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CRM Portal

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CRM PORTAL

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GRADUATE CAPSTONE SEMINAR PROJECT

Submitted in partial fulfillment of the requirements

For the Degree of Master of Science,

With a Major in Computer Science

Governors State University
University Park, IL 60484

2018

ABSTRACT

The main purpose of this project is to manage the information of the company's existing and potential customers. Customer Relationship Management (CRM) Portal is a web application that enables the enlisted with user credentials to login and access the application to add the customers information. This Portal contains three roles: sales, supervisor or Manager, and an admin role handles the database.

CRM Portal contains modules as below.

- Contact Management.
- Notes Management.
- Opportunity Management.
- Proposals Management.
- Project Management.

The supervisors can track all the information uploaded by the sales staff through the modules. This helps the company to grow their business as customers interests and sales will be tracked by the manager. It helps the company to improve their workflow at the same time.

The website will be mobile friendly and responsive to different screen resolutions. It also uses the Bootstrap mapping technology to show interactive screens. As the CRM Portal contains different modules, specific information can be stored in those modules so that the Portal looks user friendly to all users.

The technologies and tools are to be used in our project is as follows:
Server side: ASP.NET, C#.Net, SMTP Server with 587 port number.
Client Side: jQuery, Bootstrap, Css3, HTML5, Few 3rd party scripts and styles
Database: SQL SERVER

Table of Content

1   Project Description

This CRM Portal is developed for KB Insurance Company to manage the information of the company's existing and potential customers, and it is designed to create a continuous work flow between salespersons and manager. The main aim is to track the company sales and salesperson capabilities by the manager. The admin will provide credentials for salesperson to get into portal page. The salesperson will add customer details that will be accessible to manager to give corrections or instructions based upon dependency. Here customers will get the welcome notification from KB Insurance Company after adding contact details.

After adding the contacts, the proposals will be created by the salesperson who will be checked by manager in manager portal. As the last step, the project or quote will be created with price and details. Salesperson can send directly files to the manager through file upload option. The manger will check the "view project" section and notify to the salesperson with comments on it. The manager can view details of all customers at one place. The company will know who the potential customers are for the company and whose policies are to expire soon.

1.1   Competitive Information

This is the online web portal designed to access customer details and track sales information for the company. It is like GEICO, AT&T insurance and LIC services. And there are numerous online sites with these features and functionalities.

1.2   Relationship to Other Applications/Projects

This application has a relationship with SMTP server from Google third party.

1.3   Assumptions and Dependencies

All customers and policies information are valid. The project using single admin currently, we will do multiple admins to access database in the future.

- The internet connection is the dependency for this project.
- Online support will be available by contacting the admin.
- Database server will be back up as necessary.
- SMTP server will support for all mails.

1.4   Future Enhancements

Enhancements for the future release should include the items as below:

- We will do SMS integrations with enrolls and expirations to the customers.
- Direct live chat will be integrated between both sales and manager.
- We will do coupons for customers to receive discounts.
- Sales statistics will be displayed in the dashboard.
- To measure the working hours by logins and logouts by timestamp.

1.5 Definitions and Acronyms

Admin: Who handles all login details of the sales person and manger.

Sales Person: The person responsible for all customers details and project information.

Manager: The person responsible for tracking and analyzing the sales.

ASP.NET: It is an open source web framework for building web apps and websites.

C#.NET: It is a multi-paradigm programming language about strong typing, authoritative, declarative, functional and object-oriented programming disciplines.

SMTP SERVER: Simple Mail Transfer Protocol which uses 587 port number.

JQUERY: jQuery is a cross-platform JavaScript library designed to simplify the client-side scripting of HTML.

BOOTSTRAP: Bootstrap is a free and open-source front-end library for designing websites and web applications.

CSS: Cascading Style Sheets is a style sheet language used for describing the presentation of a document written in a markup language like HTML.

HTML: Hypertext Markup Language is the standard markup language for creating web pages and web applications.

SQL SERVER: Microsoft SQL Server is a relational database management system developed by Microsoft.

SQL: Structured Query Language.

ASP: Active Server Pages.

Use Case Diagram: A use case diagram, at its simplest is a representation of a user's interaction with the system that shows the relationship between the user and the different use cases in which the user is involved.

CRM: CRM stands for customer relationship management.

CTS: Common Type System in .Net framework.

CLR: Common Language Runtime.

CAS: Code Access Security.

2   Project Technical Description

In the portal we used .Net framework and SQL Server to develop the application. And the data we entered is saved into the database. The project we designed has the interoperability with the .net framework. .Net framework has a common type system (CTS) that defines all data types and programming structures gives CLR. And this CTS and CLR are used in .Net framework to give type safety. This application gives security, Portability and performance to the project by .Net framework. Asp .Net has the elements with HTML, CSS, JavaScript in the page controls. It has the validation controls, dataset controls, user authentication with logins. The application has main modules named as sales page where salesperson can add new contacts and create project. The manager module can access the sales by the database server.
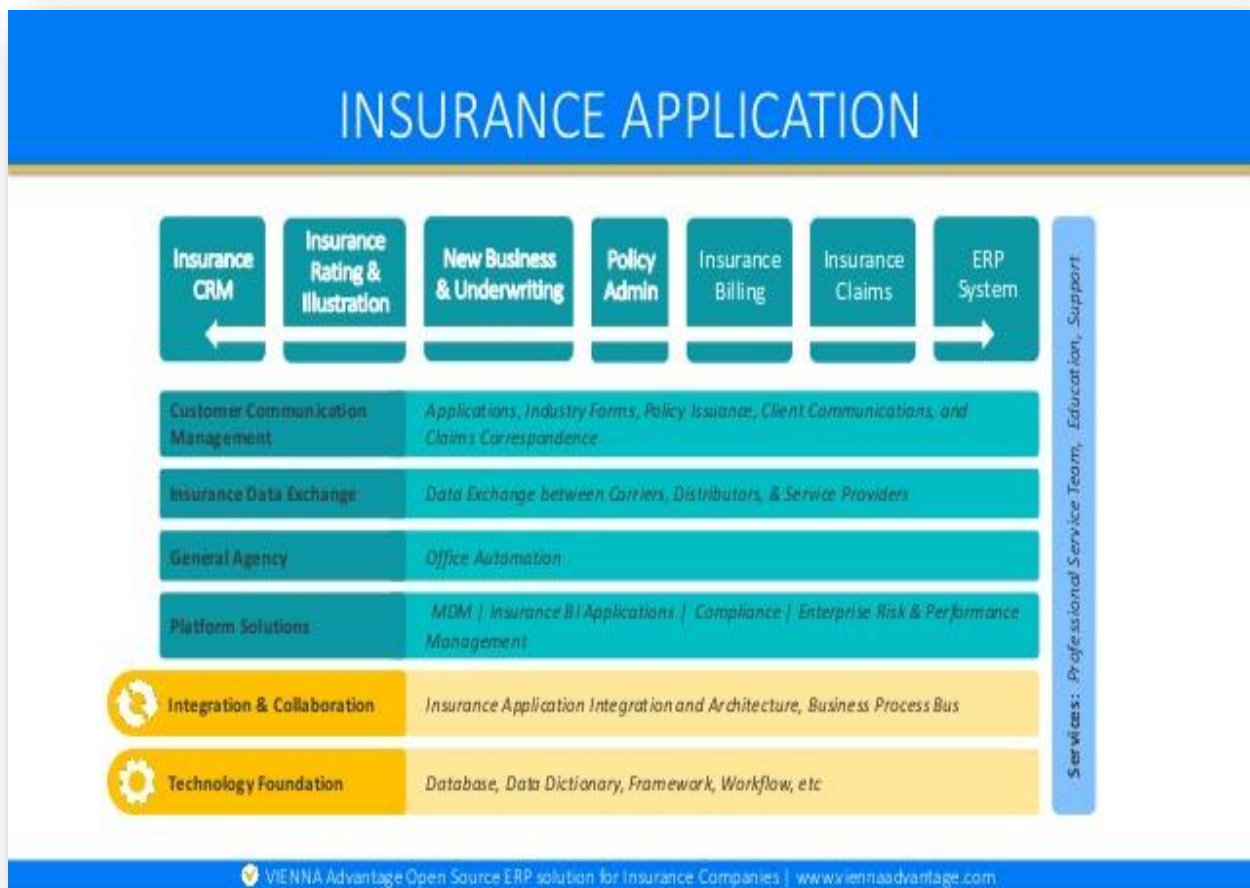
2.1 Application Architecture
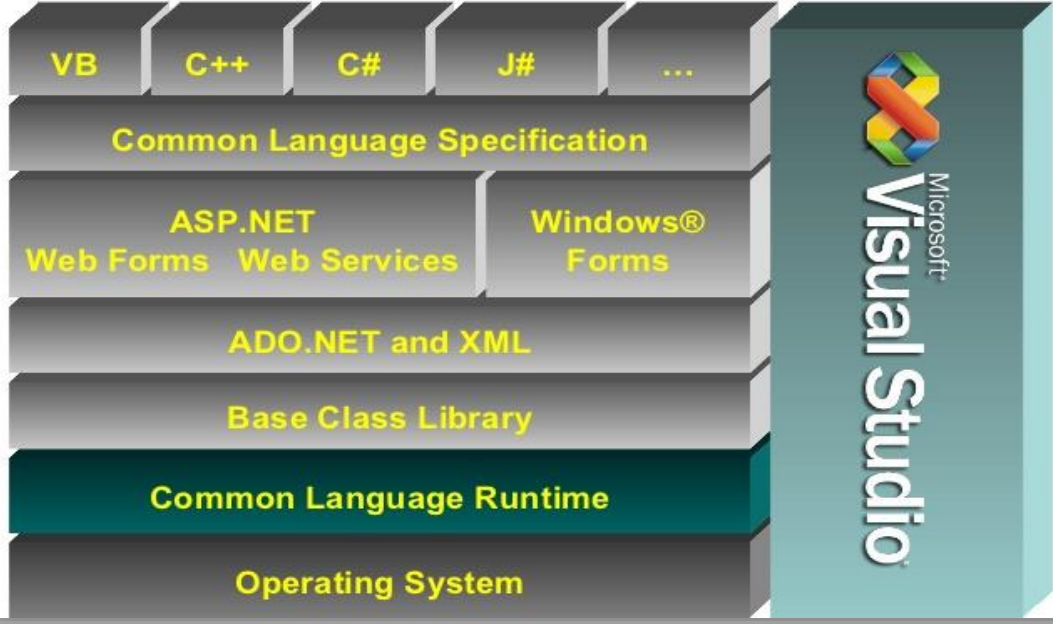

Fig1: CRM Insurance Application
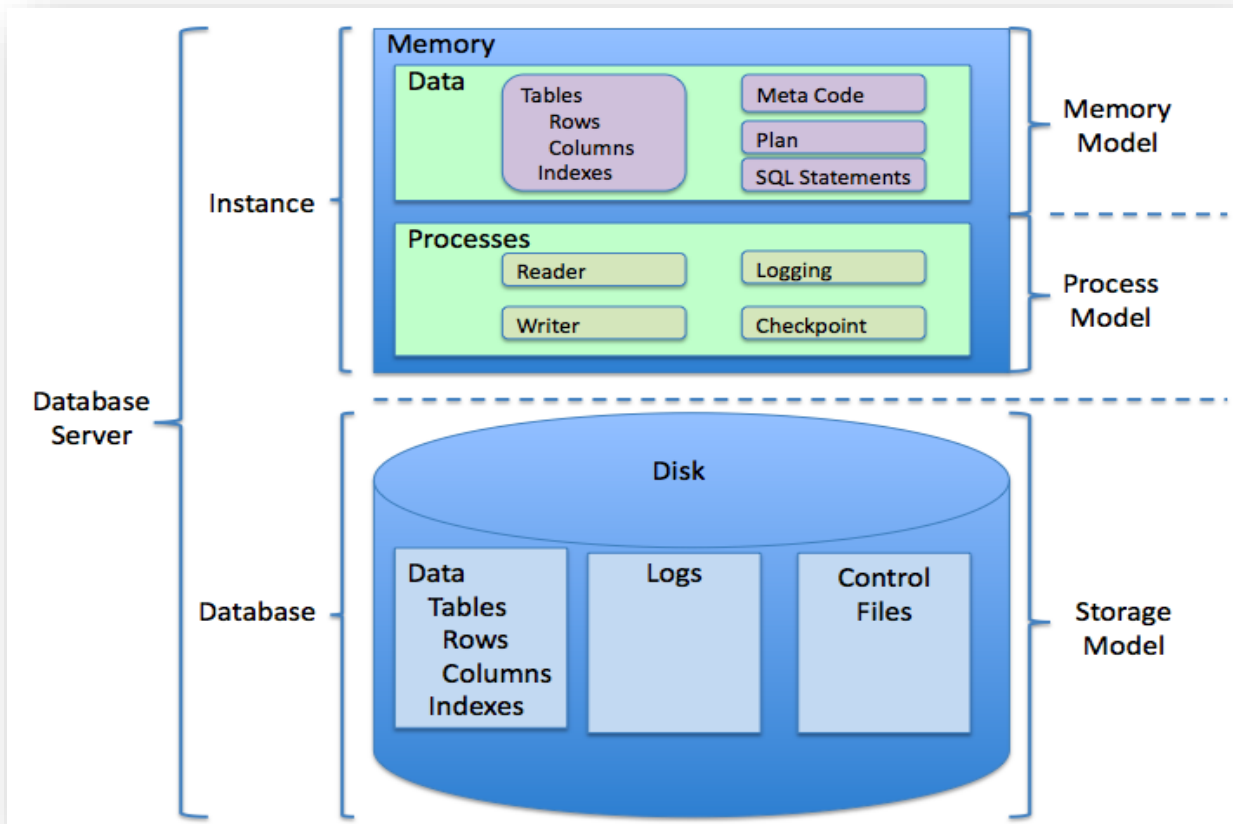
Fig2: .NET Framework Platform

Fig3: RDBMS Architecture.

2.2 Application Information flows

Admin-Sign in -Sales- Manage sales credentials-Staff- Manage sales managers credentials- Manage Announcement-Sign out.

Sales-Login-Home-Contacts-Contacts Management-Add Contacts-Welcome Mail-Notes-Add Notes-Opportunity-Add Opportunity-Proposals-Add proposals-Projects-Choose File-Add Project-Sign Out.

Manager-Login-Home-View Contacts-View Proposals-Comments-View Projects-Download File-Comments-Sign Out.

2.3 Interactions with other Projects

The project doesn't have any interactions with other projects.

2.4 Interactions with other Applications

The project interacts with Google SMTP server. It always need internet connectivity to send out e-mails.

2.5   Capabilities

Admin:
- Add sales
- Edit, delete sales details
- Add Manager
- Edit, delete Managers details
- Add Announcements
- Edit, delete Announcements

Salesperson:
- Add contacts
- Edit, delete contacts
- Add notes
- Edit delete notes
- Add Opportunity
- Edit, delete opportunity
- Add proposals
- Edit, delete proposals
- Add projects
- Edit, delete projects
- Upload files
- Download files

Manager:
- View contacts
- Search contacts
- View proposals
- Edit comments on proposals
- View projects
- Search projects
- Download project
- Edit Comment on project
- Download files

2.6   Risk Assessment and Management

- If the client information is not valid, we need to prevent the risk before adding the data.
- In case of power failure, we need to back up the data before loss or damage.
- In case of database breakdown, then alternative database server will be used.

3   Project Requirements

3.1   Identification of Requirements

< **GSU-GS_SP2018-10 Admin-000001**">
 Admin can create login IDs to the sales representatives and mangers.

< GSU-GS_SP2018-10 Admin-000002">
  Admin can do announcements to the sales representatives and managers

< GSU-GS_SP2018-10 Admin -000003">
  Admin can take care about the database and portal's technical issues.

< GSU-GS_SP2018-10 Sales person -000004">
  Sales person will add the customer information into the contacts.

< GSU-GS_SP2018-10 Sales person -000005">
  Sales person can make the notes about the customer.

< GSU-GS_SP2018-10 Sales person -000006">
  Sales person will add some opportunities to the customer.

< GSU-GS_SP2018-10 Sales person -000007">
  Sales person will make some proposals to the manager about the customer.

< GSU-GS_SP2018-10 Sales person -000008">
  Sales person will make the policy projects.

< GSU-GS_SP2018-10 Manager -000009">
   Manager can see the contacts which added by the sales person.

< GSU-GS_SP2018-10 Manager -000010">
   Manager can see the proposals which made by different sales persons and manager can do comment on those.

< GSU-GS_SP2018-10 Manager -000011">
   Manager can see the policy projects which added by the sales persons. And manager can do comment on the projects

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

Admin only can create the credentials for the sales representative and mangers. As a rule, salespersons will add customer information into the portal.

On the interval base the database will be backup and performance of the application also will be monitored.

3.3 Security and Fraud Prevention

Security will be take care by the Admin. The Admin can only give the login credentials to the authorized representatives. Sales representatives only can contact the customers so fraud can be preventing here.

3.4 Release and Transition Plan

Sales representatives and managers will always work together on a customer's projects through the portal. So, manager can give the comments to the different sales representatives every time.

4 Project Design Description

Customer contacts will always have connected to sales person and the manager. So, manager can look at the customer details. And sales person and the manger will always need to login into the portal with their unique login forms. The information

which added by the sales person is can see by the manager. Admin announcements will directly come into the sales person and manager pages.
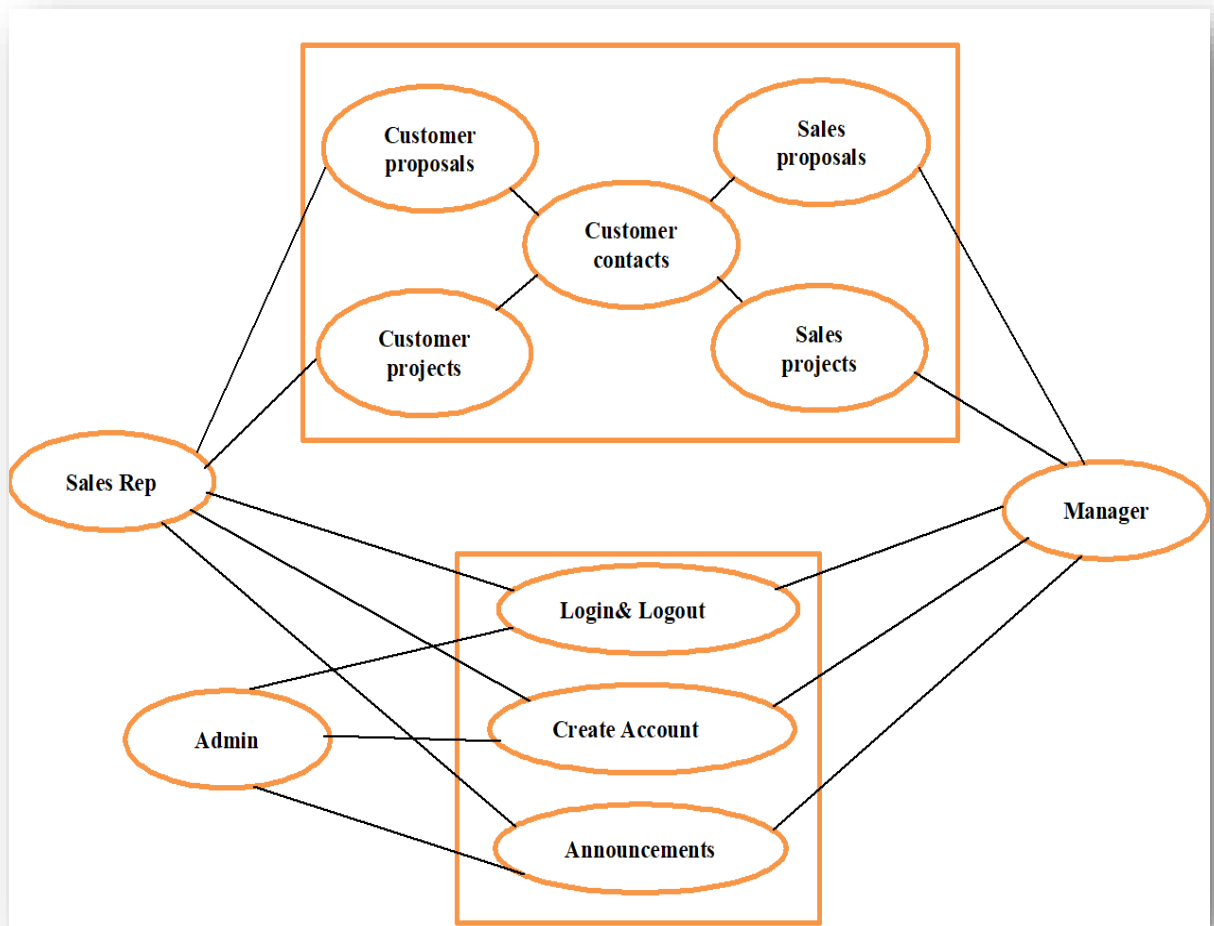
Fig4: Use Case Diagram

8

5   Internal/external Interface Impacts and Specification

In this project internally, we interfaced bootstrap to makes the application responsive, initiative and attractive. Externally we are interfaced Google SMTP Server with 587 port number. Which made communication strong between the company and the customer. SMTP server every time sends the thankyou email to the customer when the sales person adds the customer data into the database.

6   Design Units Impacts

Announcements can make impact on each person's home page on the portal. Due to this, admin can announce the important information to the sales persons or mangers like about holidays or portal issues or any technical issues. When come to the manager, manger can make a impact on sales person's customer information and their policy's, and manager have the access to do comment on the policy and can view and download the policy which are uploaded by the sales person.

6.1   Functional Area A/Design Unit A

This application database contains contacts table, notes table, proposals table, opportunities table and projects table.
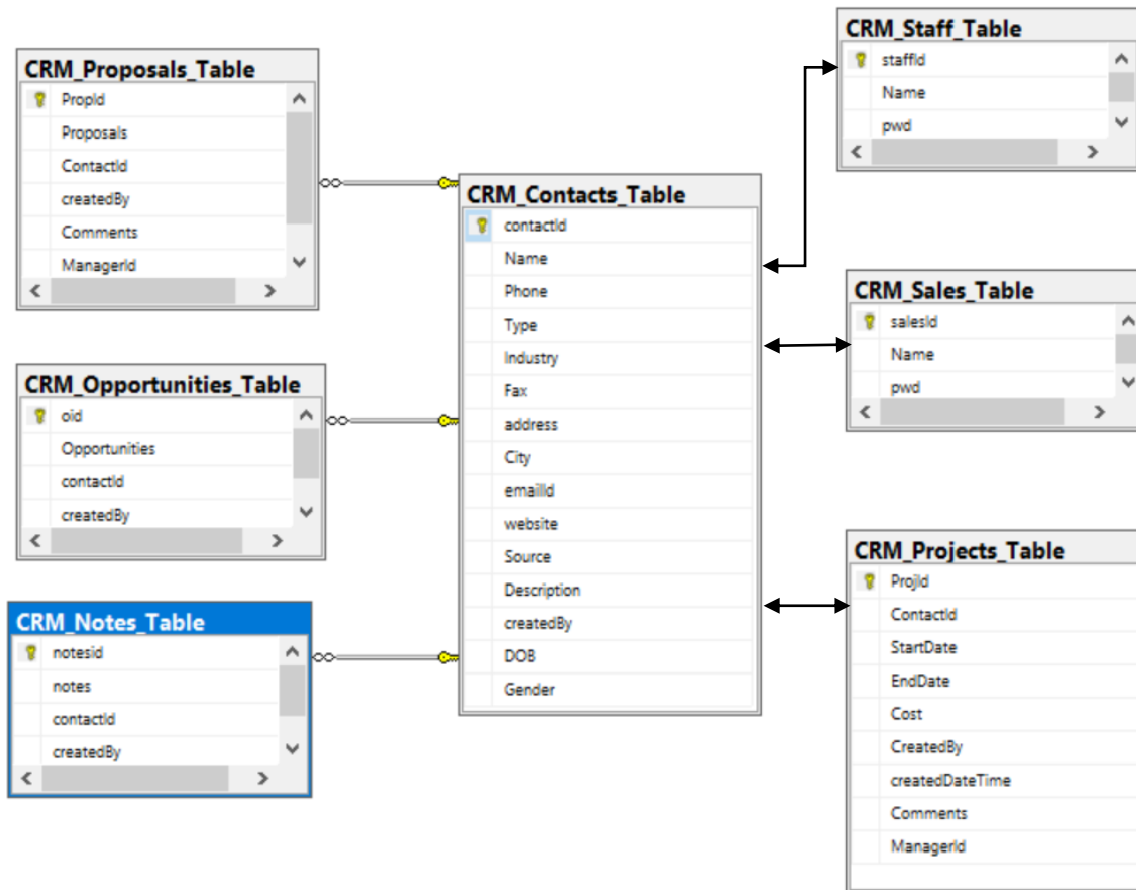
Fig5: Database Diagram

Contacts table consists of all the information about the customer like name, phone, address, industry, email etc. Admin table consists of all the login credentials like user id and password. Sales table consists sales id and password and as

similarly staff table also. Project table manages the information when the sales person adds the project. Proposal table manages when the sales person adds it.

6.1.1 Functional Overview

In this application admin, sales person and manager are the three main functionalities. Admin adds the staff to the portal and made announcements to the portal. Sales person will collect the customer information and manages the project. Manager has the access to view the contacts information and can give a comment to the sales person.

6.1.2 Requirements

Software requirements:
- Microsoft visual studio 2015
- Microsoft SQL Server management studio 2015
- ASP.NET, C#.Net

Hardware requirements:
- RAM: 2GB RAM or above
- Hard Disk: 20 GB or above
- Platform: Windows, Mac, Linux.

7 Open Issues

Currently we do not have any open issue.

8 Acknowledgements

We would like to sincere thanks to professor Alex Liu for continues guidelines, support and encouragement in all phases of the project. And we want to thank for the help of all the blogs, organizations and some books.

9   Screenshots:

Home page of the CRM Portal:
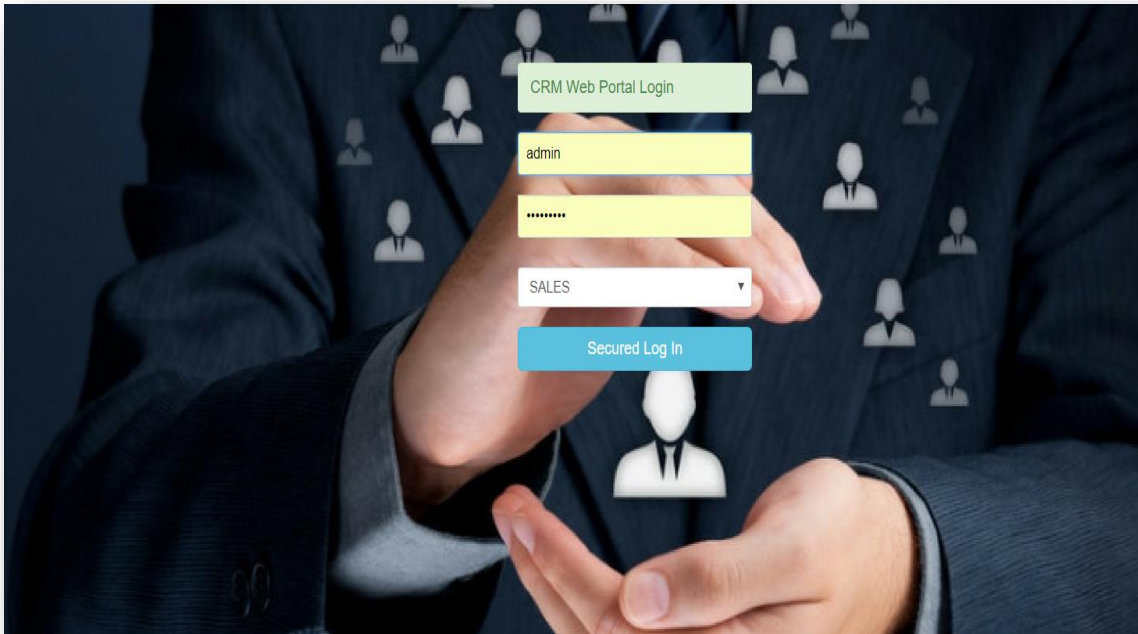
This is the home page of the project, from here salespersons, managers and admin can login to the portal with their unique login details. Username and password will be provided to each person. And that person can login into the portal by selecting their character as manager salesperson or admin in the drop down as below.
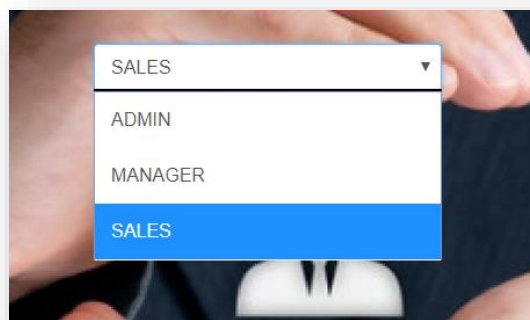
Dropdown list to choose the character.

Admin Home page:
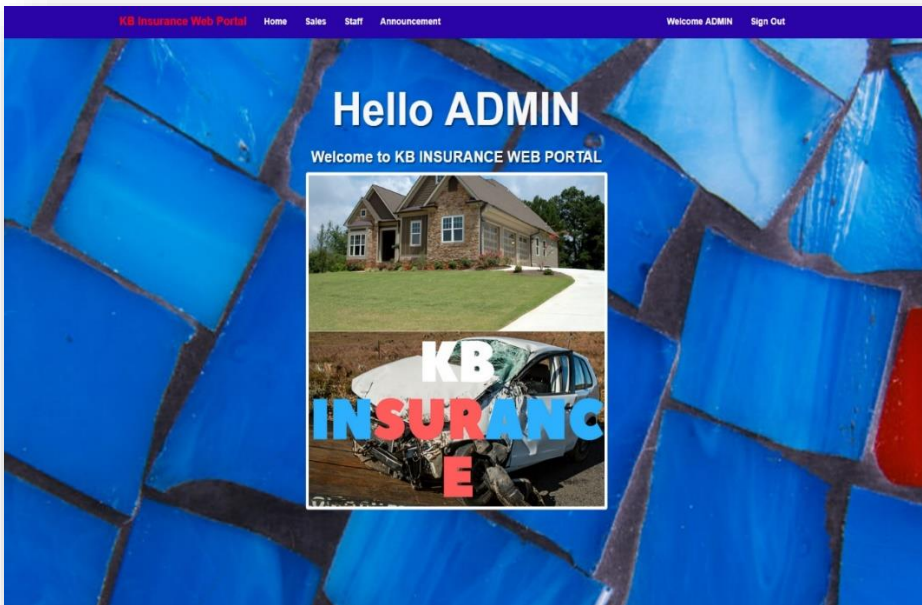
After admin login into the admins page with admin's unique login credentials the above admin's page will appears. In the admin's navigator bar there are sales, staff and announcements. With these admin can work on adding the persons and making some announcements to each person's pages. and with the Sign Out option admin can sign out from the page.

Admin's Sales page:
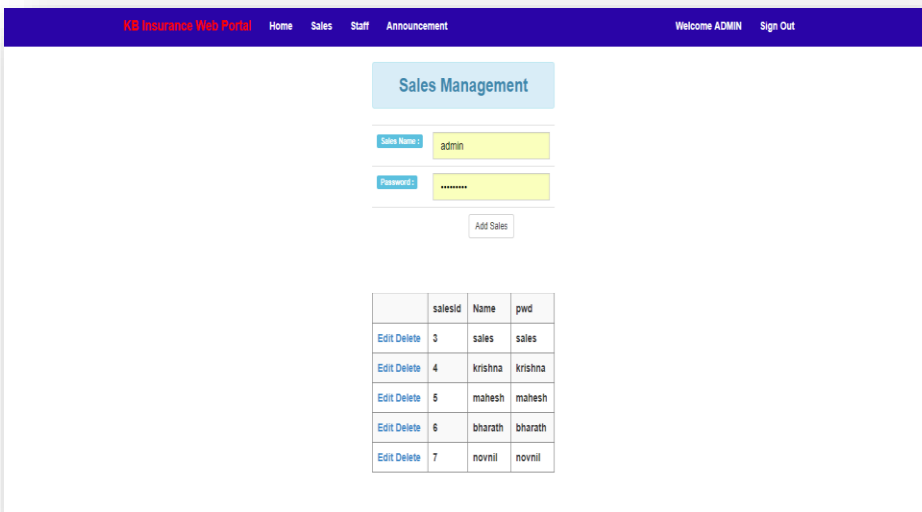
Through the admin's sales page admin can add sales persons by clicking on add and can create login credentials to each sales person name and password.

And admin can also edit and delete the sales persons by clicking on edit and delete.

Admin's Staff page
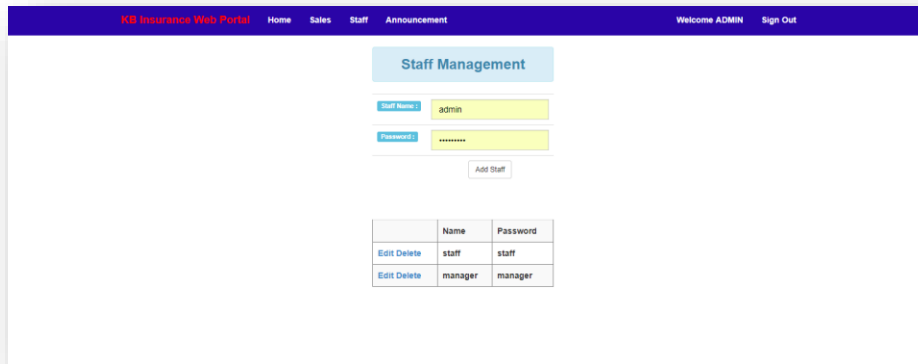
Through the admin's staff page admin can add managers by clicking on add and can create login credentials to each manager name and password.

And admin can also edit and delete the managers by clicking on edit and delete. In admin's staff page admin can add different staff persons or managers by create unique login credentials.

Admin announcement page.
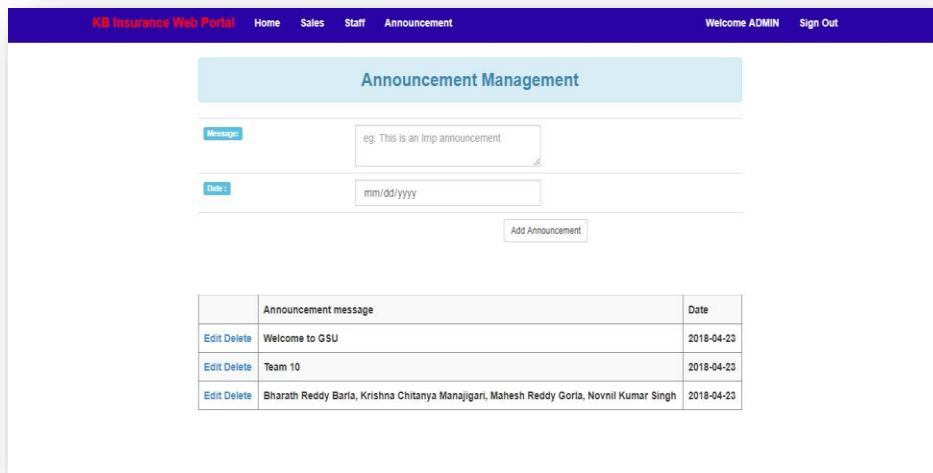
In the admin's announcement page admin can add the announcements to the sales and staff pages with the date. For example, announcing holidays or announcing update issues or database issues etc. the announcements made by the admin.

Sales person's Home page.
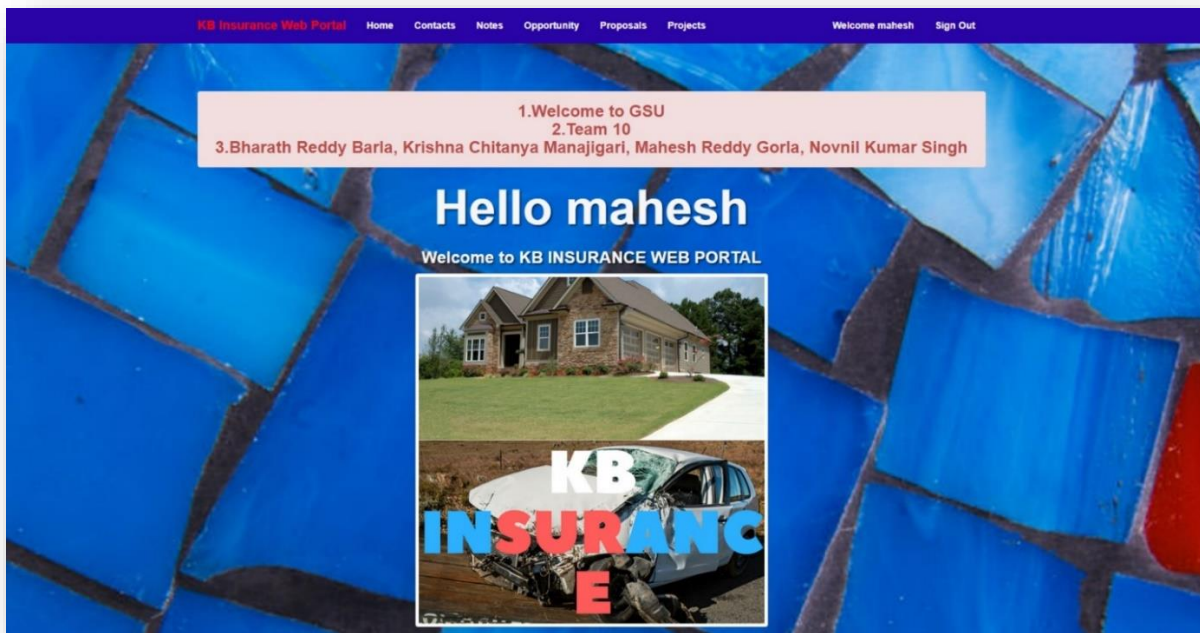
This is one of the sales persons home page, here the sales person has to work, and communicate with the manager or managers. The admin's announcements will come here in this home page of the sales person. In this page Sales person will deals with the customer information, policy and communication with the manager about the customer policy mostly. And sales person can sign out.

Sales person's Contact management:

Sales person's contact management is nothing but adding the customers contact information. When the sales person adds the customers information in this page by clicking add contact, it will save into the database and manager also can see the customers contacts through customer management system.Here the customer information sales persons are adding is Name, Gender, DOB, Email ID, Contact Number, Industry what the customer working, Type of insurance they are looking for, Address, FAX, Source is nothing but how they find this service, and description about the insurance they are interested etc. Manager can access this all information which added by the sales persons.

When the sales person adds this customer's information to the database, customer will get the email through SMTP google server as below.

Email to customer:
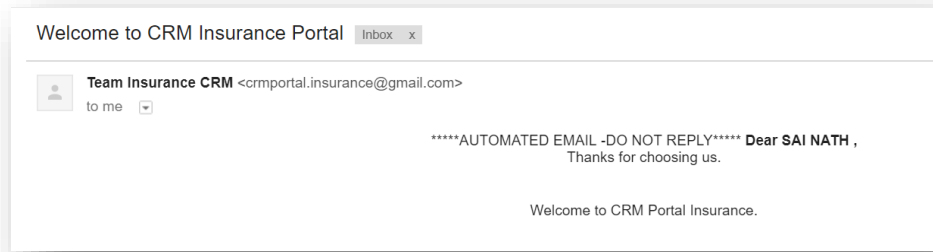
Automated Email to the customer through contacts management.

Sales person's Notes Management:
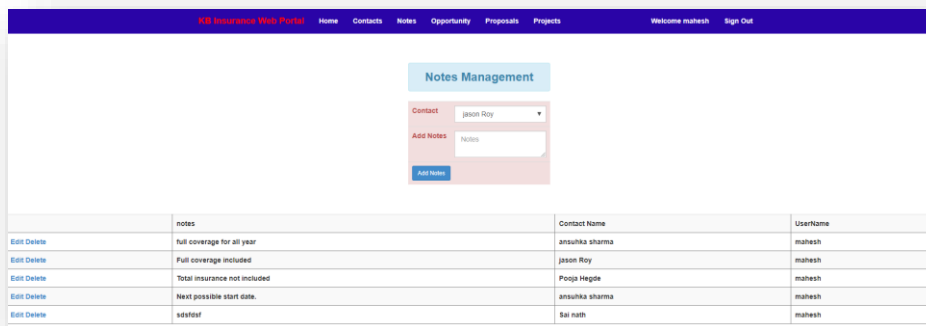
Sales person's notes are nothing but the ongoing work of the sales person on a project. So, sales person can pause and resume this work. So, the sales person can add edit delete this note. Every sales person will have their own nots to work. This note cannot have seen by the manager.

Sales person's opportunity page:

In the opportunity management sales person can add the opportunities to the customer by selecting the customer name. here are the opportunities are like adding coupons, discounts or some deals.

Sales persons can edit and delete these opportunities. These opportunities will be saved in database and managers cannot see this opportunity because this relation between the sales person and the customer, so manager would not involve in this.

Sales persons proposals mangement:

Sales persons will add the proposals of the customers projects, so when these proposals are added if everything ok then these proposals will add to the projects. And, when the sales person adds these proposals manager can also these proposals in the managers proposals, so if manager finds any issues in the proposals then manager can inform to the sales person. Finally, the approved proposals will move into the projects.

Sales person will review and work on the proposals, the manager will also go through it. If the documents and all are match to the company's requirements then the proposal will forward. And if any issues manager will make a comment on the proposals.

Sales persons Project management:

In the sales persons projects, the proposal approved projects will come here. And sales person will add the projects as insurance start date and end date , coustomer's name, cost of the plan depending on what the customer choose and sales person name, and also sales person will upload a document file to the project management. And this document and the information added by the sales person will be added in the database.

This information manager can see and commnet on the polocies and manager also download the document of the polocy whixh uploaded by the sales person. And sales person can edit and delete the customers polocy information by clicking edit and delte options. If manager does any comment on the polocy the comment will comes in the comments box and also manager name will also comes here. And finally with the signout option manager can signout from the project.

Manager's home page:
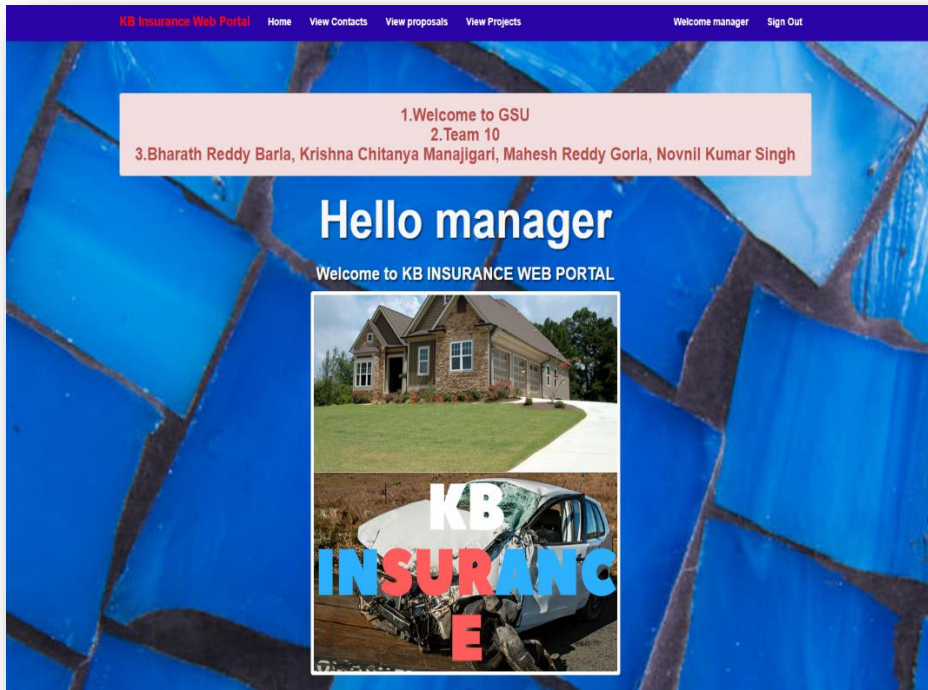
This is the managers homepage, and here manager can see the announcements made by the admin. And here manager will deal with contacts, proposals and contacts.

Manager will see the information what added by the different sales persons and with the sales person's names and manager will check evaluate and scales the business from this information.

Manager's View Contacts page:

In the managers view contacts page manager can see all the customers contacts information which are added by the different sales persons with the name of the sales person who added the contact. Here manager can look at each information about each customer. And manager can search through search box with customer name or sales person of that customer or any information of that customer through the customers contacts management.

Manager's View Proposals:

From the managers view proposals, manager can see the proposals made by the different sales person. With that proposals manager can review and comment on that proposals if any issue is fixed then sales person can add this proposal to the projects. Here Manager can filter the sales persons by searching their names in the search box.

Manger's Project Management:

Manager's project management, in this manager can see each end every policy in projects. And also, manager can see which sales person added the which policy in the sales name. and every detail about each policy.

So, manager can view and review the policies by his comments to the sales persons and manager can also search the projects with customer name, sales person's name or any other keywords. And here manager can download the document which added by the sales person. The document will provide in detail information about the customer policy and customer details. This document means the policy was approved and it's serving the customer.

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