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Sales Management Portal

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Daggolu, Manoranjan Kumar; Gampa, Bharat K.; Kakarla, Tarun; and Thokala, Mahesh Reddy, "Sales Management Portal" (2017). *All Capstone Projects*. 312.
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Abstract

The sales management portal is online web based application where the user will be able to keep a track of all the sales made by an organization with respect to the projects being handled by the organization. Apart from tracking the sales data the other features include creation of projects, teams, managing the team members, communication among the users, search functionality for the projects, teams and users and project tracking. The application supports three levels of users where each user with respect to the role will have different functionality and user authorization is made at even page level to make sure that only authorized data updates are made on the database.

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1. Project Description

The sales management portal is an internal web application which is accessible by the employees of the given organization where the employees of the organization with different levels of authorization will have different activities to perform. The level of authorization to the users will decide the feature that can be accessed by the users. The main activities in the application include addition of projects, adding the sales data of the products and other information.

1.1. Competitive Information

The application is like normal internal project where the project management can be seen and more number of competitors can be seen offering similar services at much better project budget. The primary criteria for the project development to withstand the competition would be giving more user-friendly application accompanied with much detailed sales reports. Adding such functionalities would obviously make the application the best and give a tough competition to the other competitors.

1.2. Relationships to other projects

As specified earlier the application being developed is like the other projects being used by most of the organizations in the project management and sales management. Most of the projects or the applications available in the market offer the same features that are being offered by the current web application but in addition the web application being developed will provide more user-friendly environment and much detailed sales reports to the users.

1.3. Assumptions and Dependencies

The below are a list of assumptions that have been made and can change during development of the web application.

- The application is expected to complete in time with four human resources and constant effort from the resource is expected.
- The software procurement is to be made by the resources.
- Starting from the design of the database to completion of the front-end design must be taken care by the four resources

The below are a list of dependencies that can be seen during the development of the web application.

- Failure in the team work between the resources will lead to the failure of the delivery of the project in time.

1.4. Future Enhancements

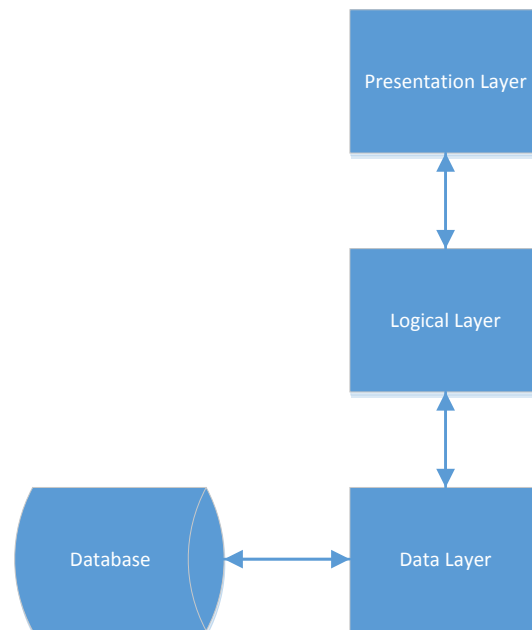
At present the salary processing of the employees is not included where it should be taken care by the employees personally by accounting the number of timesheet hours entered by the employee. Automation of this work will help in allocating the human effort hours in some other work process. Once the application goes live the users will not be able to send emails to the other users who are in the system. This creates a scenario where the resources are used even when they are available and the programming related to email management must be taken care.

2. Technical Description

The project will be developed using the C# .Net and MS SQL at the back-end. The visual studio 2016 and MS SQL server management studio will be used during the process of development. Microsoft Visio 2016 is used for creation of any kind of class or object diagram to depict the flow of control or information in the application being developed. Apart from this the application is expected to deploy over the world-wide web or the intranet of the organization where only the employees of the organization will be having access to the application.

2.1. Project Architecture

The project is being developed by using the three-tier architecture where the code is divide into three layers and each tier has its own functionality. The below diagram shows how the information from the presentation layer to the data layer.

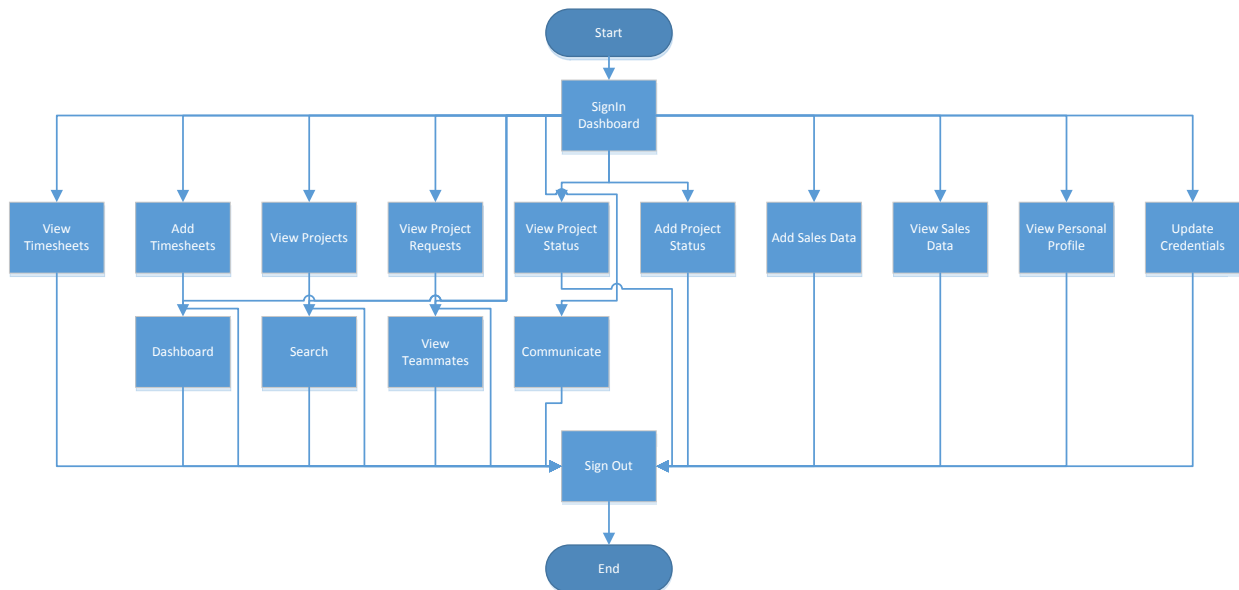


2.2. Project Information Flow

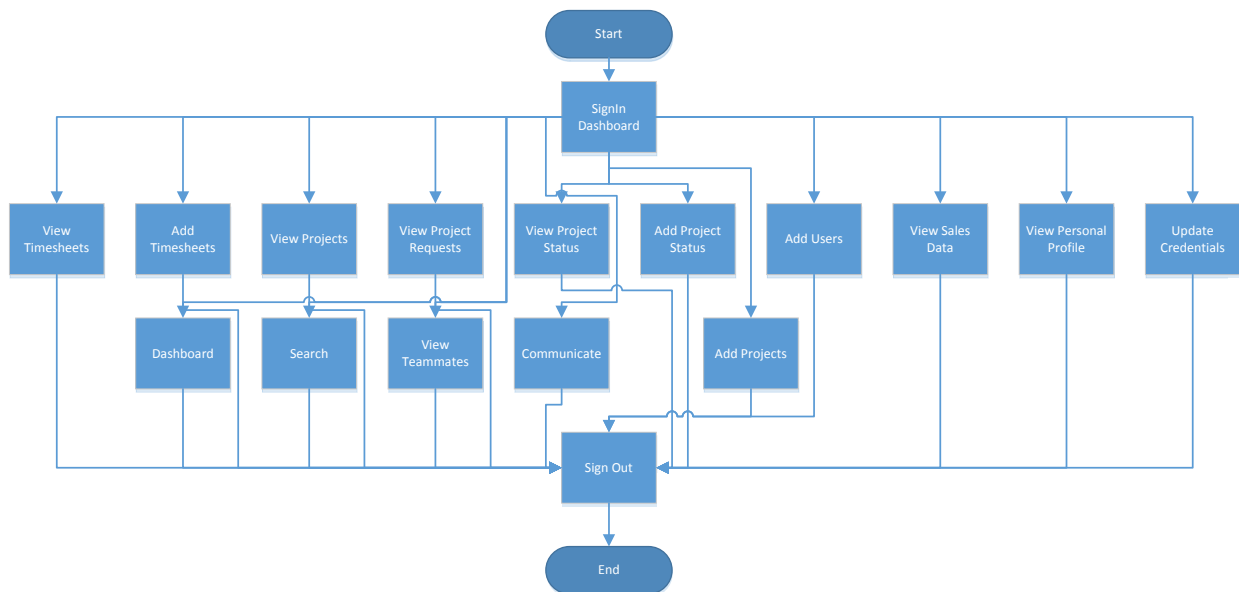
The below diagram depicts the flow of control from one page to another page between different users having different levels of authorization. As defined earlier the application is expected to have three levels of users which are as follows.

- Employee
- Manger
- Client

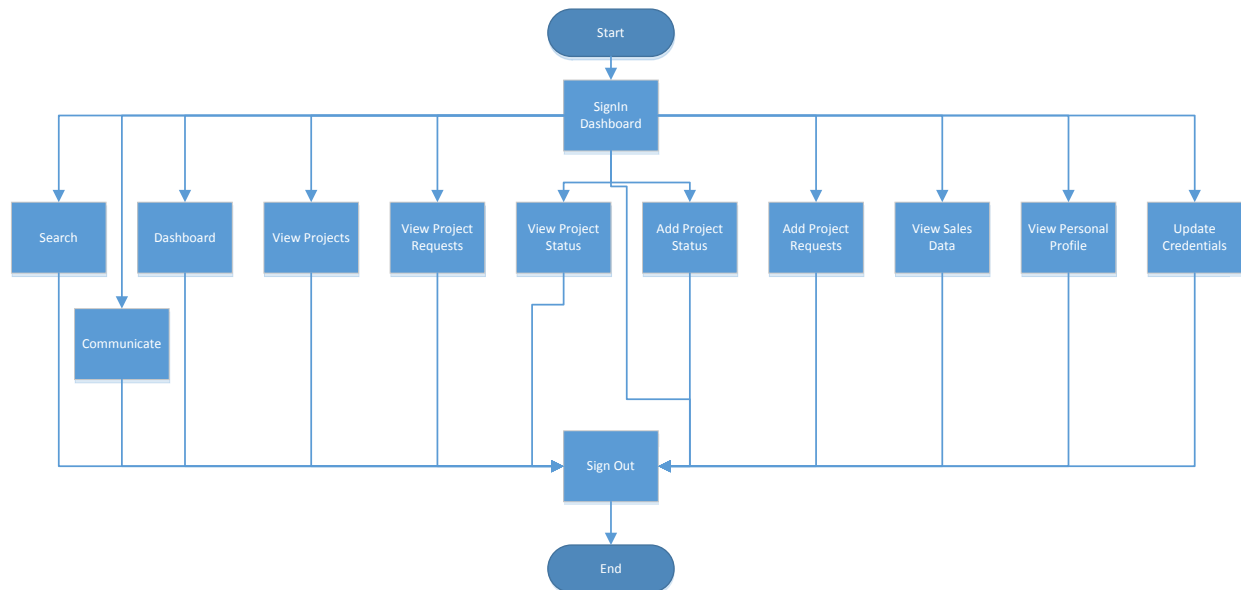
2.2.1. Employee



2.2.2. Manager



2.2.3. Client



2.3. Interaction with other Applications

In the application, the users i.e. the employees and the managers are expected to enter the timesheets which will be used for the salary processing. This data from the application will be used by the financial team to process the salary of an employee or the manager based on the pay period and other influencers. In the future, all this process will be automated within the application and no interaction with the third-party applications can be seen. Apart from this in email management the users need to depend on the third-party servers to host the application and send emails and this can cause a security threat as the mails with confidential information are being sent from third party servers and this must be avoided by having the application hosted on local server that belongs to organization or a trusted local server.

2.4. Application Capabilities

The main implementation of the application is to create a log for the sales being made from the projects being maintained by the organization. Apart from this project management, timesheet management can also be seen in the application. The below is the list of features or the actions being implemented in the application.

- Addition of new project by making a request by the client.
- Updating the project by assigning the projects to a working team to work on it
- Adding the sales information in relation with the projects
- Adding the timesheets which will be used in the salary processing of the employees.
- Adding new team who will be working on the projects.
- The manager can add new users and clients
- User will be able to retrieve the accounts if the password is forgotten by them.

2.5. Risk Assessment and Management

The probable risks that can be seen in the project is its completion in time. Due to time complexity and the limited resources the completion of the project in time would be a great challenge to the resources.

The management deals with the efficient usage of the available resources to complete the project in time. Apart from this the design of the application, development and completion of all the requirements is to be made in accordance to the plan to complete the project in time.

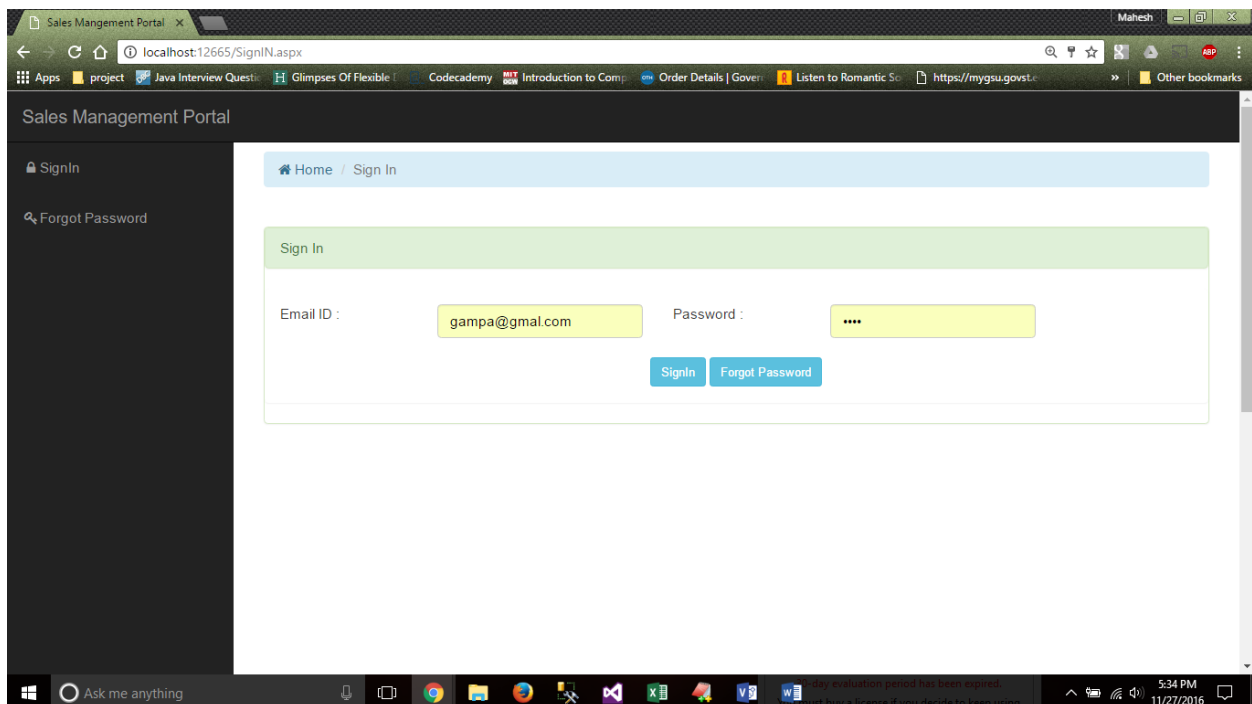
3. Project Requirements

The requirement for the project are based on the guidelines given by the client and all the requirements are to be met to complete the project. The below is the list of all the requirement that have been gathered during the development of the project.

3.1. Identification of Requirements

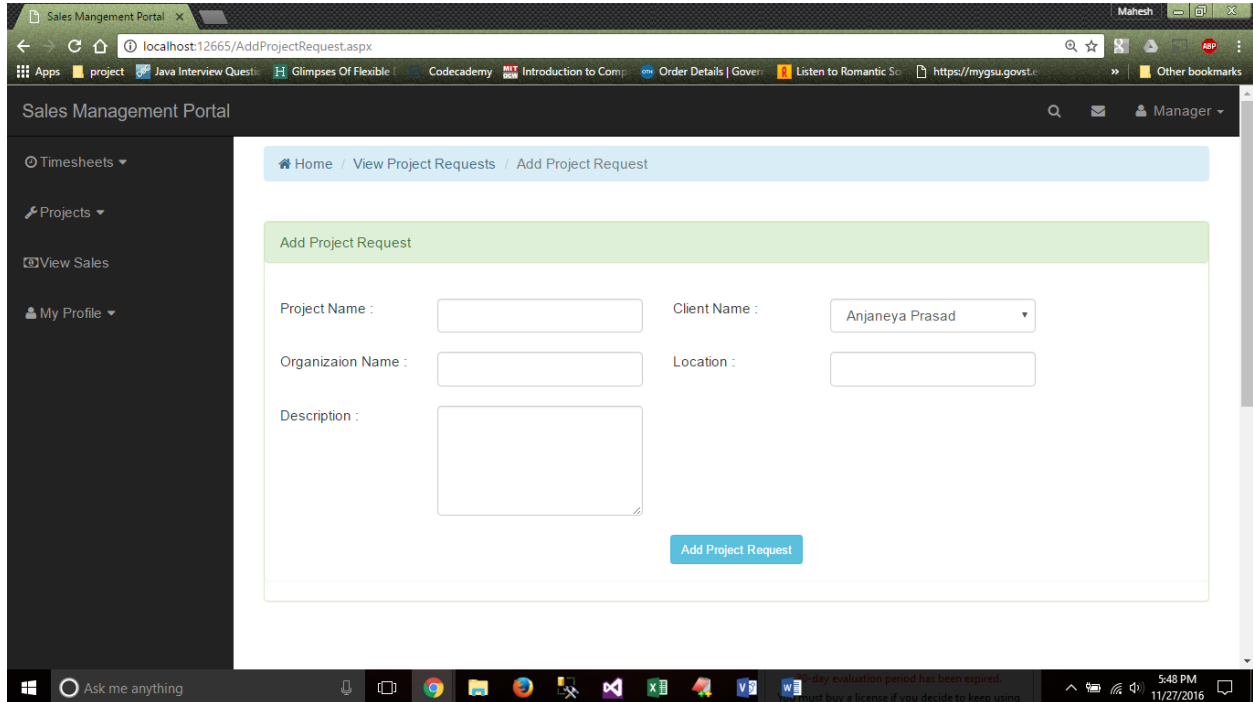
<SalesManagemenPortal-1-Authorization-1>

This feature enable the user to have an authorized access to the application where session variable will be created to the user and the role they have. Based on the role the user has the access will be given to different pages. Once the user signs out, all the session variables created on user name will be deleted.



<SalesManagementPortal-1-AddingProject-2>

This feature enable the user to create new project by making a request to add new project by the client. Only the client will be having the access to this feature and this will be verified in the future by the employee and the manager.



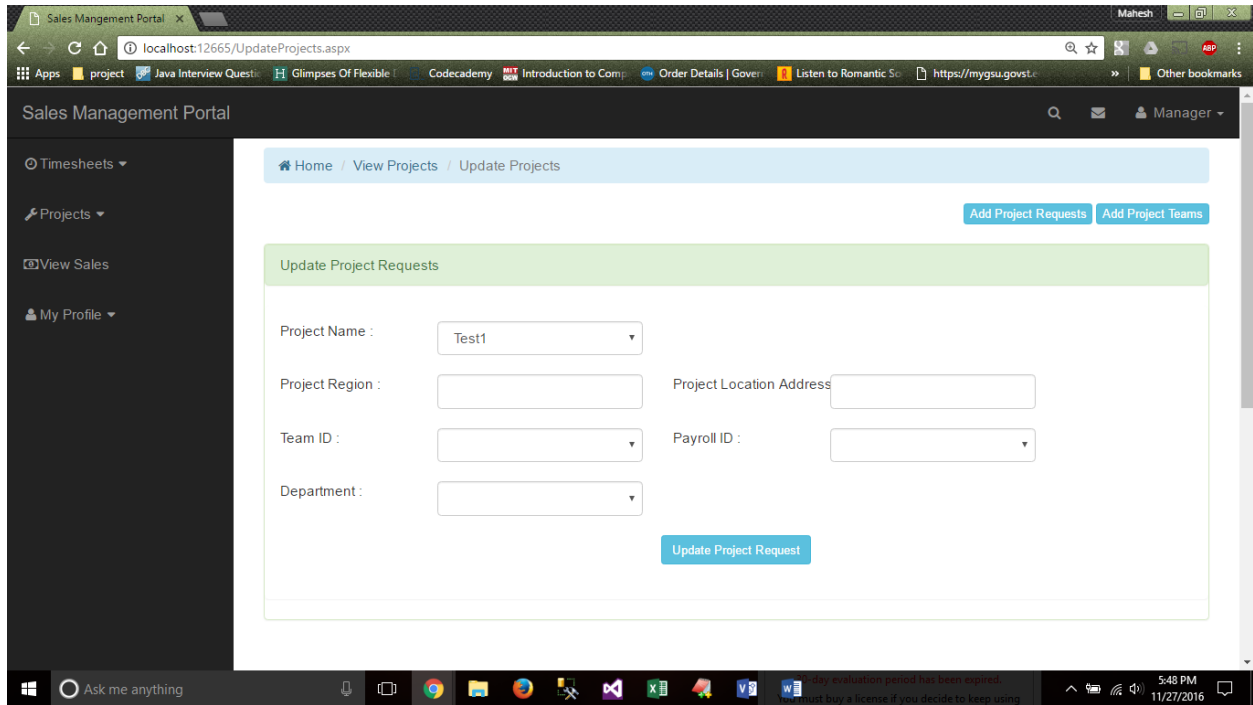
The screenshot displays a web browser window with the URL `localhost:12665/AddProjectRequest.aspx`. The page title is "Sales Management Portal" and the breadcrumb navigation shows "Home / View Project Requests / Add Project Request". The main content area is titled "Add Project Request" and contains the following form fields:

- Project Name :
- Client Name :
- Organizaion Name :
- Location :
- Description :

A blue button labeled "Add Project Request" is positioned at the bottom right of the form area. The browser's taskbar at the bottom shows the time as 5:48 PM on 11/27/2016.

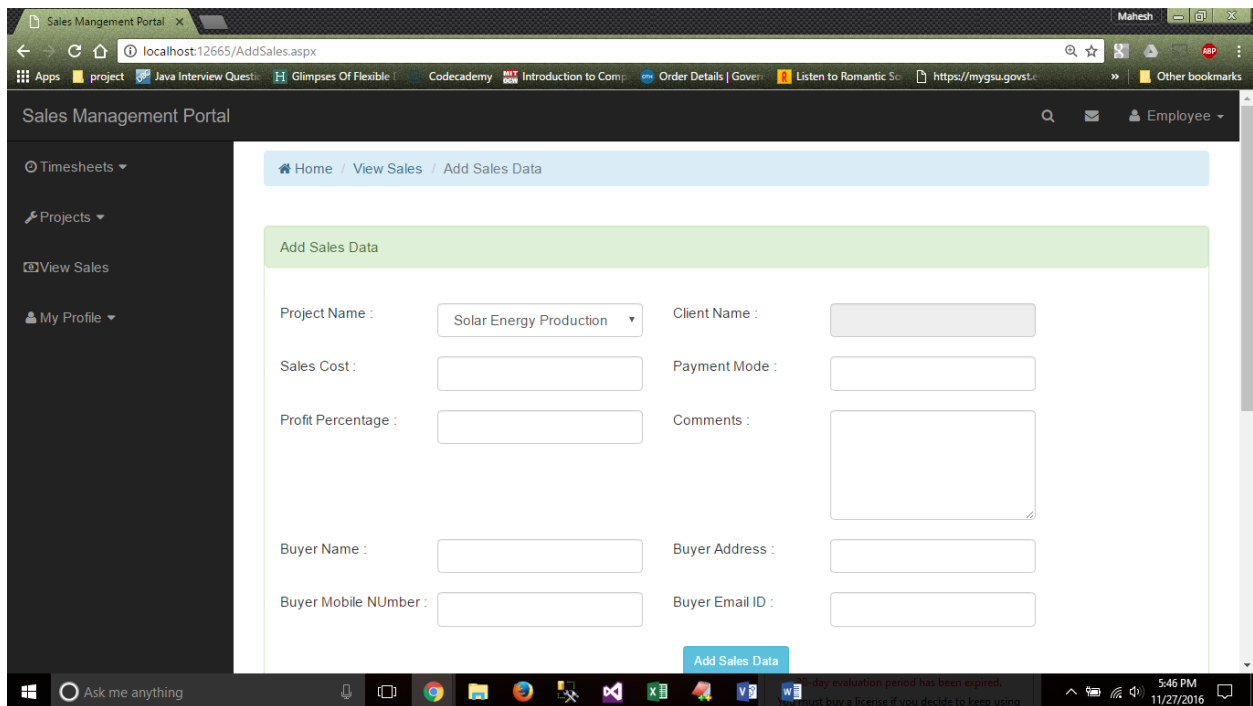
<SalesManagementPortal-1-UpdatingProject-3>

This feature is dependent on other feature where the users will be able to add a request for new features. In here the employee will verify the project and update it accordingly. Once done, the manager will assign the project to a team or create a new team and assign the project to the team on which the employees will be able to work on.



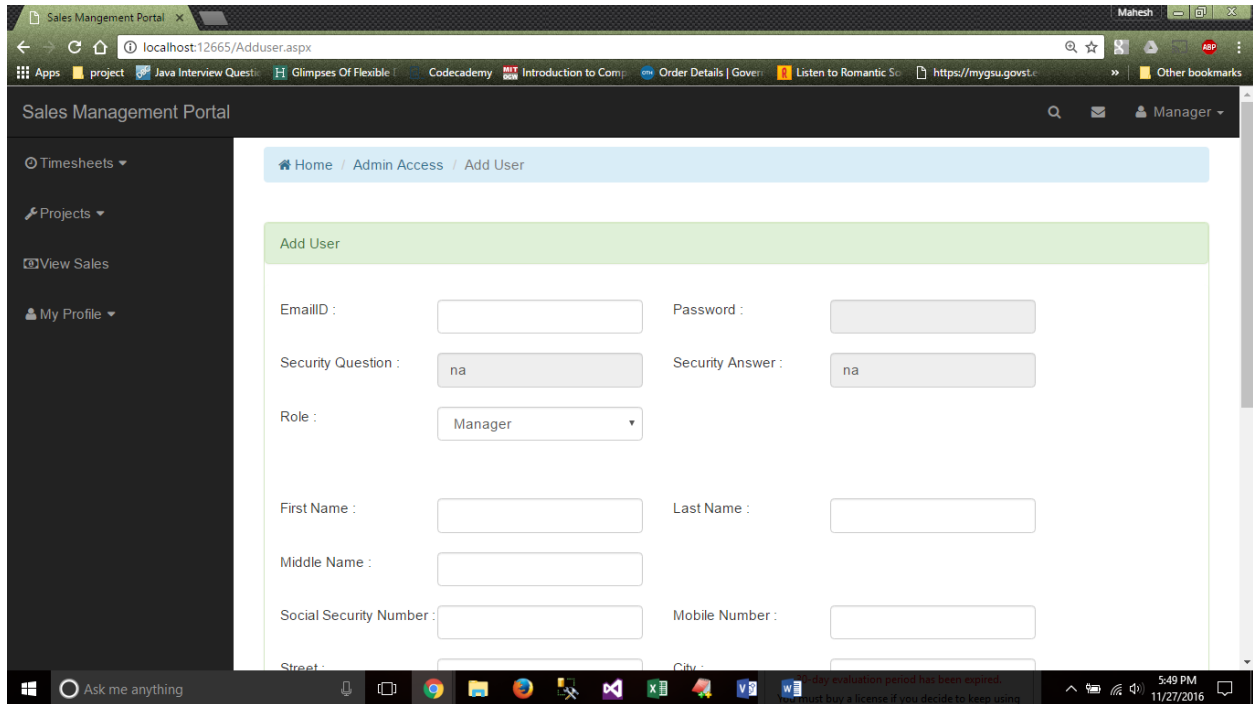
<SalesManagementPortal-1-AddSales-4>

This feature will be accessed by the employee where they will can add new sales data to a project and this data will later be used by the client and the manager to generate reports of various types. During the process of adding the sales data the employee will update the buyer information for the project data and other information.



<SalesManagementPortal-1-AddUser-5>

Only the manager will have access to this page where the user will can add new user with client, employee and manger roles. Once the user creates the user, the next minute the added user will be able to access all the services like other users. The added user needs no activation once added and can update his credential from the default credentials added during the account creation.

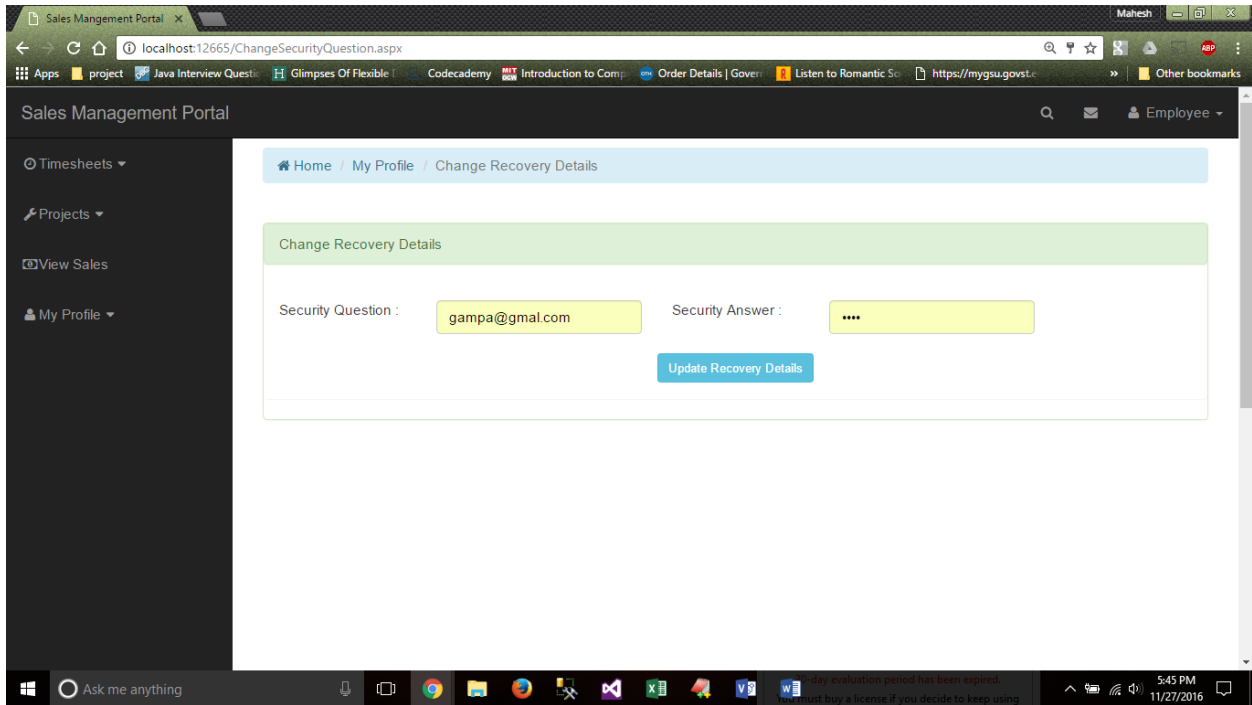


The screenshot shows a web browser window displaying the 'Add User' form in the Sales Management Portal. The browser's address bar shows 'localhost:12665/Adduser.aspx'. The page title is 'Sales Management Portal'. The breadcrumb navigation is 'Home / Admin Access / Add User'. The form is titled 'Add User' and contains the following fields:

- EmailID :
- Password :
- Security Question :
- Security Answer :
- Role : - First Name :
- Last Name :
- Middle Name :
- Social Security Number :
- Mobile Number :
- Street :
- City :

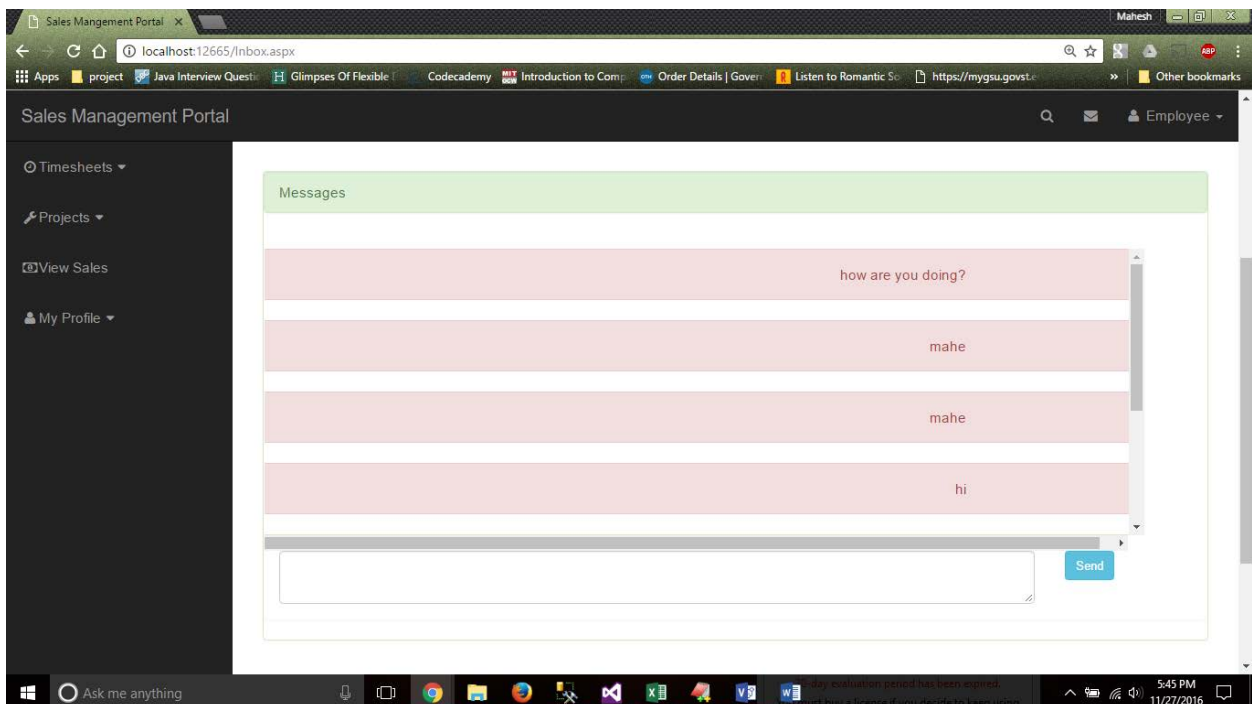
<SalesManagementPortal-1-AccountSettings-6>

This feature enable to personalize the credentials of the user from default credentials added to user account during the process of account creation. This feature protects the privacy of the user by making the user have his/her own credential to log in into his/her account.



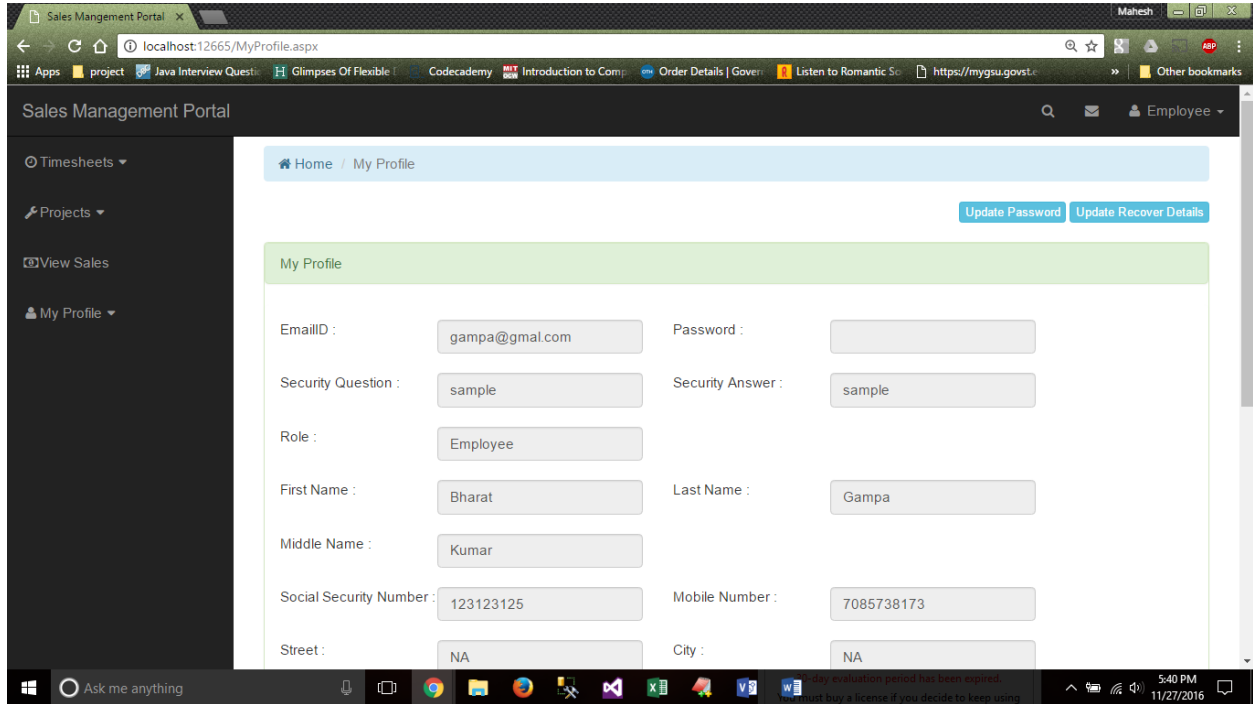
<SalesManagementPortal-1-Communication-7>

This feature creates a medium for the users to communicate with the other users. As the communication medium resides on the local server where the application is launched the security for communication being made can be seen in terms of confidentiality and data integrity.



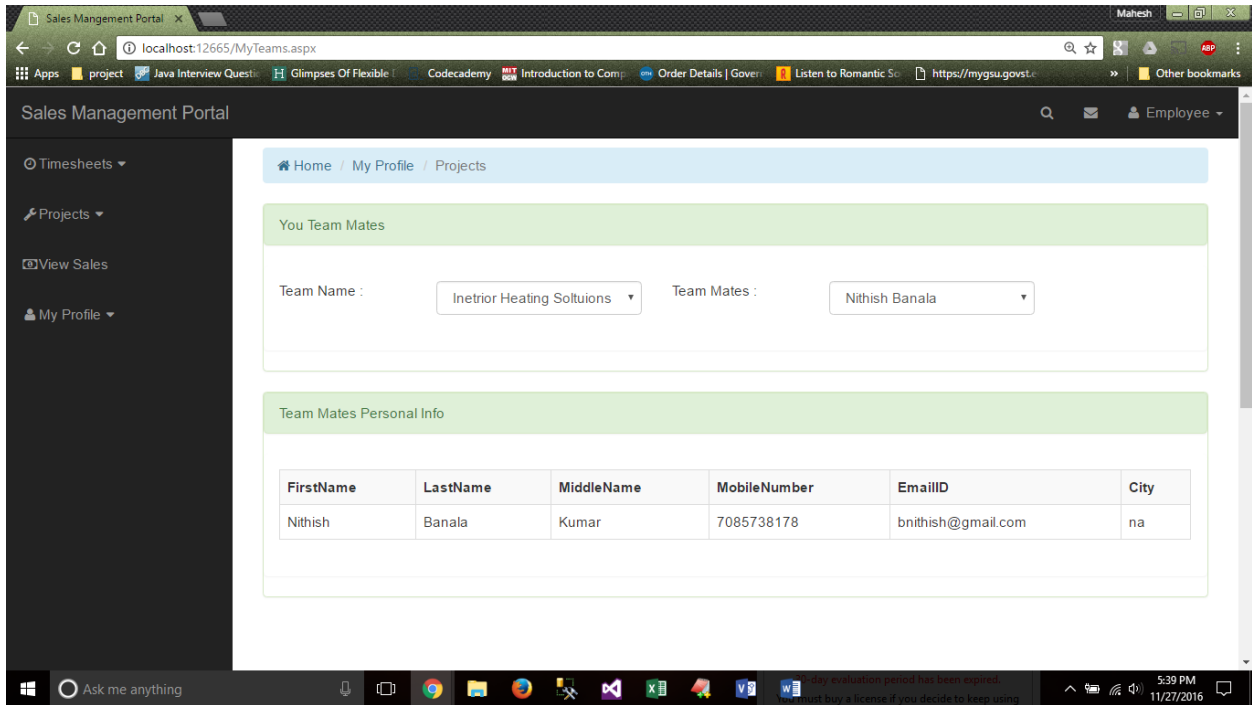
<SalesManagementPortal-1-Profile-8>

This feature enable the user to view at the personal information of the user and verify if all the information is correct. Any conspiracies in the data can be notified to the respective authorities for making an update.



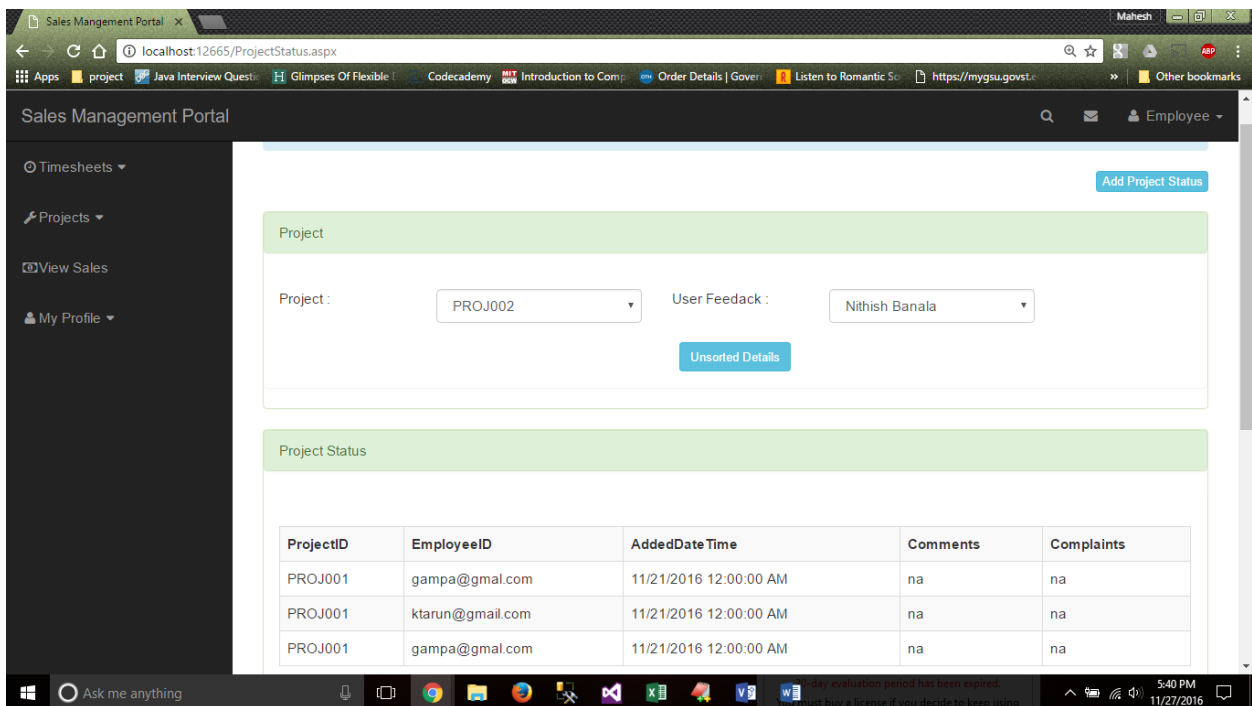
<SalesManagementPortal-1-Teams-9>

In here the users i.e. the employees and the managers will be able to view the details of the team mates such as first name, last name, location and other information. This makes the users to know more about the team mates and this helps during the normal working days.



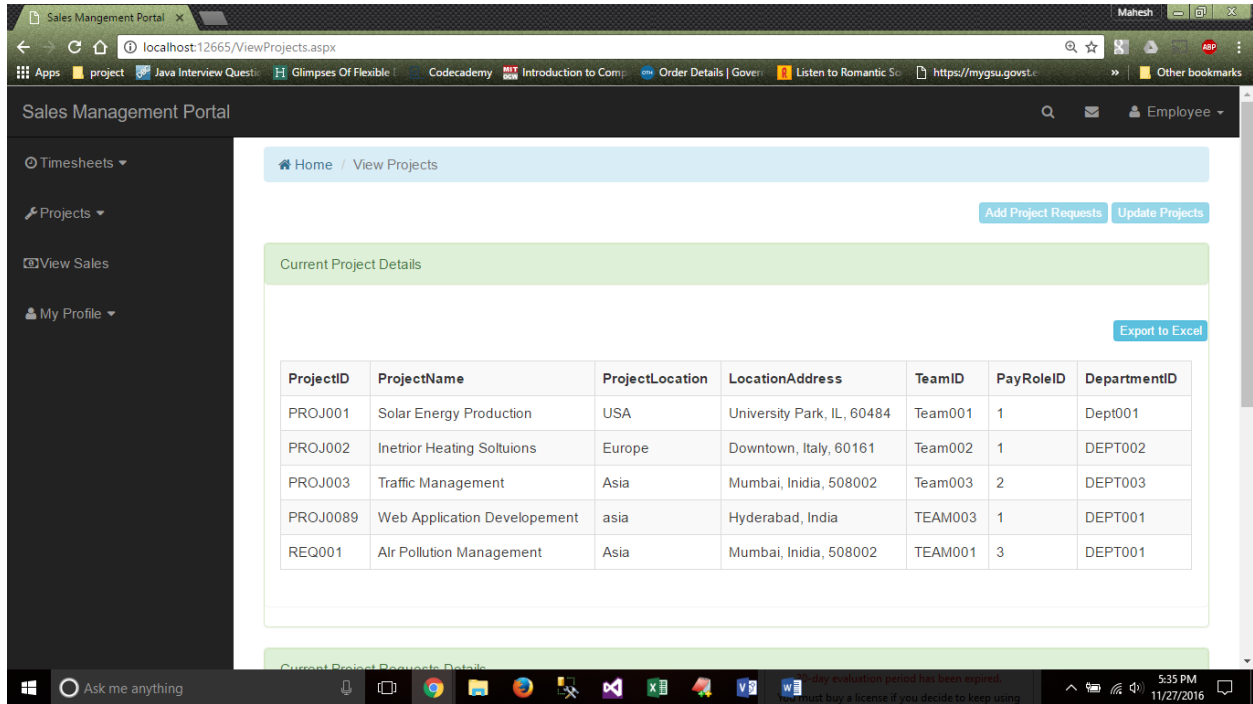
<SalesManagemenPortal-1-ProjectStatus-10>

This feature allows the user to view the status of the project where the user will be able to know whether the project has been approved or not. Once approved the project will be assigned to a team and a team will be working on the project making sales and other tasks defined for the project.



<SalesManagementPortal-1-ViewProjects-11>

This feature enables the user to view the project in the form of a list by which they get to know about all the projects the organization is working on and the team related to this. The users will be able to see the team name working on the project but will not be able to view the details about the team members working on the project protecting the privacy of the other users but, the team lead or the team member can see the details of his team mates.

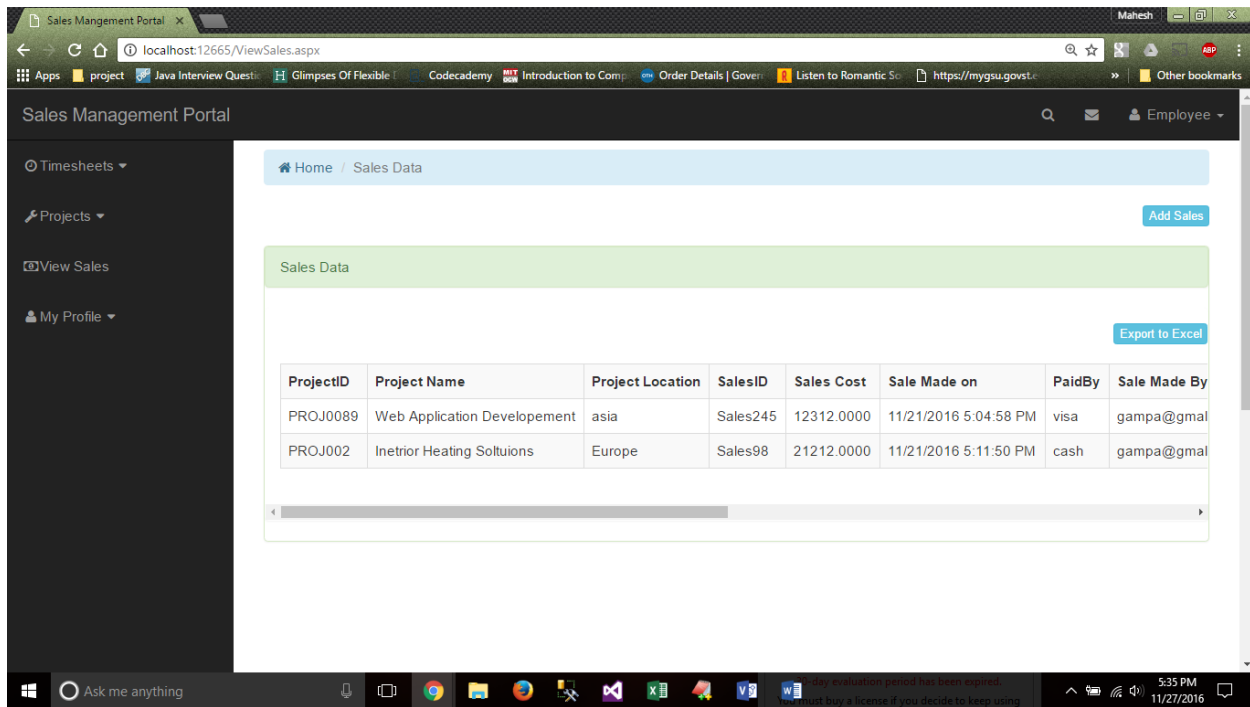


The screenshot displays the 'Sales Management Portal' interface. The browser address bar shows 'localhost:12665/ViewProjects.aspx'. The page title is 'Sales Management Portal'. The navigation menu on the left includes 'Timesheets', 'Projects', 'View Sales', and 'My Profile'. The main content area is titled 'View Projects' and contains a table of project details. The table has columns for ProjectID, ProjectName, ProjectLocation, LocationAddress, TeamID, PayRoleID, and DepartmentID. The table lists five projects: PROJ001 (Solar Energy Production), PROJ002 (Interior Heating Solutions), PROJ003 (Traffic Management), PROJ0089 (Web Application Development), and REQ001 (Air Pollution Management). There are buttons for 'Add Project Requests', 'Update Projects', and 'Export to Excel'.

ProjectID	ProjectName	ProjectLocation	LocationAddress	TeamID	PayRoleID	DepartmentID
PROJ001	Solar Energy Production	USA	University Park, IL, 60484	Team001	1	Dept001
PROJ002	Interior Heating Solutions	Europe	Downtown, Italy, 60161	Team002	1	DEPT002
PROJ003	Traffic Management	Asia	Mumbai, India, 508002	Team003	2	DEPT003
PROJ0089	Web Application Development	asia	Hyderabad, India	TEAM003	1	DEPT001
REQ001	Air Pollution Management	Asia	Mumbai, India, 508002	TEAM001	3	DEPT001

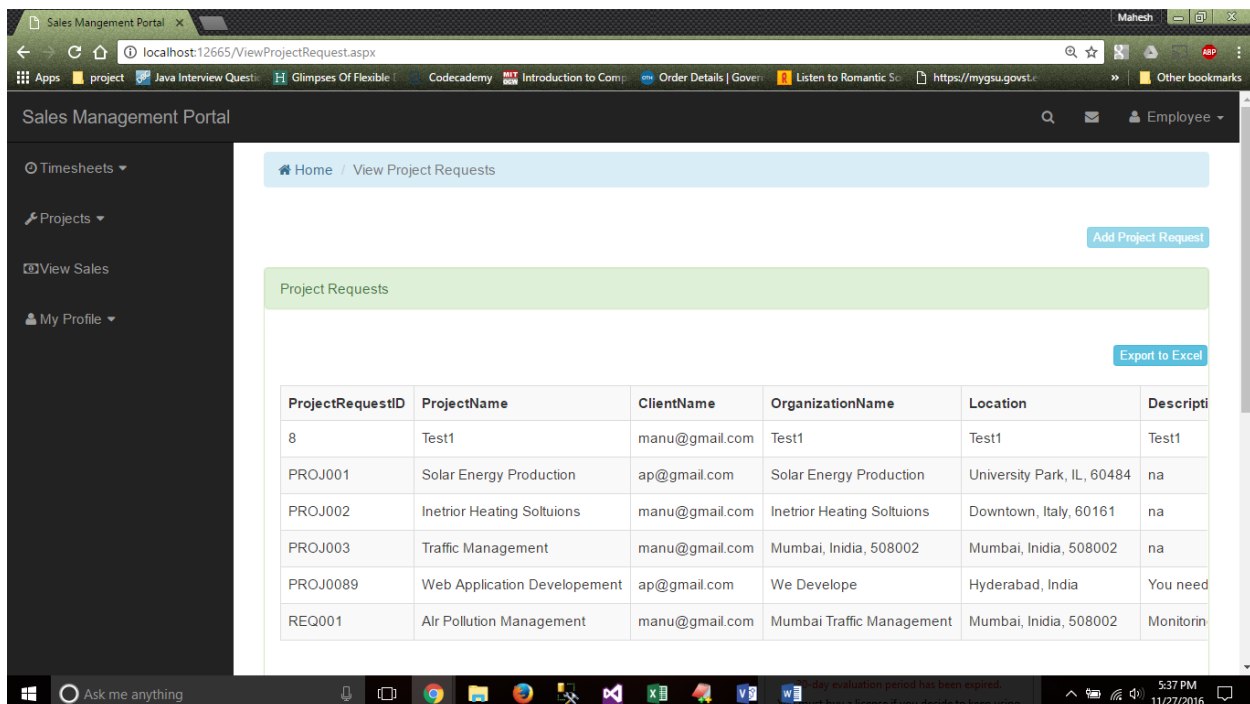
<SalesManagementPortal-1-ViewProjectSales-12>

This is one of the main features of the web application. All the sales made by members of different teams can be seen in here accompanied with different filter options by which a more defined list of sales data can be obtained. Only the users with the client and the manager roles will be able to view the sales data.



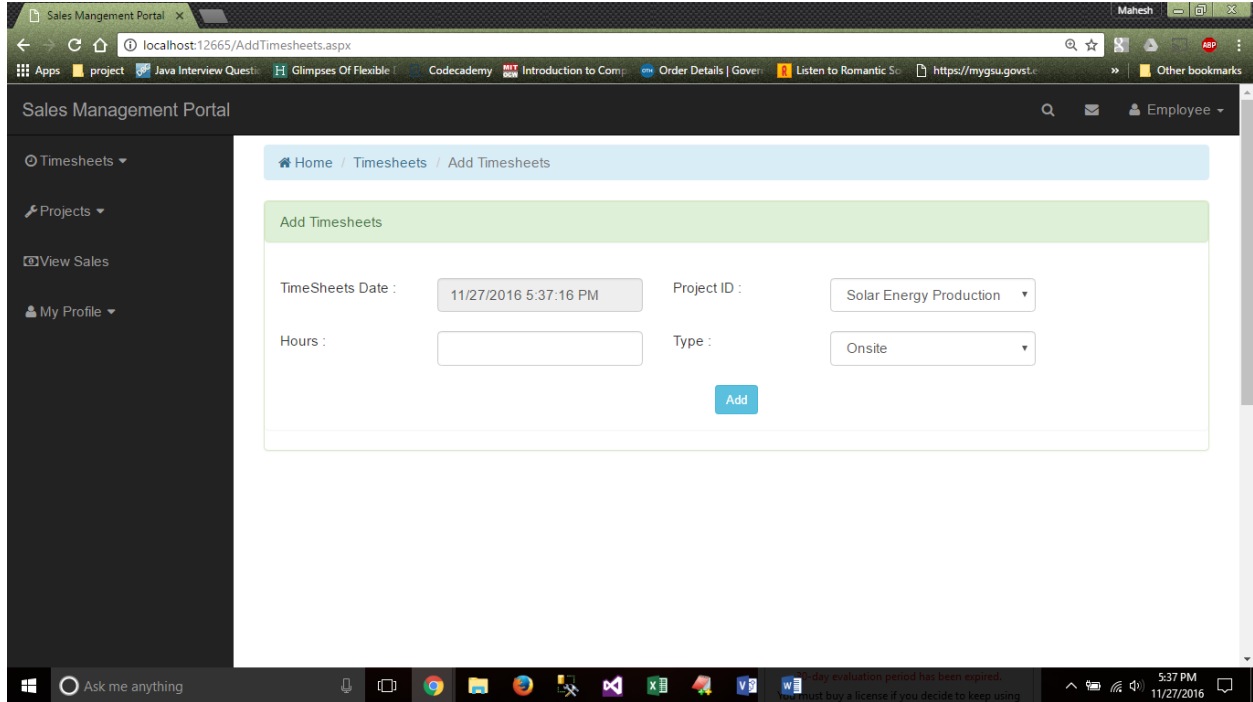
<SalesManagemenPortal-1-ViewProjectRequests-13>

When the projects need to be added to the database, the client will make a request to add a new project. This feature enable the client to make a request to add a new project which is subjected for verification by the users with manager or employee. Once the verification is done the user with manager role will assign the project to a team and the team will be responsible for recording any kind of sales data related to the project.



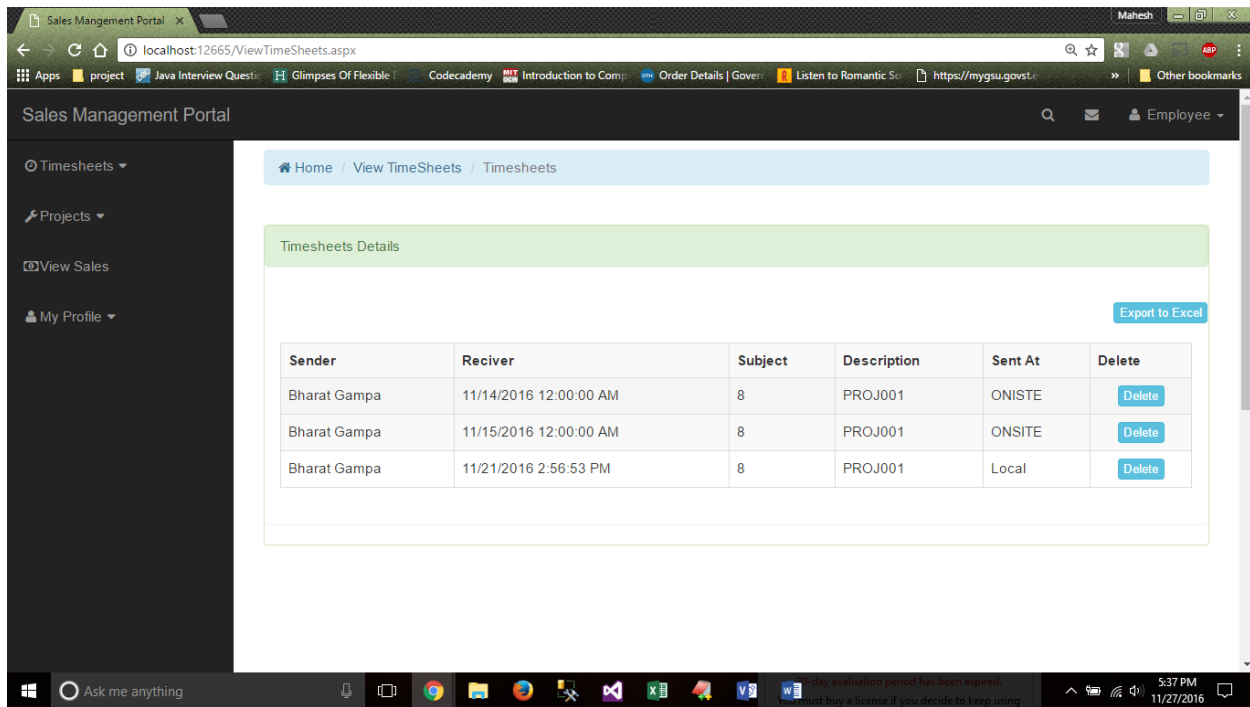
<SalesManagementPortal-1-AddTimesheets-14>

This feature creates a source for the data for salary processing of the employee where the user with roles employee and manager will enter the timesheets for the projects they are working on. Based on the number of timesheet hours entered for a project and the based on the pay grade for a given employee with respect to project the salary will be processed. Though the salary processing will be made by the third-party application services the data to that will be gained from here.



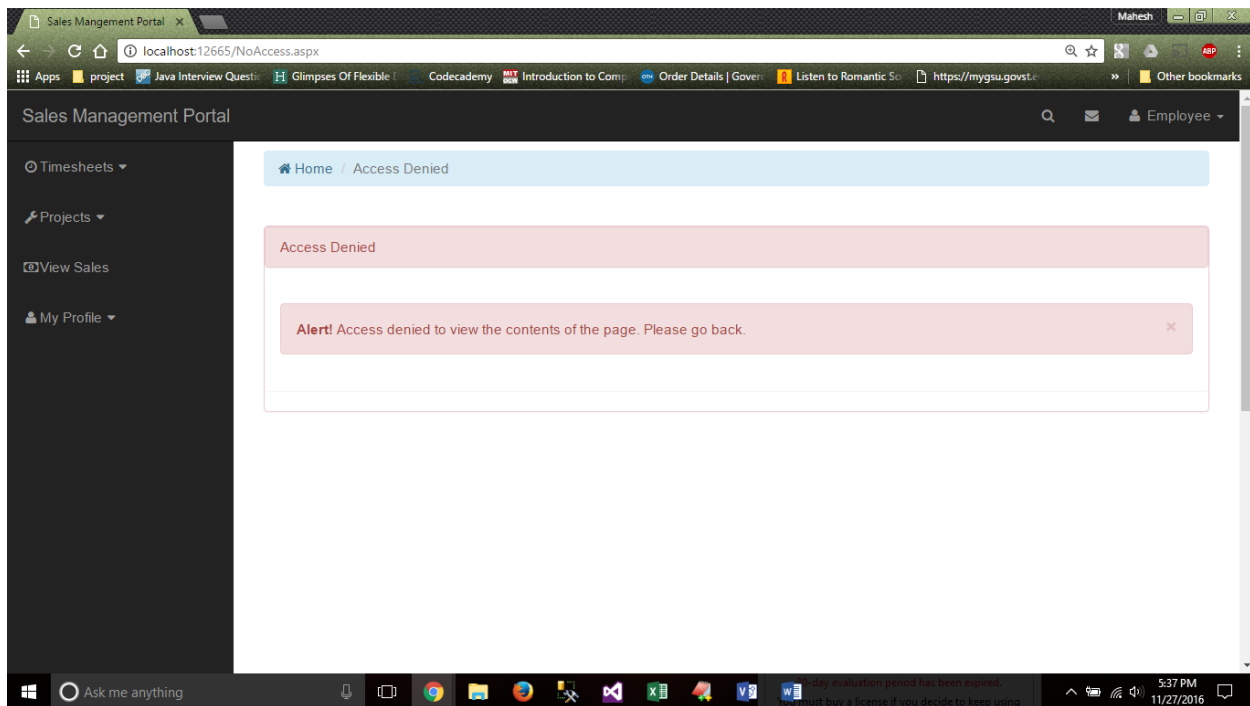
<SalesManagementPortal-1-ViewTimesheets-15>

This feature enables the user to view the list of all time sheets entered by him/her. The user has the access to delete the timesheets too and enter the timesheets. The user will be having access to enter the timesheets only for the respective day but not to the previous days.



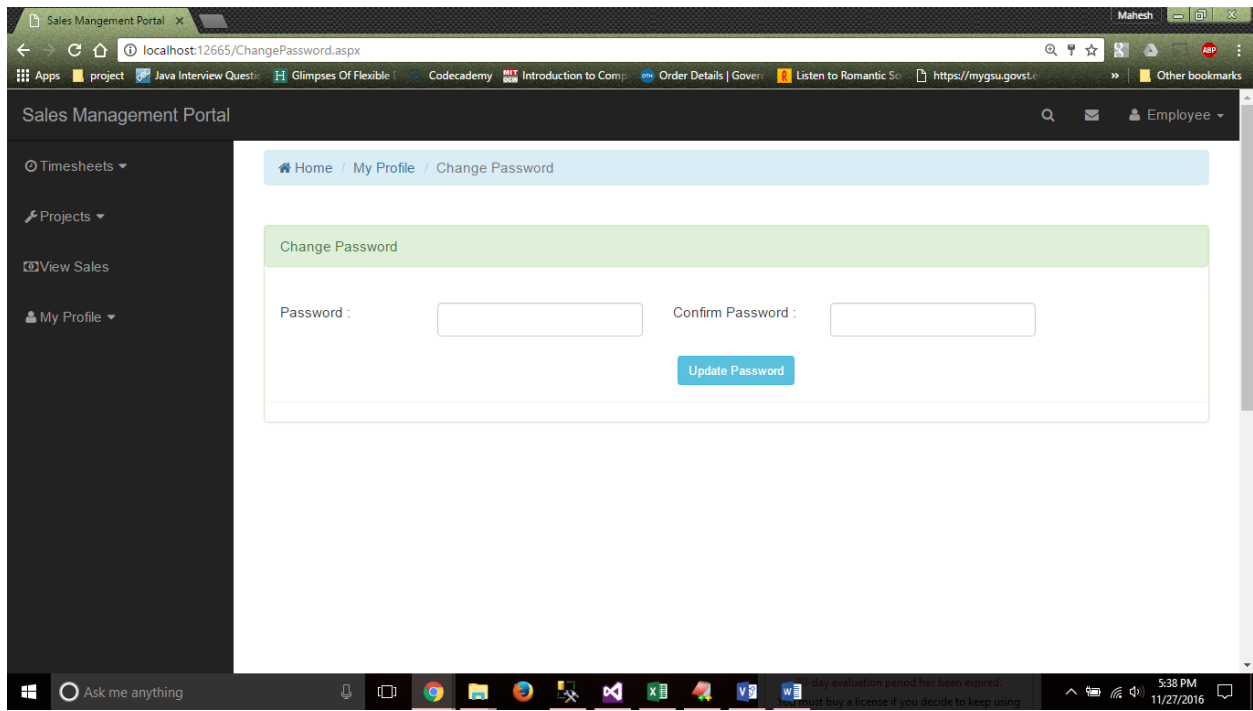
<SalesManagementPortal-1-DenyAccess-16>

In here, if the user will try to access the service to which he does not have access will be redirected to this page. Each page will verify the role of the user and then the page will be displayed to the user. This form of verification of role of the user will make sure that only the user who access to page will be able to view the page.



<SalesManagementPortal-1-AccountRecovery-17>

The account recovery gives power to the user by which even if the user forgets the password for the account he can gain access by resetting the password.



<SalesManagementPortal-1-AddTeams-18>

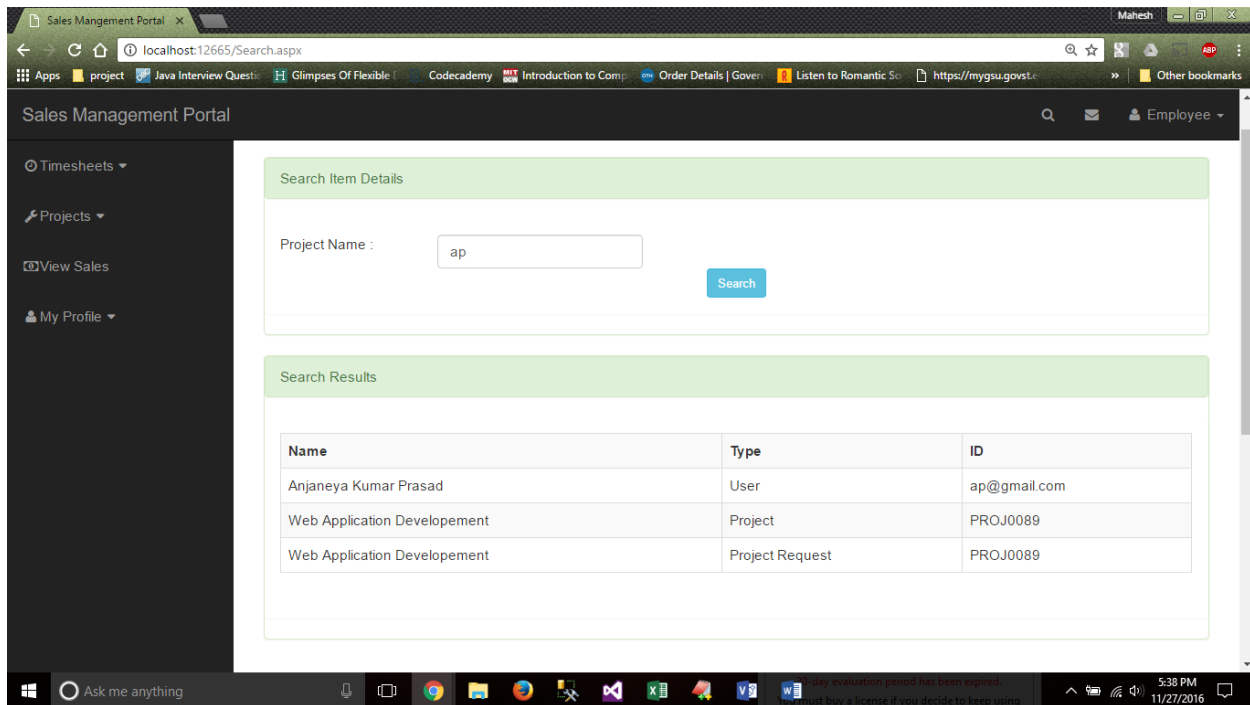
This feature enables the manager to add the teams and the team mates to the team by which on addition of new projects the manager will be able to add new project the manager has the access to create new teams or team mates and assign the project to them.

<SalesManagementPortal-1-DataConsistency-19>

This feature is achieved by creating relationships between each table created in the database and thereby upon updating each table a reference is checked to check the consistency of the data in the entire database.

<SalesManagementPortal-1-Search-20>

This feature enables the user to search the entire application for the text and return the possible outcomes.



3.2. Operations and Administrations

The primary task of the project is to record the sales data of the project and to create new projects by which the users will be able to track the sales data of multiple projects. Hence, the users must be aware of different functionalities and features they are capable with the level of authorization the user possess. The training related to the use of the application with various levels of authorization is to be given to the users.

3.3. Security and Fraud Prevention

As the access to the application can be seen only from the employee's prevention of unauthorized use of the features is the primary target. This can be protected by using authorization for the user role at each page level would really help in preventing the unauthorized access. Apart from this, coming to the external security issues if the project is hosted on an external server then care should be taken that data integrity and data confidentiality is to be expected from the server point of view.

3.4. Release and Transition plan

The web application is expected to hosted on the Go daddy server by buying some server space and the domain name for the access at the server. The application will be published from the visual studio by connecting the visual studio to the domain server and publishing the application. The expected date for the release is on 11th of November, 2016.

4. Project Design Description

The features of the project will be provided to the user if and only if the user has logged into the system and if the user is not logged into the system then the user will not be able to perform any kind of actions.

4.1. Data Flow

4.1.1. Adding Sales Data

The below screenshot depicts the input controls where the sale data must be entered and on the click of submit button the data will be saved on to the database. The user with role entitled as employee will have the access to this page.

4.1.2. Adding Projects

In this page the user with role as manager will be able to update the project request made by another user with role as client and assign the project to a team. The team is then responsible for the creation of the sales data and other varied activities for the concerned project.

4.1.3. Adding Teams

In this page the user with role as manager will be able to add new team mates or add user to the team to be able to work on different projects. Only the manger will be able to access this page and the employee will be able to view the personal details of his teammates.

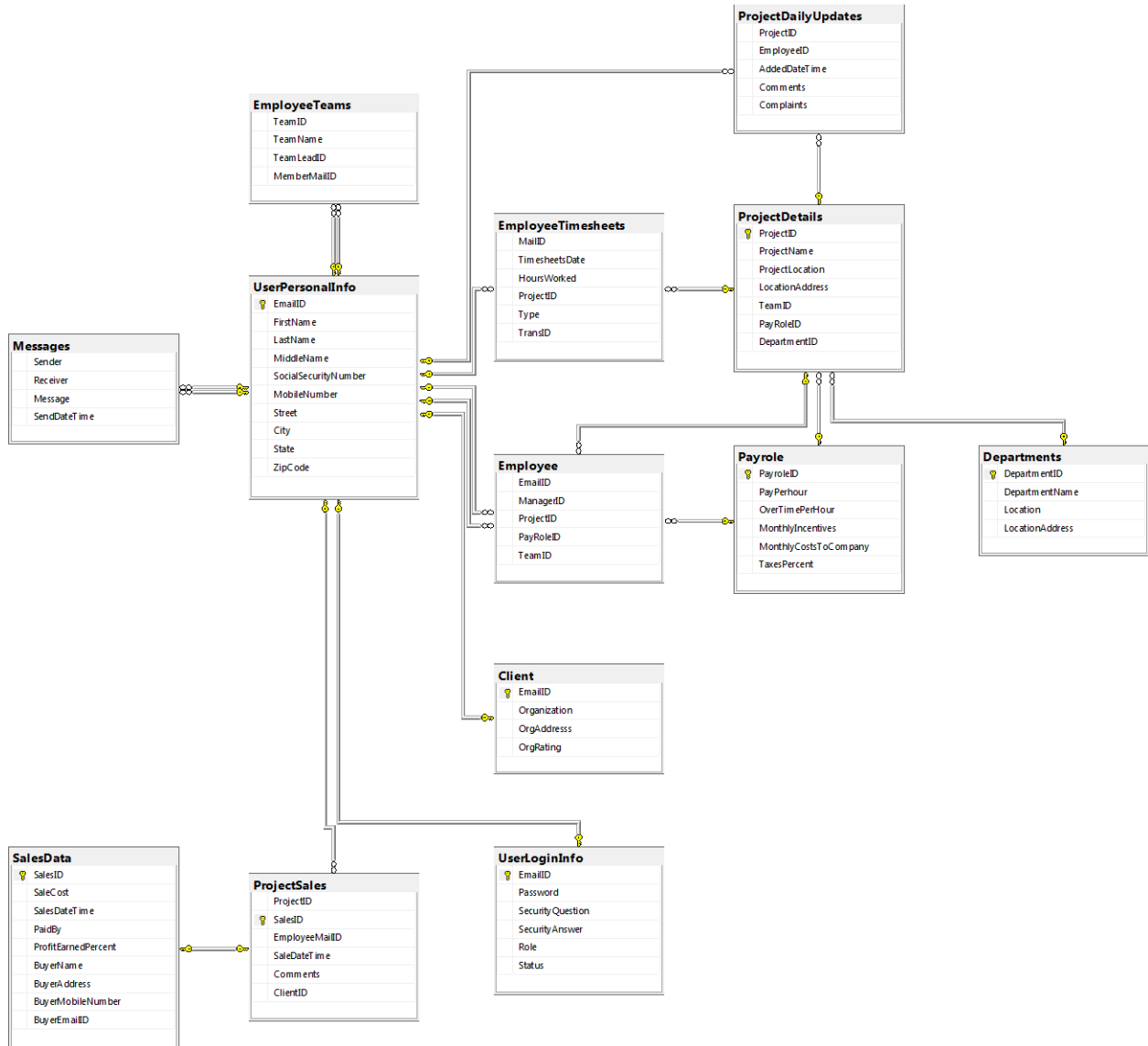
4.1.4. Viewing Sales Data

This is the primary feature where the users with role as manager or seller will be able to view the contents of the page. The manager or the seller will be able to view the data i.e. the sales data entered by the employee of various team and then filter them as per the needs.

4.2. Database Design

The below database design diagram depicts the relations between each table created in the database. The relationships reflect the check constrains that will be checked before performing any kind of updates on the database tables.

ProjectRequests	
ProjectRequestID	
ProjectName	
ClientName	
OrganizationName	
Location	
Description	
AddedBy	
VerifiedBy	
AddedDateTime	
Added	



5. Project Internal and External Interfaces

In the application, during the process of salary processing the finance team or the team related to salary processing will be using the data from the timesheet hours entered by the employees. This form of communication will not have any effect on the security of the data but if any of the communication medium is compromised then it may lead to loss of data integrity. Rather than this the application will be communicating with the local server and it has got its own security protocols to provide the data security.

6. Project Design Units

The project can be divided into three modules based on the roles the application can detect. At present in the application there are three roles which are defined as follows.

- Employee
- Manager
- Client

6.1. Employee

The below are a list of activities that can be performed by the employee.

6.1.1. Add Sales Data

In here the user will be able to add the sales data with respect to the project the user is assigned to. Each employee will be assigned to a project and each employee is responsible for entering all the sales data with respect to the project they are assigned to.

6.1.2. View Project Requests

The user with role as client will be able to add the project request which will be verified by the employee or the manager and then assign them to a team. The employee will be able to view the list of project requests that have been placed by the client.

6.1.3. Add Timesheets

The timesheets are the source for the salary generation of the employee where the timesheets entered by the employee will be used.

6.1.4. View Timesheets

In here the employee will be able to view the timesheets entered by him/her or calculate the number of working hours accordingly.

6.2. Manager

6.2.1. Assign Projects

In here the manager will be having the access to assign the project to the teams. The manger receives a list of project that must be verified and confirmed and once it's done then the manager would assign them to the teams.

6.2.2. Add teams and teammates

In here the manager will be able to add new team and assign new employee their teams to work on.

6.2.3. Add timesheets

In here the manager will be able to enter the timesheets which will be used for the salary generation of the manger.

6.2.4. View Timesheets

In here the manager will be able to view the timesheets entered by him/her and calculate the number of working hours.

6.2.5. View Sales Data

In here the manager will be able to view the sales data of all the project which is entered by the employees of various employee working from various teams.

6.2.6. Add user

In here the manager will be able to add new user with the either manager or employee or client roles with default password and security answers. Later when the user signs in, the user can update the credentials.

6.3. Client

6.3.1. Add Project Request

In here the client will be able to add new project request which are subject to approval from the manager and then they are assigned to the concerned team.

6.3.2. View Projects

In here the client will be able to view the list of all projects that have been assigned to different teams.

7. Open Issues

At present the salary processing has been not automated and this should be automated to save few work hours for the employees working on it.

8. References

Stack Overflow. 2016. Stack Overflow. [ONLINE] Available at: <http://stackoverflow.com/>. [Accessed 28 November 2016].

C# Tutorial Contents – C# Station. 2016. C# Tutorial Contents – C# Station. [ONLINE] Available at: <http://csharp-station.com/Tutorial/CSharp/SmartConsoleSetup.aspx>. [Accessed 28 November 2016].

www.techonthenet.com. 2016. SQL Server Tutorial. [ONLINE] Available at: https://www.techonthenet.com/sql_server/. [Accessed 28 November 2016].

Mark Otto, Jacob Thornton, and Bootstrap contributors. 2016. CSS · Bootstrap. [ONLINE] Available at: <http://getbootstrap.com/css/>. [Accessed 28 November 2016]

Codecademy. 2016. Learn HTML & CSS: Part I | Codecademy. [ONLINE] Available at: <https://www.codecademy.com/learn/learn-html-css>. [Accessed 28 November 2016].

Codecademy. 2016. JavaScript | Codecademy. [ONLINE] Available at: <https://www.codecademy.com/learn/javascript>. [Accessed 28 November 2016].