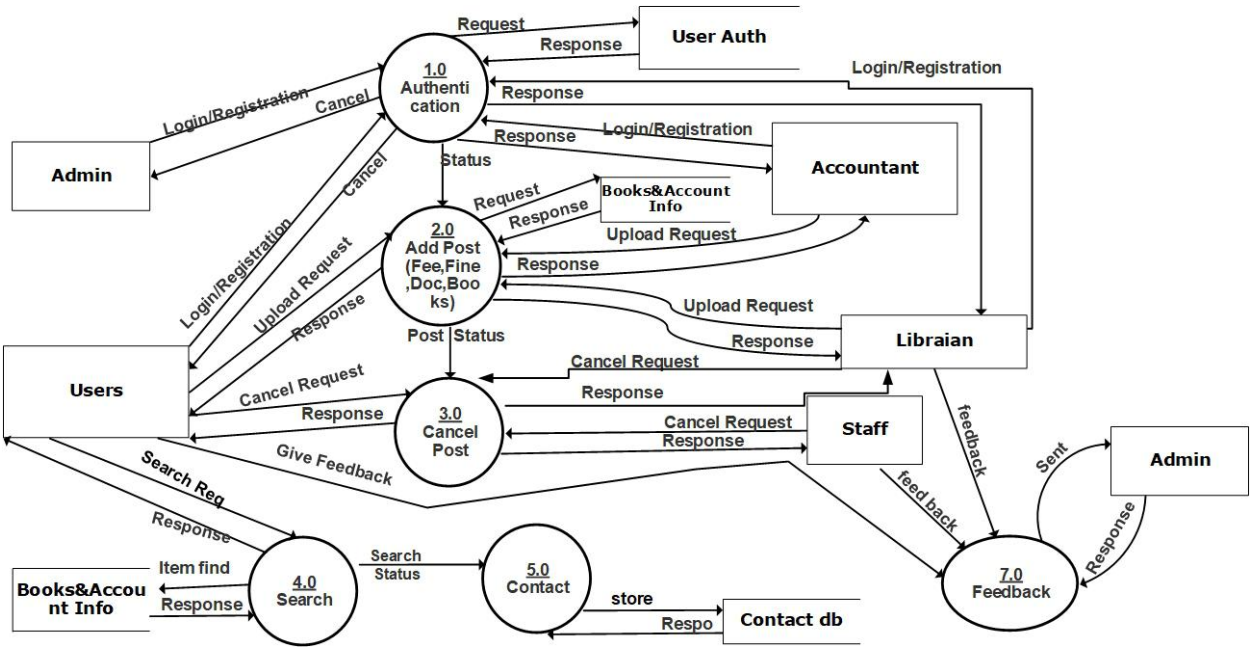


Figure 4.11.2 Data Flow Diagram (Level 1)

Chapter 5
Implementation

Chapter 5: Implementation

After defining the whole System design we are going to see how we will implement it, which types of tools & techniques that we are using to make it, which web servers are required for our website & which type of standards we should follow while coding.

5.1. Important Flow Control/Pseudo codes

Diagram shows the whole process of our working system in different steps.If any user want to buy different items then user will going to login and make registration.Then they will apply for buying product.Same like that Accountant and Librarian if not login they can't upload post. On the other hand admin can manage the account and add sub admin or manage feedback then if the process is done user can logout.

5.2. Components, Libraries, Web Services and stubs

Web Servers:

- Apache HTTP Server/ Internet information server

Components:

- Domain name: IMS.pk or IMS.com depends upon which one is available.

5.3. Deployment Environment

In Deployment environment the Apache provide basic features to run HTTP servers in a replicated manner. Our website IMS.pk will be hosted on different web-servers.

5.4. Tools and Techniques

Following tools will be used for the development.

- Wamp/Xampp (for Hp and Database)
- Brackets/Notepad++/Adobe dreamweaver (for building website)
- HTML/CSS + Bootstrap (for Front End Designing)

5.5. Best Practices / Coding Standards

- ✓ Fast loading website.
- ✓ Colour combination good.
- ✓ Email and social media marketing
- ✓ Strong security
- ✓ Automatically image slider
- ✓ Alert text blinking
- ✓ Add a video
- ✓ Display our contact number
- ✓ Live chat on website
- ✓ Use a detailed work definition document
- ✓ Create a detailed work plan
- ✓ Document everything
- ✓ Ask for feedback
- ✓ Manage new agreements
- ✓ Hold a wrap-up meeting

5.6. Version Control

Name	Date	Reason For Changes	Version
Fazal Mehboob Khan Adnan Ahmad	11-12-19	Initial Version	1.0

Chapter 6

Testing and Evaluation

Chapter 6: Testing and Evaluation

In this chapter testing of all units and individually will done and if each unit or module is working correctly then integration testing will be done to check the effect when two or more than two modules are working with each other. After completion of unit and integration than performance and stress testing will be done.

6.1. Use Case Testing

Test Suite ID	TS001
Test Case ID	TC001
Test Case Summary	To verify that by clicking Signup button username, password, email, phone# and address store in customer detail in database.
Related Requirement	RS001: User should able to Sign up.
Prerequisites	No
Test Procedure	1. Select fields in Signup form. 2. Enter user data in fields. 3. Click Signup button.
Test Data	Valid username: Adnan, Adnan Invalid username: 12Adnan, .Adnan, Adnan%^3 Valid password: 123Abc@5, Abc567$%9 Invalid password: 1_2Adnan, _Adnan12 Valid email: Adnan@gmail.com, qayyumali@yahoo.com Invalid email: qayyum.com, Adnan@yahoo Valid phone# :03123456578 Invalid phone: @56rfgf7999, 2wstyyA
Expected Result	1. If username, password, email and phone# are valid then store user data by clicking signup button in renter detail. 2. If given inputs are invalid then display error message. 3. If fields are empty then display then show warning message.
Actual Result	1. If name is valid, the result is as expected. 2. If name is not valid then invalid message displayed. 3. If fields are empty then warning massage displayed.
Status	Pass
Remarks	This test case is simple and easy.
Created By	Adnan Ahmad

Date of Creation	11/06/19
Executed By	Adnan Ahmad
Date of Execution	11/06/19
Text Environment	OS: Window 10 Browser: Google Chrome

6.2. Equivalence partitioning

Test Suite ID	TS001
Test Case ID	TC002
Testcase Summary	To verify Authentication or Login.
Related Requirement	RS002: User should able to Login.
Prerequisites	User should Signup first.
Test Procedure	1. Select Username field and enter username. 2. Select Password field and enter password. 3. Click Login button.
Test Data	Valid username: Adnan, Adnan Invalid username: 12Adnan, ./Adnan, Adnan%^3 Valid password: 123Aabc@, abMc567$% Invalid password: 1_2Adnan, _Adnan12
Expected Result	1. If username and password are valid then clicking the Login button user successfully login. 2. If username and password are invalid then clicking the Login button invalid message display. 3. If fields are empty then display warning message
Actual Result	1. If both fields are valid, the result is as expected. 2. If both fields are not valid then invalid message displayed. 3. If fields are empty then warning message displayed.
Status	Pass
Remarks	This test case is simple and easy.
Created By	Adnan Ahmad
Date of Creation	11/06/19

Executed By	Adnan Ahmad
Date of Execution	11/06/19
Text Environment	OS: Window 7 Browser: Google Chrome

Derived Equivalence Classes

1. User name is alphabetic. (valid)
2. User name is not alphabetic. (invalid)
3. Password is equal to 8 or greater than 8 characters in length. (valid)
4. Password is 2 to 15 characters in length. (invalid)
5. Password include one uppercase letter & one lowercase letter. (valid)
6. Password include '_'. (invalid)
7. Email without '@' and '.com'. (invalid)
8. Email with '@' and '.com'. (valid)
9. Phone# only be number. (valid)
10. Phone# with alphabetic. (invalid)
11. City name is alphabetic. (valid)
12. City name with numeric values. (invalid)
13. Price only be numeric. (valid)
14. Price is alphabetic. (invalid)
15. Search product with alphabetic. (valid)
16. Search product with special character (/,%,^,#,@). (invalid)
17. No search product name entered. (invalid)
18. Brand name alphabetic (valid)
19. Brand name with special character. (invalid)
20. Empty field (invalid)

Black Box Test Cases based on the Equivalence Classes Above.

Sr.	Test Data	Expected Outcome	Classes Covered
1	Adnan, Malik1	T	1
2	ss, 11233	T	2
3	123Ea84747, 12ABc4%^	T	3,5
4	_1234567, AV_we333	T	4,6
5	Adnan @gmail.com	T	7
6	Adnan.com, Adnan@malik	T	8
7	01234567890	T	9,14
8	032222XXX12),1234	T	10
9	Lahore	T	11
10	Lahore1	T	12

11	12000, 10000	T	13
12	Rs.1200, 12$	T	14

6.3. Boundary value analysis

Sr.		Partition 1	Partition 2	Partition 3
1	Password	Less than 8 character	1 – 8 character	9 – 12
2	Price	Less than 0	Greater than 1	Less than
3	Phone	<=0	1 - 11	>=12

6.4. Data flow testing

Read url

```
1. $url = 'http://localhost/Rent/Rent_API/Renter/create.php';
2. $ch = curl_init($url);
3. function getUserIpAddr(){
4. if(!empty($_SERVER['HTTP_CLIENT_IP'])){
5. $ip = $_SERVER['HTTP_CLIENT_IP'];
6. }elseif(!empty($_SERVER['HTTP_X_FORWARDED_FOR'])){
7. $ip = $_SERVER['HTTP_X_FORWARDED_FOR'];
8. }else{
9. $ip = $_SERVER['REMOTE_ADDR'];
10. }
11. return $ip;
12. }
13. $ip_address = getUserIpAddr();
14. $jsonData = array(
15. 'name' => $name,
16. 'city' => $city,
17. 'email' => $email,
18. 'password' => $password,
```

19. 'address' => $address,
20. 'phone' => $phone,
21. 'ip_address'=> $ip_address,
22. 'image_num' => $images_db
23.);
24. $jsonDataEncoded = json_encode($jsonData);
25. curl_setopt($ch, CURLOPT_POST, 1);
26. curl_setopt($ch, CURLOPT_POSTFIELDS, $jsonDataEncoded);
27. curl_setopt($ch, CURLOPT_HTTPHEADER, array('Content-Type: application/json'));
28. $result = curl_exec($ch);

Associations	All p-use	All c-use
(1,2,$url)		
(2,25,$ch)		
(2,26,$ch)		
(2,27,$ch)		
(2,28,$ch)		
(4,(5,T),$_SERVER)	*	
(4,(7,F), $_SERVER)	*	
(5,11,$ip)		
(7,11,$ip)		
(13,21,$ip_address)		
(14,24,$jsonData)		

Read $url

1. $url = 'http://localhost/Rent/Rent_API/Renter/create.php';
2. $ch = curl_init($url);
3. (1,2,$url)

Read $ch

1. $ch = curl_init($url);
2. curl_setopt($ch, CURLOPT_POST, 1);

3. curl_setopt($ch, CURLOPT_POSTFIELDS, $jsonDataEncoded);
4. curl_setopt($ch, CURLOPT_HTTPHEADER, array('Content-Type: application/json'));
5. $result = curl_exec($ch);
6. if($result)
7. {
8. echo "<script>alert('Account Created successfully !');</script>";
9. }

Associations	All p-use	All c-use
(1,2,$ch)		
(1,3,$ch)		
(1,4,$ch)		
(1,5,$ch)		*
(5,(6,T),$_SERVER)	*	
(5,(6,F), $_SERVER)	*	

Read $_SERVER

1. function getUserIpAddr(){
2. if(!empty($_SERVER['HTTP_CLIENT_IP'])){
3. $ip = $_SERVER['HTTP_CLIENT_IP'];
4. }elseif(!empty($_SERVER['HTTP_X_FORWARDED_FOR'])){
5. $ip = $_SERVER['HTTP_X_FORWARDED_FOR'];
6. }else{
7. $ip = $_SERVER['REMOTE_ADDR'];
8. }
9. return $ip;

Associations	All p-use	All c-use
(2,3,$_SERVER)		
(2,5, $_SERVER)		
(2,7, $_SERVER)		
(3,9,$ip)		
(5,9,$ip)		

(7,9,$ip)		

Read $ip_address

1. $ip_address = getUserIpAddr();
2. 'ip_address'=> $ip_address,

Associations	All p-use	All cuse
(1,2,$ip_address)		

Read $jsonData

1. $jsonData = array(
2. 'name' => $name,
3. 'city' => $city,
4. 'email' => $email,
5. 'password' => $password,
6. 'address' => $address,
7. 'phone' => $phone,
8. 'ip_address'=> $ip_address,
9. 'image_num' => $images_db
10.);
11. $jsonDataEncoded = json_encode($jsonData);

Associations	All p-use	All c-use
(1,11,$jsonData)		

Read $jsonDataencoded

1. $jsonDataEncoded = json_encode($jsonData);
2. curl_setopt($ch, CURLOPT_POSTFIELDS, $jsonDataEncoded);

Associations	All p-use	All cuse
(1,2,$jsonDataEncoded)		

Read $user_data

1. $user_data = json_decode($content3, false);
2. $_SESSION["user_data"] = $user_data;

Associations	All p-use	All cuse
(1,2,$user_data)		

Read $user_exist

1. $user_exist = count($content3);
2. if($user_exist == 1)
3. {
4. $_SESSION["user_data"] = $user_data;
5. }

Associations	All p-use	All cuse
(1,(2,T),$user_exist)		
(2,(2,F), $user_exist)		

Read $city

1. $city = new City($db);
2. $stmt = $city->search($keywords);

Associations	All p-use	All cuse
(1,2,$city)		

Read $keyword

1. $keywords=isset($_GET["s"]) ? $_GET["s"] : "";
2. $stmt = $city->search($keywords);

6.5. Unit testing

Test Suite ID	TS002
Test Suite ID	TS002
Test Case ID	TC005
Testcase Summary	To verify that Posted Ad title, id, notes, category and detail store in ad detail in database by clicking Post Ad button.

Related Requirement	RS006: Renter should able to post ad.
Prerequisites	Renter should login.
Test Procedure	4. Select fields in post ad form. 5. Enter ad data in fields. 6. Click add ad button.
Test Data	Valid Title: InstituteManagementSystem portal Invalid Title: hjg### , /////… _ Invalid Brand: real estate,vehicle,documents,jobs Valid Brand: branches,students,employees,courses Invalid Brand: branches,students,employees,courses Valid Category: branches,students,employees,courses Invalid Category: branches,students,employees,courses Valid Price: 120000, 100 Invalid Price: qamm555, oOop, AAA
Expected Result	4- If title, id, category and students are valid then store ad data by clicking add button in ad detail. 5- If given inputs are invalid then display error message. 6- If fields are empty then display warning message.
Actual Result	5. If both fields are valid, the result is as expected. 6. If both fields are not valid then invalid message displayed. 7. If fields are empty then warning message displayed.
Status	Pass
Remarks	This test case is simple and easy.
Created By	Adnan Ahmad
Date of Creation	11/06/19
Executed By	Adnan Ahmad
Date of Execution	11/06/19
Text Environment	OS: Window 7 Browser: Google Chrome

6.6. Integration testing

Integration ID	001
Unit ID	001, oo2

Testcase Summary	To verify that user first signup and then login.
Related Requirement	User should signup. User should login.
Prerequisites	For login user should signup.
Test Procedure	1. Select fields in post ad form. 2. Enter user data in fields. 3. Click add button.
Test Data	Valid username: Adnan, Adnan Invalid username: 12Adnan, ./Adnan, Adnan%^3 Valid password: 123Abc@5, Abc567$%9 Invalid password: 1_2Adnan, _Adnan12 Valid email: adnanahmad@yahoo.com Invalid email: qayyum.com, Adnan@yahoo Valid phone# :0312345657890 Invalid phone: @56rfgf7999, 2wstyyA
Expected Result	1. If username, password, email and phone# are valid then store user data by clicking signup button in renter detail. 2. If given inputs are invalid then display error message. If fields are empty then display then show message. 3. If email and password are valid by clicking login button then login. 4. If given inputs are invalid then display error message. 5. If fields are empty then display then show warning message.
Actual Result	1. If data is valid, the result is as expected. 2. If data is not valid then invalid message displayed. 3. If fields are empty then warning massage displayed.
Status	Pass
Remarks	This test case is simple and easy.
Created By	Adnan Ahmad
Date of Creation	11/06/19
Executed By	Adnan Ahmad
Date of Execution	11/06/19
Text Environment	OS: Window 7

6.7. Performance testing

Performance testing is done through online 'Pingdom website'. It tells about the system response, load, speed and performance in detail.

6.8. Stress Testing

Stress testing is used to test the stability and reliability of the system. This test mainly determines the system on its robustness and error handing under extremely heavy load conditions. Most prominent use of stress testing is to determine the limit, at which the system or software or hardware breaks. Stress testing executes a system in a manner that demands resources in abnormal quantity, frequency, or volume. Special tests may be designed that generate ten interrupts per second, when one or two is the average rate input data rates may be increased by an order of magnitude to determine how input function will respond, test case that require maximum memory or other resource are executed, test case that may cause thrashing in a virtual operating system are designed. Test cases that may cause excessive hunting for disk resident data are created. Essentially , the tester attempts to break the program. Variation of stress testing is a technique called sensitivity testing.

Chapter 7

Summary, Conclusion and Future Enhancements

Chapter 7: Summary, Conclusion & Future Enhancements

7.1. Project Summary

We are making a website with a name InstituteManagementSystem .com. Our idea is basically a search base portal where user can easily get help to maintain their records.And can have their own web base software and management system just with in a single login,where they can get to manage their employees,students,Attendance,courses as well as their finance and other classified things in a single website. The idea is very simple & unique and has not been fully implemented yet, so we are having a great chance to bring something that can be the part of our Market. Later we' ve thought to do it commercially, in a large scale. Our purpose is to attract most of the people from social sites from our website. In this website we have different actors that performs different functionality for example. A admin can make account of sub admin also manage the website etc, on the other hand an Admin can Add multiple branches, also user can search different items(student,employee, batch and courses).Moreover accountant can maintain and manage their students finance.However,Admin is the main head of the system.

7.2. Achievements and Improvements

The biggest achievements here is that we were able to compile all we learned in four years of studying software engineering and apply it to this project. We learned software architecture design techniques, UML modeling, project management, software quality assurance, testing and much more, and were able to apply it all in this project.

The next big achievement are the things we learn during this project. New languages, frameworks, libraries, data handling techniques and API. All that will be useful for us in our futures. We were able to connect all our products via API. Change in data in one place will result in change in all of our products.

7.3. Critical Review

It is very difficult to create the logic of the project, how to develop the project. Logic helps us to create the project on the valid requirement.

7.4. Lessons Learn

What went well:

- Using a multiple platform language/framework for developing your application works well.
- Using an API to manage same data all across the system will be beneficial in the future

What went wrong:

- Using redux for small traditional non-complex applications will result in complicating the code for no reason.
- A project should be well managed and tasks completed within their timeframe, else they will affect the upcoming tasks.

7.5. Future Enhancements/Recommendations

As it has been already said, there is always room for further improvement. And since we plan to launch this website as our own start up, enhancements will keep coming.

The application has been built on react native, but at some point, we are definitely going to scale it up, for that we choose to use redux. The application will grow in size and complexity and handling changes in react native alone will start getting difficult. So, the best thing here is to use redux, which is kind of a state handler. It makes it easier for us manage a highly complex application, which we believe ours is eventually going to become.

Review and rating system is going to be added as a feature that will help improve the quality of service people provide to each other since this is a C2C business

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