CUSTOMER RELATIONSHIP MANAGEMENT

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FINAL YEAR PROJECT REPORT

CUSTOMER RELATIONSHIP MANAGEMENT

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering.

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DAFFODIL INTERNATIONAL UNIVERSITY

DHAKA, BANGLADESH

APRIL 2018

APPROVAL

This Project titled **"Customer Relationship Management**", submitted by **Sumon Deb** and **Muhammad Rashiduzzaman** and **Zahid Hasan Showrov** to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on April 2018.

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DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Nusrat Jahan,** Lecturer, Department of CSE Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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ACKNOWLEDGEMENT

First we express our heartiest thanks and gratefulness to almighty Allah (God) for His divine blessing makes us possible to complete the final year project successfully.

We really grateful and wish our profound our indebtedness to **Nusrat Jahan**, Lecturer, Department of CSE Daffodil International University, Dhaka. Deep Knowledge & keen interest of our supervisor in the field of Software to carry out this project. Her endless patience, scholarly guidance, continual encouragement, constant and energetic supervision, constructive criticism , valuable advice, reading many inferior draft and correcting them at all stage have made it possible to complete this project.

We would like to express our heartiest gratitude to, **Dr. Syed Akhter Hossain**, Professor and Head**,** Department of CSE, for his kind help to finish our project and also to other faculty member and the staff of CSE department of Daffodil International University.

We would like to thank our entire course mate in Daffodil International University, who took part in this discuss while completing the course work.

Finally, we must acknowledge with due respect the constant support and patients of our parents.

ABSTRACT

Customer relationship management (CRM) is a combination of people, processes and technology that seeks to understand a company's customers. It is an integrated approach to managing relationships by focusing on customer retention and relationship development. CRM has evolved from advances in information technology and organizational changes in customer-centric processes. Companies that successfully implement CRM will reap the rewards in customer loyalty and long run profitability. However, successful implementation is elusive to many companies, mostly because they do not understand that CRM requires company-wide, cross-functional, customer-focused business process re-engineering. Although a large portion of CRM is technology, viewing CRM as a technology-only solution is likely to fail. Managing a successful CRM implementation requires an integrated and balanced approach to technology, process, and people.

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CHAPTER 1
INTRODUCTION

1.1 Definition

Customer Relationship Management (CRM) is a well-known system for managing an Organization's communications with customers, clients and sales prospects. This system uses technology for organizing, synchronizing and automating business and sales activities. This is a virtual system and this system does not require any physical offices or environment. So everybody can use this system easily. Administrator can communicate and provide services through this system, and also user can access and check his status and his project opportunity as well as getting more information about the projects and updating systems.

1.2 Objective

- For simplifying marketing and sales system.
- For providing better customer service.
- For discovering new customers and raise customer profit.
- For increasing cross sell products more effectively.

The Customer Relationship Management (CRM) system needs to support all the basic step of customer life cycle.

The Basic Steps are:

- Attracting present and new leads (customers).
- Adding new customers.
- Adding new business opportunities.
- Buildup communication to customer.
- Holding the customers.

1.3 Purpose

The purpose of CRM system is to:

- Maintain good relationship with customer
- Manage business opportunity
- Lead Management
- Track the business opportunity and develop it
- Daily Meeting, Task, Note, Emails with contacts or leads
- Alert Notification for meeting or call
- Customer Observation

The overall purposes are to search, allure and get new clients, nurture and hold those the organization already has. Entice former clients back in to the fold, and decrease marketing and client service cost.

1.4 Document Convention

In this CRM system we used very simple format. Bold face is used on general and sub topic or specific points of interest. Font size 14 and 12 is used on general topics and sub topics accordingly. The remainder of the document will be written using the standard font, Times New Roman with font 12.

1.5 Project Scope

This entire CRM system is web based and creating on open source applications and software. This system is developed in PHP (Laravel Framework) with apache web server and database is MySQL. Also included Node JS for User Notification. It is eligible and compatible for every web browser and operating system.

CHAPTER 2
OVERALL DESCRIPTION

This section contains different perspective of project with its available functions, user classes and characteristics, operating environment, assumption and dependencies, design and implementation constraints.

2.1 Project Features

In our project we have three types of roles:

- Administrator
- CRM User
- Both (Administrator & CRM)

2.1.1 General

Login

Every user login with their valid username and password. User having only admin access directly goes to admin panel and user having only CRM access goes to CRM panel and user having both accesses goes to app index.

App Index

App Index contains two parts, Administrator & Customer Relationship Management (CRM). This part is available only for users having both access (Administrator & CRM).

2.1.2 Administrator

User Management

Administrator generates the user and also can edit their details when required. If he wanted, he can add new user and inactive the existing user. Administrator can control user access for both panel (Administrator & CRM).

Set Target

Administrator assign sales target for the company and distribute the target between sales persons of the company.

Company Profile

Administrator can add or modify company Name, Logo, Address and other information.

2.1.3 CRM User

Dashboard

User can observe his contribution and compare with his sales target. He also checks his upcoming task & campaign and views his activities in calendar.

Leads

Leads are generated when new client comes and modify by the user. Leads are transforming into the contact when client qualify and assign for new opportunity. If once leads change into contact, then it will end. Leads can be created or imported from CSV file (Maximum 8000 leads at a time). Leads are accessible for only its owner.

Lead qualifying process consists of 5 steps:
- Unqualified
- Primary
- Maturity
- Finding
- Qualified

Accounts

In this system, Accounts represent client's company. Every Account has multiple clients (Contacts). Accounts are accessible for all users but only owner can modify.

Contacts

When lead is qualified, it transforms into contact. Contact also can be created directly. It mainly represents clients or customers.

Opportunities

When a scope is generated to make business to customer (Contact/Lead), then we called it opportunity. Opportunity can be won or lost by following 6 steps. Opportunity won means business is succeeded and Opportunity lost means business is failed. Lost reason must be included if it is lost.

Opportunity qualifying process consists of 6 steps:

- Initial
- Analysis
- Presentation
- Proposal
- Negotiate
- Closed (Won/Lost)

<u>**Activities**</u>

Meeting

User can call meeting, observe and set the meeting schedule. He can also modify the date, time, place of the meeting and inform to the appropriate client. User can set reminder for the meeting. He can also divert the meeting to another user.

Task

User can create task, observe and set the task schedule. He can also modify the date, priority, status of the task. He can also divert the task to another user.

Note

User can create note with details information. It helps user to maintain his work activities.

Call

User records call history into system, observe and set the call schedule. He can also modify the date, time, status (Held, Not Held, Planned) of the call. User can set reminder for the call. He can also divert the call to another user.

Email

User can send email to leads or contacts. For sending email, User must need to configure the email settings. He can also attach the file.

Calendar

User can view his activities (Meetings, Task) in calendar.

Campaign

User can create campaign to advertise his business, observe and set the campaign schedule. He can also modify the date, time, budget and actual cost of the campaign. User can also add impressions, expected revenue and actual revenue.

Back Office Setup

Email Configuration

Email Configuration is needed for sending email.

Products

Opportunity consists of different products. Products is created in Back Office.

Product Group

It represents product category and needed to create product.

Source

It represents Lead Source and needed to create Lead.

Lead Category

It is needed to create Lead.

2.2 Development Tools

A software development tool is an application or program that software designers and developers can use in order to create, maintain, debug, or support other applications or programs. To develop "CRM" applications following tools are used:

- PHP 7 (Laravel Framework)
- MYSQL

- Node JS
- HTML
- CSS
- Bootstrap
- jQuery
- Ajax
- JavaScript
- Plugins (Form Validation, Calendar, Date-picker, Summer-note, Loader, Image-viewer, Socket)
- IDE (Sublime Text, Atom, Notepad++, Dreamweaver, Visual Studio)
- Graphics Editor (Adobe Photoshop, Adobe Illustrator)
- Server (Linux)
- Browser (Firefox, Chrome etc.)

Using above software and hardware specification are used to develop "CRM".

2.3 Project Schedule

Task Name	From	To	Duration
Project Planning Proposal	06-Nov-17	12-Nov-17	6 Days
Requirements Gathering and Specification	13-Nov-17	10-Dec-17	24 Days
Data Analysis	13-Nov-17	24-Dec-17	36 Days
Design and Coding	25-Dec-17	18-Mar-18	72 Days
Testing and Debugging	04-Mar-18	14-Apr-18	36 Days
Implementation and Submission	15-Apr-18	05-May-18	18 Days

2.3.1 Gantt Chart for Project Schedule

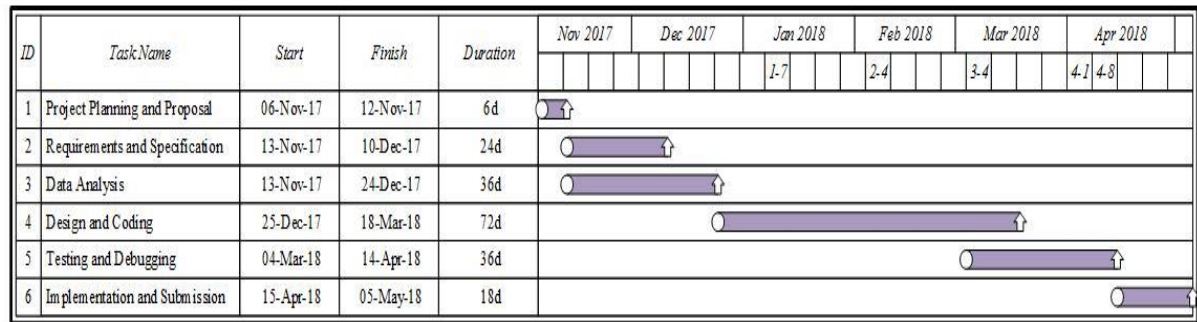| ID	Task Name	Start	Finish	Duration	Nov 2017	Dec 2017	Jan 2018 1-7	Feb 2018 2-4	Mar 2018 3-4	Apr 2018 4-1 4-8
1	Project Planning and Proposal	06-Nov-17	12-Nov-17	6d						
2	Requirements and Specification	13-Nov-17	10-Dec-17	24d						
3	Data Analysis	13-Nov-17	24-Dec-17	36d						
4	Design and Coding	25-Dec-17	18-Mar-18	72d						
5	Testing and Debugging	04-Mar-18	14-Apr-18	36d						
6	Implementation and Submission	15-Apr-18	05-May-18	18d						

Figure 2.3.1: Gantt chart of Online CRM Project Schedule

2.4 Flow Chart

A flowchart is a formalized graphic representation of a logic sequence, work or manufacturing process, organization chart, or similar formalized structure. The purpose of a flow chart is to provide people with a common language or reference point when dealing with a project or process.

Flowcharts use simple geometric symbols and arrows to define relationships. In this CRM software, the beginning or end of software is represented by an oval. A process is represented by a rectangle; a decision is represented by a diamond.

We follow this flow chart shown in **Fig 2.4.1** in our entire CRM project.
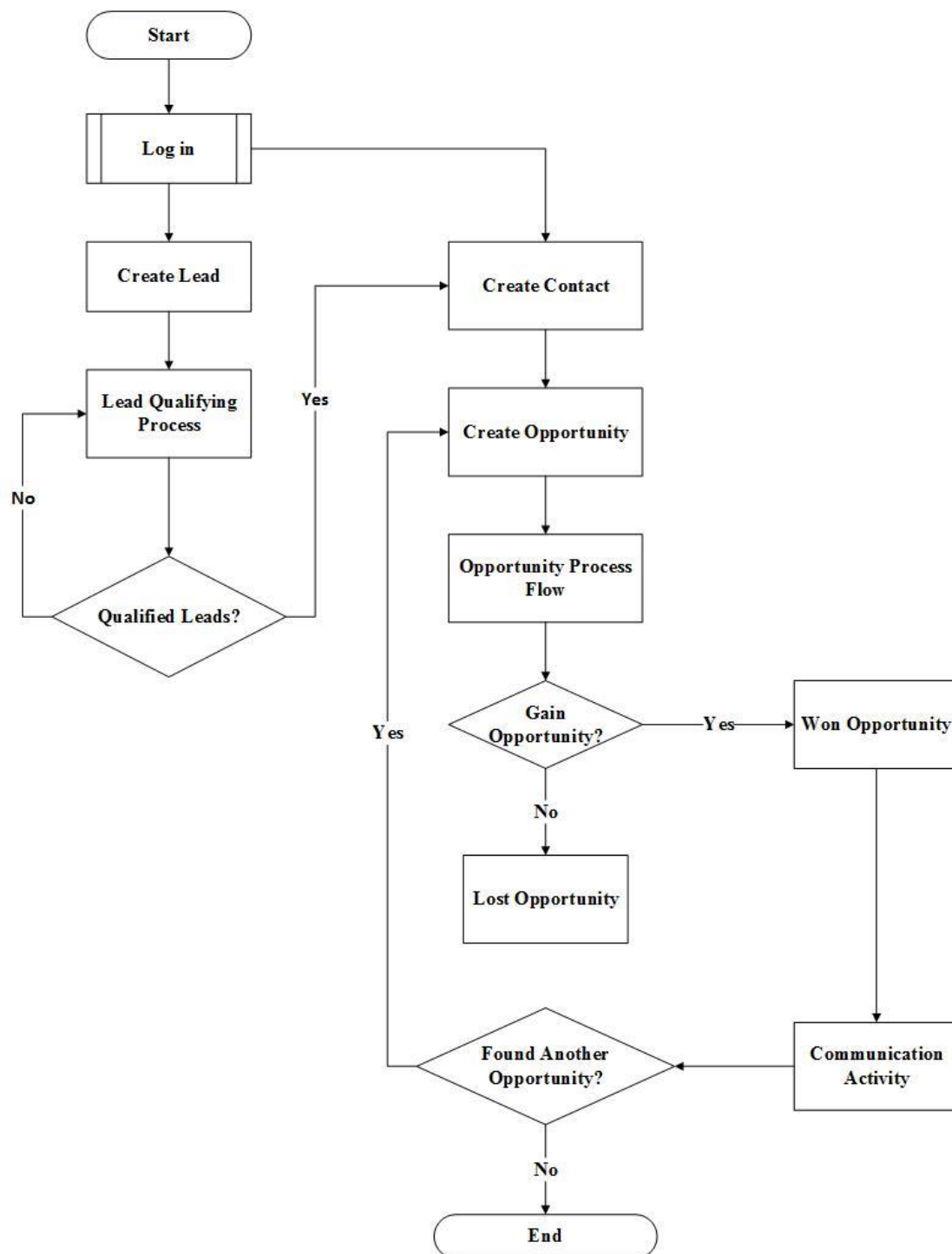

Figure 2.4.1: Flow Chart of Online CRM Project

CHAPTER 3
REQUIREMENT SPECIFICATION

3.1 Introduction

To run efficiently every software need some basic requirements which are Hardware components and Software resources. These requirements are often known as Requirement Specification which is used as rules and regulation.

3.2 General System Requirements

General system requirement deals with both least requirements of hardware and software that is required to run the optimal functioning of an application. To run "CRM" application on a website following things should be required:

- Operating System
- Browser (Firefox, Chrome etc.)
- Internet Connection
- PC or Mobile devices

Using above software and hardware specification one should be able to work with "CRM".

3.3 Use Case Model

The following diagram indicates the use case model for CRM. Here three kinds of user are present. A Supervisor (Admin) user can perform all the processes after login into system. On the other hand a normal user can handle note, client, actual sale, reminders, change password etc. He also needs to be logged in the system. Another CRM System user can also handle remainders.
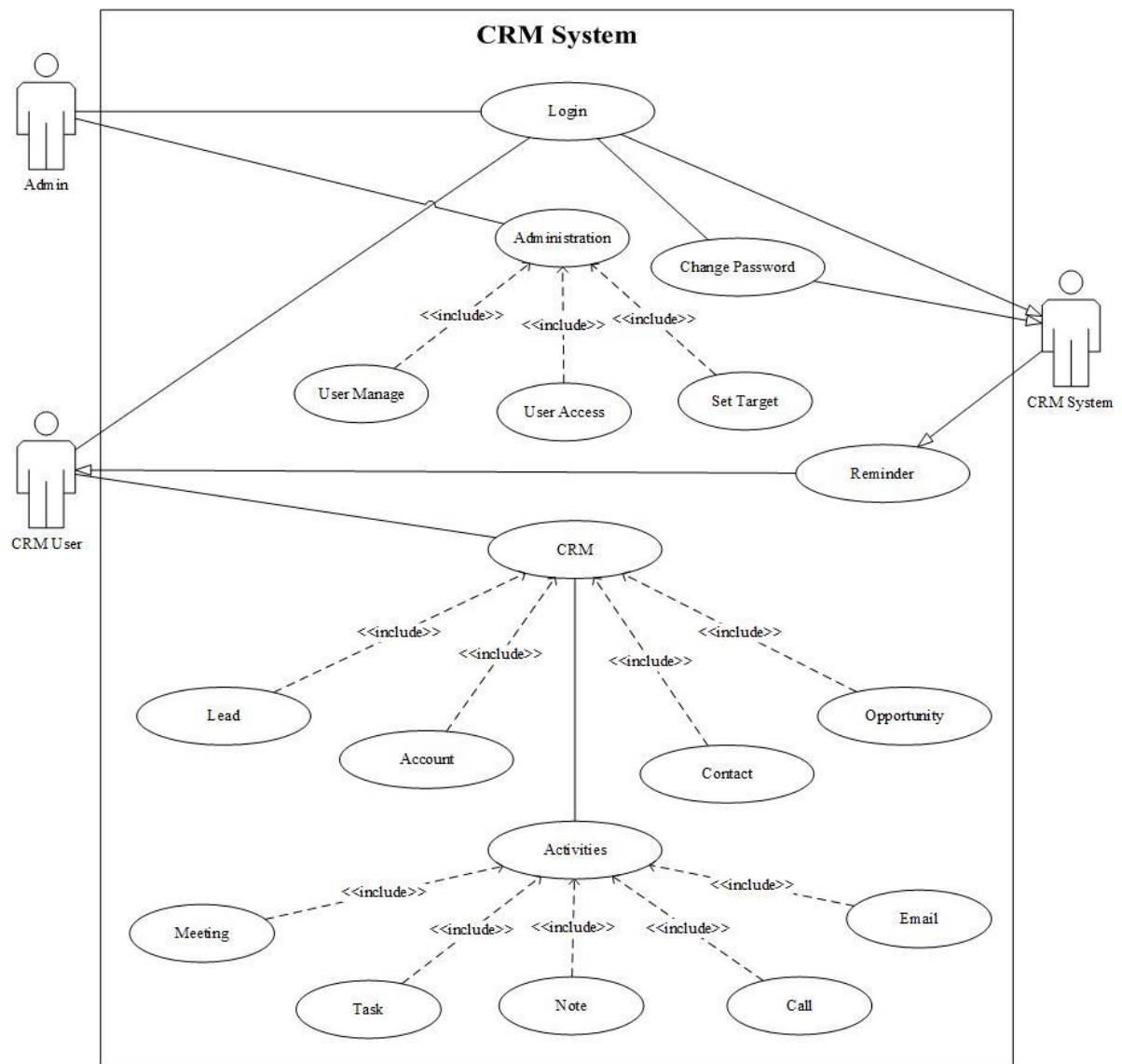
Figure 3.3.1: Use Case Model for Online CRM

3.4 Use Case Description

It has all the information of the Use case Model display in the previous picture. We have narrated use case with a table in the following section. Each table shows five types of detail information about a use case. They are Use case name, Actor, Pre-Condition, Primary Path and Exceptional Path. Use case name refers the name of the process. Actor identifies who will be the user. Pre-condition means whether or not another process is required to enter or use this process. Primary Path indicates step by step works of the process. Exceptional Path shows us what the process will do if any exception occurs in a primary path.

We provide fourteen tables with detail information of the processes of CRM project.

Table 3.4.1 Describes about "login" process of our project and it gives us an understanding how the process works in project. Login process has three primary paths. In this three primary path have two exceptional paths.

Table 3.4.1: Use case description of Login

Use case name:	Login
Actor:	Admin, CRM User
Pre-condition:	None
Primary Path:	1. Enter user Email 2. Enter Password 3. Click "Login" Button
Exceptional Path:	3.1 Please Enter Registered Email 3.2 Email or Password is not valid

Table 3.4.2 Describes about "Change Password" process of our project. Change Password process has four primary paths. In this four primary path have two exceptional paths.

Table 3.4.2: Use case description of Change Password

Use case name:	Change Password
Actor:	Admin, CRM User
Pre-condition:	Login
Primary Path:	1. Enter Old Password 2. Enter New Password 3. Confirm New Password 4. Click "Change Password" Button
Exceptional Path:	3.1 Please enter the same value 4.1 Your old password is incorrect

Table 3.4.3 Describes about "User Manage" process of our project and it gives us an understanding how this process works in project. User Manage process has eight primary paths. In this eight primary path have two exceptional paths.

Table 3.4.3: Use case description of User Manage.

Use case name:	User Manage
Actor:	Admin
Pre-condition:	Login
Primary Path:	1. Enter Employee Information 2. Select Employee Category 3. Click "Go" Button to search 4. Select Number of List 5. Click "Edit" Button to Update Employee Information 6. Click "Delete" Button to Delete Employee Information 7. Click "Access" Button to Access Employee Information 8. Click "Add New" Button to Create Employee
Exceptional Path:	1.1 Employee Information is not correct 3.1 List of Employee is empty

Table 3.4.4 Describes about "User Access" process of our project and it is gives us an understanding how this process works in project. User Access process has three primary paths. In this three primary path have two exceptional paths.

Table 3.4.4: Use case description of User Access.

Use case name:	User Access
Actor:	Admin

Pre-condition:	Login
Primary Path:	1. Enter Employee Information 2. Click "Go" Button to search 3. Select Number of List
Exceptional Path:	1.1 Employee Information is not correct 2.1 No search result found

Table 3.4.5 Describes about "Set Target" process of our project and it gives us an understanding how this process works in project. Set Target process has five primary paths. In this five primary paths have two exceptional paths.

Table 3.4.5: Use case description of Set Target.

Use case name:	Set Target
Actor:	Admin
Pre-condition:	Login
Primary Path:	1. Enter Employee Name 2. Or click "Search" Button to add Employee 3. Select Target Year 4. Enter Value (Amount in Taka) 5. Click "Create Sales Target" Button
Exceptional Path:	1.1 No matches found 3.1 No matches found

Table 3.4.6 Describes about "Lead" process of our project and it gives us an understanding how this process works in project. Lead process has seven primary paths. In this seven primary path have two exceptional paths.

Table 3.4.6: Use case description of Lead.

Use case name:	Lead
Actor:	CRM User
Pre-condition:	Login
Primary Path:	1. Enter Leads Information 2. Select Leads Category 3. Click "Go" Button to search 4. Select Number of List 5. Click "Edit" Icon to Update Lead 6. Click "Delete" Icon to Delete Lead 7. Click "Add New" Button to Create Lead
Exceptional Path:	1.1 Lead Information is not correct 3.1 List of Leads is empty

Table 3.4.7 Describes about "Account" process of our project and it gives us an understanding how this process works in project. Account process has seven primary paths. In this seven primary path have two exceptional paths.

Table 3.4.7: Use case description of Account.

Use case name:	Account
Actor:	CRM User
Pre-condition:	Login
Primary Path:	1. Enter Accounts Information 2. Select Accounts Category 3. Click "Go" Button to search 4. Select Number of List 5. Click "Edit" Icon to Update Accounts 6. Click "Delete" Icon to Delete Account 7. Click "Add New" Button to Create Account

Exceptional Path:	1.1 Account Information is not correct
	3.1 List of Accounts is empty

Table 3.4.8 Describes about "Contact" process of our project and it gives us an understanding how this process works in project. Contact process has eight primary paths. In this eight primary path have two exceptional paths.

Table 3.4.8: Use case description of Contact.

Use case name:	Contact
Actor:	CRM User
Pre-condition:	Login
Primary Path:	1. Enter Contacts Information
	2. Select Contacts Category
	3. Select Industry Category
	4. Click "Go" Button to search
	5. Select Number of List
	6. Click "Edit" Icon to Update Contacts
	7. Click "Delete" Icon to Delete Contact
	8. Click "Add New" Button to Create Contacts
Exceptional Path:	1.1 Contact Information is not correct
	4.1 List of Contacts is empty

Table 3.4.9 Describes about "Opportunity" process of our project and it gives us an understanding how this process works in project. Opportunity process has six primary paths. In this six primary path have two exceptional paths.

Table 3.4.9: Use case description of Opportunity.

Use case name:	Opportunity
Actor:	CRM User
Pre-condition:	Login
Primary Path:	1. Enter Opportunities Information 2. Click "Go" Button to search 3. Select Number of List 4. Click "Edit" Icon to Update Opportunities 5. Click "Delete" Icon to Delete Opportunity 6. Click "Add New" Button to Create Opportunities
Exceptional Path:	1.1 Opportunity Information is not correct 2.1 List of Opportunities is empty

Table 3.4.10 Describes about "Meeting" process of our project and it gives us an understanding how this process works in project. Meeting process has seven primary paths. In this seven primary path have two exceptional paths.

Table 3.4.10: Use case description of Meeting.

Use case name:	Meeting
Actor:	CRM User
Pre-condition:	Login
Primary Path:	1. Enter Meeting Information 2. Select Meeting Category 3. Click "Go" Button to search 4. Select Number of List 5. Click "Edit" Icon to Update Meeting 6. Click "Delete" Icon to Delete Meeting 7. Click "Add New" Button to Create

	Meeting
Exceptional Path:	1.1 Meeting Information is not correct 3.1 List of Meetings is empty

Table 3.4.11 Describes about "Task" process of our project and it gives us an understanding how this process works in project. Task process has seven primary paths. In this seven primary path have two exceptional paths.

Table 3.4.11: Use case description of Task.

Use case name:	Task
Actor:	CRM User
Pre-condition:	Login
Primary Path:	1. Enter Task Information 2. Select Task Category 3. Click "Go" Button to search 4. Select Number of List 5. Click "Edit" Icon to Update Tasks 6. Click "Delete" Icon to Delete Task 7. Click "Add New" Button to Create Task
Exceptional Path:	1.1 Task Information is not correct 3.1 List of Task is empty

Table 3.4.12 Describes about "Note" process of our project and it gives us an understanding how this process works in project. Note process has six primary paths. In this six primary path have two exceptional paths.

Table 3.4.12: Use case description of Note.

Use case name:	Note
Actor:	CRM User
Pre-condition:	Login
Primary Path:	1. Enter Note Information 2. Click "Go" Button to search 3. Select Number of List 4. Click "Edit" Icon to Update Notes 5. Click "Delete" Icon to Delete Note 6. Click "Add New" Button to Create Note
Exceptional Path:	1.1 Note Information is not correct 2.1 List of Note is empty

Table 3.4.13 Describes about "Call" process of our project and it gives us an understanding how this process works in project. Call process has seven primary paths. In this seven primary path have two exceptional paths.

Table 3.4.13: Use case description of Call.

Use case name:	Call
Actor:	CRM User
Pre-condition:	Login
Primary Path:	1. Enter Call Information 2. Select Call Category 3. Click "Go" Button to search 4. Select Number of List 5. Click "Edit" Icon to Update Calls 6. Click "Delete" Icon to Delete Call 7. Click "Add New" Button to Create Call

Exceptional Path:	1.1 Call Information is not correct
	3.1 List of Call is empty

Table 3.4.14 Describes about "Email" process of our project and it gives us an understanding how this process works in project. Email process has five primary paths. In this five primary path have two exceptional paths.

Table 3.4.14: Use case description of Email.

Use case name:	Email
Actor:	CRM User
Pre-condition:	Login
Primary Path:	1. Enter Email Information
	2. Click "Go" Button to search
	3. Select Number of List
	4. Click "Subject Title" to see Email details
	5. Click "Compose" Button to Create Email
Exceptional Path:	1.1 Email Information is not correct
	2.1 List of Email is empty

CHAPTER 4
SYSTEM DESIGN SPECIFICATION

4.1 Data Flow Diagrams

A data flow diagram (DFD) maps out the flow of information for any process or system. It uses defined symbols like rectangles, circles and arrows, plus short text labels, to show data inputs, outputs, storage points and the routes between each destination.A DFD describes what data flow (logical) rather than how they are processed, so it does not depend on hardware, software, data structure or file organization.

Data flowcharts can range from simple, even hand-drawn process overviews, to in-depth, multi-level DFDs that dig progressively deeper into how the data is handled. They can be used to analyze an existing system or model a new one. Like all the best diagrams and charts, a DFD can often visually "say" things that would be hard to explain in words, and they work for both technical and nontechnical audiences, from developer to CEO. That's why DFDs remain so popular after all these years. While they work well for data flow software and systems, they are less applicable nowadays to visualizing interactive, real-time or database-oriented software or systems.

Data flow diagrams are one of the three essential perspectives of the structured-systems analysis and design method. The sponsor of a project and the end users will need to be briefed and consulted throughout all stages of a system's evolution. With a data flow diagram, users are able to visualize how the system will operate, what the system will accomplish, and how the system will be implemented.The symbols used to prepare DFD do not imply a physical implementation. The four basic symbols used to construct data flow diagrams are shown below:
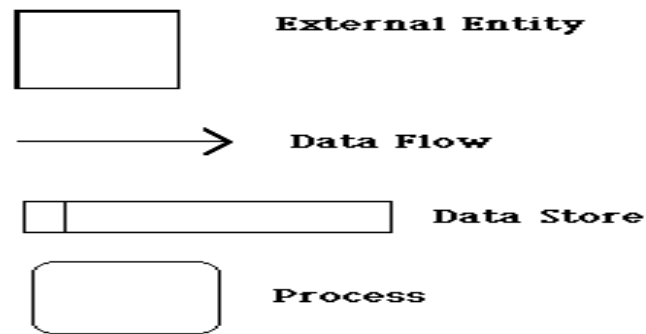
These are symbols that represent data flows, data sources, data transformations and data storage. The points at which data are transformed are represented by enclosed figures, usually circles, which are called nodes.
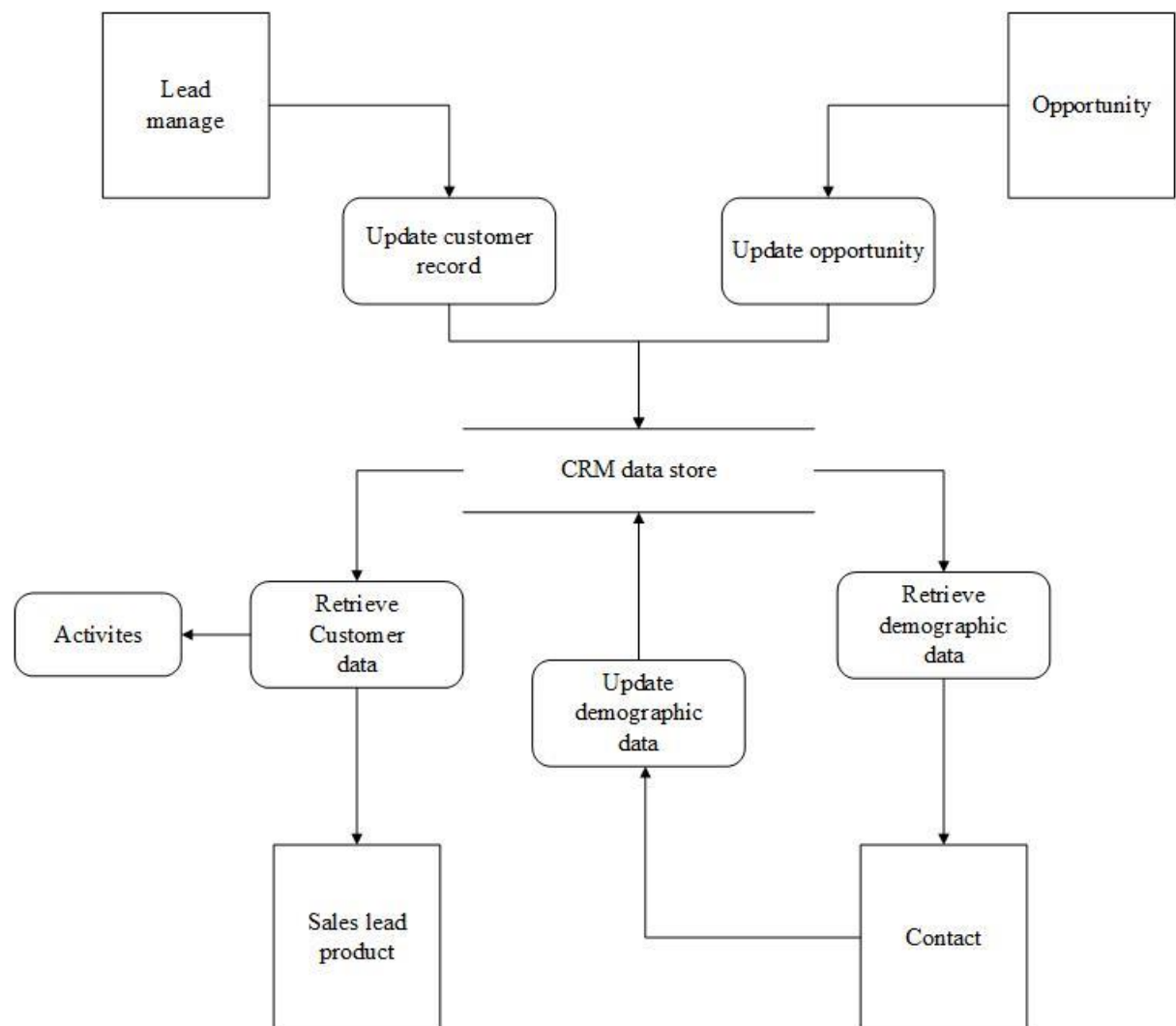

Figure 4.1.1: Data Flow Diagram of online CRM

4.2 UML Class Diagram:

Class diagram is a static diagram. It represents the static view of an application. Class diagram is not only used for visualizing, describing, and documenting different aspects of a system but also for constructing executable code of the software application.

Class diagram shows a collection of classes, interfaces, associations, collaborations, and constraints. It is also known as a structural diagram.
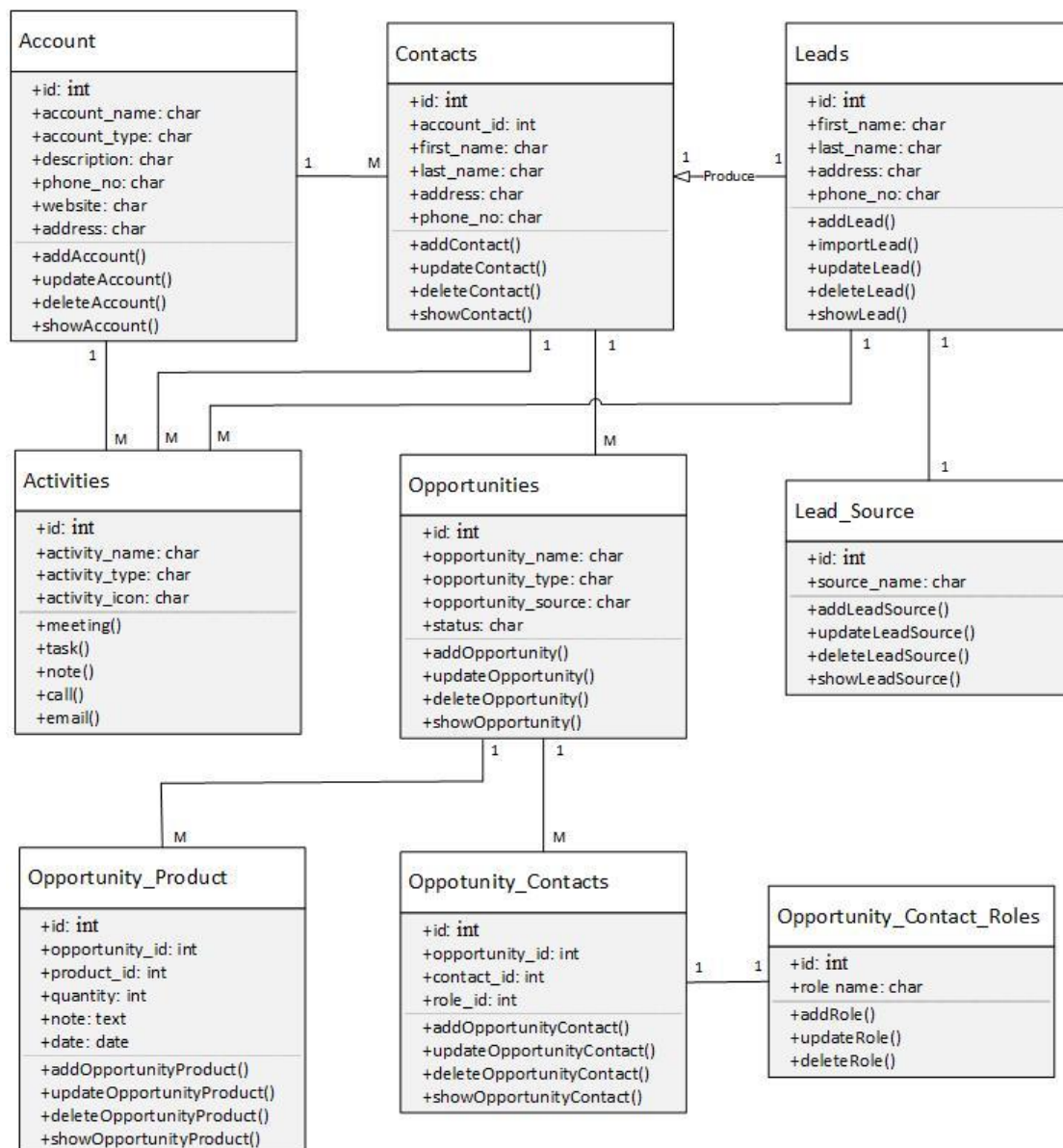
Figure 4.2.1: UML Class Diagram

4.3 Database Design

A database design is a collection of stored data organized in such a way that the data requirements are satisfied by the database. The general objective is to make information access easy, quick, inexpensive and flexible for the user. There are also some specific objectives like controlled redundancy from failure, privacy, security and performance.

A collection of relative records makes up a table. To design and store data to the needed forms database tables are prepared. Two essential settings for a database are:

- ❖ Primary key: - A primary key is a special relational database table column (or combination of columns) designated to uniquely identify all table records.
- ❖ Foreign key: - A foreign key is a column or group of columns in a relational database table that provides a link between data in two tables

4.4 E-R Diagram:

Entity Relationship Diagram, also known as ERD, ER Diagram or ER model, is a type of structural diagram for use in database design. An ERD contains different symbols and connectors that visualize two important information; the major entities within the system scope, and the inter-relationships among these entities.

It is most often used to design or debug relational databases in the fields of software engineering, business information systems, education and research. They use a defined set of symbols such as rectangles, diamonds, ovals and connecting lines to depict the interconnectedness of entities, relationships and their attributes.
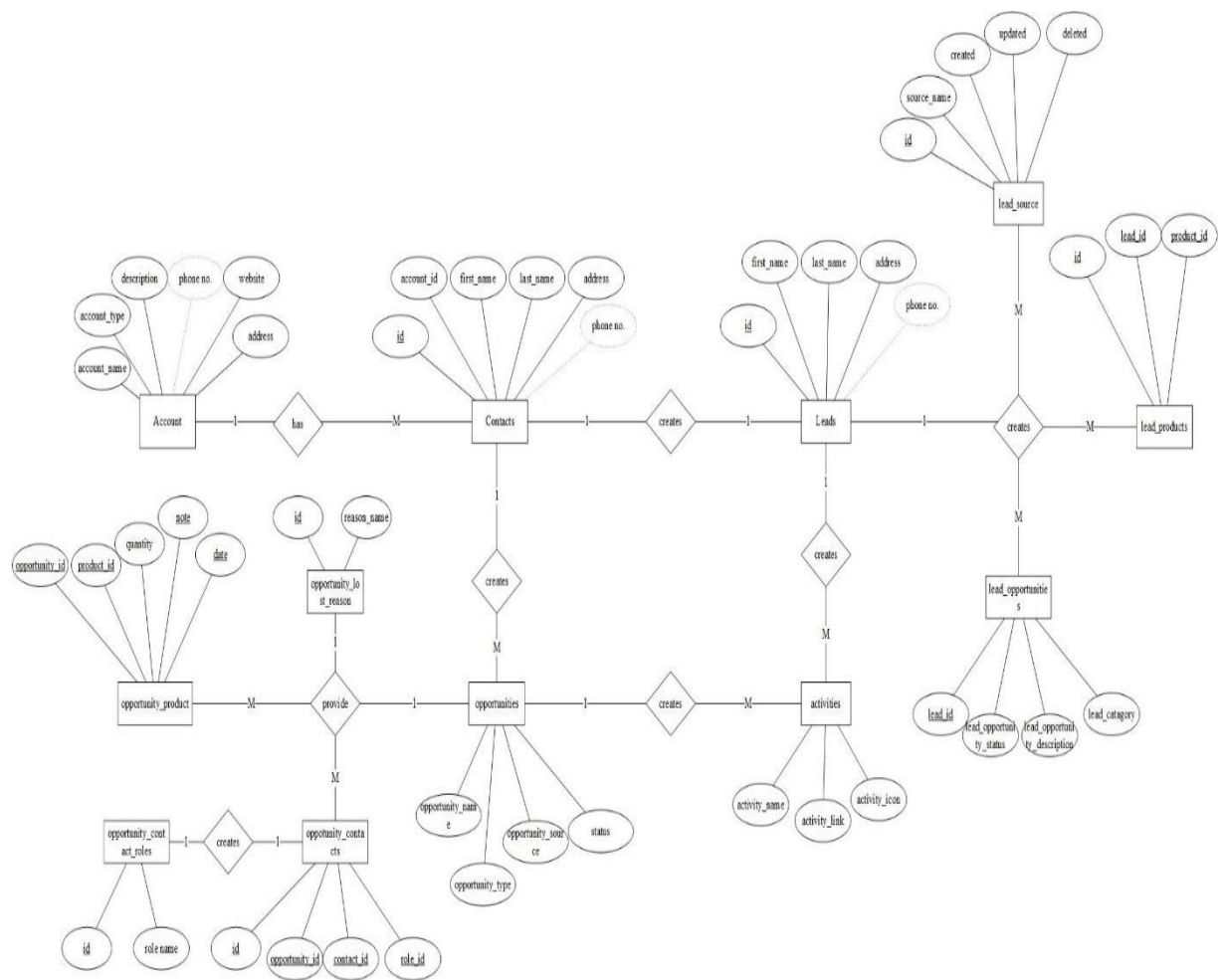
Figure 4.4.1: ER Diagram of CRM

4.5 Database Table Design

Table 4.5.1 Table structure for table crm_accounts:

Column	Type	Null	Default
id	int(11)	No	
account_name	varchar(100)	No	
account_type	int(11)	No	
description	Text	No	
parent_account	int(11)	No	
phone	varchar(50)	No	
website	varchar(100)	No	
industry	int(11)	No	
employees	int(11)	No	
billing_address	text	No	
billing_street	varchar(50)	No	
billing_city	varchar(50)	No	
billing_state	varchar(50)	No	
billing_post_code	varchar(20)	No	
billing_country	int(11)	No	
shipping_address	text	No	
shipping_street	varchar(50)	No	
shipping_city	varchar(50)	No	
shipping_state	varchar(50)	No	
shipping_post_code	varchar(20)	No	
shipping_country	int(11)	No	
assign_to	int(11)	No	
created_at	timestamp	Yes	NULL
created_by	int(11)	No	
updated_at	timestamp	Yes	NULL

Column	Type	Null	Default
updated_by	int(11)	No	
deleted_at	timestamp	Yes	NULL
deleted_by	int(11)	No	
project_id	int(11)	No	
valid	tinyint(1)	No	

Table 4.5.2 Table structure for table crm_activities:

Column	Type	Null	Default
id	int(11)	No	
activity_name	varchar(100)	No	
activity_link	varchar(50)	No	
activity_icon	varchar(50)	No	
search_url	varchar(100)	No	
sl_no	int(11)	No	

Table 4.5.3 Table structure for table crm_contacts:

Column	Type	Null	Default
Id	int(11)	No	
account_id	int(11)	No	
name_title	int(11)	No	
first_name	varchar(50)	No	
last_name	varchar(50)	No	
Surname	varchar(50)	No	
Designation	varchar(100)	No	
Department	varchar(100)	No	
full_address	text	No	
Street	varchar(50)	No	

City	varchar(50)	No	
State	varchar(50)	No	
post_code	varchar(20)	No	
Country	int(11)	No	
Mobile	varchar(50)	No	
office_phone	varchar(50)	No	
Fax	varchar(50)	No	
Website	varchar(100)	No	
Email	varchar(100)	No	
Industry	int(11)	No	
Note	text	No	
nature_id	int(11)	No	
Image	varchar(50)	No	
assign_to	int(11)	No	
created_at	timestamp	Yes	NULL
created_by	int(11)	No	
updated_at	timestamp	Yes	NULL
updated_by	int(11)	No	
deleted_at	timestamp	Yes	NULL
deleted_by	int(11)	No	
project_id	int(11)	No	
Valid	tinyint(1)	No	

Table 4.5.4 Table structure for table crm_leads:

Column	Type	Null	Default
Id	int(11)	No	
generated_lead_id	varchar(20)	No	
csv_id	int(11)	No	

csv_file	int(11)	No	
name_title	int(11)	No	
first_name	varchar(50)	No	
last_name	varchar(50)	No	
Surname	varchar(50)	No	
Designation	varchar(100)	No	
Department	varchar(100)	No	
full_address	text	No	
Street	varchar(50)	No	
City	varchar(50)	No	
State	varchar(50)	No	
post_code	varchar(20)	No	
Country	int(11)	No	
Mobile	varchar(50)	No	
office_phone	varchar(50)	No	
Fax	varchar(50)	No	
Website	varchar(100)	No	
Email	varchar(100)	No	
company_name	varchar(100)	No	
Industry	int(11)	No	
Employees	int(11)	No	
lead_description	varchar(200)	No	
Rating	int(11)	No	
lead_source	int(11)	No	
Campaign	int(11)	No	
lead_referred_by	varchar(100)	No	
assign_to	int(11)	No	
step_one_status	tinyint(4)	No	
step_one_date	timestamp	Yes	NULL

step_two_status	tinyint(4)	No	
step_two_date	timestamp	Yes	NULL
step_three_status	tinyint(4)	No	
step_three_date	timestamp	Yes	NULL
step_four_status	tinyint(4)	No	
step_four_date	timestamp	Yes	NULL
step_five_status	tinyint(4)	No	
step_five_date	timestamp	Yes	NULL
Stage	tinyint(4)	No	
created_at	timestamp	Yes	NULL
created_by	int(11)	No	
updated_at	timestamp	Yes	NULL
updated_by	int(11)	No	
deleted_at	timestamp	Yes	NULL
deleted_by	int(11)	No	
project_id	int(11)	No	
Valid	tinyint(1)	No	

Table 4.5.5 Table structure for table crm_lead_info_basic:

Column	Type	Null	Default
Id	int(11)	No	
generated_lead_id	varchar(20)	No	
csv_id	int(11)	No	
csv_file	int(11)	No	
first_name	varchar(50)	No	
last_name	varchar(50)	No	
Designation	varchar(100)	No	
Department	varchar(100)	No	

company_name	varchar(100)	No	
full_address	text	No	
lead_email	varchar(100)	No	
lead_mobile	varchar(22)	No	
lead_office_phone	varchar(100)	No	
Website	varchar(100)	No	
lead_source	int(11)	No	
lead_source_description	varchar(200)	No	
lead_referred_by	varchar(100)	No	
lead_description	varchar(200)	No	
assign_to	int(11)	No	
Status	tinyint(4)	No	
created_at	timestamp	Yes	NULL
created_by	int(11)	No	
updated_at	timestamp	Yes	NULL
updated_by	int(11)	No	
deleted_at	timestamp	Yes	NULL
deleted_by	int(11)	No	
project_id	int(11)	No	
Valid	tinyint(1)	No	

Table 4.5.6 Table structure for table crm_lead_opportunities:

Column	Type	Null	Default
Id	int(11)	No	
lead_id	int(11)	No	
lead_opportunities_status	int(11)	No	
lead_opportunities_description	varchar(200)	No	
lead_category	int(11)	No	

currency_id	int(11)	No	
lead_opportunities_amount	float(8,2)	No	
Probability	Float	No	
created_at	Timestamp	Yes	NULL
created_by	int(11)	No	
updated_at	Timestamp	Yes	NULL
updated_by	int(11)	No	
deleted_at	Timestamp	Yes	NULL
deleted_by	int(11)	No	
project_id	int(11)	No	
Valid	tinyint(1)	No	

Table 4.5.7 Table structure for table crm_lead_products:

Column	Type	Null	Default
Id	int(11)	No	
lead_id	int(11)	No	
product_id	int(11)	No	
created_at	timestamp	Yes	NULL
created_by	int(11)	No	
updated_at	timestamp	Yes	NULL
updated_by	int(11)	No	
deleted_at	timestamp	Yes	NULL
deleted_by	int(11)	No	
project_id	int(11)	No	
Valid	tinyint(1)	No	

Table 4.5.8 Table structure for table crm_lead_source:

Column	Type	Null	Default
Id	int(11)	No	
source_name	varchar(50)	No	
created_at	timestamp	Yes	NULL
created_by	int(11)	No	
updated_at	timestamp	Yes	NULL
updated_by	int(11)	No	
deleted_at	timestamp	Yes	NULL
deleted_by	int(11)	No	
project_id	int(11)	No	
Valid	tinyint(1)	No	

Table 4.5.9 Table structure for table crm_opportunities:

Column	Type	Null	Default
Id	int(11)	No	
account_id	int(11)	No	
opportunity_name	varchar(100)	No	
opportunity_type	int(11)	No	
opportunity_source	int(11)	No	
campaign_source	int(11)	No	
budget_confirmed	tinyint(1)	No	
analysis_completed	tinyint(1)	No	
Status	int(11)	No	
Category	int(11)	No	
step_one_status	tinyint(4)	No	
step_one_date	timestamp	Yes	NULL

step_two_status	tinyint(4)	No	
step_two_date	timestamp	Yes	NULL
step_three_status	tinyint(4)	No	
step_three_date	timestamp	Yes	NULL
step_four_status	tinyint(4)	No	
step_four_date	timestamp	Yes	NULL
step_five_status	tinyint(4)	No	
step_five_date	timestamp	Yes	NULL
step_final_status	tinyint(1)	No	
step_final_date	timestamp	Yes	NULL
Stage	int(11)	No	
Probability	tinyint(4)	No	
currency_id	int(11)	No	
opportunity_amount	float(11,2)	No	
proposed_amount	float(11,2)	No	
actual_amount	float(11,2)	No	
closed_date	date	No	
lost_reason_id	int(11)	No	
lost_reason_details	text	No	
assign_to	int(11)	No	
created_at	timestamp	Yes	NULL
created_by	int(11)	No	
updated_at	timestamp	Yes	NULL
updated_by	int(11)	No	
deleted_at	timestamp	Yes	NULL
deleted_by	int(11)	No	
project_id	int(11)	No	
Valid	tinyint(1)	No	

Table 4.5.10 Table structure for table crm_opportunity_contact:

Column	Type	Null	Default
Id	int(11)	No	
opportunity_id	int(11)	No	
contact_id	int(11)	No	
role_id	int(11)	No	
is_primary	tinyint(1)	Yes	NULL
created_at	timestamp	Yes	NULL
created_by	int(11)	No	
updated_at	timestamp	Yes	NULL
updated_by	int(11)	No	
deleted_at	timestamp	Yes	NULL
deleted_by	int(11)	No	
project_id	int(11)	No	
Valid	tinyint(1)	No	
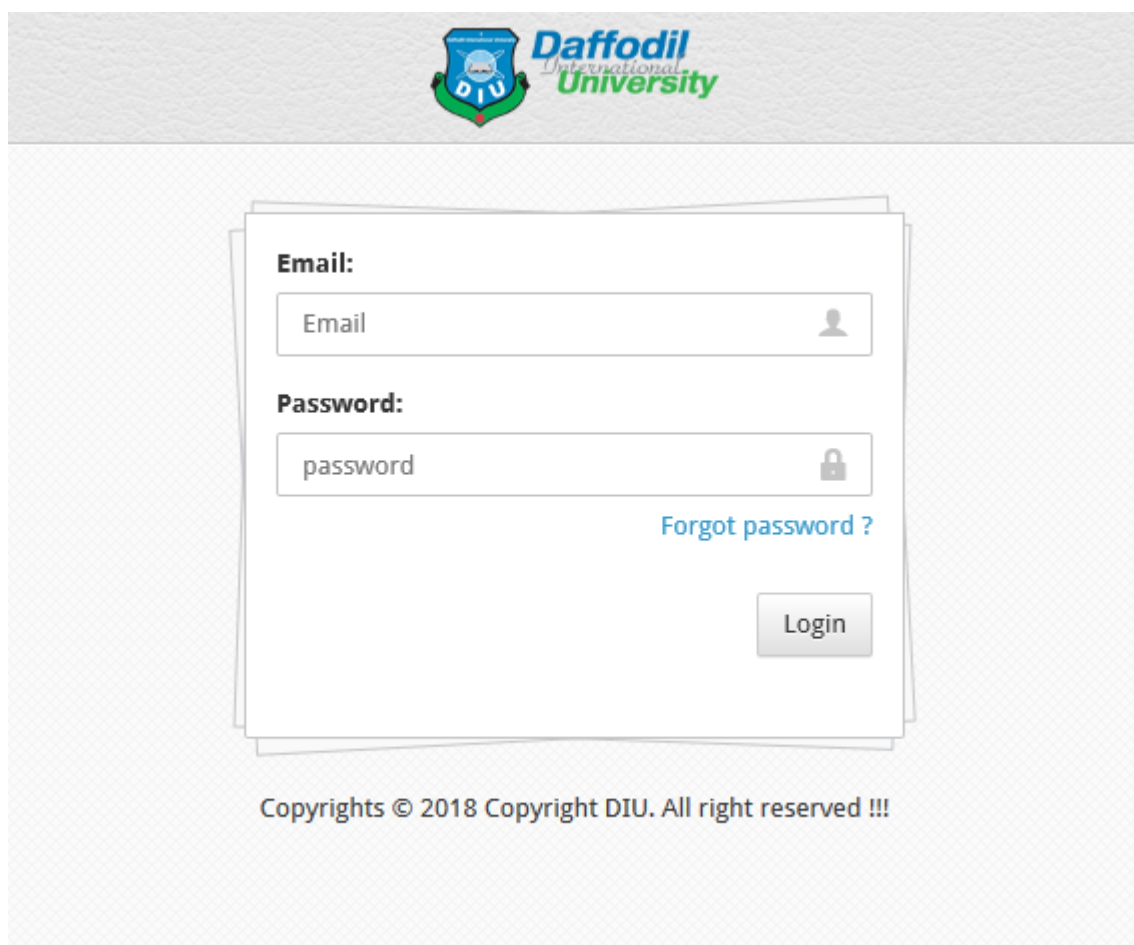
CHAPTER 5
EXTERNAL INTERFACE REQUIREMENTS

This Chapter contains the summary of user interface of our Online Customer Relationship Management (CRM) Software.

5.1 User Interfaces
Login Page:

Figure 5.1.1: Login Page.

App Index:
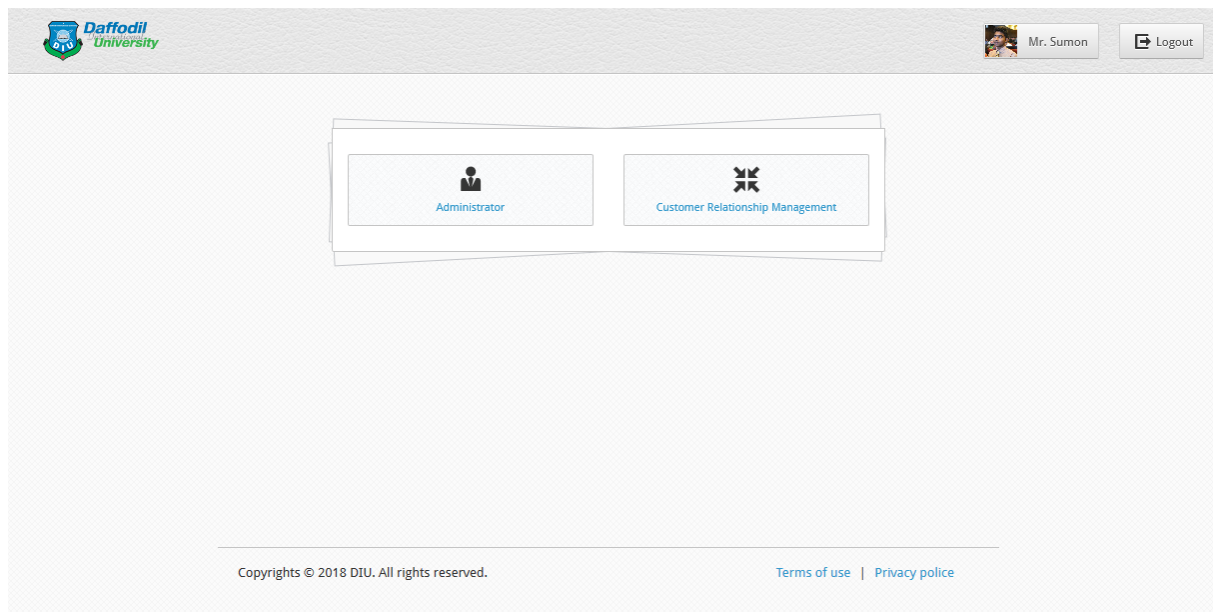
Figure 5.1.2: App Index

Administrator Part

Administrator Home page:
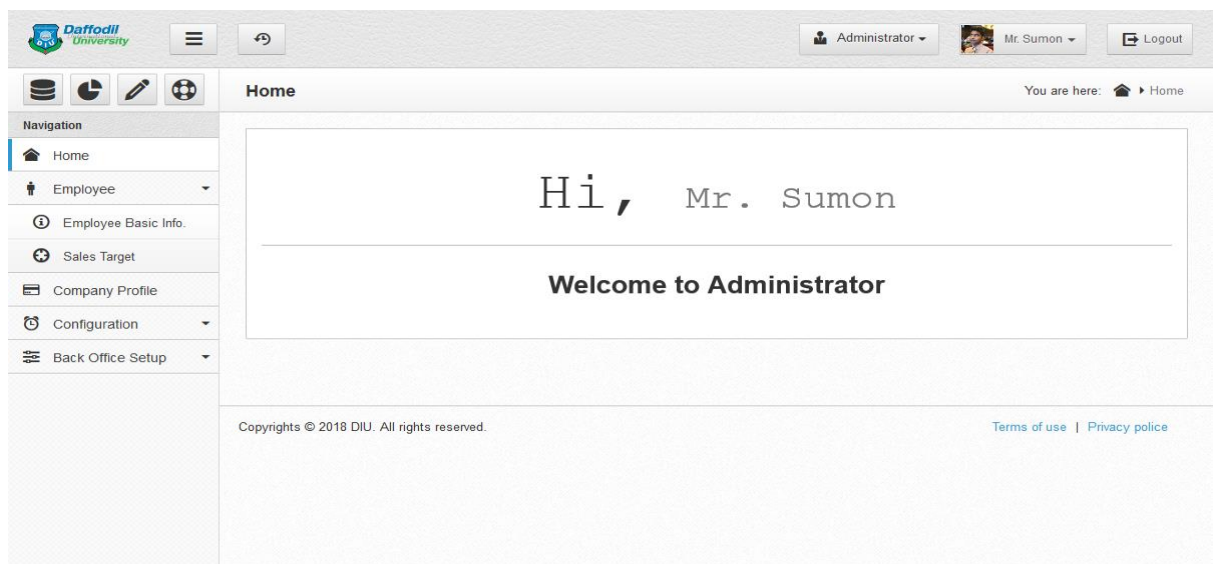
Figure 5.1.3: Administrator Home page

Company Profile:

Figure 5.1.4: Company Profile

Company Target:

Figure 5.1.5: Company Target

Employee Create:

Figure 5.1.6: Employee create

Create Sales Targets:

Figure 5.1.7: Create Sales Targets

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Customer Relationship Management Part

Dashboard:
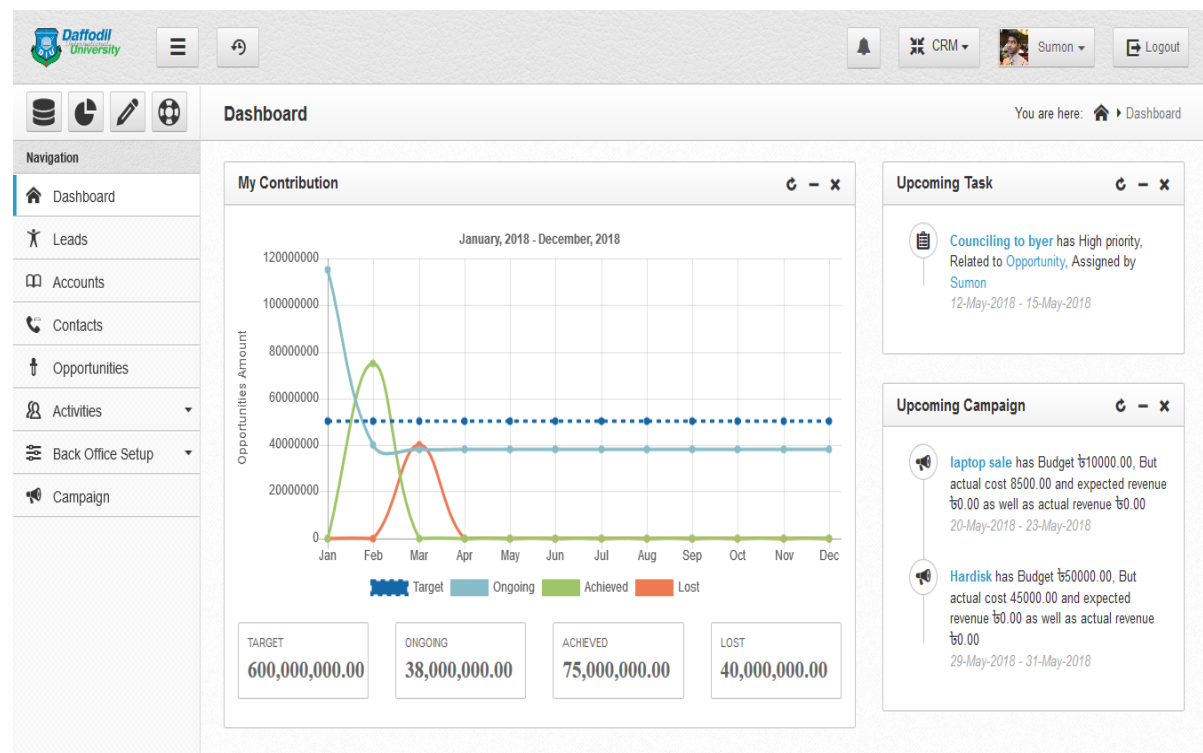
Figure 5.1.8: Dashboard

Lead Create:

Figure 5.1.9: Create Leads

Import Leads

Figure 5.1.10: Import Leads (Maximum 8000 at a time)

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Lead Process Flow

Figure 5.1.11: Lead Process Flow

Account Create

Figure 5.1.12: Account Create

Contact Create

Figure 5.1.13: Contact Create

Opportunity Create

Figure 5.1.14: Opportunity Create

Opportunity Process Flow

Figure 5.1.15: Opportunity Process Flow

Meeting Create

Figure 5.1.16: Meeting Create

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Task Create

Figure 5.1.17: Task Create

Note Create

Figure 5.1.18: Note Create

Call Create

Figure 5.1.19: Call Create

Email Create

Figure 5.1.20: Email Create

Calendar
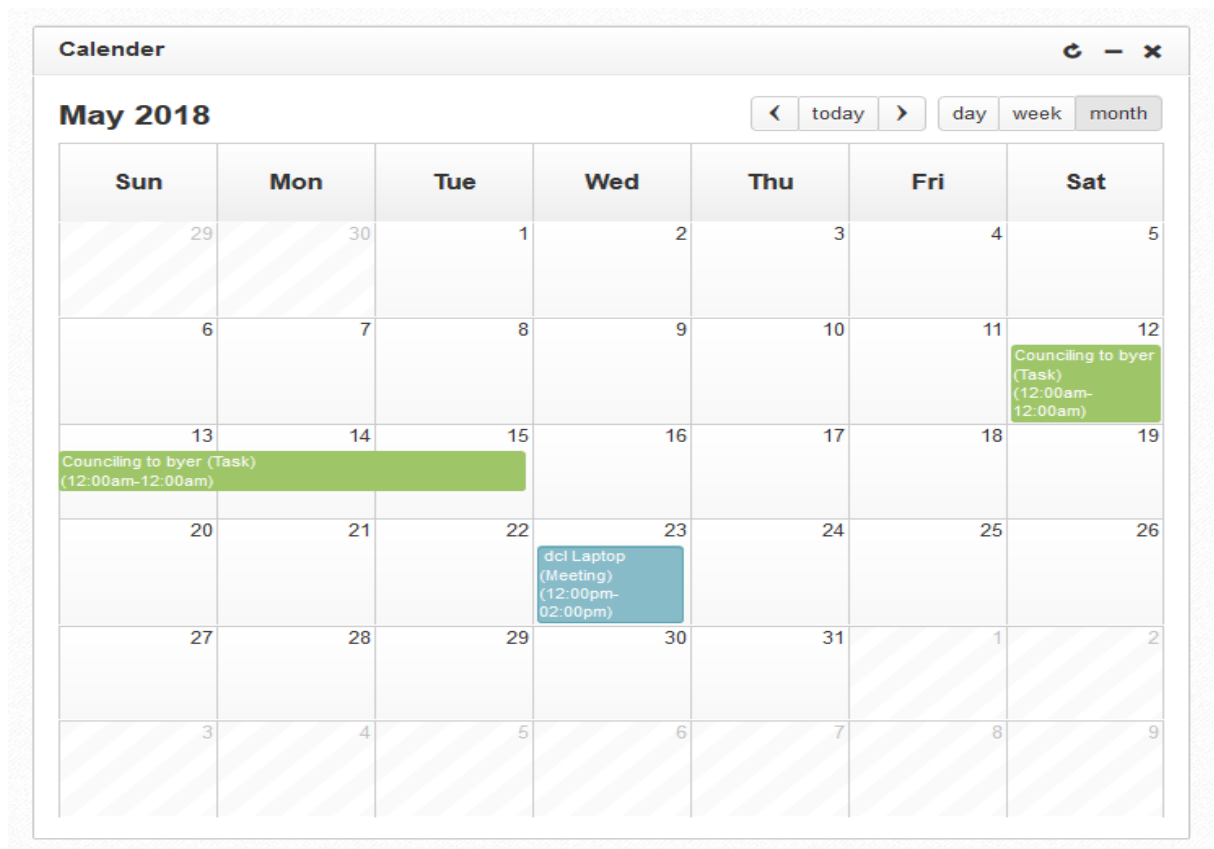
Figure 5.1.21: Calendar Shows Task & Meeting

Campaign Create

Figure 5.1.22: Campaign Create

5.2 Communications Interfaces

To send sent Email requires SMTP server. Due to lack of hardware resource we have not configured any local SMTP server. We have used Gmail SMTP sever to send email. To get real time push notification we have integrated Node JS.

CHAPTER 6

OTHER NONFUNCTIONAL REQUIREMENTS

6.1 Performance Requirements

Performance requirements of CRM

Performance of CRM deployment is dependent on a number of factors related to the infrastructure and controller services. It is recommended to use high performance Computer or Mobile Device and reliable internet connection

6.2 Security Requirements

Following steps should take to secure CRM hypervisors:

1. Should must use both firewall and Intrusion Prevention System

2. Strong Password Policy & Password aging policy should enforce mandatorily

3. Implement two steps authentication

CHAPTER 7
CONCLUSION AND FUTURE SCOPE

7.1 Discussion and Conclusion

This is to conclude that the project that we undertook was worked upon with a sincere effort. Most of the requirements have been fulfilled up to the mark and the requirements which have been remaining, can be completed in near future.

We tried to implement the best practices and Framework of PHP. We also implement MVC design pattern with fronted template system like Smarty. We worked in PHP for the first time in this project. So sometimes we faced some problems at the time of work. We also tried to implement Node JS, Relational Database and Advance Database Feature in our project.

7.2 Future Scope

In the near future we will try to implement Artificial Intelligence (AI) based feature in our Project. Such as by collecting user experience and analyzing the user data we can build up our relationship with customer more effectively. We can also build up our marketing policy more effectively through communication with user. This is a scope which we will try to update in the near future.

APPENDIX

Appendix A: Glossary

CRM: Customer Relationship Management

SRS: Software Requirement Specification

AI: Artificial Intelligence

PHP: Hypertext Preprocessor

HTML: Hypertext Markup Language

CSS: Cascading Style Sheets

UML: Unified Modeling Language

ERD: Entity Relationship Diagram

DFD: Data Flow Diagram

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