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# Sales Management Portal

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#### **ABSTRACT**

Sales management and operation deals with set of business activities and processes that help a business organization run effectively and efficiently. It also means to coordinate sales operation that allows a business to consistently reach or even surpass its sales targets. Therefore as a sales manager, one would need to be able to evaluate and gain visibility into the current sales force and decide whether a particular objective would be met or not.

In this project, we would be building such a tool that will help the sales manager, oversees the current state of business, in terms of managing different clients and the state of each order placed managed by sales personnel. The tool is intended to be an online portal in which the manager, who acts as an admin has the authority to approve/decline a sales request from the clients, keep track of their details, keep track of the production process of a previously accepted proposal, manage the sales force team.

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#### 1 Project Description

As more and more small and midsize companies emerge, there is a need for a fully automated system that keeps tracks of the company sales and project progress. In a typical company, the sales executive is always on the outlook for new clients/customers. These sales executives bring in new project proposals from a new client and submit to a manager. The manager then reviews these opportunities submitted by the sales executive. If the manger believes that the opportunity has a lot of potential, he then approves of the opportunity to a new project of the company. However typically, a manger oversees many projects and therefore relies on software to keep track of such activities.

In such scenarios, the company usually purchases third party computer applications or sales management systems. One of the challenges involved in selecting such applications is that most of the applications are not sufficient in keeping the business going. Also, they require the company to purchase full packages that include high cost and require special hardware requirements to operate on, therefore paying extra money for functions that are not needed. The objectives of this work are the following.

- 1. Design an easy and intuitive sales management portal suitable for small and medium scale enterprises.
- 2. Develop a framework for a simple sales management portal that can be used as a template for future projects.
- 3. Design the sales management portal that is capable of producing smooth transaction procedures and effective sales tracking system.

## Competitive Information

Other examples of Sales Management Portals are Intuit Quick Books, Tally and Mr. John Boachy Asibuo design of enterprise application.

#### 1.1 Relationship to Other Applications/Projects

This application is not related to any other previous projects and is completely a new implementation of the Sales Management Portal.

#### 1.2 Assumptions and Dependencies

• A sales representative has the privileges to bring in new project proposal and opportunities.

 A client is willing to provide their contact information to the sales representative to enter into the database.

There are no dependencies on any other projects.

#### 1.3 Future Enhancements

There are currently no future enhancements planned for this project.

#### 1.4 Definitions and Acronyms

None

## 2 Project Technical Description

The modules are developed under the following development environments.

- Operating System: Windows compatible environment.
- Web Server: Internet Information Services (IIS) for Windows Server.
- Server side Application Software : ASP.NET and ADO.NET
- Client side Application Software: HTML, JQuery and JavaScript
- Database software : MS-SQL.
- Visual Studio 2013.
- Hardware: Intel i5 with 512 RAM and 512 GB HDD.

#### 2.1 Application Architecture

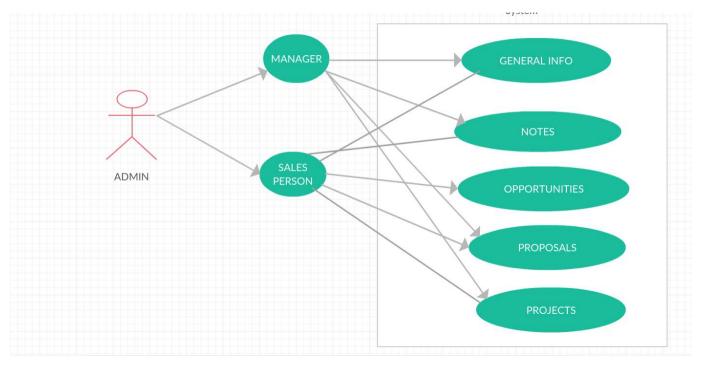
Database Driver Layer: This layer contains the driver software required by the application to connect, store, retrieve and modify the stored data.

Application Layer: This layer contains the core implementation of the sales management portal including the front end web design, access control, etc.

Web Interface Layer: This layer of code exists in the web server that is selected for this project. It contains the web pages (ASPX) of the application which interacts with the front-end browsers.

Web Browser: The web browser that the user interacts with the sales management portal.

## 2.2 Application Information flows



## 2.3 Interactions with other Projects (if Any)

This implementation is stand alone and does not interact with any other projects.

#### 2.4 Interactions with other Applications

This implementation is stand alone and does not interact with any other applications.

## 2.5 Capabilities

- The sales management portal allows users to have different roles and thereby presents different views to the users.
- The portal allows the sales representative to add new proposals into the system.
- The portal allows the manager to accept / decline the proposals added by the sales representative.
- The portal allows the manager to search for clients in the database

#### 2.6 Risk Assessment and Management

The entire sales management portal is web based and can be hosted on multiple remote servers. The users accessing the application requires a basic browser to access the services provided by this portal.

#### 3 Project Requirements

#### 3.1 Identification of Requirements

#### <GSU-SMP\_SP2016-1 Admin -0001>

This system should have the three schema, one for Admin, Manager and for Sales Person(s)

Implementation: Mandatory

#### <GSU-SMP SP2016-1 Admin -0002>

This system should allow the admin to manage all the users

Implementation: Mandatory

#### <GSU-SMP\_SP2016-1 Admin -0003>

This system should allow the admin to create login credentials for himself

Implementation: Mandatory

## <GSU-SMP\_SP2016-1 Admin -0004>

This system should allow the admin to create login credentials for details for the manager

Implementation: Mandatory

#### <GSU-SMP\_SP2016-1 Admin -0005>

This system should allow the admin to create unique login credentials for the sales person(s)

Implementation: Mandatory

## <GSU-SMP\_SP2016-1 Admin -0006>

This system should allow the admin to create login credentials for the sales person(s)

Implementation: Mandatory

#### <GSU-SMP\_SP2016-1 Manager -0007>

This system should allow the manager to reset his default password generated by the admin

Implementation: Mandatory

#### <GSU-SMP\_SP2016-1 Manager -0008>

This system should allow the manager to manage the general information of the client(s)

Implementation: Mandatory

#### <GSU-SMP\_SP2016-1 Manager -0009>

This system should allow the manager to manage contacts for each client

Implementation: Mandatory

#### <GSU-SMP\_SP2016-1 Manager -00010>

This system should allow the manager to give announcements for each clients via notes to all the sales person(s) regarding the important updates of the clients

Implementation: Mandatory

#### <GSU-SMP\_SP2016-1 Manager -00011>

This system should allow the manager to add the new opportunities from the clients

Implementation: Mandatory

## <GSU-SMP\_SP2016-1 Manager -00012>

This system should allow the manager to view the new opportunities from the clients

Implementation: Mandatory

## <GSU-SMP\_SP2016-1 Manager -00013>

This system should allow the manager to accept the proposals generated from the opportunities of the clients

Implementation: Mandatory

## <GSU-SMP\_SP2016-1 Manager -00014>

This system should allow the manager to edit the general information of the client

Implementation: Mandatory

#### <GSU-SMP\_SP2016-1 Manager -00015>

This system should allow the manager to delete the information of the client which is not necessary

Implementation: Mandatory

#### <GSU-SMP\_SP2016-1 Manager -00016>

This system should allow the manager to be able to change the status of the proposal once accepted

Implementation: Mandatory

#### <GSU-SMP\_SP2016-1 Manager -00017>

This system should allow the manager to change/add the deadline of the project that has accepted by him

Implementation: Mandatory

#### <GSU-SMP\_SP2016-1 Manager -00018>

This system should allow the manager to reject any proposal under any circumstances

Implementation: Mandatory

#### <GSU-SMP\_SP2016-1 Manager -00019>

This system should allow the manager to update the project status

Implementation: Mandatory

## <GSU-SMP\_SP2016-1 Manager -00020>

This system should allow the manager to view the list of clients under each sales person(s)

Implementation: Mandatory

#### <GSU-SMP\_SP2016-1 Sales Person -00021>

This system should allow the sales person(s) to reset his default password generated by the admin

Implementation: Mandatory

#### <GSU-SMP\_SP2016-1 Sales Person -00022>

This system should allow the sales person to manage contacts for each client

Implementation: Mandatory

## <GSU-SMP\_SP2016-1 Sales Person -00023>

This system should allow the sales person(s) to view notes for each clients via posted by the manager regarding the important updates of the clients

Implementation: Mandatory

#### <GSU-SMP SP2016-1 Sales Person -00024>

This system should allow the sales person(s) to add the new opportunities from the clients

Implementation: Mandatory

#### <GSU-SMP SP2016- Sales Person -0025>

This system should allow the sales peron(s) to accept the proposals generated from the opportunities of the clients only with the manager consent

Implementation: Mandatory

#### <GSU-SMP\_SP2016-1 Sales Person -00026>

This system should allow the sales person(s) to edit the general information of the client

Implementation: Mandatory

#### <GSU-SMP\_SP2016-1 Sales Person -00027>

This system should allow the sales person(s) to delete the information of the client which is not necessary

Implementation: Mandatory

#### <GSU-SMP\_SP2016-1 Sales Person -00028>

This system should allow the sales peron(n) to be able to change the status of the proposal once

accepted by the manager

Implementation: Mandatory

#### <GSU-SMP\_SP2016-1 Sales Person -00029>

This system should allow the sales person(s) to change/add the deadline of the project that has accepted by the manager

Implementation: Mandatory

#### <GSU-SMP\_SP2016-1 Sales Person -00030>

This system should allow the sales person(s) to update the proposal

Implementation: Mandatory

#### <GSU-SMP SP2016-1 Sales Person -00031>

This system should allow the sales person(s) to view the project status

Implementation: Mandatory

#### <GSU-SMP SP2016-1 Sales Person -00032>

This system should allow the sales person(s) to view all the list of clients he handles or takes care

Implementation: Mandatory

of

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

#### 3.3 Security and Fraud Prevention

For any company security and fraud prevention is the top most concern. The design and implementation of this project provides the following security measures.

- The admin, Manager, Sales Representative each is provided with a different username and password to login into the portal.
- The database connection is made through a secured manner to prevent man in the middle attacks.
- The current design can be easily extended such that the connection made to the server is encrypted.

#### 3.4 Release and Transition Plan

No upgrades to the portal is planned at this time and therefore no transitions are anticipated.

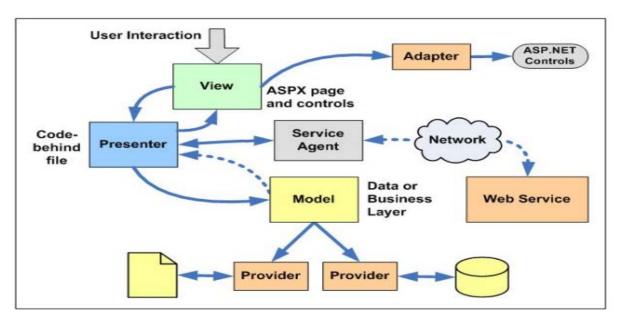
#### 4 Project Design Description

This project implements the following modules.

**Manager Module:** It allows the manager to look out for all sales information, client details, sales staff info, contact details, check the progress of all projects, etc.

**Sales Personnel Module:** It allows all the sales staff to view and enter sales details including the clients they handle which can later be reviewed by the manager and decide either to accept or reject the sales proposals..

**Admin Module:** This module allows the admin to monitor all the managers and sales personnel module settings, ability to create / delete new or existing members of the portal.



## 5 Internal/external Interface Impacts and Specification

#### 6 Design Units Impacts

The following are the list of functional design units.

- Database Architecture and Design.
- Front End Web Pages Design

	Column Name	Data Type	Allow Nulls
P	ID	int	Г
	ProjectName	varchar(300)	Г
	DateAdded	varchar(200)	Г
	ProjectAmount	float	Г
	TotalRevenue	float	Г
	ProjectDuration	varchar(300)	F
	ProjectStatusID	int	Г
	LaunchDate	varchar(200)	Г
	ContactID	int	Г
	Description	varchar(MAX)	Г
	ProjectNotes	varchar(300)	Г
			Г

	Column Name	Data Type	Allow Nulls
P	ID	int	Г
	FirstName	varchar(200)	Г
	LastName	varchar(200)	Г
	Title	varchar(200)	Þ
	WorkPhone	varchar(100)	Г
	MobilePhone	varchar(100)	Г
	Fax	varchar(100)	Г
	eNews	bit	Þ
	EmailID	varchar(100)	Г
			Г

	Column Name	Data Type	Allow Nulls
P	ID	int	Г
	FirstName	varchar(200)	Г
	LastName	varchar(200)	Г
	EmailID	varchar(200)	Г
	StateID	int	Г
	CityID	int	Г
	Address	varchar(200)	Г
	isActive	bit	Г
	UserID	int	Г
	CountryID	int	Г
	Gender	int	Г
			Г

Column Name	Data Type	Allow Nulls
ID	int	Г
ProposalName	varchar(300)	Г
DateAdded	varchar(200)	Г
ChangetoClose	float	F
EstimatedBudget	float	Г
TotalRevenue	float	Г
ProposalDuration	varchar(300)	F
ProposalAmount	float	Г
ProposalStatusID	int	Г
RejectionReason	varchar(MAX)	F
ContactID	int	г
Description	varchar(MAX)	Г
ProposalNotes	varchar(300)	г
AccountManagerID	int	F
isConverted	bit	г
		Г

ID Opportunit AddedBy DateAdded		int varchar(200) int	F F
AddedBy DateAdded			
DateAdded		int	_
			M
	1	varchar(200)	Г
Changeto(	Close	float	F
Estimated	Budget	float	Г
Opportunit	yDuration	varchar(300)	F
Opportunit	yTypeID	int	F
ContactID		int	Г
Description	1	varchar(MAX)	Г
Notes		varchar(MAX)	F
isConverte	d	bit	Г
			Г

	Column Name	Data Type	Allow Nulls
P	ID	int	Г
	CompanyName	varchar(200)	Г
	Туре	varchar(200)	Г
	Telephone	varchar(200)	Г
	Industry	varchar(200)	Г
	Fax	varchar(200)	Г
	StateID	int	Г
	CityID	int	Г
	CountryID	int	Г
	Source	varchar(200)	Г
	ZipCode	varchar(10)	F
	Division	varchar(200)	Г
	WebSite	varchar(200)	Г
	Description	varchar(MAX)	Г
	Address	varchar(MAX)	Г
			Г

ID     int     Γ       ClientID     int     Γ       SalesPersonID     int     Γ
SalesPersonID int $\Gamma$
г

#### 6.1 Database Architecture and Design.

The ADO.NET tool is used to design the database. This tool is an excellent resource to access data from the database, manipulate it and sending the data to any application in the XML format. Also ADO.NET uses the Microsoft .NET framework and therefore makes it much easier to develop database application using the .NET language. There are four main classes in the .NET framework that handles the database interactions.

- 1. Connection Object
- 2. Command Object
- 3. DataReader Object
- 4. Data Adapter Object

The Connection Object establishes a unique connection with the database by opening a connection between the .NET application and the database depending on the parameter specified in the Connection String. When the connection is established, the program can continue to retrieve and manipulate data using SQL commands.

The Command Object handles the execution of SQL statements on the Connection Object instance created above. A reset set is returned on a successful execution of the SQL statement.

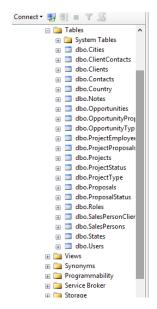
The DataReader Object is created by calling the ExecuteReader method of the Command Object. This object is a read-only retrieval of the result set. The Read() method in the DataReader object reads the next row in the table and always moves forward to the next row, if it exists.

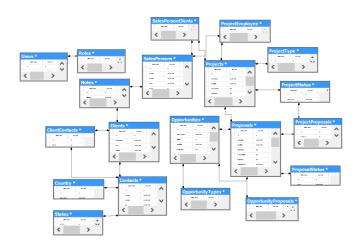
The DataAdapter object performs the Select, Insert, Update and Delete operations on the data source. The SelectCommand property of the DataAdapter retrieves data while the InsertCommand, UpdateCommand and DeleteCommand manipulates the data in the data source.

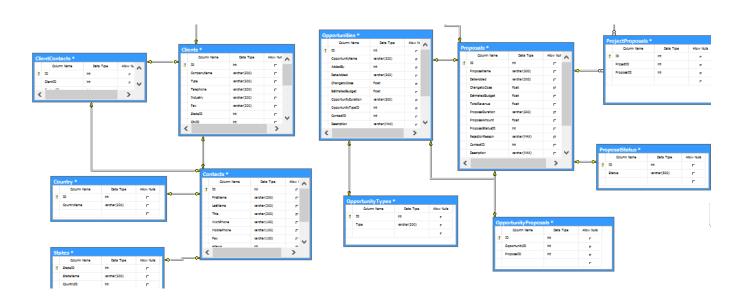
#### 6.1.1 Functional Overview

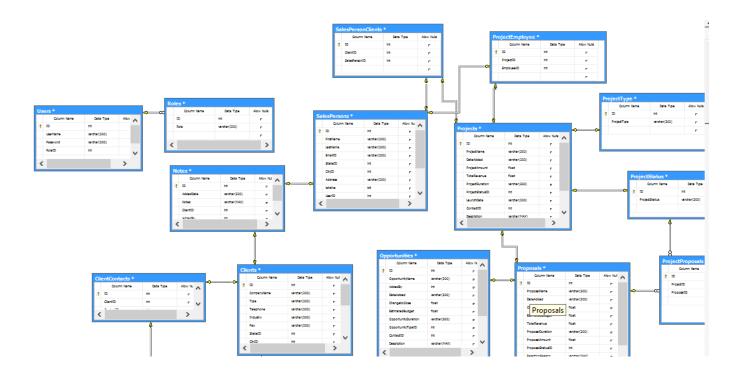
The database architecture and design captures all the data interactions and storage between the admin, manager and sales executive.

## **ER Diagrams:**









#### 6.1.2 Impacts

Any new field that needs to be tracked in the portal may require changes to the existing database design.

## 6.1.3 Requirements

This system should have the three schema, one for Admin, Manager and for Sales Person(s)

This system should allow the sales person(n) to edit the general information of the client

This system should allow the sales person(n) to delete the information of the client which is not necessary

This system should allow the sales peron(n) to be able to change the status of the proposal once accepted by the manager

This system should allow the sales person(n) to change/add the deadline of the project that has accepted by the manager

This system should allow the sales person(n) to update the proposal

This system should allow the sales person(n) to view the project status

This system should allow the sales person(n) to view all the list of clients he handles or takes care of.

#### 6.2 Front End Web Pages Design

In this project, the front end web pages are developed using a confluence of emerging programming languages such as HTML, CSS, Bootstrap, JQuery and Javascript. A brief overview of each of these languages is described next.

#### **Hyper Text Markup Language (HTML)**

HTML is currently the most popular language that is widely used to present information such as text, images, graphics, etc to the user. It has now become standard in presenting the information to the user or present link to other websites in general. HTML is not a programming language but instead a markup languages in which the information is presented in a series of elements that are separated by delimiters. Each element has specific properties that can be set in order to visualize the data accordingly. The rules of HTML language makes the implementation platform independent and offers great flexibility for the developers in coming up with novel ways in presenting their information. The core concept of HTML language is its tags that makes the information render attractive, when viewed on any device. These tags are case-insensitive and are used to display information on the webpage accordingly. Some of the examples of these tags are presented below.

The starting and ending tag of a paragraph.

<div></div>
The starting and ending tag of a division element.

<a></a> The anchor tags to specify external links.

<button></button> Adds a button to the web page

Adds a list to the web page

#### **Cascading Style Sheets (CSS)**

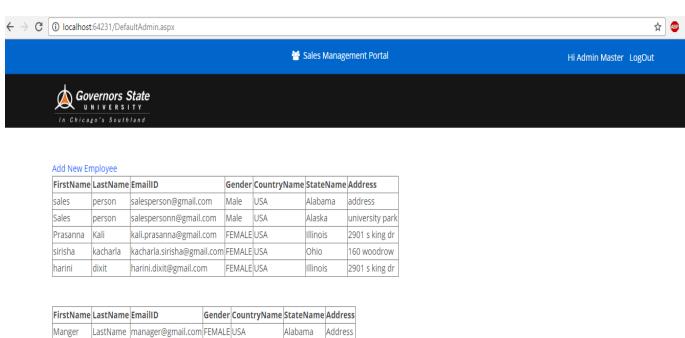
CSS is designed primarily to separate the document content from that of its presentation aspects such as layout, color, margins etc. This separation enables multiple HTML pages to share the same style sheet and hence minimizes code repeatability and eliminates code complexity. Similarly, for a project that span multiple pages, changes to each page can be made by making a small change to the CSS file. The CSS specification also introduces the rule of priority, so that in the event multiple CSS files are loaded into a single HTML page, the CSS that has highest priority takes precedence over other style sheets.

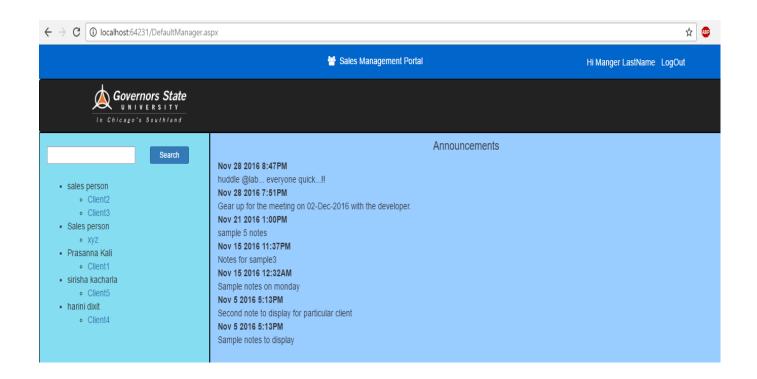
## **JQuery**

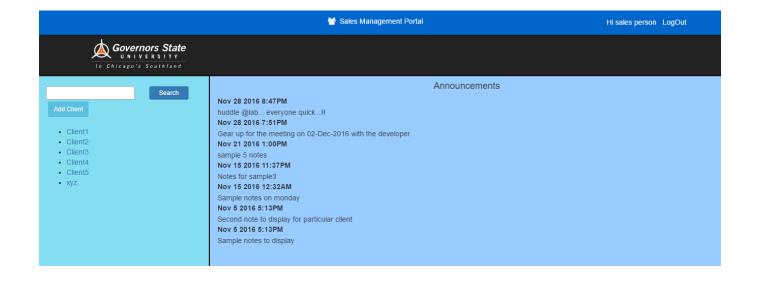
JQuery is a document manipulation library that provides simple means to add event handlers to the elements of the HTML page. This way the code that handles events ( such as when the user clicks a button) can be separated from the html code. The

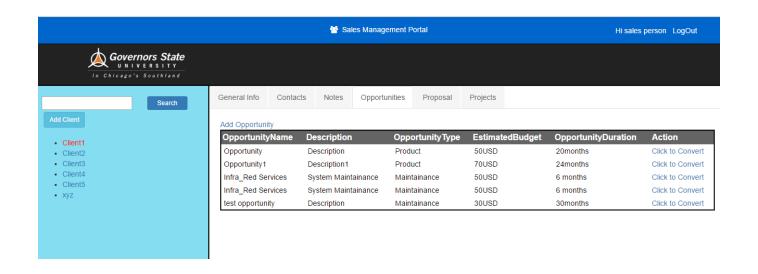
JQuery engine handles the web browser dependencies since different browsers react differently to events on the HTML pages and therefore makes the life of the programmer easier. The architecture of this language makes it easy to add new events and methods and the changes can be released as a plugin.

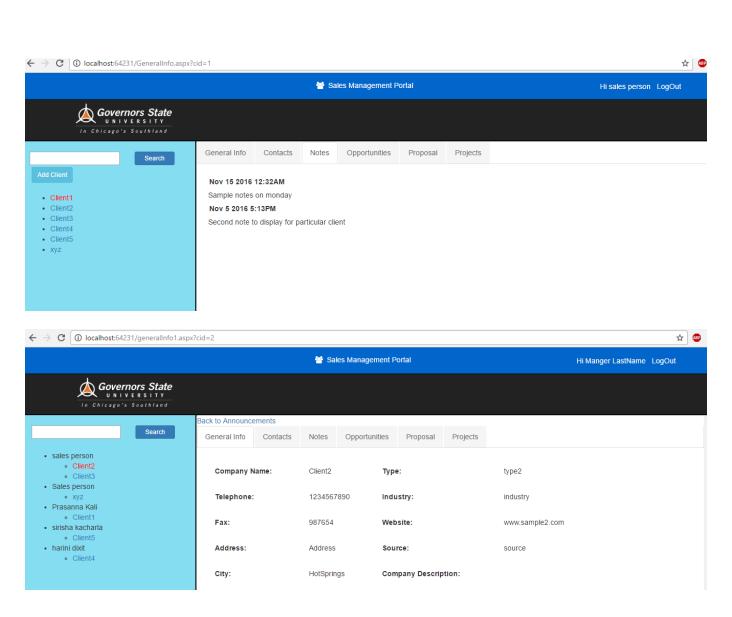
#### 6.2.1 Functional Overview

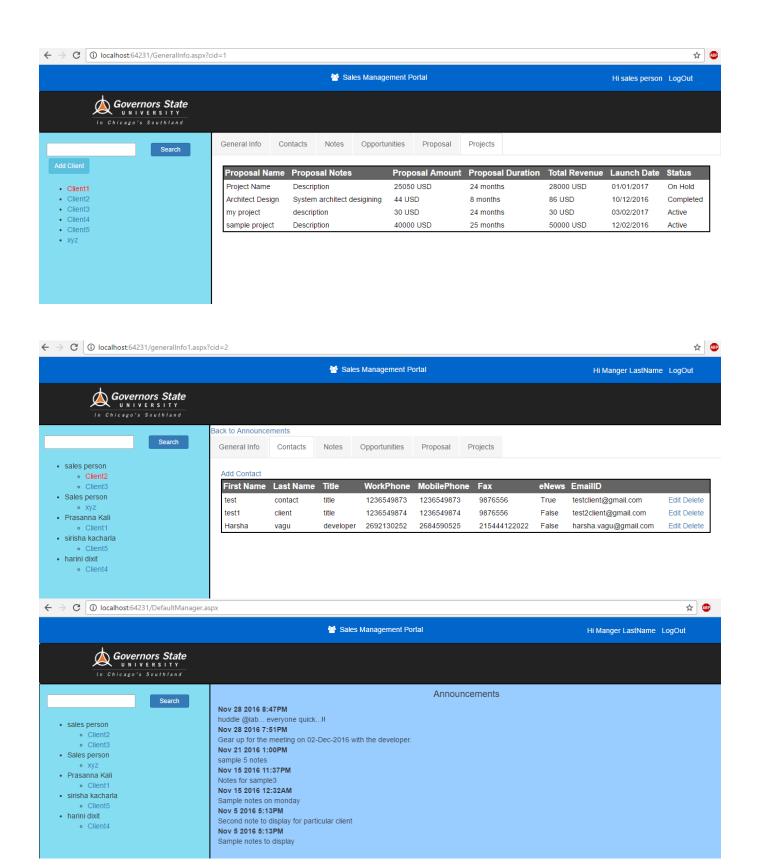


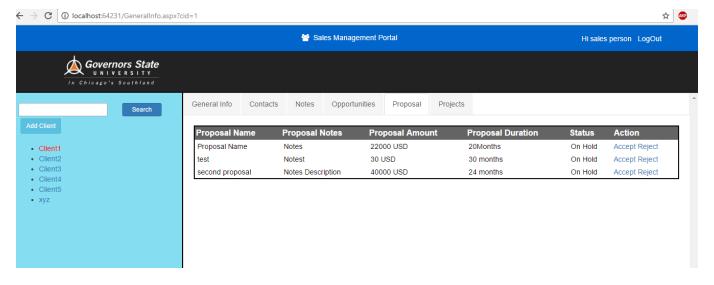












#### 6.2.2 Impacts

Any new interfaces to visualize the web pages will require one or many changes to the HTML pages.

#### 6.2.3 Requirements

This system should allow the admin to manage all the users

This system should allow the admin to create login credentials for himself

This system should allow the admin to create login credentials for details for the manager

This system should allow the admin to create unique login credentials for the sales person(s)

This system should allow the admin to create login credentials for the sales person(s)

This system should allow the manager to reset his default password generated by the admin

This system should allow the manager to manage the general information of the client(s)

This system should allow the manager to manage contacts for each client

This system should allow the manager to give announcements for each clients via notes to all the sales person(s) regarding the important updates of the clients

This system should allow the manager to add the new opportunities from the clients

This system should allow the manager to view the new opportunities from the clients

This system should allow the manager to accept the proposals generated from the opportunities of the clients

This system should allow the manager to edit the general information of the client

This system should allow the manager to delete the information of the client which is not necessary

This system should allow the manager to be able to change the status of the proposal once accepted

This system should allow the manager to change/add the deadline of the project that has accepted by him

This system should allow the manager to reject any proposal under any circumstances

This system should allow the manager to update the project status

This system should allow the manager to view the list of clients under each sales person(n)

This system should allow the sales person(n) to reset his default password generated by the admin

This system should allow the sales person to manage contacts for each client

This system should allow the sales person(s) to view notes for each clients via posted by the manager regarding the important updates of the clients

#### 7 Open Issues

#### 8 Acknowledgements

I would like to express my gratitude to my professor Alex, Liu for the support and guidance he provided during every step of this project. This work would not be possible for the dedication and hard work of my team member Prasanna Valavala. I would also want to thank my husband Dr. Mukesh Chippa for providing valuable suggestions and insights in the design phase of this project. Finally, I express gratitude to the Department of Computer Science at Governors State University for providing me an opportunity to pursue this project.

## 9 References

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## 10 Appendices

None