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Sales Management Portal

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ABSTRACT

Sales Management Portal is a client information tracking portal. Which client's info contains contacts and activities, opportunities and proposals, and eventually projects. This portal has ability to add clients and search clients based on the name and prospects and can update information of contacts and activities, opportunities and proposals to the respective client. This portal has ability to display announcements message on manager's screen. This portal should have a responsive design so it will adjust to diverse resolutions, making it easy for users to navigate the portal on their own devices.

There are not any existing systems for client side. So all the work are handle manually and have to be noted down in some register and also taking care of that documentation. They are arranged meeting by call and if any update occurred then again the client and update meeting schedule. its wasting time and money as well and also the disturb the valuable clients

Table of Content

1   Project Description

1. Users :It's provides authentication and authorization of the users.

2. Sales Staff :Sales staff enter clients' information into pipeline by keeping logs of contacts and activities, opportunities and proposals, and eventually projects. Staff has facility can search the client information based on name and prospects

3.Manager :Managers can create user accounts, view and update entries, leave comments on entries, and send messages to staff.

1.1   Competitive Information

Here the existing system is nothing but manual system using which they can store all the work orders, projects, customers and employees inside an excel sheet or just similar to that. Correlating the projects and customers with work orders, employees with project and work order and getting the actual statistics is not easy in this case.

1.2   Relationship to Other Applications/Projects

This application is not related to other application/project

1.3   Assumptionsand Dependencies

- Describe any assumptions made (e.g., new functionality or capability that will provided by other in the same time frame as your Project).
- Identify other projects, applications, services, capabilities, and any elements upon which this project, application, service, or capability is depended on.
- Also identifyrequired development and/or changes in customer operational procedures needed to support this project.

1.4   Future Enhancements

No future enhancements

1.5   Definitions and Acronyms

2   Project Technical Description

Development Environment

- Operating System: Windows 2000/XP: The system will be built on windows compatible environment. The application will be web based using Java technology
- Web Server:Apache Tomcat Web Server to serve as Servlet\JSP engine.
- Server side Application Software: Java Server Pages (JSP),Spring,Hibernate.
- Client Side Application Software: Java Script, jQuery, HTML.

- Data Base: MySQL 5.0: The system requires MySQL as a database, however the system will be JDBC complaint to work on any standard database.

- Client Browsers: Internet Explorer 9.0 or Mozilla Firefox.

- Java Software:jdk-1_7_0-windows-i586

- Hardware: Pentium PCs with 512 MB RAM/ 40 GB HDD.

System Design:

SYSTEM DESIGN phase follows system analysis phase. Design is maintaining record proof design divisions and providing a blueprint for the implementation phase. Design is the bridge between system analysis and system implementation.

System design is transition from a user oriented, document oriented to programmers or database personnel. The design is a solution, a "how to" approach to the creation a new system. This is composed of several steps. It provides the understanding and procedural details necessary for implementing the system recommended in the feasibility study. Design goes through logical and physical stages of development, logical design reviews the present physical system, prepare input and output specifications, detail the implementation plan, and prepare a logical design walkthrough.

OBJECTIVES OF DESIGN

System design is like a blue print for a building, it specifies all the features that are to be in the finished product. Design states how to accomplish objectives determined in the analysis phase.
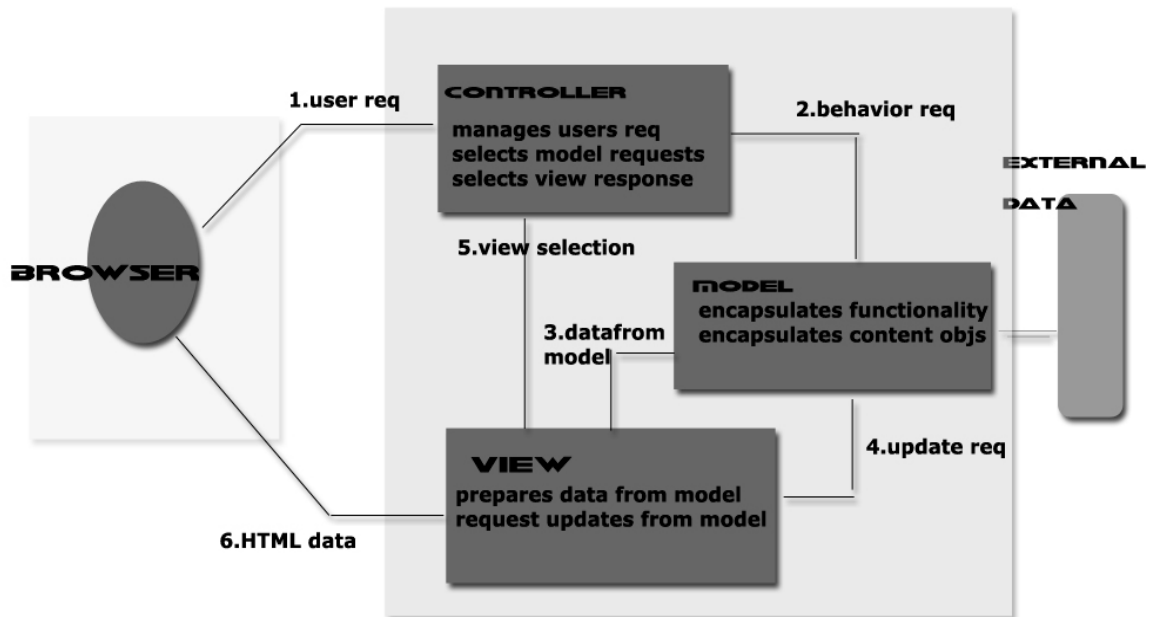
Module Description:

The entire application is based on the following modules:

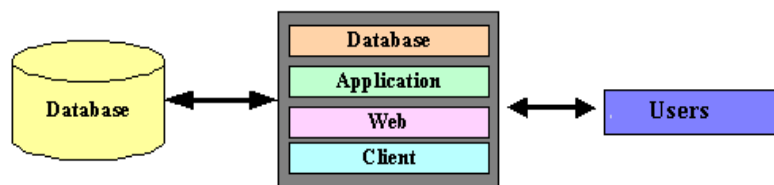1. Administrator Module
2. Manger Module
3. Staff Member Module

Hierarchy of Users:

1. Administrator
2. Manager
3. Staff Member

2.1   Application Architecture
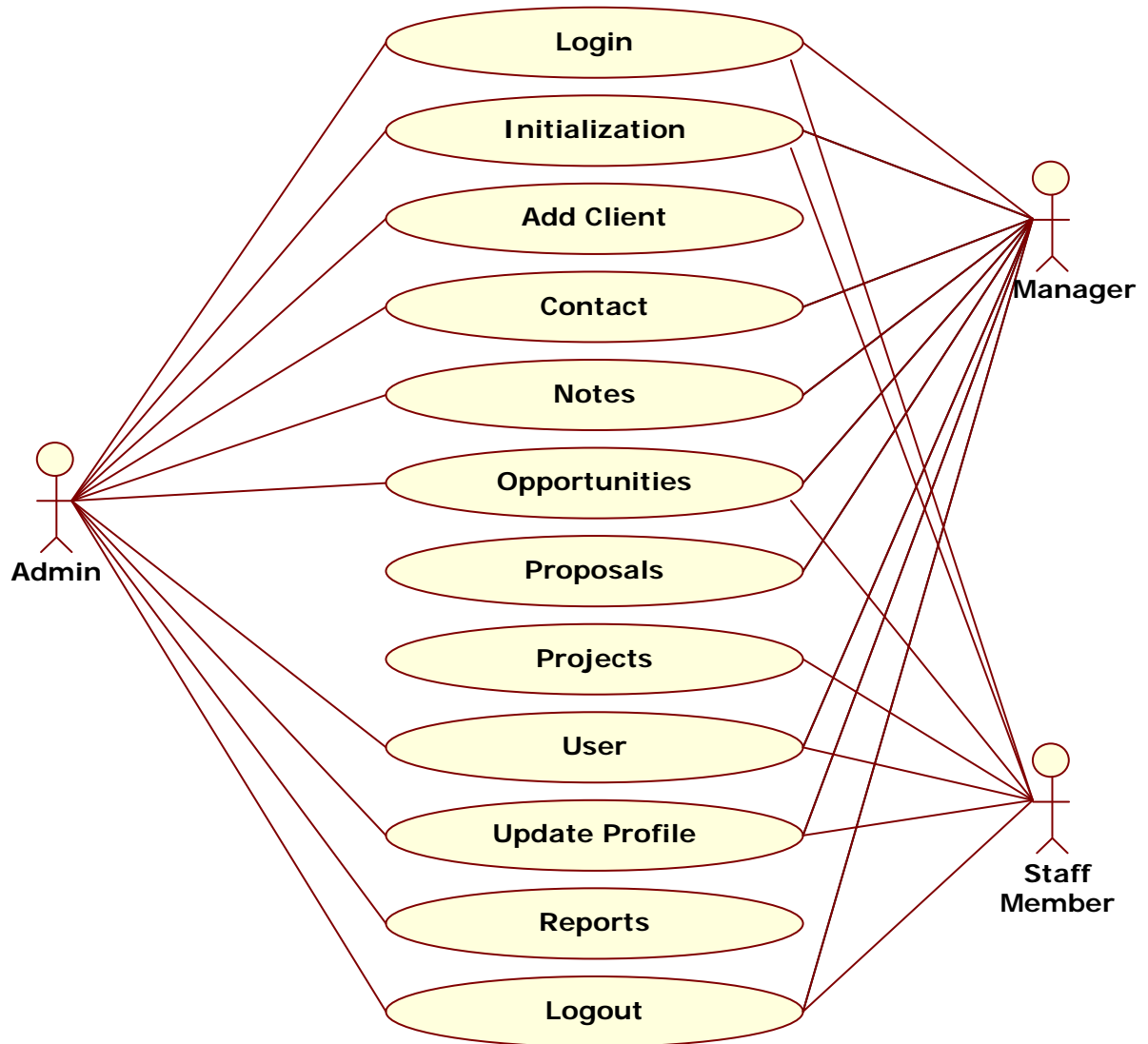

Layerd Architecture

Database Layer: Contains the data and database-related objects like stored procedures, triggers, packages, etc.

Application Layer: Contains the objects addressing the business logic; Most of the middle-level Java objects will be here in application layer.

Web Interface Layer: It will be on the web server; It contains the web pages (JSPs) of the application which will interact with the front-end browsers

Client Layer: Contains the web browser which interacts with web server

2.2   Application Information flows

Use case diagram with actors Admin, Manager, and Staff Member connected to the following use cases: Login, Initialization, Add Client, Contact, Notes, Opportunities, Proposals, Projects, User, Update Profile, Reports, Logout.

2.3   Interactions with other Projects (if Any)

No interaction with other projects

2.4   Interactions with other Applications

No interaction with other applications

2.5   Capabilities

It will retrieve data from Mysql server and the data entered in the front end will be updated in backend.

2.6   Risk Assessment and Management

The approach for managing risks for the SMP Project includes a methodical process by which the project team identifies, scores, and ranks the various risks. Every effort will be made to proactively identify risks ahead of time in order to implement a mitigation strategy from the project's onset. The most likely and highest impact risks were added to the project schedule to ensure that the assigned risk managers take the necessary steps to implement the mitigation response at the appropriate time during the schedule. Risk managers will provide status updates on their assigned risks in the bi-weekly project team meetings, but only when the meetings include their risk's planned timeframe.

Upon the completion of the project, during the closing process, the project manager will analyze each risk as well as the risk management process. Based on this analysis, the project manager will identify any improvements that can be made to the risk management process for future projects. These improvements will be captured as part of the lessons learned knowledge base

3   Project Requirements

3.1   Identification of Requirements

The main purpose of functional requirements within the requirement specification document is to define all the activities or operations that take place in the system. These are derived through interactions with the users of the system.

Functional Requirements:

<GSU-SMP_SP2016-1 administrator-000100>
This system should allow the administrator to manage the users

Implementation: Mandatory

<GSU-SMP_SP2016-1 administrator-000101>
This system should allow the administrator to add/edit/view/revise/close and delete the work orders

Implementation: Mandatory

<GSU-SMP_SP2016-1 administrator-000102>
This system should allow the administrator to manage customers information

Implementation: Mandatory

<GSU-SMP_SP2016-1 administrator-000103>
This system should allow the administrator to manage projects information

Implementation: Mandatory

<GSU-SMP_SP2016-1 administrator-000104>

This system should allow the administrator to manage the employee and assign the employees to a work order.

Implementation: Mandatory

<GSU-SMP_SP2016-1 administrator-000105>
This system should allow the administrator to approve the employee documents

Implementation: Mandatory

<GSU-SMP_SP2016-1 administrator-000106>
This system should allow the administrator to view the pending approvals

Implementation: Mandatory

<GSU-SMP_SP2016-1 administrator-000107>
This system should allow the administrator to generate appointment order for an employee.

Implementation: Mandatory

<GSU-SMP_SP2016-1 administrator-000108>
This system should allow the administrator to monitor the employee performance.

Implementation: Mandatory

<GSU-SMP_SP2016-1 administrator-000109>
This system should allow the administrator to generate the Payslip for am employee.

Implementation: Mandatory

<GSU-SMP_SP2016-1 administrator-000110>
This system should allow the administrator to relieve an employee

Implementation: Mandatory

<GSU-SMP_SP2016-1 administrator-000111>
This system should allow the administrator to view different reports (Work Orders, Customers, Projects and Employees).

Implementation: Mandatory

<GSU-SMP_SP2016-1 administrator-000112>
This system should allow the Customer to view list of his work orders and projects

Implementation: Mandatory

<GSU-SMP_SP2016-1 administrator-000113>
This system should allow the Customer to add / view employees into his Work Order or Project.

Implementation: Mandatory

<GSU-SMP_SP2016-1 administrator-000114>
This system should allow the Customer to view his employee's performance.

Implementation: Mandatory

<GSU-SMP_SP2016-1 administrator-000115>
This system should allow the Customer to Approve the Employee Leaves and then Process the salaries.

Implementation: Mandatory

<GSU-SMP_SP2016-1 administrator-000116>
This system should allow the Customer to view list of leave approvals and salary details

Implementation: Mandatory

<GSU-SMP_SP2016-1 administrator-000117>
This system should allow the Customer to Approve the employee resignations and relieve the employee

Implementation: Mandatory

<GSU-SMP_SP2016-1 Employee -000118>
This system should allow the Employee to upload/view and delete the documents.

Implementation: Mandatory

Non-Functional Requirements:

Nonfunctional requirements describe user-visible aspects of the system that are not directly related to functionality of the system.

User Interface and Human factors:

The proposed system should provide a user- friendly interface to customers and candidates as well as Administrator with ease of use. The user interface must be suitable for easy and fast data entry. With the help of this interface, customers and candidate even without adequate knowledge of systems would complete their tasks. Administrator needs little training about the system in-order to utilize the facilities being provided by the system efficiently.

Documentation:

The proposed system requires three levels of documentation, user level documentation which helps the customers, candidates and administrator how to interact with the system. This documentation includes how to fill the forms provided and get reports that can be generated by the system. In the proposed system help link provides the user level documentation. The RAD prepared during analysis phase helps the developer in-order to develop the system as per client's requirements. The system design documentation prepared during development process provides

information regarding design goals and about subsystems into the proposed system which also helps in testing process. In addition to user level and development level documentation proposed system also requires technical documentation for maintainers of the system. This technical documentation includes the port number on which server is running and listening clients requests and also includes any other configuration required for maintainers.

Hardware Consideration:

Hardware Considerations includes the virtual machine on which the system should be built. Virtual machine includes operating system and any software components needed. Virtual machine minimum required for web server is WINDOWS 7 and Above system and web browser is IE 9.0.And Above the system is compatible with Linux, Unix based systems.

Performance Characteristics: The proposed system is server applications and server applications are inherently multi-threaded. Every request creates new thread hence the system supports any no of concurrent users. Hence this system offers good performance and easy solutions to problems. This is the static requirement. The Dynamic requirement is system response. As the proposed system developed using JavaServerPages which reduces response problems.

Error handling and Extreme conditions: The proposed system should handle exceptions that originate at low level components and exceptions at high level components. The high level components in proposed system should handle exceptions that occur while connecting to database Server,IOExceptions etc. The end user should not be bother about exceptions at low-level. When low level Exceptions arises user should be shown with appropriate message. Errors that arises during data entry should be handled by performing client side validations. In the proposed system all client side validations will be done using JavaScript.

Quality Issues:

Quality issues refers to how reliable and robust should the system be? While developing the proposed system the developer must be able to guarantee the reliability transactions so that they will be processed completely and accurately.

The ability of system to detect failures and recovery from those failures refers to the availability of system. Robustness of system refers to the capability of system providing information when concurrent users requesting for information.

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As the proposed system's capability of handling various exception it is reliable and it will be developed using JSP which supports multithreading. Hence it satisfies the requests from concurrent users. So it is robust.

System modification:

As the proposed is not implementing employee hikes information so it can be extended and this updating can be done by any developer familiar with specified hardware and software constraints followed for development of proposed system.

3.2 Operations, Administration, Maintenance and Provisioning (OAM&P)

3.3 Security and Fraud Prevention

Security and confidentiality are the top most concerns of the client. The proposed system should provide the following.

- Administrator should be provided with id and password for secured access of information regarding dealers and customers.
- Each Customer should also be provided with code and password for controlled access of information regarding their work orders and projects.
- Each candidate should be provides with a username and password

Pseudo Requirements: No design and implementation constraints imposed by the client before the development of this application.

3.4 Release and Transition Plan

The proposed system can be deployed and withstand in any physical environment.

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Administrator Module
Manger Module
Staff Member Module
Hierarchy of Users:

Administrator
Manager
Staff Member

5 Internal/external Interface Impactsand Specification

It is only the intranet application. Because of this if any employee is working from client place then he can't enter into this application from online since it's access is restrict with in the company.

Documents should be processed by the customer first then admin. But here two level checking is not done.

The project flow is little bit clumsy which should be simplified.

Most of the time the database server is busy by providing authentication.

Future Enhancements:

Extendibility: Provides high level extendibility. It means it provides all the basic features and allows us to extend their features very easily with out disturbing the existing code.

We can make this application is suitable to work on any application just by changing the deployment files.

6 Design Units Impacts

A Data Dictionary is a collection of metadata, that is, data about data.In addition to storing catalog information about schemas and constraints, the data dictionary stores other information, such as design decisions, usage standards, application program descriptions, and user information.

A Database is a collection of interrelated data stored with a minimum of redundancy to serve many applications. The database design is used to group data into a number of tables and minimizes the artificiality embedded in using separate files. The tables are organized to:

- Reduced duplication of data.
- Simplify functions like adding, deleting, modifying data etc..,
- Retrieving data
- Clarity and ease of use
- More information at low cost

Normalization is built around the concept of normal forms. A relation is said to be in a particular normal form if it satisfies a certain specified set of constraints on the kind of functional dependencies that could be associated with the relation. The normal forms are used to ensure that various types of anomalies and inconsistencies are not introduced into the database.

First Normal Form:

A relation R is in first normal form if and only if all underlying domains contained atomic values only.

Second Normal Form:

A relation R is said to be in second normal form if and only if it is in first normal form and every non-key attribute is fully dependent on the primary key.

Third Normal Form:

A relation R is said to be in third normal form if and only if it is in second normal form and every non key attribute is non transitively depend on the primary key.

1.user_login

Column Name	Datatype	NOT NULL	AUTO INC	Flags		Default Value	Comment
user_id	INTEGER	✓	✓	☐ UNSIGNED	☐ ZEROFILL	NULL	
user_name	VARCHAR(45)	✓		☐ BINARY			
password	VARCHAR(45)	✓		☐ BINARY			
role_id	INTEGER			☐ UNSIGNED	☐ ZEROFILL	NULL	
is_delete	TINYINT(1)			☐ UNSIGNED	☐ ZEROFILL	NULL	
is_login	TINYINT(1)			☐ UNSIGNED	☐ ZEROFILL	NULL	
created_date	DATETIME					NULL	

2.role_master

Column Name	Datatype	NOT NULL	AUTO INC	Flags		Default Value	Comment
🔑 role_id	INTEGER	✔	✔	☐ UNSIGNED	☐ ZEROFILL	NULL	
◆ role_name	VARCHAR(45)	✔		☐ BINARY			
◆ role_desc	VARCHAR(45)			☐ BINARY		NULL	
◆ is_delete	TINYINT(1)			☐ UNSIGNED	☐ ZEROFILL	NULL	
◆ created_by	INTEGER			☐ UNSIGNED	☐ ZEROFILL	NULL	
◆ created_date	DATETIME					NULL	
◆ modified_by	INTEGER			☐ UNSIGNED	☐ ZEROFILL	NULL	
◆ modified_date	DATETIME					NULL	

3.client_info

Column Name	Datatype	NOT NULL	AUTO INC	Flags		Default Value	Comment
🔑 client_info_id	INTEGER	✔	✔	☐ UNSIGNED	☐ ZEROFILL	NULL	
◆ company_name	VARCHAR(45)	✔		☐ BINARY			
◆ telephone	VARCHAR(20)	✔		☐ BINARY			
◆ fax	VARCHAR(45)			☐ BINARY		NULL	
◆ address	VARCHAR(120)	✔		☐ BINARY			
◆ city	VARCHAR(45)	✔		☐ BINARY			
◆ state_id	INTEGER			☐ UNSIGNED	☐ ZEROFILL	NULL	
◆ country_id	INTEGER			☐ UNSIGNED	☐ ZEROFILL	NULL	
◆ zip_code	VARCHAR(6)	✔		☐ BINARY			
◆ division	VARCHAR(45)			☐ BINARY		NULL	
◆ type	VARCHAR(45)			☐ BINARY		NULL	
◆ industry	VARCHAR(45)			☐ BINARY		NULL	
◆ web_site	VARCHAR(45)			☐ BINARY		NULL	
◆ source	VARCHAR(45)			☐ BINARY		NULL	
◆ description	VARCHAR(120)			☐ BINARY		NULL	

4.contacts

Column Name	Datatype	NOT NULL	AUTO INC	Flags		Default Value	Comment
🔑 contact_id	INTEGER	✔	✔	☐ UNSIGNED	☐ ZEROFILL	NULL	
◆ first_name	VARCHAR(45)	✔		☐ BINARY			
◆ last_name	VARCHAR(45)	✔		☐ BINARY			
◆ title	VARCHAR(8)			☐ BINARY		NULL	
◆ work_phone	VARCHAR(20)			☐ BINARY		NULL	
◆ mobile	VARCHAR(12)	✔		☐ BINARY			
◆ fax	VARCHAR(45)			☐ BINARY		NULL	
◆ enews	VARCHAR(45)			☐ BINARY		NULL	
◆ email	VARCHAR(45)	✔		☐ BINARY			

5.notes

Column Name	Datatype	NOT NULL	AUTO INC	Flags		Default Value	Comment
note_id	INTEGER	✔	✔	☐ UNSIGNED	☐ ZEROFILL	NULL	
name	VARCHAR(45)	✔		☐ BINARY			
description	VARCHAR(45)	✔		☐ BINARY			
created_date	DATETIME					NULL	
created_by	INTEGER			☐ UNSIGNED	☐ ZEROFILL	NULL	
modified_date	DATETIME					NULL	
modified_by	INTEGER			☐ UNSIGNED	☐ ZEROFILL	NULL	

6. opportunities

Column Name	Datatype	NOT NULL	AUTO INC	Flags		Default Value	Comment
oppt_id	INTEGER	✔		☐ UNSIGNED	☐ ZEROFILL	0	
oppt_name	VARCHAR(45)	✔		☐ BINARY			
created_by	INTEGER			☐ UNSIGNED	☐ ZEROFILL	NULL	
created_date	DATETIME					NULL	
modified_by	INTEGER			☐ UNSIGNED	☐ ZEROFILL	NULL	
modified_date	DATETIME					NULL	
chance_to_close	FLOAT			☐ UNSIGNED	☐ ZEROFILL	NULL	
estimated_budget	DOUBLE			☐ UNSIGNED	☐ ZEROFILL	NULL	
oppt_duration	INTEGER			☐ UNSIGNED	☐ ZEROFILL	NULL	
oppt_type	VARCHAR(45)			☐ BINARY		NULL	
contact_name	VARCHAR(45)	✔		☐ BINARY			
contact_teleph...	VARCHAR(20)	✔		☐ BINARY			
oppt_desc	VARCHAR(45)			☐ BINARY		NULL	
oppt_notes	VARCHAR(45)			☐ BINARY		NULL	

7. proposals

Column Name	Datatype	NOT NULL	AUTO INC	Flags	Default Value	Comment
proposals_id	INTEGER	✔	✔	☐ UNSIGNED ☐ ZEROFILL	NULL	
proposals_name	VARCHAR(45)	✔		☐ BINARY		
account_manager	VARCHAR(45)	✔		☐ BINARY		
created_date	DATETIME	✔				
created_by	INTEGER	✔		☐ UNSIGNED ☐ ZEROFILL		
modified_date	DATETIME				NULL	
modified_by	INTEGER			☐ UNSIGNED ☐ ZEROFILL	NULL	
chance_to_close	INTEGER			☐ UNSIGNED ☐ ZEROFILL	NULL	
estimated_budget	DOUBLE			☐ UNSIGNED ☐ ZEROFILL	NULL	
proposal_duration	FLOAT			☐ UNSIGNED ☐ ZEROFILL	NULL	
proposal_amount	DOUBLE			☐ UNSIGNED ☐ ZEROFILL	NULL	
total_revenue	DOUBLE			☐ UNSIGNED ☐ ZEROFILL	NULL	
proposal_status	VARCHAR(12)			☐ BINARY	NULL	
rejection_reason	VARCHAR(80)	✔		☐ BINARY		
contact_name	VARCHAR(45)	✔		☐ BINARY		
contact_telephone	VARCHAR(20)			☐ BINARY	NULL	
proposal_desc	VARCHAR(80)			☐ BINARY	NULL	
proposal_notes	VARCHAR(45)			☐ BINARY	NULL	

8.projects

Column Name	Datatype	NOT NULL	AUTO INC	Flags	Default Value	Comment
project_id	INTEGER	✔	✔	☐ UNSIGNED ☐ ZEROFILL	NULL	
project_name	VARCHAR(45)	✔		☐ BINARY	NULL	
project_desc	VARCHAR(120)			☐ BINARY	NULL	
project_notes	VARCHAR(120)			☐ BINARY	NULL	
created_date	DATETIME				NULL	
created_by	INTEGER			☐ UNSIGNED ☐ ZEROFILL	NULL	
client_info_id	INTEGER			☐ UNSIGNED ☐ ZEROFILL	NULL	
project_manager	VARCHAR(45)			☐ BINARY	NULL	
project_amunt	DOUBLE			☐ UNSIGNED ☐ ZEROFILL	NULL	
total_revenue	DOUBLE			☐ UNSIGNED ☐ ZEROFILL	NULL	
project_duration	FLOAT			☐ UNSIGNED ☐ ZEROFILL	NULL	
project_status	VARCHAR(12)			☐ BINARY	NULL	
launch_date	DATETIME				NULL	
contact_name	VARCHAR(45)			☐ BINARY	NULL	
contact_tel	VARCHAR(45)			☐ BINARY	NULL	
reject_reason	VARCHAR(45)			☐ BINARY	NULL	

9.state_master

Column Name	Datatype	NOT NULL	AUTO INC	Flags	Default Value	Comment
state_id	INTEGER	✔	✔	☐ UNSIGNED ☐ ZEROFILL	NULL	
state_name	VARCHAR(45)	✔		☐ BINARY		
state_desc	VARCHAR(45)	✔		☐ BINARY		
created_by	INTEGER			☐ UNSIGNED ☐ ZEROFILL	NULL	
created_date	DATETIME				NULL	
is_delete	VARCHAR(8)			☐ BINARY	NULL	
country_id	INTEGER			☐ UNSIGNED ☐ ZEROFILL	NULL	
state_code	VARCHAR(8)			☐ BINARY	NULL	

10.country_master

Column Name	Datatype	NOT NULL	AUTO INC	Flags			Default Value	Comment
country_id	INTEGER	✔	✔	☐ UNSIGNED	☐ ZEROFILL		NULL	
country_name	VARCHAR(45)	✔		☐ BINARY				
country_desc	VARCHAR(45)			☐ BINARY			NULL	
created_date	DATETIME						NULL	
created_by	INTEGER			☐ UNSIGNED	☐ ZEROFILL		NULL	
is_delete	VARCHAR(8)			☐ BINARY			NULL	
country_code	VARCHAR(8)			☐ BINARY			NULL	

11. notifications

Column Name	Datatype	NOT NULL	AUTO INC	Flags			Default Value	Comment
notification_id	INTEGER	✔	✔	☐ UNSIGNED	☐ ZEROFILL		NULL	
notification_name	VARCHAR(45)	✔		☐ BINARY			NULL	
date	DATETIME						NULL	
is_expire	VARCHAR(45)			☐ BINARY			NULL	

ER Diagram
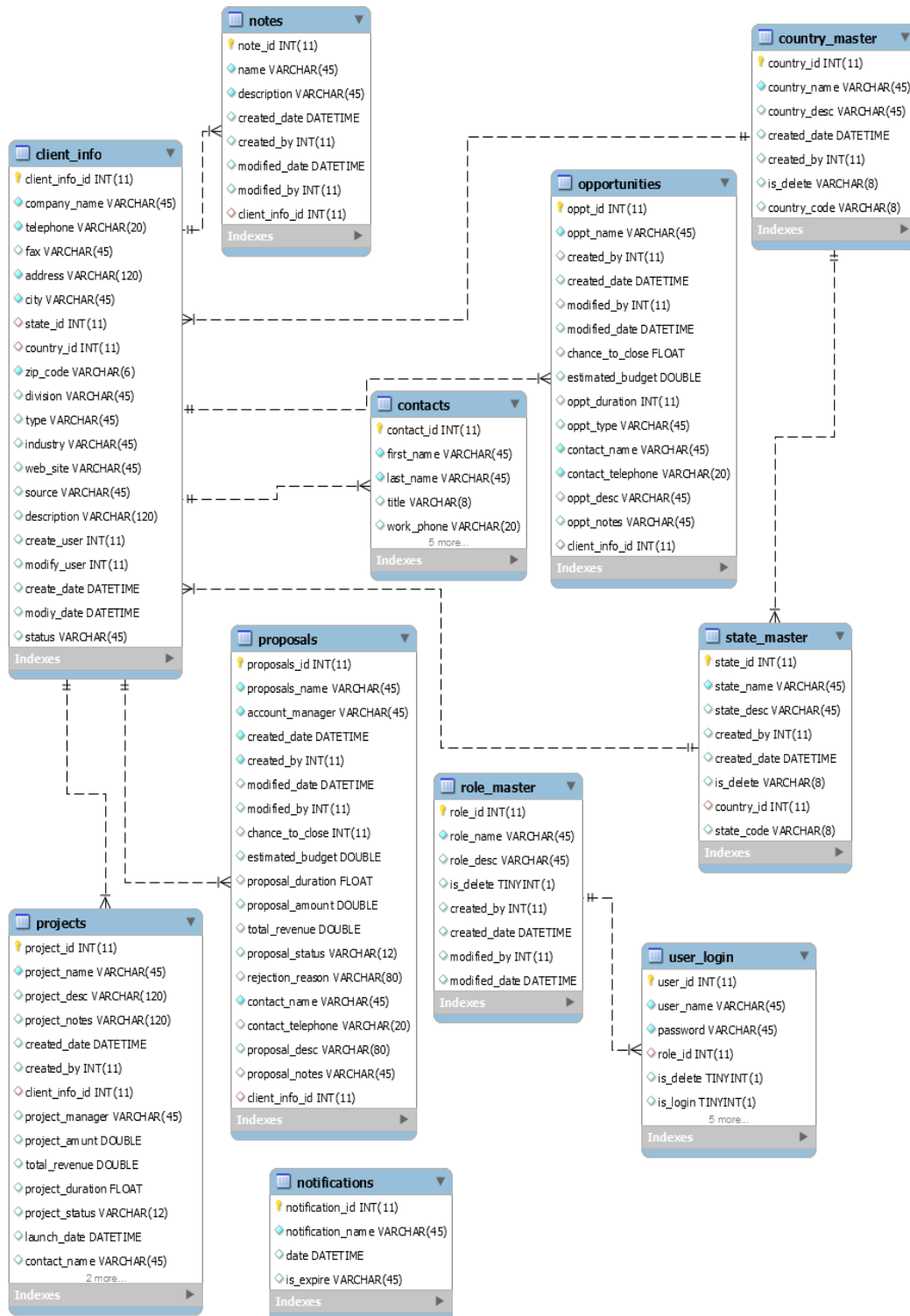
6.1   Functional Area A/Design UnitA

6.1.1   Functional Overview
Front end or User Interface Design

The entire user interface is planned to be developed in browser specific environment with a touch of Intranet-Based Architecture for achieving the Distributed Concept.

The browser specific components are designed by using the HTML standards, and the dynamism of the designed by concentrating on the constructs of the Java Server Pages.

Communication or Database Connectivity Tier

The Communication architecture is designed by concentrating on the Standards of Servlets and Enterprise Java Beans. The database connectivity is established by using the Java Data Base Connectivity.

The standards of three-tire architecture are given major concentration to keep the standards of higher cohesion and limited coupling for effectiveness of the operations.

About Java:

Initially the language was called as "oak" but it was renamed as "Java" in 1995. The primary motivation of this language was the need for a platform-independent (i.e., architecture neutral) language that could be used to create software to be embedded in various consumer electronic devices.

Java is a programmer's language.

Java is cohesive and consistent.

Except for those constraints imposed by the Internet environment, Java gives the programmer, full control.

Finally, Java is to Internet programming where C was to system programming.

Importance of Java to the Internet

Java has had a profound effect on the Internet. This is because; Java expands the Universe of objects that can move about freely in Cyberspace. In a network, two categories of objects are transmitted between the Server and the Personal computer. They are: Passive information and Dynamic active programs. The Dynamic, Self-executing programs cause serious problems in the areas of Security and probability. But, Java addresses those concerns and by doing so, has opened the door to an exciting new form of program called the Applet.

Spring:

Spring is the most popular application development framework for enterprise Java. Millions of developers around the world use Spring Framework to create high performing, easily testable, reusable code.

Spring framework is an open source Java platform and it was initially written by Rod Johnson and was first released under the Apache 2.0 license in June 2003.

Spring is lightweight when it comes to size and transparency. The basic version of spring framework is around 2MB.

The core features of the Spring Framework can be used in developing any Java application, but there are extensions for building web applications on top of the Java EE platform. Spring framework targets to make J2EE development easier to use and promote good programming practice by enabling a POJO-based programming model.

Benefits of Using Spring Framework:

Following is the list of few of the great benefits of using Spring Framework:

Spring enables developers to develop enterprise-class applications using POJOs. The benefit of using only POJOs is that you do not need an EJB container product such as an application server but you have the option of using only a robust servlet container such as Tomcat or some commercial product.

Spring is organized in a modular fashion. Even though the number of packages and classes are substantial, you have to worry only about ones you need and ignore the rest.

Spring does not reinvent the wheel instead, it truly makes use of some of the existing technologies like several ORM frameworks, logging frameworks, JEE, Quartz and JDK timers, other view technologies.

Testing an application written with Spring is simple because environment-dependent code is moved into this framework. Furthermore, by using JavaBean-style POJOs, it becomes easier to use dependency injection for injecting test data.

Spring's web framework is a well-designed web MVC framework, which provides a great alternative to web frameworks such as Struts or other over engineered or less popular web frameworks.

Spring provides a convenient API to translate technology-specific exceptions (thrown by JDBC, Hibernate, or JDO, for example) into consistent, unchecked exceptions.

Lightweight IoC containers tend to be lightweight, especially when compared to EJB containers, for example. This is beneficial for developing and deploying applications on computers with limited memory and CPU resources.

Spring provides a consistent transaction management interface that can scale down to a local transaction (using a single database, for example) and scale up to global transactions (using JTA, for example)

Java Script

JavaScript is a script-based programming language that was developed by Netscape Communication Corporation. JavaScript was originally called Live Script and renamed as JavaScript to indicate its relationship with Java. JavaScript supports the development of both client and server components of Web-based applications. On the client side, it can be used to write programs that are executed by a Web browser within the context of a Web page. On the server side, it can be used to write Web server programs that can process information submitted by a Web browser and then updates the browser's display accordingly

Even though JavaScript supports both client and server Web programming, we prefer JavaScript at Client side programming since most of the browsers supports it. JavaScript is almost as easy to learn as HTML, and JavaScript statements can be included in HTML documents by enclosing the statements between a pair of scripting tags .<SCRIPTS>..</SCRIPT>.

<SCRIPT LANGUAGE = "JavaScript">

JavaScript statements

</SCRIPT>

Here are a few things we can do with JavaScript :

Validate the contents of a form and make calculations.

Add scrolling or changing messages to the Browser's status line.

Animate images or rotate images that change when we move the mouse over them.

Detect the browser in use and display different content for different browsers.

Detect installed plug-ins and notify the user if a plug-in is required.

We can do much more with JavaScript, including creating entire application.

Hyper Text Markup Language

Hypertext Markup Language (HTML), the languages of the World Wide Web (WWW), allows users to produces Web pages that include text, graphics and pointer to other Web pages (Hyperlinks).

HTML is not a programming language but it is an application of ISO Standard 8879, SGML (Standard Generalized Markup Language), but specialized to hypertext and adapted to the Web. The idea behind Hypertext is that instead of reading text in rigid linear structure, we can easily jump from one point to another point. We can navigate through the information based on our

interest and preference. A markup language is simply a series of elements, each delimited with special characters that define how text or other items enclosed within the elements should be displayed. Hyperlinks are underlined or emphasized works that load to other documents or some portions of the same document.

HTML can be used to display any type of document on the host computer, which can be geographically at a different location. It is a versatile language and can be used on any platform or desktop.

HTML provides tags (special codes) to make the document look attractive. HTML tags are not case-sensitive. Using graphics, fonts, different sizes, color, etc., can enhance the presentation of the document. Anything that is not a tag is part of the document itself.

Basic HTML Tags :

<!--   -->   Specifies comments

<A>……….</A>   Creates hypertext links

<B>……….</B>   Formats text as bold

<BIG>……….</BIG> Formats text in large font.

<BODY>…</BODY> Contains all tags and text in the HTML document

<CENTER>...</CENTER>   Creates text

<DD>…</DD> Definition of a term

<DL>...</DL>   Creates definition list

<FONT>…</FONT>   Formats text with a particular font

<FORM>...</FORM>   Encloses a fill-out form

<FRAME>...</FRAME>   Defines a particular frame in a set of frames

<H#>…</H#> Creates headings of different levels

<HEAD>...</HEAD>   Contains tags that specify information about a document

<HR>...</HR> Creates a horizontal rule

<HTML>…</HTML> Contains all other HTML tags

<META>...</META>   Provides meta-information about a document

<SCRIPT>…</SCRIPT>   Contains client-side or server-side script

<TABLE>…</TABLE>   Creates a table

<TD>…</TD> Indicates table data in a table

<TR>…</TR> Designates a table row

<TH>…</TH> Creates a heading in a table

ADVANTAGES

A HTML document is small and hence easy to send over the net. It is small because it does not include formatted information.

HTML is platform independent.

HTML tags are not case-sensitive.

ORM(Hibernate)

Hibernate framework simplifies the development of java application to interact with the database. Hibernate is an open source, lightweight, ORM (Object Relational Mapping) tool.

An ORM tool simplifies the data creation, data manipulation and data access. It is a programming technique that maps the object to the data stored in the database.
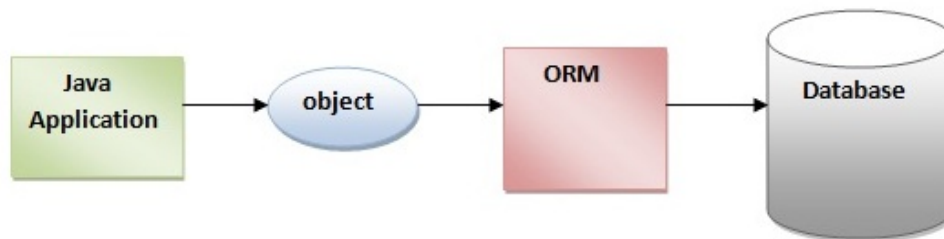
Advantages of Hibernate Framework

There are many advantages of Hibernate Framework. They are as follows:

Opensource and Lightweight: Hibernate framework is opensource under the LGPL license and lightweight.

Fast performance: The performance of hibernate framework is fast because cache is internally used in hibernate framework. There are two types of cache in hibernate framework first level cache and second level cache. First level cache is enabled bydefault.

Database Independent query: HQL (Hibernate Query Language) is the object-oriented version of SQL. It generates the database independent queries. So you don't need to write datab ase specific queries. Before Hibernate, If database is changed for the project, we need to change the SQL query as well that leads to the maintenance problem.

Automatic table creation: Hibernate framework provides the facility to create the tables of the database automatically. So there is no need to create tables in the database manually.

Simplifies complex join: To fetch data form multiple tables is easy in hibernate framework.

Provides query statistics and database status: Hibernate supports Query cache and provide statistics about query and database status.

Java Server Pages (JSP)

Java server Pages is a simple, yet powerful technology for creating and maintaining dynamic-content web pages. Based on the Java programming language, Java Server Pages offers proven portability, open standards, and a mature re-usable component model .The Java Server Pages architecture enables the separation of content generation from content presentation. This separation not eases maintenance headaches, it also allows web team members to focus on their areas of expertise. Now, web page designer can concentrate on layout, and web application designers on programming, with minimal concern about impacting each other's work.

Features of JSP

Portability:

Java Server Pages files can be run on any web server or web-enabled application server that provides support for them. Dubbed the JSP engine, this support involves recognition, translation, and management of the Java Server Page lifecycle and its interaction components.

Components:

It was mentioned earlier that the Java Server Pages architecture can include reusable Java components. The architecture also allows for the embedding of a scripting language directly into the Java Server Pages file. The components current supported include Java Beans, and Servlets.

Processing:

A Java Server Pages file is essentially an HTML document with JSP scripting or tags. The Java Server Pages file has a JSP extension to the server as a Java Server Pages file. Before the page is served, the Java Server Pages syntax is parsed and processed into a Servlet on the server side. The Servlet that is generated outputs real content in straight HTML for responding to the client.

Access Models:

A Java Server Pages file may be accessed in at least two different ways. A client's request comes directly into a Java Server Page. In this scenario, suppose the page accesses reusable Java Bean components that perform particular well-defined computations like accessing a database. The result of the Beans computations, called result sets is stored within the Bean as properties. The page uses such Beans to generate dynamic content and present it back to the client.

In both of the above cases, the page could also contain any valid Java code. Java Server Pages architecture encourages separation of content from presentation.

Steps in the execution of a JSP Application:

The client sends a request to the web server for a JSP file by giving the name of the JSP file within the form tag of a HTML page.

This request is transferred to the JavaWebServer. At the server side JavaWebServer receives the request and if it is a request for a jsp file server gives this request to the JSP engine.

JSP engine is program which can understands the tags of the jsp and then it converts those tags into a Servlet program and it is stored at the server side. This Servlet is loaded in the memory and then it is executed and the result is given back to theJavaWebServer and then it is transferred back to the result is givenback to the JavaWebServer and then it is transferred back to the client.

Testing

Testing is the process of detecting errors.Testing performs a very critical role for quality assurance and for ensuring the reliability of software.The results of testing are used later on during maintenance also.
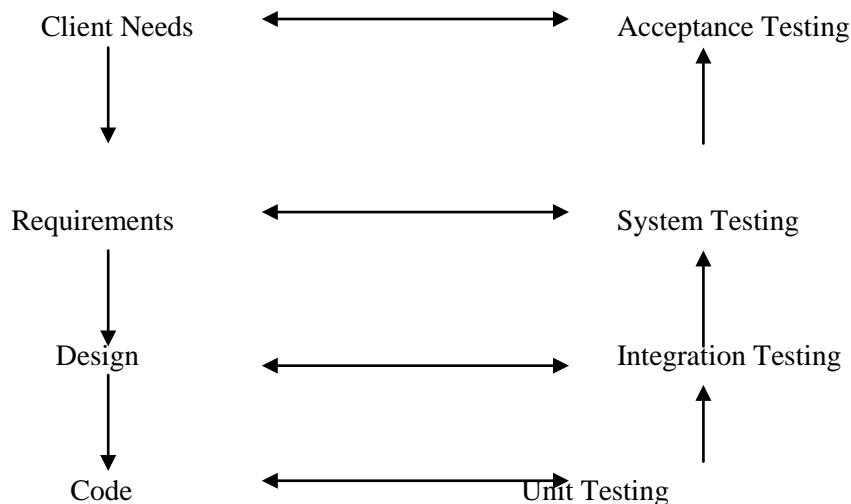
Testing Objectives:

The main objective of testing is to uncover a host of errors, systematically and with minimum effort and time. Stating formally, we can say,

- Testing is a process of executing a program with the intent of finding an error.
- A successful test is one that uncovers an as yet undiscovered error.
- A good test case is one that has a high probability of finding error, if it exists.
- The tests are inadequate to detect possibly present errors.
- The software more or less confirms to the quality and reliable standards.

Level of Testing

In order to uncover the errors present in different phases we have the concept of levels of testing.The basic levels of testing are

Client Needs ←——————→ Acceptance Testing

Requirements ←——————→ System Testing

Design ←——————→ Integration Testing

Code ←——————— Unit Testing

Unit testing:

Unit testing focuses verification effort on the smallest unit of software i.e. the module. Using the detailed design and the process specifications testing is done to uncover errors within the boundary of the module. All modules must be successful in the unit test before the start of the integration testing begins.

In this project each service can be thought of a module.There are so many modules like Admin, Tracking, and Inventory. Each module has been tested by giving different sets of inputs.When developing the module as well as finishing the development so that each module works without any error.The inputs are validated when accepting from the user.

Integration Testing:

After the unit testing we have to perform integration testing.The goal here is to see if modules can be integrated properly,the emphasis being on testing interfaces between modules.This testing activity can be considered as testing the design and hence the emphasis on testing module interactions.

In this project the main system is formed by integrating all the modules.When integrating all the modules I have checked whether the integration effects working of any of the services by giving different combinations of inputs with which the two services run perfectly before Integration.

System Testing

Here the entire software system is tested.The reference document for this process is the requirements document, and the goal is to see if software meets its requirements.

Here entire 'SMP has been tested against requirements of project and it is checked whether all requirements of project have been satisfied or not.

Acceptance Testing

Acceptance Test is performed with realistic data ofthe client to demonstrate thatthe software is working satisfactorily. Testing here isfocused onexternal behavior ofthesystem;the internal logic of program is not emphasized.In this project 'Sales Management Portal I have collected some data and tested whether project is working correctly or not.

Test cases should be selected so that the largest number of attributes of an equivalence class is exercised at once. The testing phase is an important part of software development. It is the process of finding errors and missing operations and also a complete verification to determine whether the objectives are met and the user requirements are satisfied.

Test Cases

7 S.NO	TESTING OBJECT	EXPECTED VALUE	SIMULATED VALUE	EXPLANATION	REMARKS
1	Login/UserID	"name"	"name"	Pass	Expected Value=Simulated Value
2	Login/UserID	"name"	""	Fail	User ID Field Empty
3	Login/UserID	"name"	"NAME"	Fail	Case Sensitive
4	Login/Password	"password"	"password"	Pass	Expected Value=Simulated Value
5	Login/Password	"password"	""	Fail	Password Field Empty
6	Login/Password	"password"	"PASSWORD"	Fail	Case Sensitive

6.1.2 Impacts

Java server Pages is a simple, yet powerful technology for creating and maintaining dynamic-content web pages. Based on the Java programming language, Java Server Pages offers proven portability, open standards, and a mature re-usable component model .The Java Server Pages architecture enables the separation of content generation from content presentation. This separation not eases maintenance headaches, it also allows web team members to focus on their areas of expertise. Now, web page designer can concentrate on layout, and web application designers on programming, with minimal concern about impacting each other's work.

6.1.3 Requirements

This system should allow the administrator to manage the users

This system should allow the administrator to add/edit/view/revise/close and delete the work orders

This system should allow the administrator to manage customers information

This system should allow the administrator to manage projects information

This system should allow the administrator to manage the employee and assign the employees to a work order.

This system should allow the administrator to approve the employee documents

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This system should allow the administrator to view the pending approvals

This system should allow the administrator to generate appointment order for an employee.

This system should allow the administrator to monitor the employee performance.

 This system should allow the administrator to generate the Payslip for am employee.

This system should allow the administrator to relieve an employee

This system should allow the administrator to view different reports (Work Orders, Customers, Projects and Employees).

This system should allow the Customer to view list of his work orders and projects

 This system should allow the Customer to add / view employees into his Work Order or Project.

This system should allow the Customer to view his employee's performance.

 This system should allow the Customer to Approve the Employee Leaves and then Process the salaries.

This system should allow the Customer to view list of leave approvals and salary details

This system should allow the Customer to Approve the employee resignations and relieve the employee

This system should allow the Candidate (Employee) to upload/view and delete the documents.

This system should allow the Candidate to view Appointment Order

This system should allow the Candidate to enter his leave details

 This system should allow the Candidate to Add / View / Edit and Delete his Bank Account Details.

This system should allow the Candidate view his pay slip

This system should allow the Candidate to submit his resignation

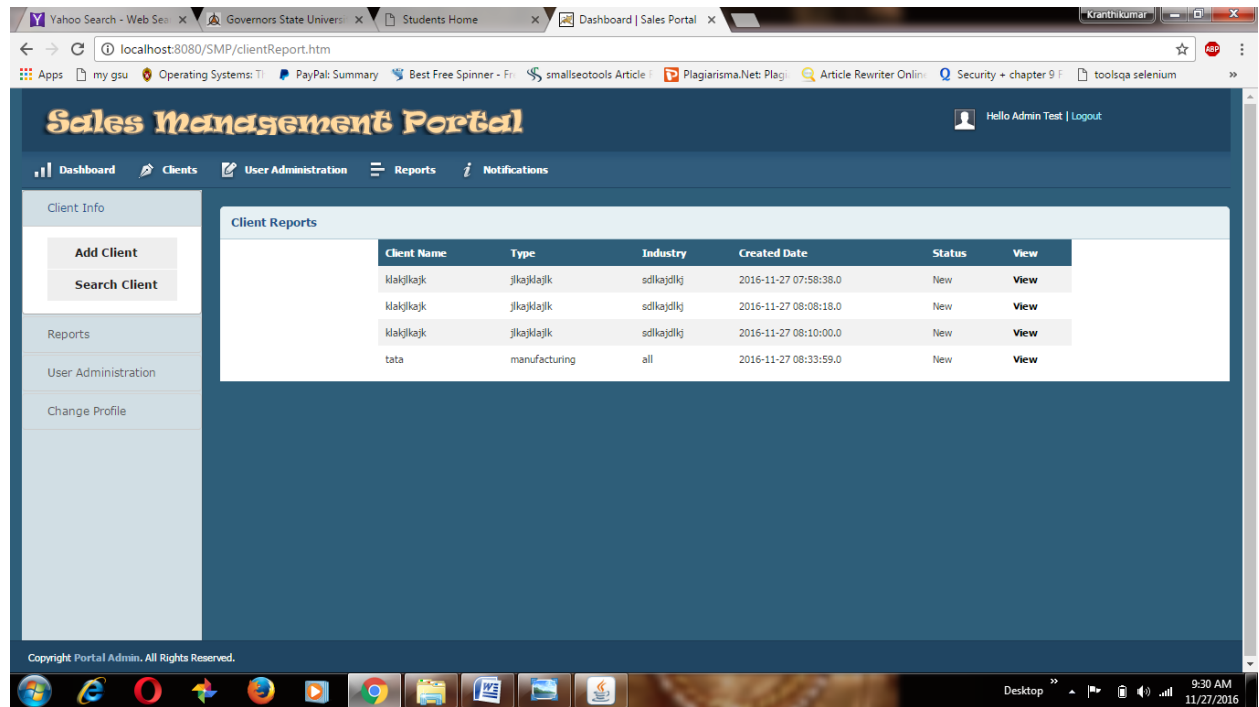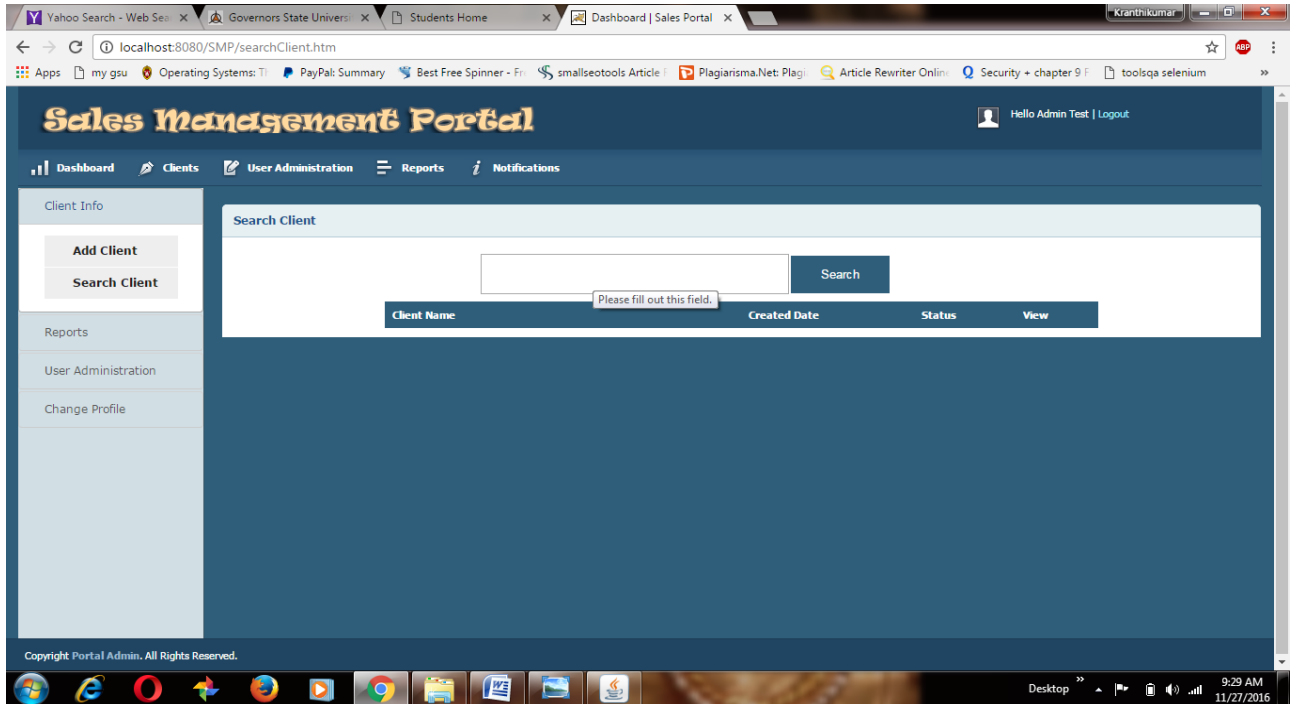## 6.2 Functional Area B/Design Unit B

 Login Page
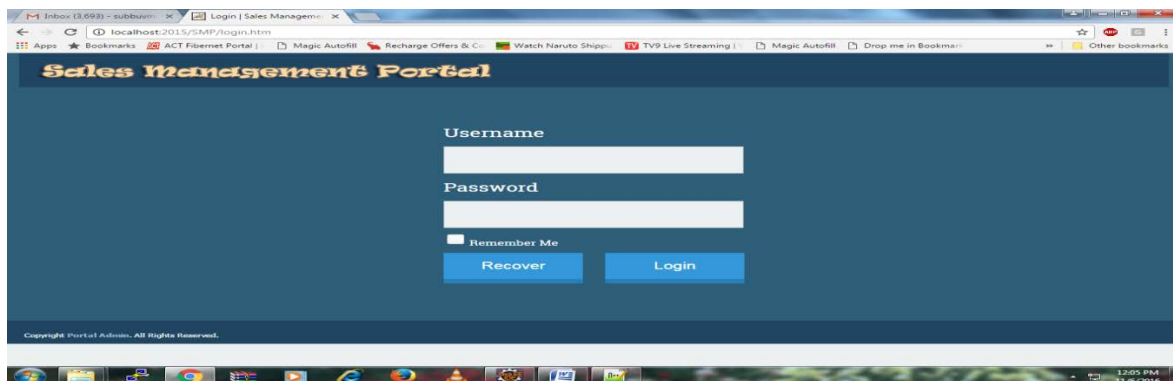
Home Page
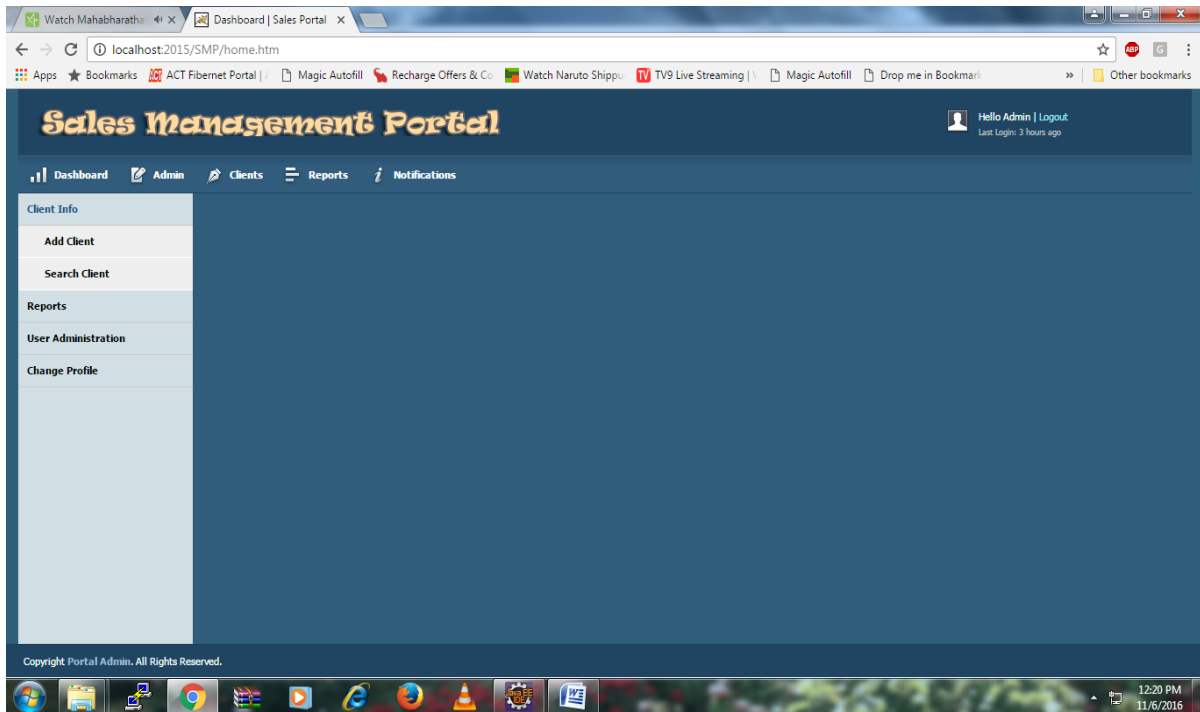
Create Users Pages
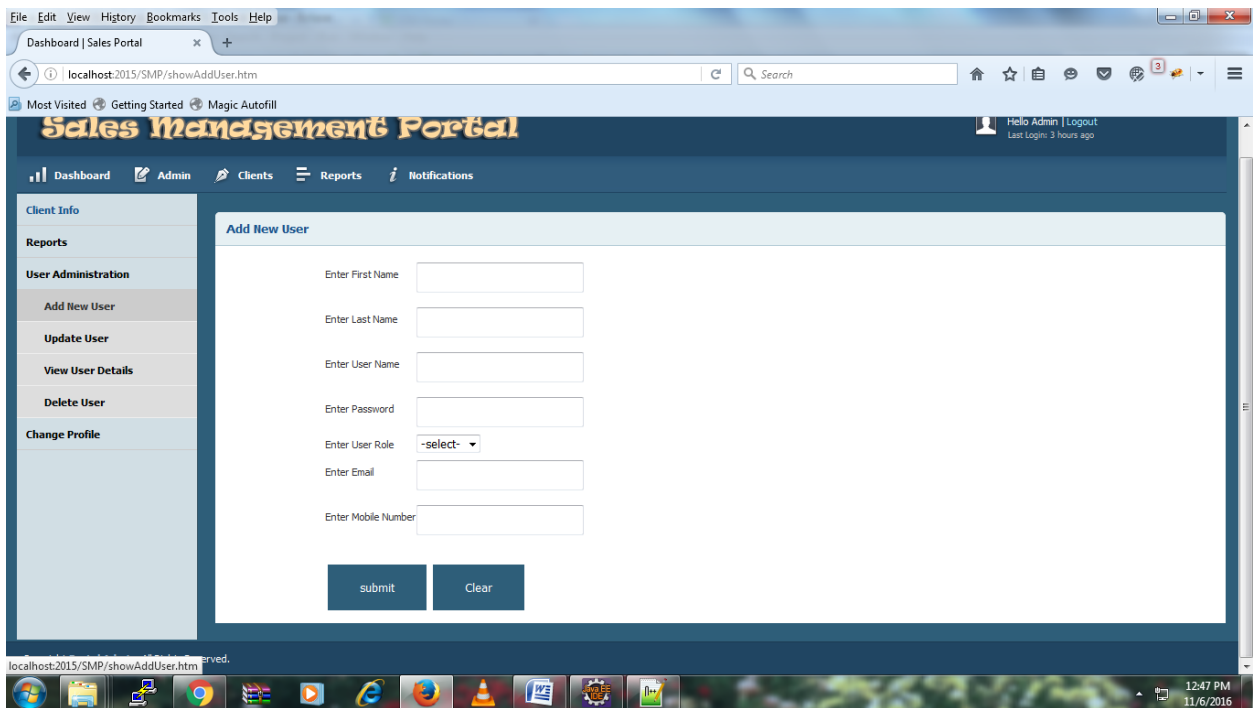
Update Users Pages
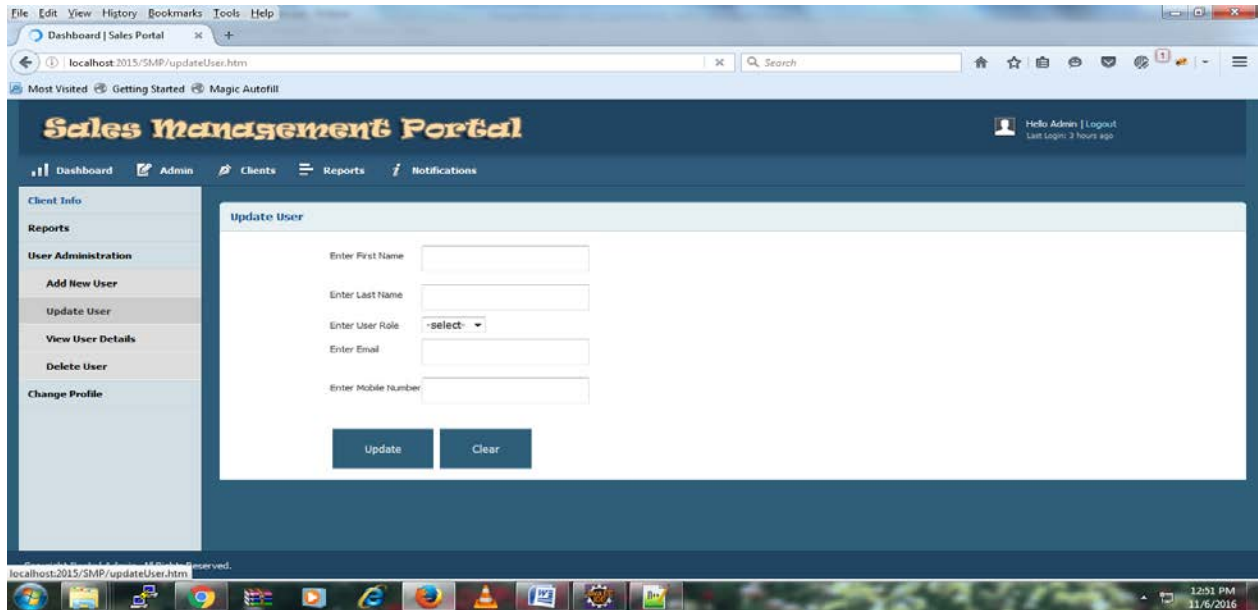
Update user
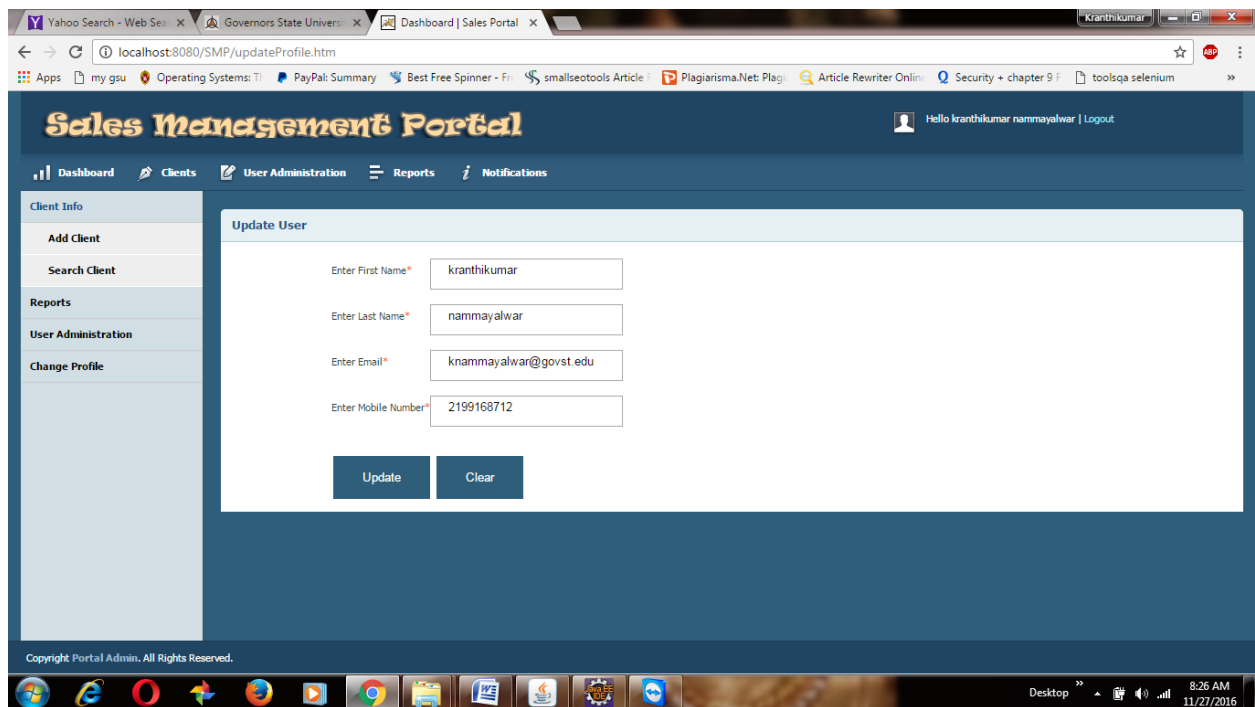
Search client

Update profile

Change password

Add Client - Primary Information

Add Client - Contact Information

Add Client - Notes

Add Client - opportunities

Add Client - Proposal

Add Client - Projects
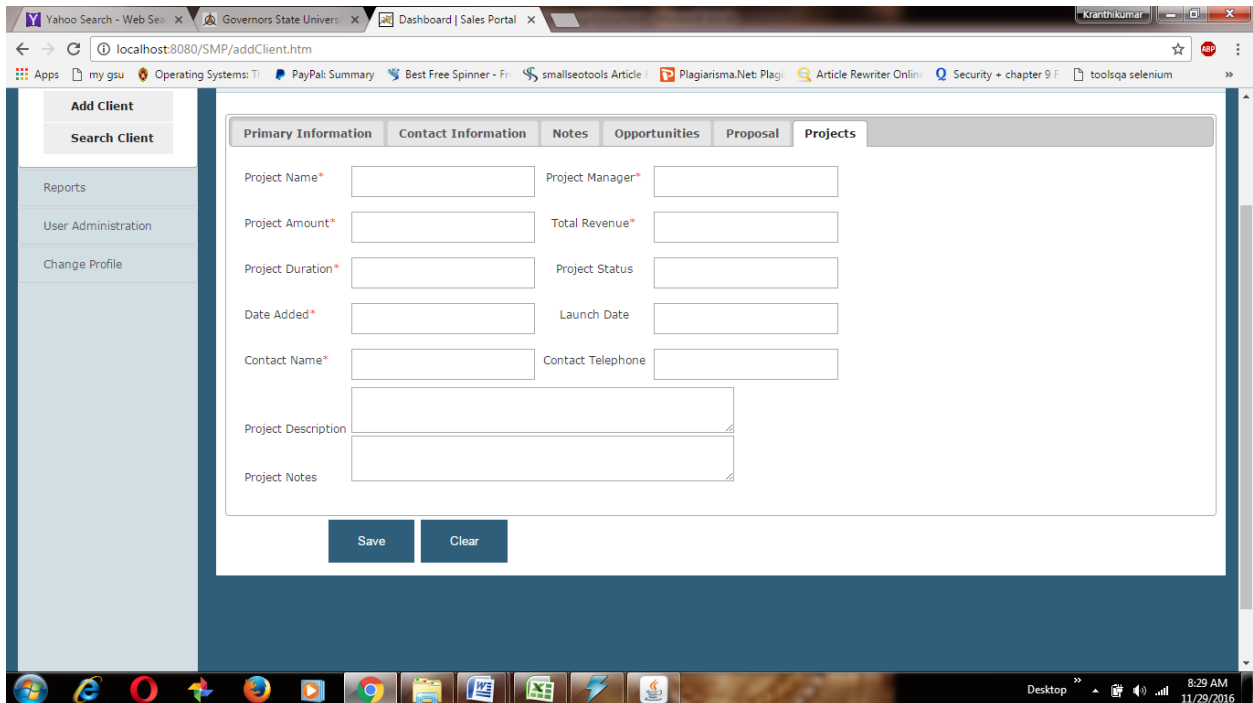
Application Flow Diagram


```
         ┌──────────────┐
         │    Spring    │
┌─────┐  │              │           ┌────────┐
│     │  │ Controller   │           │        │
│     │  └──────────────┘           │ Mysql  │
│ UI  │     ┌──────────────┐        │        │
│     │     │              │        │        │
│ JSP │     │  Hibernate   │        │DataBase│
│     │     │   Model      │        └────────┘
└─────┘     └──────────────┘
```

JSP -- > Controller -- > Service -- > DAo -- Database
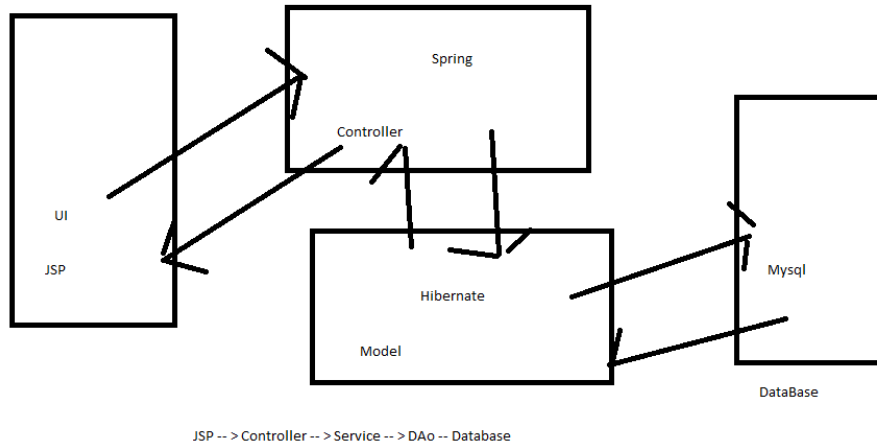
6.2.1 Functional Overview

The "Sales Management Portal Software" is web-based applications. This application software has been computed successfully and was also tested successfully by taking "test cases". It is user friendly, and has required options, which can be utilized by the user to perform the desired operations. The software is developed using Java as front end and MySQL as back end in Windows environment. The goals that are achieved by the software are:

✓ Instant access.

✓ Improved productivity.

✓ Optimum utilization of resources.

✓ Efficient management of records.

✓ Simplification of the operations.

✓ Less processing time and getting required information.

✓ User friendly.

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6.2.2   Impacts

6.2.3   Requirements

7   Open Issues

Extendibility: Provides high level extendibility. It means it provides all the basic features and allows us to extend their features very easily with out disturbing the existing code.

We can make this application is suitable to work on any application just by changing the deployment files.

By providing some more features like providing accessibility to internet for branch office.

8   Acknowledgements

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10 Appendices