

CHALMERS



a product by Eurwaymedia.com

CLOSE CONTACT
Stay in touch with your customers

Close Contact

Specification & Implementation

Master of Science Thesis in the Programme Software engineering and technology

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Göteborg, Sweden, August 2009

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Close Contact is email marketing tool by eruowaymedia.com which provides easy and better way to send newsletters and store customer information with a lot of other functionalities at a single place.

Department of Computer Science and Engineering
Göteborg, Sweden August 2009

PREFACE

This thesis has been done under the M.Sc. degree Software Engineering and Technology at Chalmers University of Technology. Thesis is completed under supervision of Christian Nicolaisen. The examiner for the thesis was Christer Carlsson. This thesis was idea of the company Euroway Media and has done with the closed coordination with them.

I am very grateful to my supervisor, my examiner and Euroway Media for all of their efforts and help in completing this thesis with me.

Göteborg, June 2009

Muhammad Fahad Salman Malik

ABSTRACT

Close Contact is a web application which is the product of Euroway Media. It is a Business To Business application, its focus is to provide marketing facilities to its customers (users). The users of the Close Contact will use this web application to send promotions and newsletters to their potential customers. These customers include both industrial clients and then can be distributed by them for their sub clients as well. The goal of this thesis is actual realization of the features put forth by the Euroway Media which include newsletters, SMS promotions & user behavior by use of statistics.

All details related to specification and implementation will be the part of this thesis and will be discussed here. This document cover the features, conceptual model, use cases, architecture, database model, screen analysis and test cases of Close Contact.

After the initial analysis and design the implementation part was started on the finalized design. As Euroway Media works in PHP for all of its implementation so we also used PHP for the creation of Close Contact.

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1-INTRODUCTION:

This report is summarized into three main sections. Section-1 contains all the information related to requirements. All list of features, hardware/software requirements, the motivation of close contact and a little introduction to the company Euroway Media. Section-2 is about the actual realization of Close Contact. It includes class diagrams, message sequence diagrams, architecture, development approach and conceptual model. Section-3 is last section which contained the actual screens and a small description for each screen. This section will make this project easy to understand.

1.1. BACKGROUND:

We have seen great advancement in the field of information technology in past few years. E-commerce and other e-solutions are reaching to their zenith. People are now more used to email rather than regular mail. Advertisements and managing contacts is always challenging for any type of business. Therefore Euroway Media find a better solution named as Close Contact for dealing with all kind of problems and providing a central way for marketing in such an easy way that even a single person could do that.

1.2. PURPOSE:

There are two purpose of this thesis. From business point of view this project is very helpful for managing all of your contacts and then sending them ads efficiently. From software engineering point of view, this project is a right platform to analyze and finding best solutions for the system.

1.3. GOAL:

The final goal of the thesis is implementation of the project, a full working web application, which would cover all proposed requirements and include all features.

SECTION - 1

REQUIREMENTS

2-EUROWAY MEDIA:

Euroway Media is IT Company whose headquarter is in Stockholm, Sweden. Euroway Media provides services for business development thorough web and graphic profiling. Euroway Media is always focused about their goals and objectives. Euroway Media has developed a lot of successful products and now also Close Contact is one of them. Euroway Media is very good in graphical designing and providing consultancy for the improvement of one's business.

3-CLOSE CONTACT:

3.1. OVERVIEW:

Close Contact is an E-Marketing system. The main objective of this E-Marketing system is to store customer data and then distribute newsletters and advertisement campaigns. There is much more complex functionality provided in Close Contact which is used for promoting information to the customers. By deploying this solution companies/people can use much more smart method to spread information, enhanced target audience, and automate system to send promotions.

3.2. SCOPE:

Close Contact has seven different modules. Functional requirements for each module are described in detail below in this document.

1. Newsletter

This module deals with the management of newsletters. The challenge in this module was WYSIWYG editor, which was the core of this module. Due to its extensive functionality WYSIWYG editor was added into our prerequisite list and Euroway Media agreed to provide WYSIWYG editor. But before using WYSIWYG editor, we need to use any other dummy editor and later Euroway Media replace that dummy editor with actual WYSIWYG editor. I did a lot of analysis, searched on internet to find a relevant, open source editor and I found FCK editor. It was very interesting editor with full compatibility with PHP. The other important features (which forced me to use FCK editor) were,

- Multi browser compatibility.
- Outputs XHTML 1.0.

- CSS support for better integration with your web site.
- Font formatting: type, size, color, style, bold, italic, etc.
- Text formatting: alignment, indentation, bullets list, etc.
- Cut, Paste, and Paste as Plain Text, Undo and Redo.
- Paste from Word cleanup with auto detection.
- Link and anchors support.
- Image insertion, with upload and server browsing support.

2. SMS Promotions

Sending SMS to customers is very interesting development in e-marketing. In this module the real challenge was to send SMS to a mobile from the website. I had done a lot of research and then I came to know that I need a gateway for sending SMS. I discussed this with Euroway Media and they agreed to provide a SMS Gateway. It was MO-SMS and it requires a user name and password (which was also provided by Euroway Media) to work.

3. Mailing List

This module is very common and you will find it in a number of sites. This module will store customer contact information (email, phone number etc). Though this is a common module but Euroway Media makes it unique by providing some extensive features support for importing contacts. The user can import his contacts based on different formats. I dealt with it by using conventional text parsing techniques (basic string functions i.e. search and split).

4. Dynamic Features

Dynamic features are events which could be attached with newsletters. The event could be birthday, anniversary, a national holiday etc. For developing this module I needed a calendar. After some good research on internet I found Tigra Calendar. The features which compelled me to use Tigra Calendar were,

- Uses document layers - no problems with pop-up blockers.
- Easy customization via CSS file.
- Simple localization.
- Attaches to existing form fields.
- Can be created dynamically - perfect for AJAX applications.
- Multiple popular date formats are supported (American, European, Database).
- Efficient, well formatted code - great learning source for students.
- Easy setup - no programming skills required.
- Works in all modern browsers.

- Can be used in any kind of web applications (PHP/ASP/CGI etc.).
- Public domain software - FREE for any use

5. Statistics

In close contact user can see two kinds of statistics, SMS or Newsletters. Statistics can be the comparison e.g. Failed SMS versus Successful SMS. For developing this module I needed Graphs, which is the most interactive way to show statistics. Euroway Media has provided me a graph component which than I integrated into close contact.

6. Tracking

This module will see that which newsletter got response from customer. When customer will visit the provided link in newsletter, this module will track this and update its statistics database accordingly.

3.3. OBJECTIVES

To provide better way for advertisement, Close Contact is developed by keeping following objectives in mind.

- Flexible distribution options
- Smart entry of customer data
- Automated and modern e-mail
- Adjustable customer lists
- Good and professional contact with user's potential customers
- Distribute customized mailing
- Deploy automatic mailing

4-FUNCTIONAL REQUIREMENTS:

Requirements and a short description for each requirement of module are given below.

4.1. NEWSLETTER

- Create Newsletter
- WYSIWYG editor
 - Integrate a WYSIWYG editor to create a Newsletter.
- HTML converter

- Convert the data entered in the WYSIWYG editor to HTML format.
- Preview option as a pop up
 - Show the page preview in a pop up window.
- Test send Newsletter as email
 - Send the Newsletter to the specified email id to verify the email view of Newsletter.
- Character setting
 - Western European
 - Central Eastern European
 - Baltic
 - Cyrillic
 - Use the char set converter component to convert from one format to another format.
- Spam Checking
 - Spam rating of the Newsletter based on predefined logic.
- Save Template
 - Folder Listing
 - List the existing folders
 - Create New folder
 - Default folder setting Set one folder as a default folder
 - Remove Folder
- Saved Templates Listing
- Thumbnail view of templates listed
- Remove template
- Load a template for creating Newsletter in WYSIWYG editor.
- Manage Mailing Queue

4.2. SMS

- Create SMS
- Address List selection
- Filters - inclusive & exclusive
 - And or filters for manipulating the address list.

- Schedule SMS
 - Schedule for a later date and time
- SMS accounting
 - Accounting of managing the number of SMS a user can send and already sent.
- Mailing Queue
- SMS Server integration
 - Third party SMS gateway to be integrated.

4.3. ADDRESS LIST

- List all the address lists
- Search the address lists
 - Search within address list
- Create address list
- Edit address list
- Remove address list
- Import addresses
 - Import from csv/excel
- Import VCard
 - Import from a Vcard.
- Add address to address list
- Remove address based on a format
- Deregister confirmation

4.4. DYNAMIC FUNCTIONS:

- Listing the dynamic functions
- Edit dynamic function
- Remove dynamic function
- Define type of function
- Create dynamic function based on type of function
 - The attributes of dynamic function varies based on type of function.

4.5. STATISTICS:

- Generate the statistics
- List Newsletter statistics
- List SMS statistics
- Keep track of
 - Sent mails
 - Bounces
 - Opened
 - Number of clicks
- Sort Newsletters
- Export to Excel

4.6. TRACKING

- **Tracking code auto-generation**
- **Generate Script**
- **Tracking Statistics**
 - based on address list
 - based on Newsletter
- **Export statistics to Excel**

5-TECHNICAL REQUIREMENTS

5.1. HARDWARE

- CPU: 600 MHz Minimum
- RAM: 256 MB
- HDD: At least 1 GB

5.2. SOFTWARE

- Framework: CodeIgniter framework of PHP.
- Web Languages: PHP, HTML, JavaScript, CSS
- Web Server: Apache Server

- Operating System: Linux, Windows
- Database: MySQL

6-PREREQUISITES:

Following prerequisites will be provided by the company for the completion of this thesis.

1. Supervision to understand the requirements
2. Design with HTML.
3. Support of designer to integrate HTML with code.
4. Standard Newsletters Templates
5. Newsletter editor
 - a. Able to open a newsletter from user's pc.
 - b. Provide SAVE AS MODEL button.
 - c. Able to upload and edit images.
 - d. Preview newsletter.
 - e. Other expected functionalities.
6. SMS Gateway
 - a. Able to send SMS from Web to Mobile.
7. Plug-in or source code for specific Graphs, pie charts.

7-PLANNING & ESTIMATION:

7.1. DURATION:

The complete realization of Close Contact will take almost 4 months.

7.2. COST:

This is a thesis project. No cost estimation is settled for this.

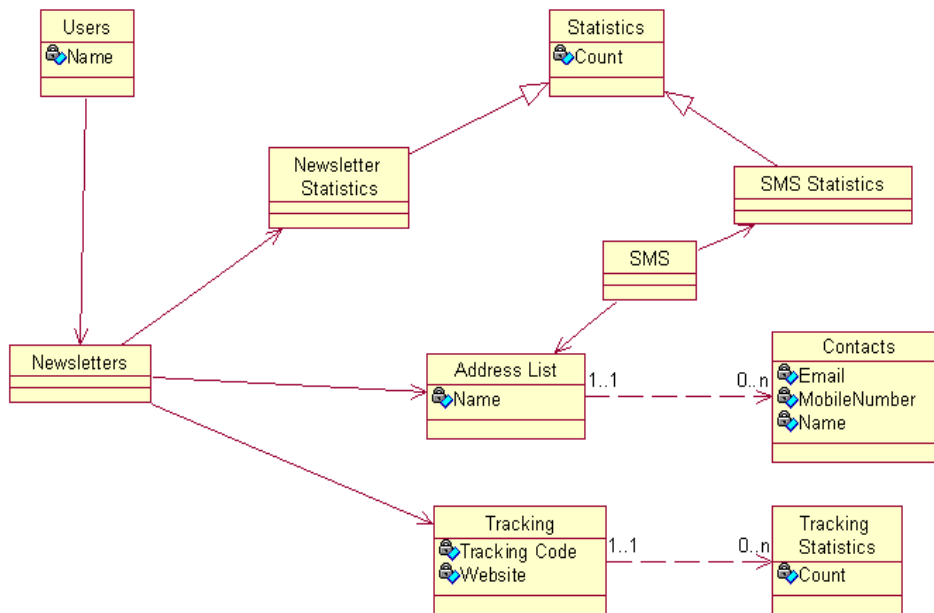
SECTION - 2

DESIGN

8-CONCEPTUAL DIAGRAM:

This is problem domain analysis of the project. It is very basic understanding of whole system.

As there was no analysis of Close Contact provided by Euroway Media, which means all decisions regarding development had to be taken by me. At this point I thought that the scope of Close Contact as 10 Components interacting with each other. User can send newsletters. Newsletter statistics/SMS statistics will be managed for newsletters/SMS, so they are derived from Main Statistics module. Address List could contain any number of contacts, similarly tracking could have any number of tracking statistics.



9-ARCHITECTURE:

The architecture is based on MVC (Model, View and Controller). This architecture clearly defines the 3 necessary layers for application.

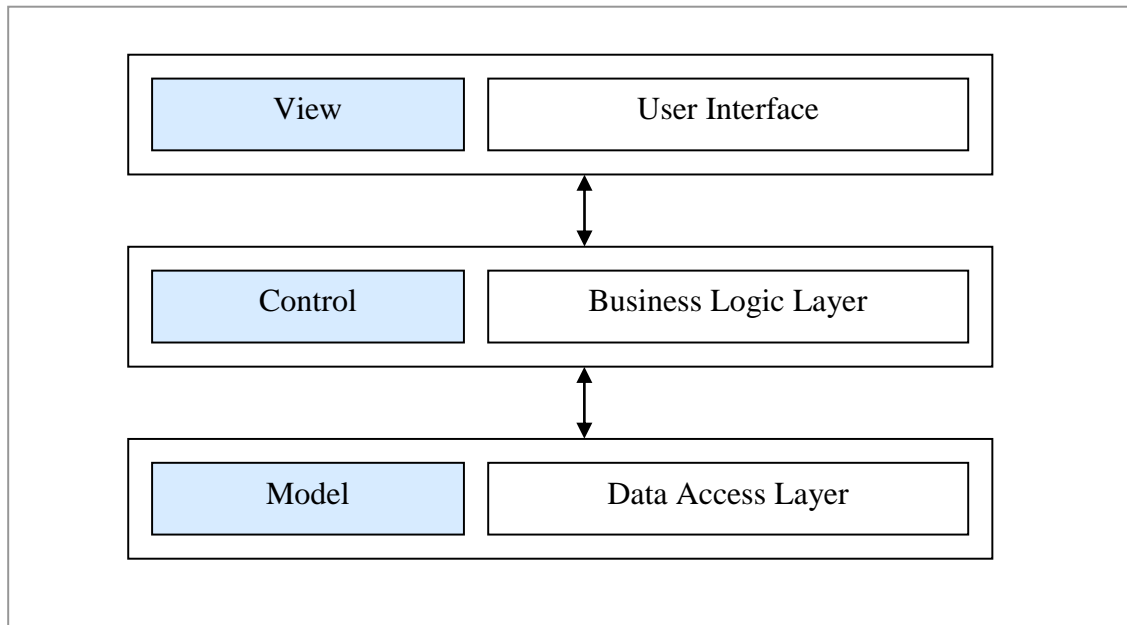


Figure 8-1 MVC Architecture

9.1. PRESENTATION LAYER (VIEW)

All web pages will reside in this layer. They can send data to control layer via Get or Post method.

9.2. BUSINESS LOGIC LAYER (CONTROL)

This layer will be responsible for displaying the appropriate presentation layer after applying some business logic. It will provide parameters to view layer, so that view can customized itself. It will also communicate with Model layer to make queries on database.

9.3. DATA ACCESS LAYER (MODEL)

The connection with the database and functions related to insert, delete, update reside here. I choose this architecture due to following reasons.

1. Clear distinction between layers.
2. Simple, Easy to use 3-tire architecture.
3. Used commonly for PHP bases applications.

10-ACTORS OF THE SYSTEM:

In this system we have three main actors, two active and one passive.

- Administrator
- Users
- Customers

10.1. ADMINISTRATOR:

Administrator will do the main administration task. He will be the active actor of the system. Administrator will manage users.

TASKS

- Create Users
- Maintain Users

10.2. USER:

User is the active actor of the system. He is the one who will interact with the system more than other actors.

TASKS

- Newsletters
- SMS
- Address List
- Dynamic Functions
- Statistics
- Tracking

10.3. CUSTOMER:

They are passive actors of the system. They don't use any functionality directly. But they have their impact on the system. They are the potential customers of the user. So user will send them newsletter and they will click on links in the newsletter which will change tracking statistics without their notice.

TASKS

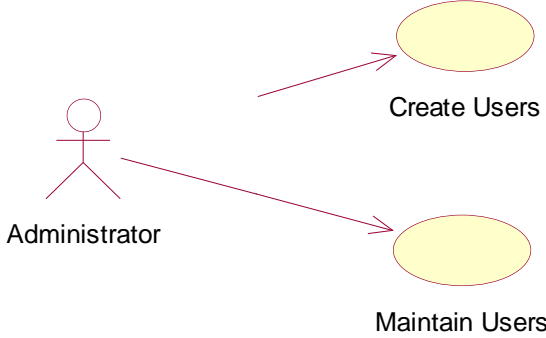
- Tracking Statistics

11-USE CASE DIAGRAM:

11.1. USE CASE MODEL:

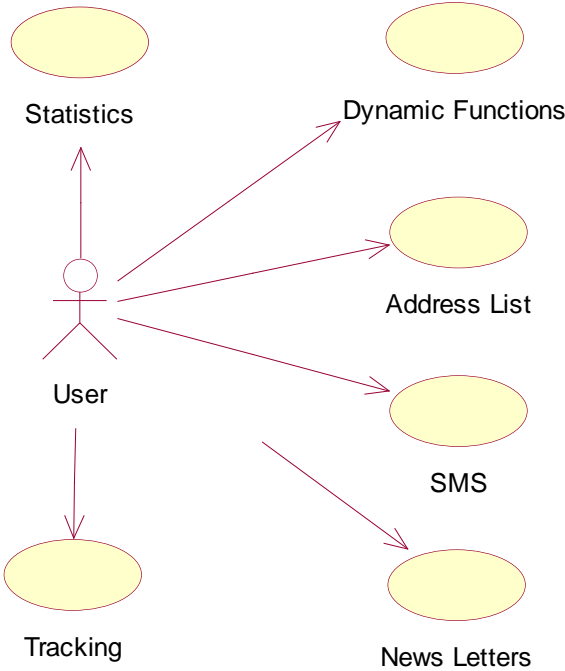
11.1.1. ADMINISTRATOR:

Administrator could create and maintain users. Both sub use cases are discussed in detail next section.



11.1.2. USER:

User is the most interactive stakeholder of the site. Each Use Case within component is discussed in detail in Use Case Description (Section 11.2).



11.1.3. CUSTOMER:

Customer is not very interactive with the site but he can show his impact by having influence on tracking statistics.



11.2. USE CASE DESCRIPTION:

11.2.1. ADMINISTRATOR:

11.2.1.1. CREATE USERS



BASIC INFORMATION:

ID: CC_11211

Actors: Administrator

Cross Reference: Admin Login

Feature: Tracking Statistics

Pre-Condition: User must be administrator

Brief Description: Administrator can create users, which will use this website.

Main Flow:

The user will follow the steps given below;

- Login as administrator.

11.2.1.2. MAINTAIN USERS



BASIC INFORMATION:

ID: CC_11212

Actors: Administrator

Cross Reference: Admin Login

Feature: Maintain Users

Pre-Condition: User must be administrator

Brief Description: Administrator can maintain user's accounts, which are using this website.

Main Flow:

The user will follow the steps given below;

- Login as administrator.

11.2.2. USER:

11.2.2.1. CREATE NEWSLETTER



BASIC INFORMATION:

ID: CC_11221

Actors: User

Cross Reference: Login

Feature: Create Newsletters

Pre-Condition: User must be Login.

Brief Description: The users will create Newsletters.

Main Flow:

The user will follow the steps given below;

- Select “Newsletter” Menu.
- Select “Create Newsletter”
- User can create Newsletters with the help of HTML editor.

11.2.2.2. WYSIWYG EDITOR



BASIC INFORMATION:

ID: CC_11222

Actors: User

Cross Reference: Login

Feature: Integrate a WYSIWYG editor

Pre-Condition: User must be login to use WYSIWYG editor

Brief Description: Integrate a WYSIWYG editor to create a Newsletter.

Main Flow:

The user will follow the steps given below;

- Select “Newsletter” Menu.
- User can use WYSIWYG editor to perform multiple tasks on Newsletters.

11.2.2.3. HTML CONVERTER



BASIC INFORMATION:

ID: CC_11223

Actors: User

Cross Reference: Login

Feature: Convert into HTML

Pre-Condition: User must be login to use WYSIWYG editor

Brief Description: Convert the data entered in the WYSIWYG editor to HTML format.

Main Flow:

The user will follow the steps given below;

- Select “Newsletter” Menu.
- User Click on HTML to see html of Newsletter.

11.2.2.4. PREVIEW AS POPUP



BASIC INFORMATION:

ID: CC_11224

Actors: User

Cross Reference: Login

Feature: Show the page preview in a pop up window.

Pre-Condition: User must be login to use WYSIWYG editor.

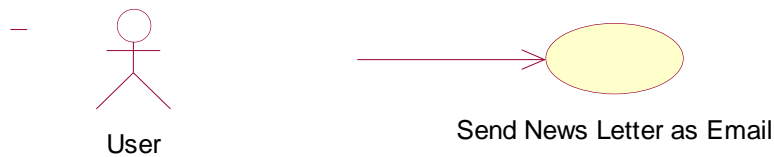
Brief Description: WYSIWYG editor can be able to preview the Newsletter.

Main Flow:

The user will follow the steps given below;

- Select “Newsletter” Menu.
- User Click on Preview.

11.2.2.5. SEND NEWSLETTER AS EMAIL



BASIC INFORMATION:

ID: CC_11225

Actors: User

Cross Reference: Login

Feature: Send Newsletter as Email.

Pre-Condition: User must be login.

Brief Description: Send the Newsletter to the specified email id to verify the email view of Newsletter.

Main Flow:

The user will follow the steps given below;

- Select “Newsletter” Menu.
- Click on “Send”.

11.2.2.6. CHARACTER SETTING



BASIC INFORMATION:

ID: CC_11226

Actors: User

Cross Reference: Login

Feature: Set Character Setting.

Pre-Condition: User must be login.

Brief Description: Use the char set Converter component to convert from one format to another format.

- i. Western European
- ii. Central Eastern European
- iii. Baltic
- iv. Cyrillic

Main Flow:

The user will follow the steps given below;

- Select “Newsletter” Menu.
- Use Editor to set Character Setting.

11.2.2.7. SPAM CHECKING



BASIC INFORMATION:

ID: CC_11227

Actors: User

Cross Reference: Login

Feature: Spam Checking of Newsletter.

Pre-Condition: User must be login.

Brief Description: Spam rating of the Newsletter based on predefined logic.

Main Flow:

The user will follow the steps given below;

- Select “Newsletter” Menu.
- Click “Spam Checking”.

11.2.2.8. SAVE TEMPLATE**BASIC INFORMATION:****ID:** CC_11228**Actors:** User**Cross Reference:** Login**Feature:** Save Newsletter as template.**Pre-Condition:** User must be login.**Brief Description:** Newsletter could be saved as template. The following functionality is expected.

- v. Folder Listing
List the existing folders
- vi. Create New folder.
- vii. Default folder setting Set one folder as a default folder.
- viii. Remove Folder.

Main Flow:

The user will follow the steps given below;

- Select “Newsletter” Menu.
- Click on “Save As”.

11.2.2.9. SAVED TEMPLATE LISTING



BASIC INFORMATION:

ID: CC_11229

Actors: User

Cross Reference: Login

Feature: Saved Template Listing.

Pre-Condition: User must be login.

Brief Description: User can be able to list saved Templates.

Main Flow:

The user will follow the steps given below;

- Select “Newsletter” Menu.
- Click on “Saved Newsletters”.

11.2.2.10. THUMBNAIL VIEW



BASIC INFORMATION:

ID: CC_112210

Actors: User

Cross Reference: Login

Feature: Thumbnail View of Saved Templates.

Pre-Condition: User must be login.

Brief Description: User can able to see thumbnail view of saved templates.

Main Flow:

The user will follow the steps given below;

- Select “Newsletter” Menu.
- Click on “Saved Newsletters”.

11.2.2.11. REMOVE TEMPLATE



BASIC INFORMATION:

ID: CC_112211

Actors: User

Cross Reference: Login

Feature: Remove Saved Templates.

Pre-Condition: User must be login.

Brief Description: User can able to remove saved templates.

Main Flow:

The user will follow the steps given below;

- Select “Newsletter” Menu.
- Click on “Saved Newsletters”.
- Click “Delete”.

11.2.2.12. LOAD TEMPLATE



BASIC INFORMATION:

ID: CC_112212

Actors: User

Cross Reference: Login

Feature: Load Template into Editor.

Pre-Condition: User must be login.

Brief Description: User can able to load template into HTML Editor for editing.

Main Flow:

The user will follow the steps given below;

- Select “Newsletter” Menu.
- Click on “Saved Newsletters”.
- Click “Open”.

11.2.2.13. LOAD TEMPLATE



BASIC INFORMATION:

ID: CC_112213

Actors: User

Cross Reference: Login

Feature: Load Template into Editor.

Pre-Condition: User must be login.

Brief Description: User can able to load template for creating Newsletter in WYSIWYG editor.

Main Flow:

The user will follow the steps given below;

- Select “Newsletter” Menu.

- Click on “Saved Newsletters”.
- Click “Open”.

11.2.2.14. MANAGE MAILING QUEUE



BASIC INFORMATION:

ID: CC_112214

Actors: User

Cross Reference: Login

Feature: Manage the Mailing Queue.

Pre-Condition: User must be login.

Brief Description: User can able to manage mailing queue. It is a queue of sent mails.

Main Flow:

The user will follow the steps given below;

- Select “Newsletter” Menu.
- Click “Status”.

11.2.2.15. CREATE SMS



BASIC INFORMATION:

ID: CC_112215

Actors: User

Cross Reference: Login

Feature: Create SMS
Pre-Condition: User must be login.
Brief Description: User can able to send SMS to his customers.

Main Flow:

The user will follow the steps given below;

- Select “Create SMS” Menu.

11.2.2.16. ADDRESS LIST SELECTION



BASIC INFORMATION:

ID: CC_112216

Actors: User
Cross Reference: Login
Feature: Select Address List.
Pre-Condition: User must be login.
Brief Description: Select Address List from drop-down list.

Main Flow:

The user will follow the steps given below;

- Select “Create SMS” Menu.
- Select “Address List”.

11.2.2.17. FILTERS



BASIC INFORMATION:

ID: CC_112217

Actors: User

Cross Reference: Login

Feature: Filters for Address list.

Pre-Condition: User must be login.

Brief Description: “And” “OR” filters for manipulating the address list.

Main Flow:

The user will follow the steps given below;

- Select “Create SMS” Menu.
- Select respected filter.

11.2.2.18. SCHEDULE SMS



BASIC INFORMATION:

ID: CC_112218

Actors: User

Cross Reference: Login

Feature: Schedule SMS for sending.

Pre-Condition: User must be login.

Brief Description: Schedule SMS for a later date and time, so that it can be sent later.

Main Flow:

The user will follow the steps given below;

- Select “Create SMS” Menu.
- Check “Send SMS Later” and select Date Time.

11.2.2.19. SMS ACCOUNTING



BASIC INFORMATION:

ID: CC_112219

Actors: User

Cross Reference: Login

Feature: SMS Accounting.

Pre-Condition: User must be login.

Brief Description: Accounting of managing the number of SMS a user can send and already sent.

Main Flow:

The user will follow the steps given below;

- Select “Create SMS” Menu.

11.2.2.20. MAILING QUEUE



BASIC INFORMATION:

ID: CC_112220

Actors: User

Cross Reference: Login

Feature: Mailing Queue

Pre-Condition: User must be login

Brief Description: Queue for Sending SMS and their status.

Main Flow:

The user will follow the steps given below;

- Select “Create SMS” Menu.
- Select “Status”.

11.2.2.21. SMS SERVER INTEGRATION



BASIC INFORMATION:

ID: CC_112221

Actors: User

Cross Reference: Login

Feature: SMS Server Integration.

Pre-Condition: User must be login.

Brief Description: Third party SMS gateway to be integrated.

Main Flow:

The user will follow the steps given below;

- User will send SMS through this Gateway.

11.2.2.22. LIST ADDRESS LISTS



BASIC INFORMATION:

ID: CC_112222

Actors: User

Cross Reference: Login

Feature: List Address Lists

Pre-Condition: User must be login

Brief Description: View Stored address lists.

Main Flow:

The user will follow the steps given below;

- Click on “Address List”.

11.2.2.23. SEARCH ADDRESS LISTS



BASIC INFORMATION:

ID: CC_112223

Actors: User

Cross Reference: Login

Feature: Search address list.

Pre-Condition: User must be login.

Brief Description: Search Desired Address from address lists.

Main Flow:

The user will follow the steps given below;

- Click on “Address List”.
- Enter Name and press “Search”.

11.2.2.24. CREATE ADDRESS LIST



BASIC INFORMATION:

ID: CC_112224

Actors: User

Cross Reference: Login

Feature: Create Address List.

Pre-Condition: User must be login.

Brief Description: Create New address list.

Main Flow:

The user will follow the steps given below;

- Click on “Address List”.
- Click “Create Address List”.

11.2.2.25. EDIT ADDRESS LIST



BASIC INFORMATION:

ID: CC_112225

Actors: User

Cross Reference: Login

Feature: Edit Address List.

Pre-Condition: User must be login.

Brief Description: Edit already created address list.

Main Flow:

The user will follow the steps given below;

- Click on “Address List”.
- Select “Edit Address List”.
- Select Address List from drop-down list.

11.2.2.26. REMOVE ADDRESS LIST



BASIC INFORMATION:

ID: CC_112226

Actors: User

Cross Reference: Login

Feature: Remove Address List.

Pre-Condition: User must be login.

Brief Description: Delete Address list from already stored address lists.

Main Flow:

The user will follow the steps given below;

- Click on “Address List”.
- Check Address Lists.
- Click Delete.

11.2.2.27. IMPORT ADDRESSES



BASIC INFORMATION:

ID: CC_112227

Actors: User

Cross Reference: Login

Feature: Import Addresses.

Pre-Condition: User must be login.

Brief Description: Import addressed from csv/excel into address list.

Main Flow:

The user will follow the steps given below;

- Click on “Address List”.
- Click on “Import Addresses”.
- Select Import Criteria from Drop-down list

11.2.2.28. IMPORT VCARD



BASIC INFORMATION:

ID: CC_112228

Actors: User

Cross Reference: Login

Feature: Import VCard

Pre-Condition: User must be login.

Brief Description: Import address from a VCard into address list.

Main Flow:

The user will follow the steps given below;

- Click on “Address List”.
- Select “Import Addresses”.
- Select “Import VCard” from dropdown list.

11.2.2.29. ADD ADDRESS TO ADDRESS LIST



BASIC INFORMATION:

ID: CC_112229

Actors: User

Cross Reference: Login

Feature: Add Addresses to Address List.

Pre-Condition: User must be login.

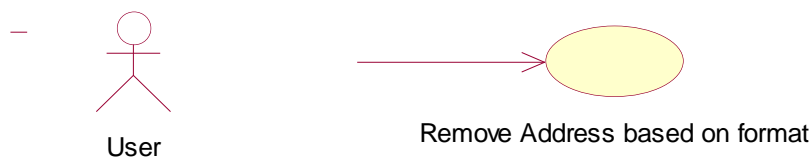
Brief Description: Add different customers Addresses to address.

Main Flow:

The user will follow the steps given below;

- Click on “Address List”.
- Click on “Add Addresses”.

11.2.2.30. REMOVE ADDRESS BASED ON FORMAT



BASIC INFORMATION:

ID: CC_112230

Actors: User

Cross Reference: Login

Feature: Remove Address Based on format.

Pre-Condition: User must be login.

Brief Description: Remove addresses based on specified format from respective address list.

Main Flow:

The user will follow the steps given below;

- Click on “Address List”.
- Select any address list.
- Select Address.
- Click Delete.

11.2.2.31. DEREGISTER CONFIRMATION



BASIC INFORMATION:

ID: CC_112231

Actors: User

Cross Reference: Login

Feature: Deregister Confirmation.

Pre-Condition: User must be login.

Brief Description: Deregister confirmation for Address list.

Main Flow:

The user will follow the steps given below;

- Click on “Address List”.
- Click on “Deregister”.

11.2.2.32. LISTING THE DYNAMIC FUNCTIONS



BASIC INFORMATION:

ID: CC_112232

Actors: User

Cross Reference: Login

Feature: Listing Dynamic Functions.

Pre-Condition: User must be login.

Brief Description: Display already created dynamic functions.

Main Flow:

The user will follow the steps given below;

- Click on “Dynamic Functions”.

11.2.2.33. EDIT DYNAMIC FUNCTION



BASIC INFORMATION:

ID: CC_112233

Actors: User

Cross Reference: Login

Feature: Edit Dynamic Function.
Pre-Condition: User must be login.
Brief Description: Edit already created dynamic function.

Main Flow:

The user will follow the steps given below;

- Click on “Dynamic Functions”.
- Click “Edit”.

11.2.2.34. REMOVE DYNAMIC FUNCTION



BASIC INFORMATION:

ID: CC_112234

Actors: User
Cross Reference: Login
Feature: Remove Dynamic Function.
Pre-Condition: User must be login.
Brief Description: Delete already created dynamic function.

Main Flow:

The user will follow the steps given below;

- Click on “Dynamic Functions”.
- Check Listed Dynamic Functions.
- Click on “Delete”.

11.2.2.35. DEFINE TYPE OF FUNCTION



BASIC INFORMATION:

ID: CC_112235

Actors: User

Cross Reference: Login

Feature: Define Type of function.

Pre-Condition: User must be login.

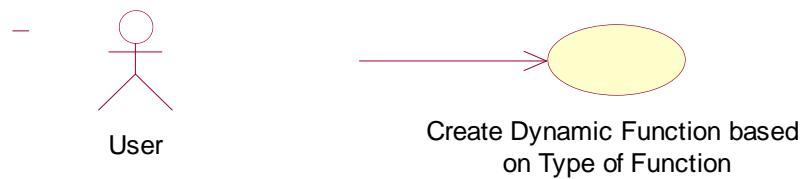
Brief Description: User can select different type of function.

Main Flow:

The user will follow the steps given below;

- Click on “Dynamic Functions”.

11.2.2.36. CREATE DYNAMIC FUNCTION BASED ON TYPE



BASIC INFORMATION:

ID: CC_112236

Actors: User

Cross Reference: Login

Feature: Create Dynamic Function.

Pre-Condition: User must be login.

Brief Description: Create Dynamic function based on type. The attributes of dynamic function varies based on type of function.

Main Flow:

The user will follow the steps given below;

- Click on “Dynamic Functions”.
- Select “Create Dynamic Function”.

11.2.2.37. GENERATE THE STATISTICS



BASIC INFORMATION:

ID: CC_112237

Actors: User

Cross Reference: Login

Feature: Generate Statistics.

Pre-Condition: User must be login.

Brief Description: List Statistics. Statistics could be of SMS, Newsletter etc.

Main Flow:

The user will follow the steps given below;

- Click on “Statistics”.

11.2.2.38. LIST NEWSLETTER STATISTICS



BASIC INFORMATION:

ID: CC_112238

Actors: User

Cross Reference: Login

Feature: List Newsletter statistics.

Pre-Condition: User must be login.

Brief Description: Show statistics of different newsletters.

Main Flow:

The user will follow the steps given below;

- Click on “Statistics”.

11.2.2.39. LIST SMS STATISTICS



BASIC INFORMATION:

ID: CC_112239

Actors: User

Cross Reference: Login

Feature: List SMS statistics.

Pre-Condition: User must be login.

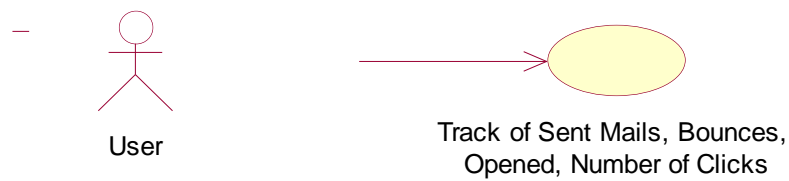
Brief Description: Show statistics of different sent SMS.

Main Flow:

The user will follow the steps given below;

- Click on “Statistics”.
- Click on “SMS”.

11.2.2.40. TRACK OF SENT MAIL, BOUNCES ...



BASIC INFORMATION:

ID: CC_112240

Actors: User

Cross Reference: Login

Feature: Track of Sent Mail, Bounces ...

Pre-Condition: User must be login.

Brief Description: User can able to see

- a. Sent mails
 - b. Bounces
 - c. Opened
 - d. Number of clicks
- as attribute of statistics for newsletter.

Main Flow:

The user will follow the steps given below;

- Click on “Statistics”.

11.2.2.41. SORT NEWSLETTERS



BASIC INFORMATION:

ID: CC_112241

Actors: User

Cross Reference: Login
Feature: Sort Newsletters
Pre-Condition: User must be login.
Brief Description: User can be able to sort newsletters by clicking on grid.

Main Flow:

The user will follow the steps given below;

- Click on “Statistics”.
- Click on desired column to sort with.

11.2.2.42. EXPORT TO EXCEL



BASIC INFORMATION:

ID: CC_112242

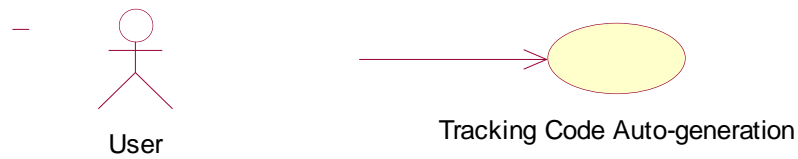
Actors: User
Cross Reference: Login
Feature: Export to Excel
Pre-Condition: User must be login.
Brief Description: User can export statistics to excel.

Main Flow:

The user will follow the steps given below;

- Click on “Statistics”.
- Click Export.

11.2.2.43. TRACKING CODE AUTO-GENERATION



BASIC INFORMATION:

ID: CC_112243

Actors: User

Cross Reference: Login

Feature: Tracking code auto-generation.

Pre-Condition: User must be login.

Brief Description: Tracking code will be in the form of GUID. It will be auto-generated for every next creating tracking item.

Main Flow:

The user will follow the steps given below;

- Click on “Tracking”.

11.2.2.44. GENERATE SCRIPT



BASIC INFORMATION:

ID: CC_112244

Actors: User

Cross Reference: Login

Feature: Generate Script.

Pre-Condition: User must be login.

Brief Description: User can able to generate script, which will be pasted into the website page and it, will help for managing tracking statistics.

Main Flow:

The user will follow the steps given below;

- Click on “Tracking”.
- Click on “Generate Script”.

11.2.2.45. TRACKING STATISTICS



BASIC INFORMATION:

ID: CC_112245

Actors: User

Cross Reference: Login

Feature: Tracking Statistics

Pre-Condition: User must be login.

Brief Description: User can be able to see tracking statistics

- a. based on address list.
- b. based on Newsletter.

Main Flow:

The user will follow the steps given below;

- Click on “Tracking”.
- Click on “Statistics”.

11.2.2.46. EXPORT STATISTICS TO EXCEL



BASIC INFORMATION:

ID: CC_112246

Actors: User

Cross Reference: Login

Feature: Export Statistics to Excel

Pre-Condition: User must be login.

Brief Description: User can export statistics to excel file.

Main Flow:

The user will follow the steps given below;

- Click on “Tracking”.
- Click on “Statistics”.
- Click on “Export”.

11.2.3. CUSTOMER:

11.2.3.1. TRACKING STATISTICS



BASIC INFORMATION:

ID: CC_11231

Actors: Customer

Cross Reference: Send Newsletter as email.

Feature: Tracking Statistics

Pre-Condition: newsletter must be sent by close contact user to customer.

Brief Description: Customer will click on link provided in newsletter and a page will open. The script on opened page will change tracking statistics.

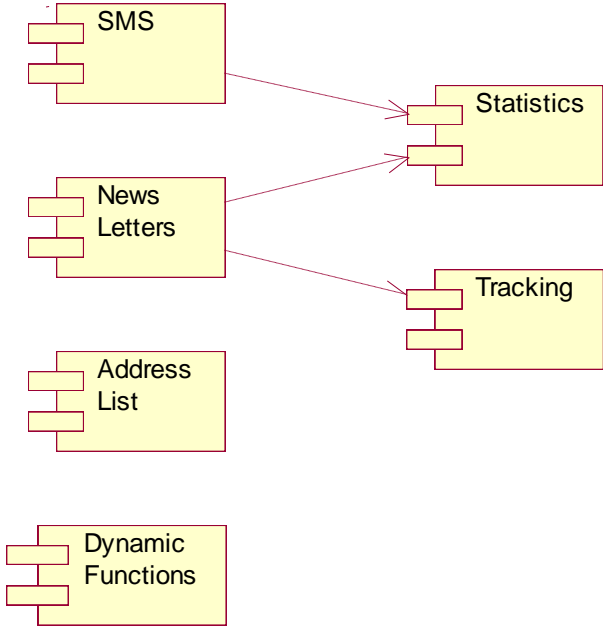
Main Flow:

The user will follow the steps given below;

- Click on Link in newsletter.

12-COMPONENT DIAGRAM

There are six components or modules which will be integrated to make this complete system. They are already discussed in detail in requirements part. The statistics module could be developed only after SMS and newsletter modules. Similarly Tracking also needs newsletters to be completed.

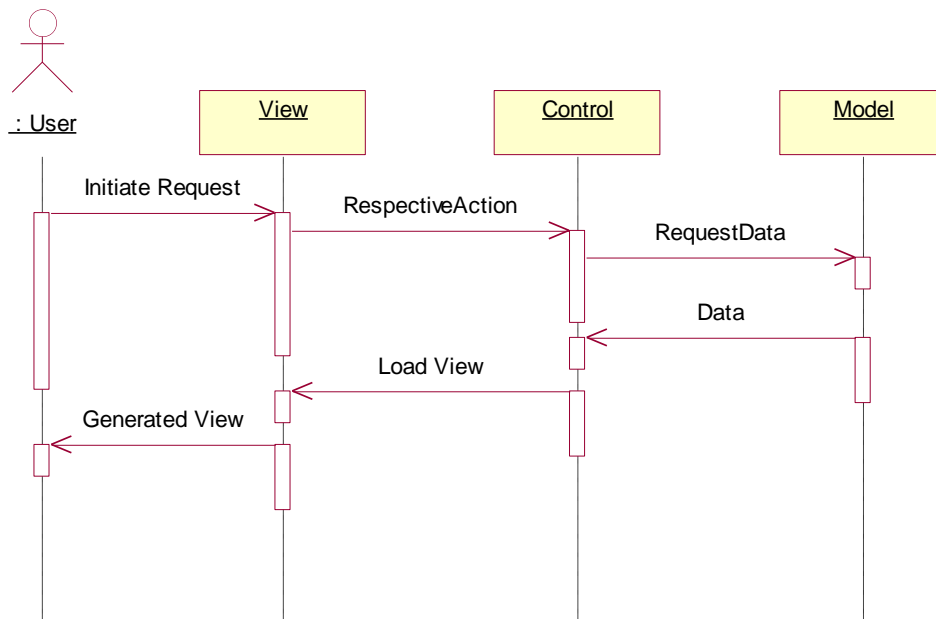


13-INTERACTION DIAGRAMS

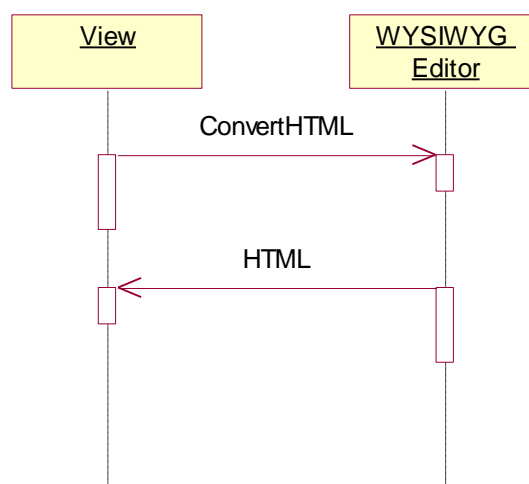
The interaction diagram for an MVC architecture normally followed same pattern. Here I will provide a generic interaction diagram and some specific important interaction diagrams.

13.1. SEQUENCE DIAGRAMS

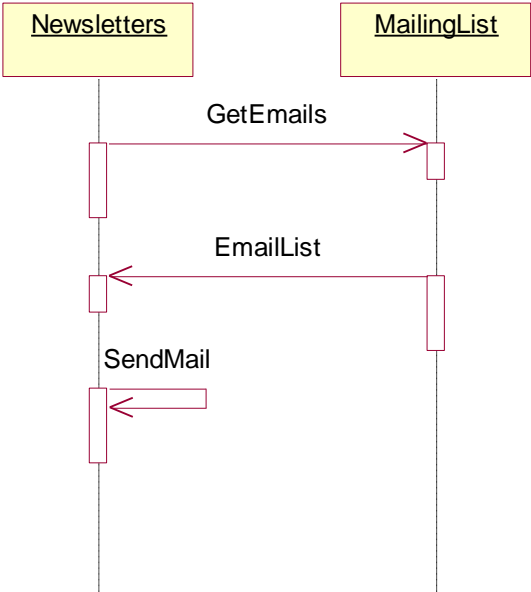
13.1.1. GENERIC



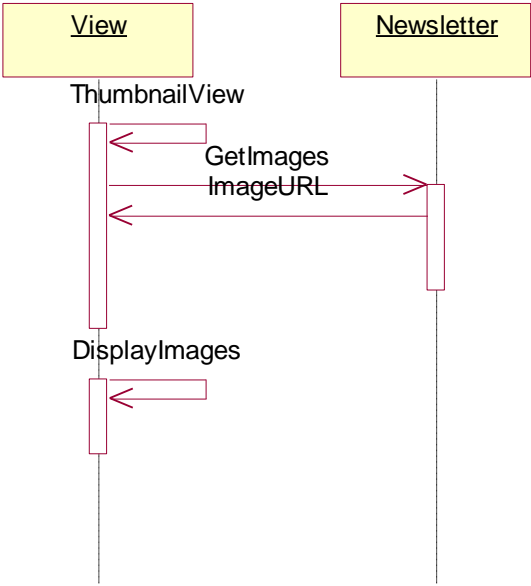
13.1.2. HTML CONVERTER



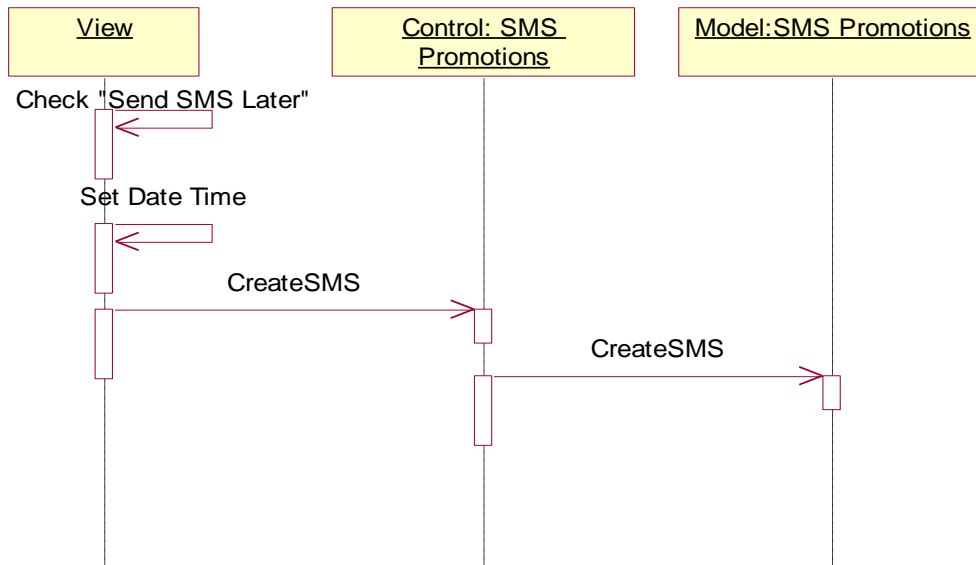
13.1.3. SEND NEWSLETTER AS EMAIL



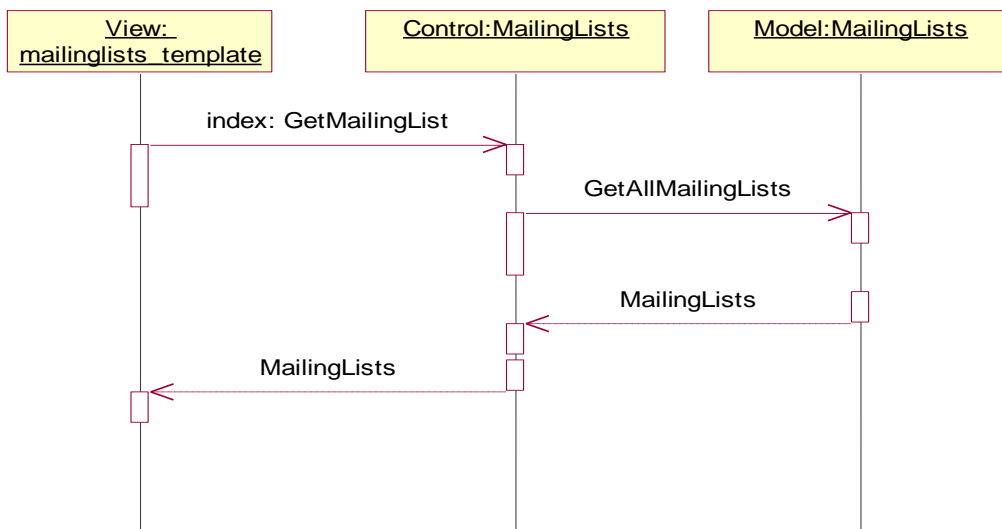
13.1.4. THUMBNAIL VIEW



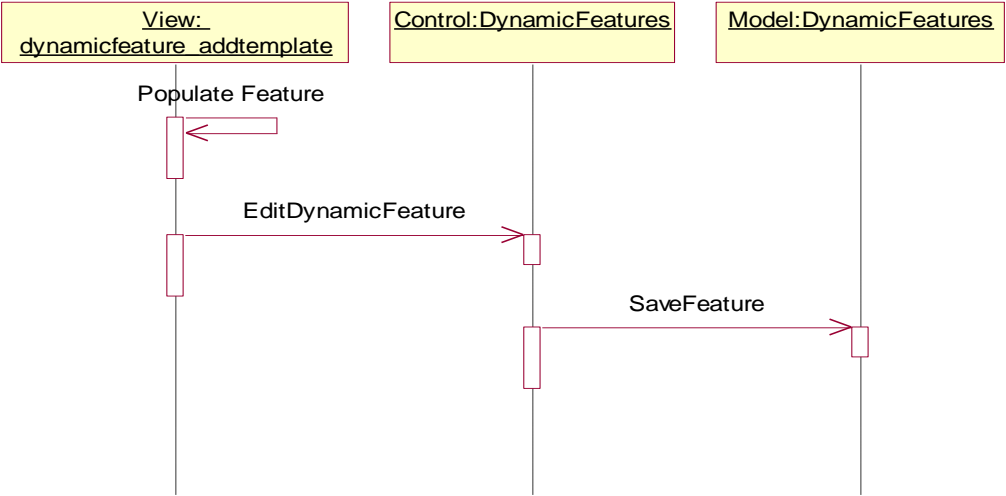
13.1.5. SCHEDULE SMS



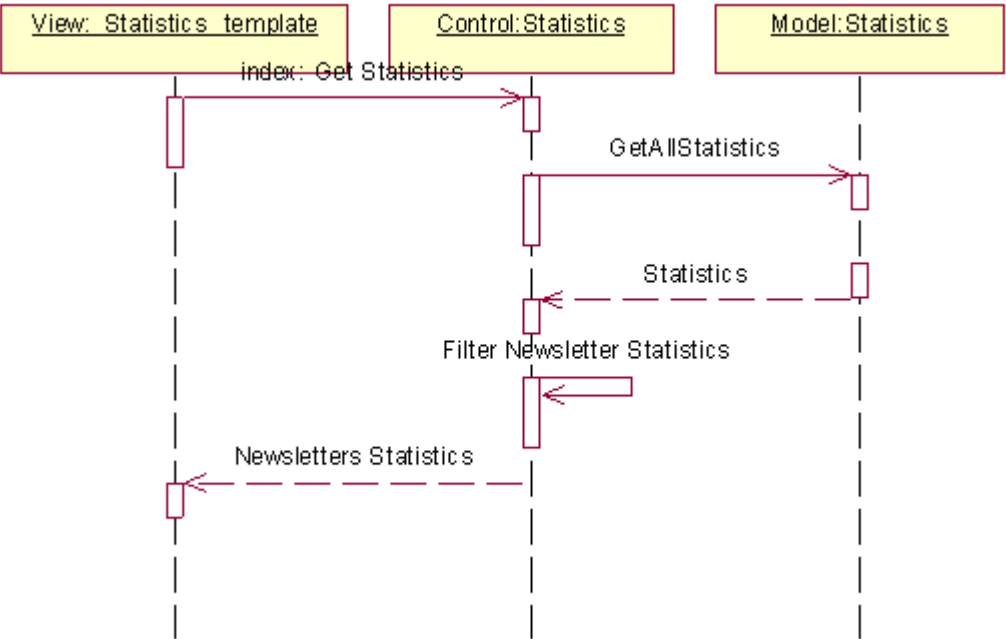
13.1.6. LIST ADDRESS LISTS



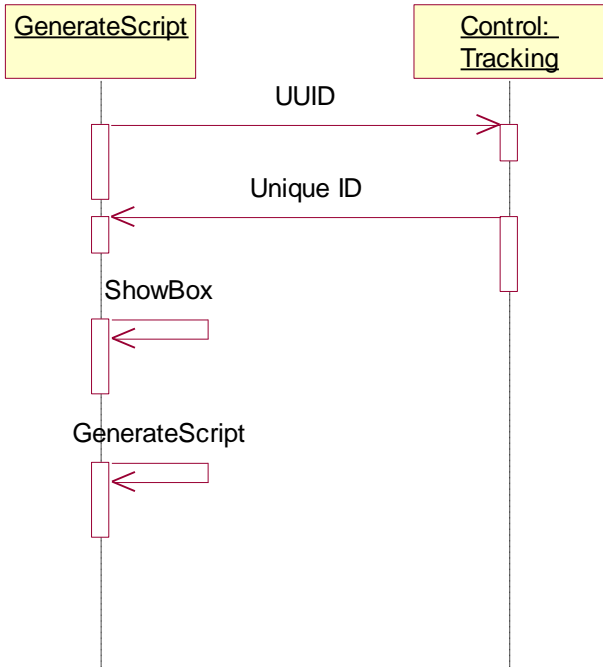
13.1.7. EDIT DYNAMIC FUNCTION



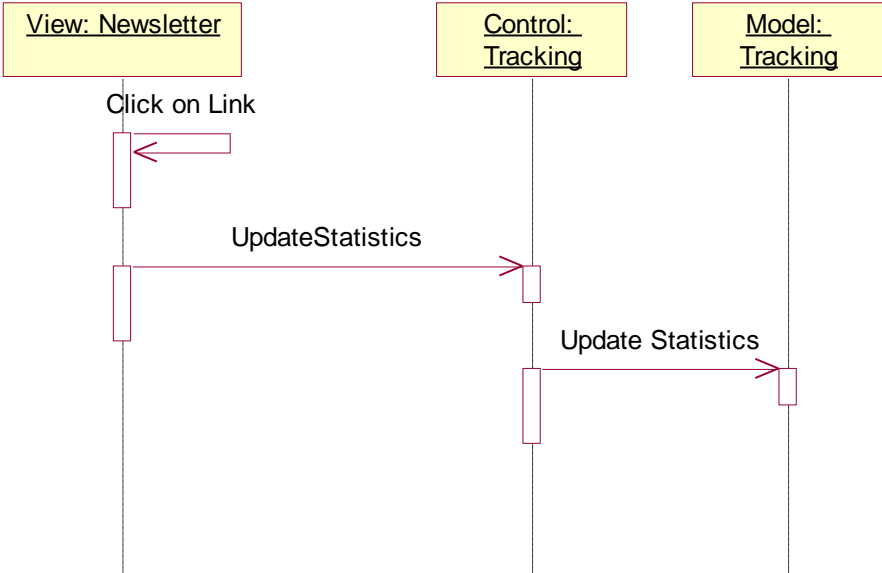
13.1.8. LIST NEWSLETTER STATISTICS



13.1.9. GENERATE SCRIPT

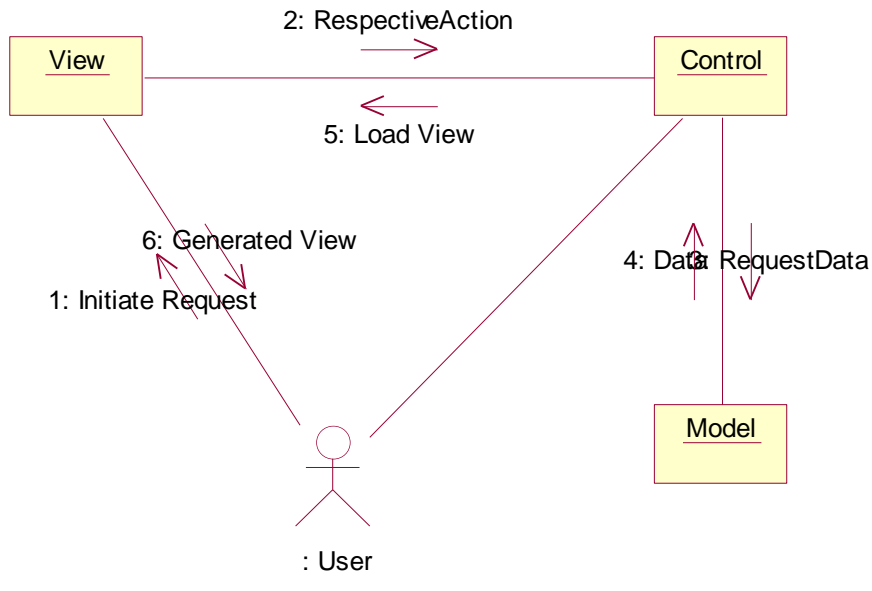


13.1.10. TRACKING STATISTICS

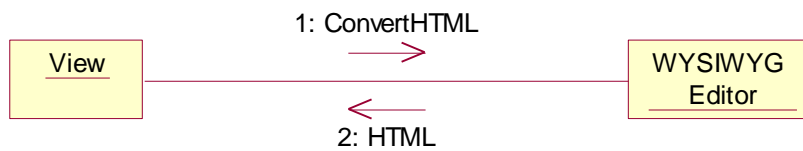


13.2. COLLABORATION DIAGRAMS

13.2.1. GENERIC



13.2.2. HTML CONVERTER



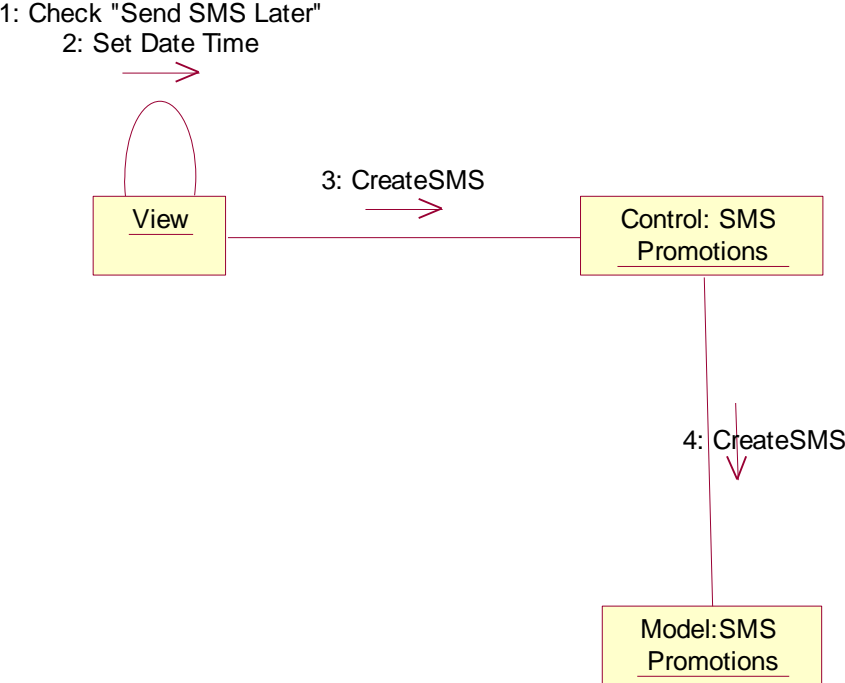
13.2.3. SEND NEWSLETTER AS EMAIL



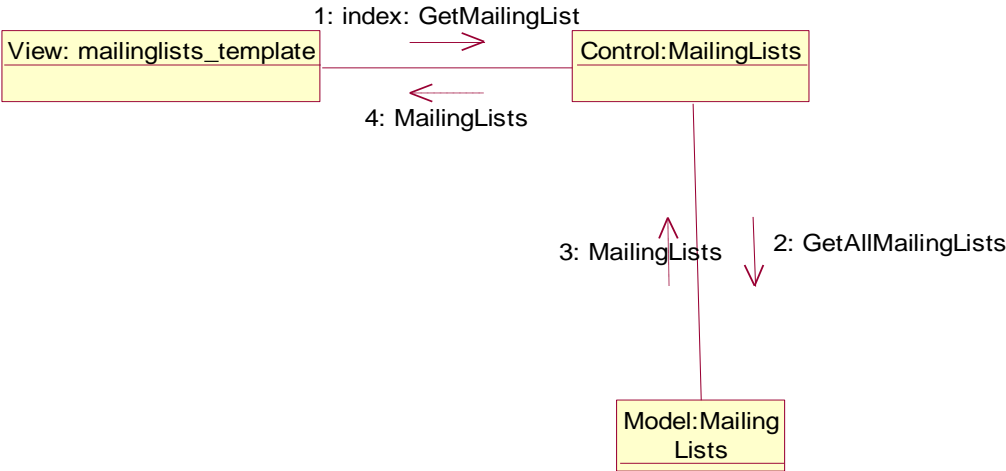
13.2.4. THUMBNAIL VIEW



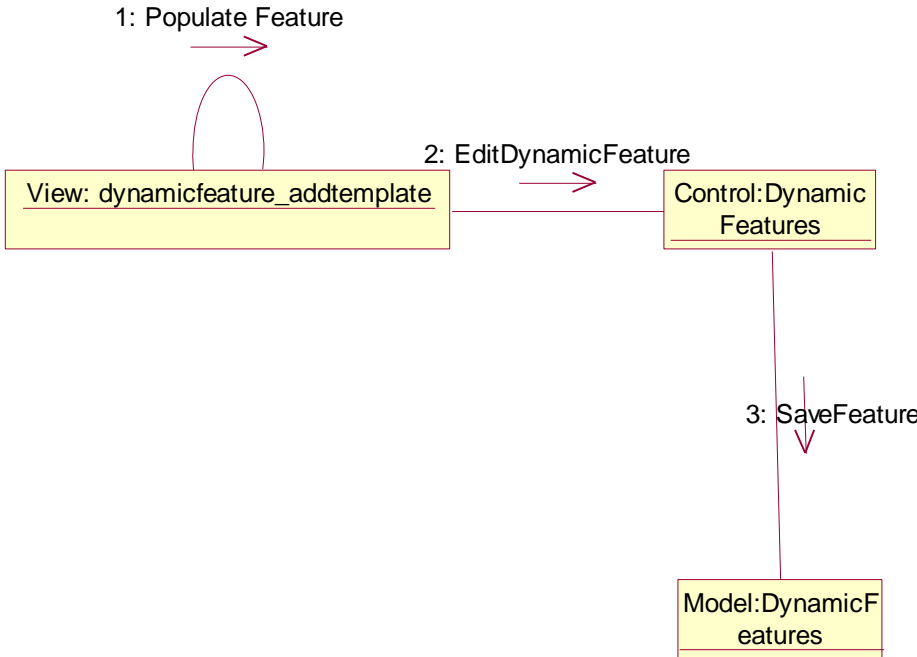
13.2.5. SCHEDULE SMS



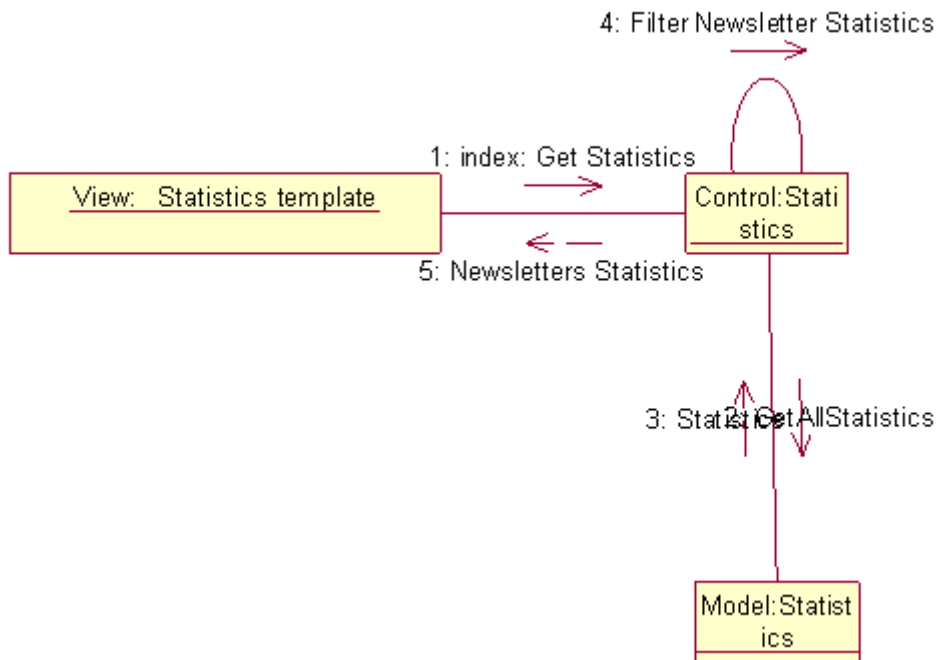
13.2.6. LIST ADDRESS LISTS



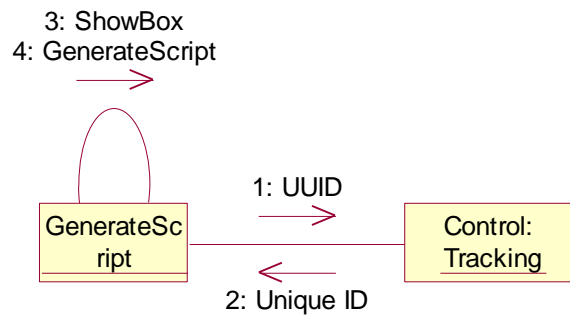
13.2.7. EDIT DYNAMIC FUNCTION



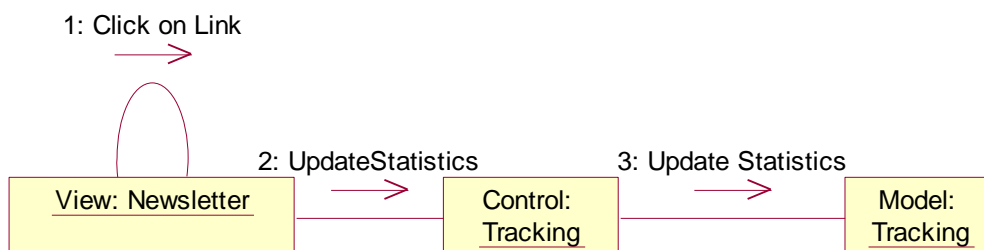
13.2.8. LIST NEWSLETTER STATISTICS



13.2.9. GENERATE SCRIPT



13.2.10. TRACKING STATISTICS

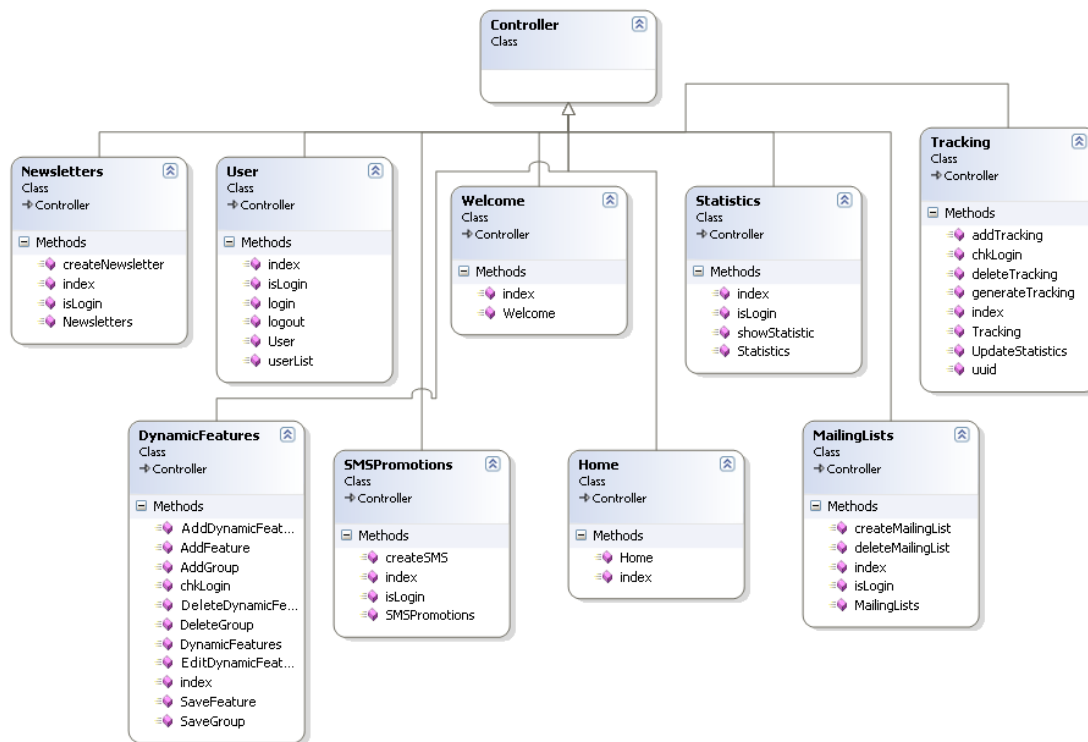


14-CLASS DIAGRAM

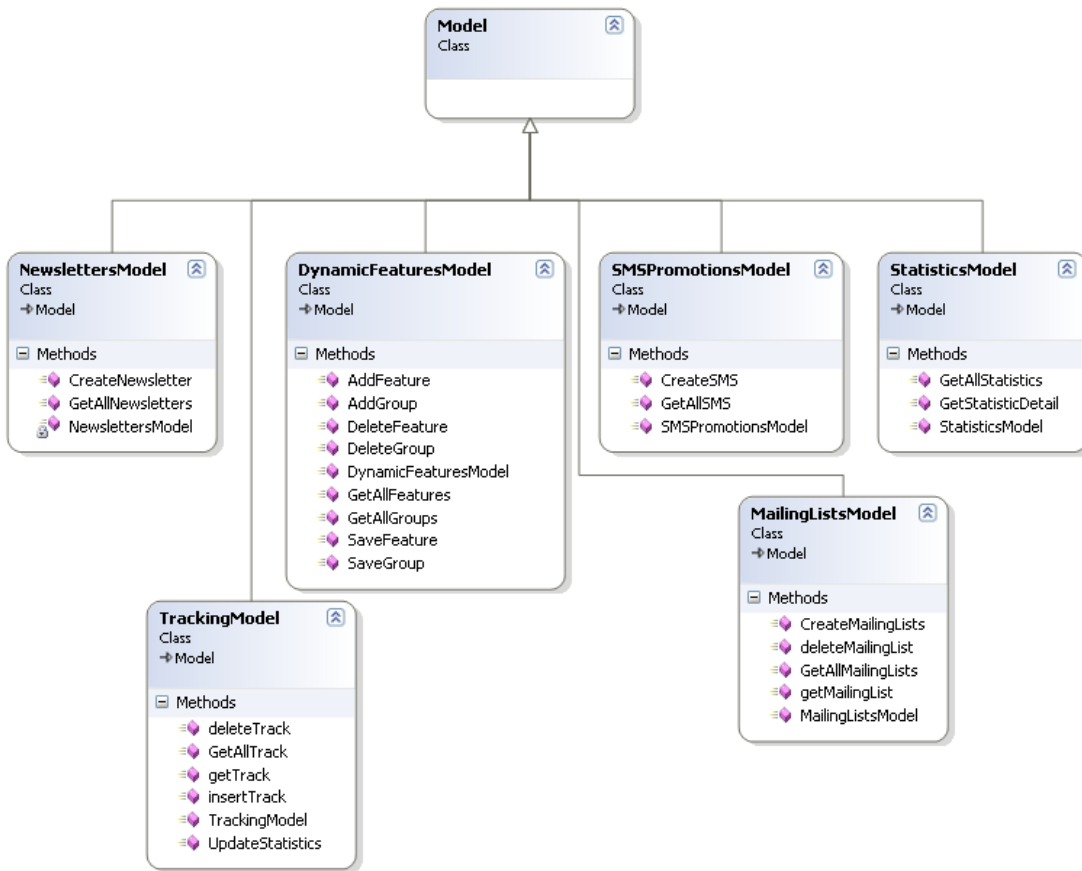
It was very tough job to develop correct class diagram. Often it happens that one needs to change its class diagram when actual development of the product started. I used conventional software engineering ways to develop this class diagram so that there should be very less need to change it. The conventional ways includes,

1. Reading of all provided information about the Close Contact.
2. Identifying nouns.
3. Identifying the connection between nouns.
4. Identifying particular functionalities of that noun.
5. The noun was a complete class and connections between nouns are their relations.

14.1. CONTROLLER



14.2. MODEL



14.3. VIEW

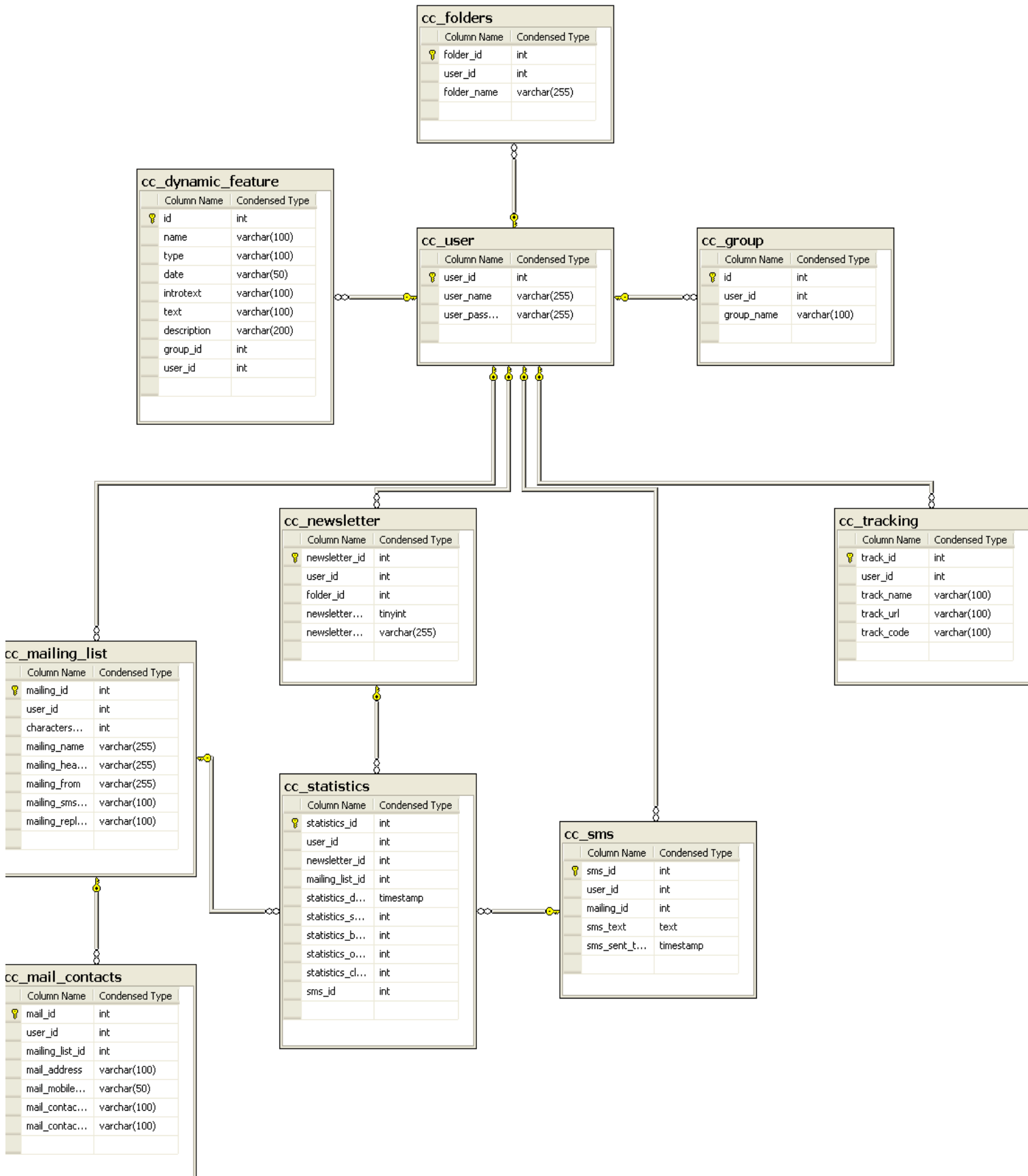
View just contained html pages to provide a user interface for the system.

Expected PHP pages for the project are:

1. create_mailinglist_template.php
2. create_newsletter_template.php
3. create_sms_template.php
4. dynamicfeatures_addtemplate.php
5. dynamicfeatures_template.php
6. ffooter.php
7. fheader.php
8. ftemplate.php
9. home_template.php
10. mailinglist_subheader.php
11. mailinglists_template.php
12. newsletter_subheader.php
13. newsletter_template.php
14. sms_subheader.php
15. smspromotions_template.php
16. statistics_detail_template.php
17. statistics_template.php
18. subheader.php
19. tracking_subheader.php
20. tracking_template.php
21. userlist_template.php
22. userlogin_template.php
23. welcome_message.php

15-DATABASE MODEL

After developing class diagram, normally database model is not a problem, we have one-to-one mapping with classes and database tables. For example: there is User class in class diagram and there is cc_user table in database model.



SECTION - 3

IMPORTANT SCREENS DESCRIPTIONS & TEST CASES

16-IMPORTANT SCREENS AND DESCRIPTION

16.1. NEWSLETTER

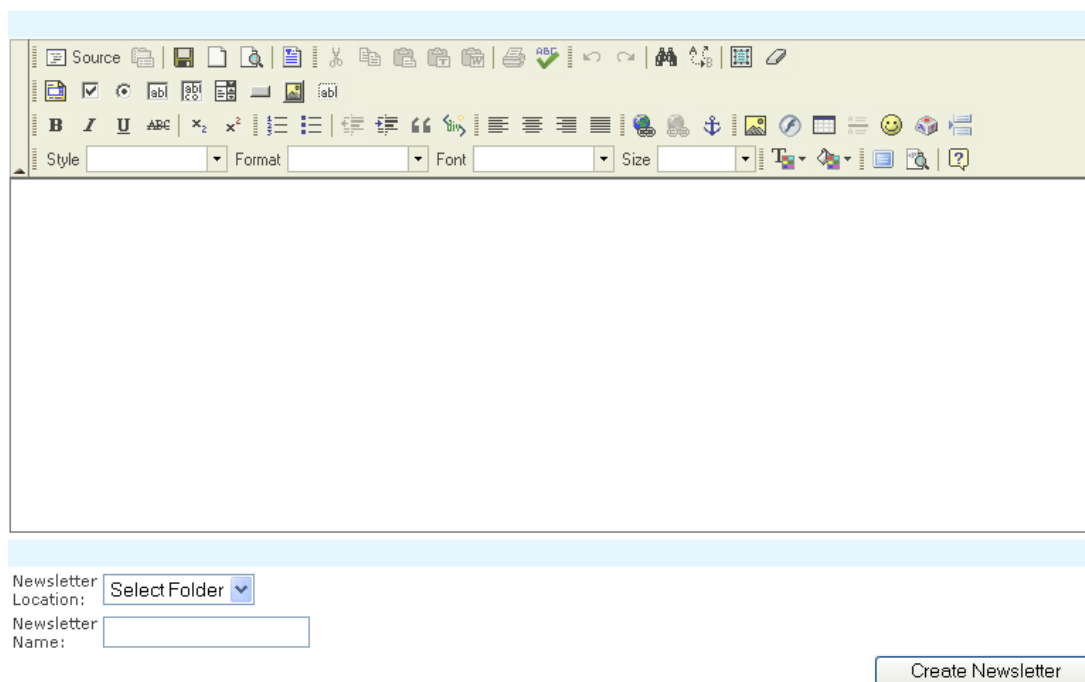
16.1.1. STANDARD TEMPLATE



User can start with any standard template and customize it according to his needs. The standard templates are the templates which are provided by the software itself. User can also create new templates.

16.1.2. CREATING CUSTOMIZED TEMPLATE

Create Newsletter



User can create his own template using built-in editor. The WYSIWYG editor is the editor with strong functionality, which can be used to build extensive html pages with embedded images at complex structure.

User can also upload a HTML page into the Newsletter editor.

16.2. SMS PROMOTIONS

16.2.1. SMS SEND



The screenshot shows the 'CLOSE CONTACT' web interface. At the top, it says 'a product by Eurowaymedia.com'. Below the logo is a navigation menu with links: Newsletters | SMS Promotions | Mailing Lists | Dynamic features | Statistics | Tracking | Logout. A light blue bar contains a link to 'SMS' and a button for 'Create SMS'. Below this is a table titled 'SMSPromotions' with columns for 'SMS', 'Sent', 'Status', 'Delete', and 'Edit'. The table lists several SMS entries with their respective dates, times, and statuses. At the bottom of the page, there is a footer with links: Home | About us | Contact Us | Terms of Use | Privacy Policy.

SMS	Sent	Status	Delete	Edit
View	2009-06-01 13:02:51	Sent	Delete	Edit
View	2009-05-31 15:31:34	Sent	Delete	Edit
View	2009-05-29 10:16:54	Not Sent	Delete	Edit
View	2009-06-02 20:57:38	Sent	Delete	Edit
View	2009-06-01 12:06:25	Sent	Delete	Edit
View	2009-06-06 14:06:38	Sent	Delete	Edit
View	2009-06-06 14:06:38	Sent	Delete	Edit
View	2009-06-06 14:06:04	Sent	Delete	Edit
View	2009-06-07 23:06:27	Sent	Delete	Edit

User can be able to crate text messages in a text box. Maximum length of the text should be 160 characters including spaces. User can also see the remaining characters. When user will select the address list, for SMS recipient, the user must have a mobile number with specified country code.

16.2.2. SMS SCHEDULING

[SMS](#) [Create SMS](#)

Create SMS

Select Mailing List:

Text: (max 160 characters)

Calendar - Micr...
 June 2009
 Mo Tu We Th Fr Sa Su
 1 2 3 4 5 6 7
 8 9 10 11 12 13 14
 15 16 17 18 19 20 21
 22 23 24 25 26 27 28
 29 30 1 2 3 4 5
 Time: 23:6:7

User can be able to schedule SMS like newsletters.

16.3. MAILING LIST

16.3.1. SHOW ADDRESS LIST

[Mailinglist](#) [Create Mailinglist](#) [Add Contacts](#)

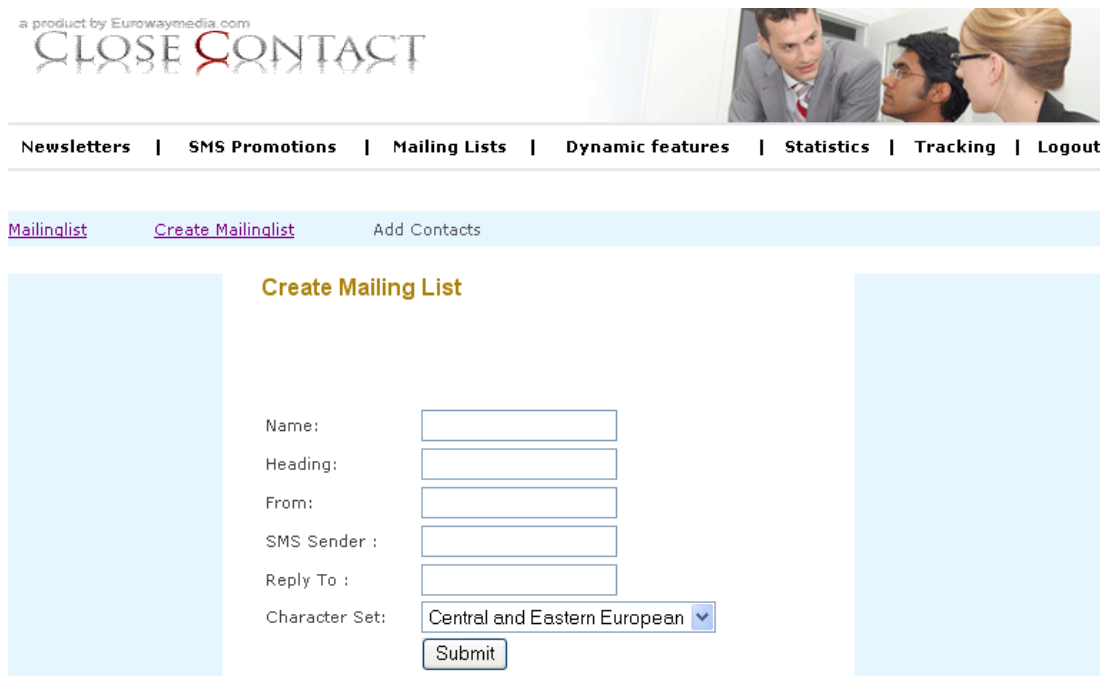
MailingLists

Name	Heading	From	Delete	Generate Script
Mailing List1	Mailing List1	maboob	Delete	Generate Script
Mailing List2	Mailing List2	Ayaz	Delete	Generate Script
Mailing List3	Mailing List3	Fahad	Delete	Generate Script

Home | [About us](#) | [Contact Us](#) | [Terms of Use](#) | [Privacy Policy](#)

User can be allowed to see stored address lists. The created date for the address list should also be displayed. User can also export address list in Excel format.

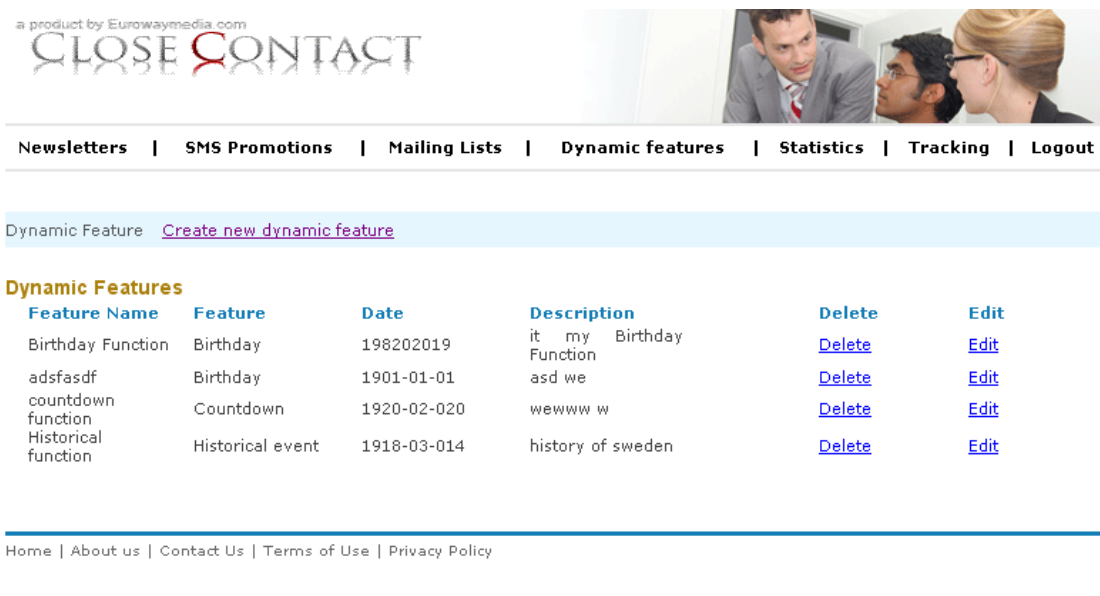
16.3.2. CREATE NEW ADDRESS LIST



User can also create a new address list. After creating address list user can add address via two ways.

1. User can simply write addresses.
2. User can import addressed from CSV format. The CSV could contain information like Name, Surname, and Email etc.

16.4. DYNAMIC FEATURES



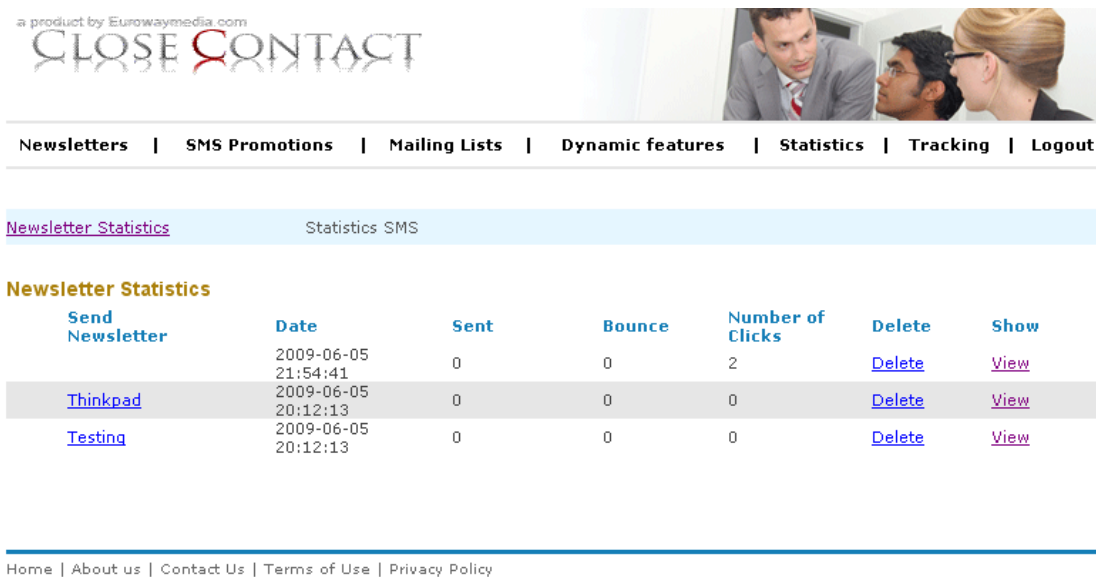
There will be four types of functions from where user can create dynamic features.

- Birthday
- Countdown
- Historic Event
- Calendar

To create new dynamic feature user should select type of function according to his wish. After creating a dynamic function, than he will be able to insert it into any newsletter.

16.5. STATISTICS

16.5.1. NEWSLETTER STATISTICS



The screenshot shows the 'CLOSE CONTACT' dashboard, a product by Eurowaymedia.com. The navigation menu includes: Newsletters | SMS Promotions | Mailing Lists | Dynamic features | Statistics | Tracking | Logout. The 'Statistics' section is active, showing 'Newsletter Statistics' and 'Statistics SMS'. A table displays the following data:

Send Newsletter	Date	Sent	Bounce	Number of Clicks	Delete	Show
	2009-06-05 21:54:41	0	0	2	Delete	View
Thinkpad	2009-06-05 20:12:13	0	0	0	Delete	View
Testing	2009-06-05 20:12:13	0	0	0	Delete	View

Footer: Home | About us | Contact Us | Terms of Use | Privacy Policy

Here you will see statistics related to Newsletters.

16.5.2. SMS STATISTICS



[Newsletter Statistics](#)

[Statistics SMS](#)

SMS Statistics

Send SMS	Date	Sent	Bounce	Delete	Show
SMS to Maj	2009-06-06 14:25:41	0	0	Delete	View
asf asdf a	2009-06-06 14:29:51	0	0	Delete	View
asdfasdf a	2009-06-07 23:11:58	0	0	Delete	View
	2009-06-07 23:12:47	0	0	Delete	View

In this module user can sort out the SMS could not be delivered to by using drop-down menu. Data will be show in given fields below. SMS, Date, Sent, Bounce, Address List, Remove.

16.6. TRACKING

16.6.1. CREATE TRACKING

Tracking

[Create tracking to your website](#)

[Tracking Statistics](#)

Tracking Name	Tracking URL	Tracking Code	Delete	
Tracking 1	www.google.com	f6071d3f-6f6d-0fc4-71b8-5595bc424044	Delete	Generate Script
new track	www.goal.com	57772b8c-0d72-0f44-7988-4ba5daa5335c	Delete	Generate Script
My Track	<input type="text"/>	<pre><script language="JavaScript"> var link; var rand; var params; rand = Math.round(1000*Math.random()); params = '?rand=' + rand + '&TrC=f6071d3f-6f6d-0fc4-71b8-5595bc424044&url=' + document.URL + '&Ref=' + escape(document.referrer); link = ''; document.open(); document.write(link); document.close(); </script></pre>	Delete	Generate Script

User can create tracking by providing a tracking name and a target web page URL. The web page URL could be any e.g. a thank you page. It depending upon user's needs.

There would be button “Generate Script”. User will generate a script and copy that script into within the <body> </body> tags of target URL User also need to include that URL into his newsletter.

17-TEST CASES

Few test cases for testing this whole system are given below.

17.1. HTML CONVERTER

Test Case ID:	CC_171	System Tester:	Fahad
Use Case Ref:	CC_11223	Date:	1 st June 2009
Purpose:	User will able to see html of newsletter template.		
Pre-Condition:	User Must Be Login.		
Execution Description:	User created/opened a newsletter into editor. User clicked on HTML button.		
Input:	Newsletter		
Expected Result:	Display HTML		
Result	HTML of Newsletter has been shown perfectly.		

17.2. SEND NEWSLETTER AS EMAIL

Test Case ID:	CC_172	System Tester:	Fahad
Use Case Ref:	CC_11225	Date:	1 st June 2009
Purpose:	User will able to send newsletter as email.		
Pre-Condition:	User Must Be Login.		
Execution Description:	User created/opened a newsletter into editor. User will click on “Send” Button.		
Input:	Newsletter		
Expected Result:	Newsletter will be sent.		
Result	Newsletter sent successfully.		

17.3. THUMBNAIL VIEW

Test Case ID:	CC_173	System Tester:	Fahad
Use Case Ref:	CC_112210	Date:	1 st June 2009
Purpose:	User can see the thumbnail view of saved templates.		
Pre-Condition:	User Must Be Login.		
Execution Description:	User created/opened a newsletter into editor. User clicked “Saved Newsletters”.		
Input:	Saved Newsletters.		
Expected Result:	Thumbnail of newsletters.		
Result	Thumbnail of saved newsletters shown successfully.		

17.4. SCHEDULE SMS

Test Case ID:	CC_174	System Tester:	Fahad
Use Case Ref:	CC_112218	Date:	1 st June 2009
Purpose:	User can schedule SMS to send them later.		
Pre-Condition:	User Must Be Login.		
Execution Description:	Click on “SMS”. Check “Send SMS Later” and enter time.		
Input:	SMS Text	Any Schedule Date Time.	
Expected Result:	SMS will be sent automatically on respected date time.		
Result	SMS has been sent automatically on respected date time.		

17.5. LIST ADDRESS LISTS

Test Case ID:	CC_175	System Tester:	Fahad
Use Case Ref:	CC_112222	Date:	1 st June 2009
Purpose:	User able to view all saved address lists.		
Pre-Condition:	User Must Be Login.		
Execution Description:	Click on “Address List”.		
Input:	Address lists		
Expected Result:	Saved Address lists will be shown.		
Result	Saved Address lists shown successfully.		

17.6. EDIT DYNAMIC FUNCTION

Test Case ID:	CC_176	System Tester:	Fahad
Use Case Ref:	CC_112233	Date:	1 st June 2009
Purpose:	User can edit the already created dynamic function.		
Pre-Condition:	User Must Be Login.		
Execution Description:	Click on “Dynamic Functions”. Click “Edit”.		
Input:	Dynamic Function		
Expected Result:	Dynamic Function will be updated.		
Result	Dynamic Function updated successfully.		

17.7. LIST NEWSLETTER STATISTICS

Test Case ID:	CC_177	System Tester:	Fahad
Use Case Ref:	CC_112238	Date:	1 st June 2009

Purpose:	User can see the statistics of newsletters.
Pre-Condition:	User Must Be Login.
Execution Description:	Click on “Statistics”.
Input:	Send Newsletters.
Expected Result:	Display newsletters statistics.
Result	Newsletters statistics displayed successfully.

17.8. GENERATE SCRIPT

Test Case ID:	CC_178	System Tester:	Fahad
Use Case Ref:	CC_112244	Date:	1 st June 2009
Purpose:	User will be able to see tracking script.		
Pre-Condition:	User Must Be Login.		
Execution Description:	Click on “Tracking”. Click on “Generate Script”.		
Input:	Tracking Data		
Expected Result:	Script will be shown successfully.		
Result	Javascript shown into a pop.		

17.9. TRACKING STATISTICS

Test Case ID:	CC_179	System Tester:	Fahad
Use Case Ref:	CC_11231	Date:	1 st June 2009
Purpose:	Customer can able to click on link and tracking status should be changed.		

Pre-Condition:	User Must Be Login.
Execution Description:	Click on Link in newsletter.
Input:	Link on Newsletters .
Expected Result:	Tracking statistics should be incremented.
Result	Tracking statistics incremented when customer clicked on link in newsletter.

CONCLUSION

Close contact is an impressive web application with a business to business approach. It has a tendency to provide what a user want and can also introduce a new way of marketing for products. I would say it is the most impressive tool with great deal of time and money saving involved in it. It can act as a central hub for all kind of marketing related activities, all kind of statistics, information, customer's data and newsletters.

Close Contact is unique in its kind. Currently there is no product in the market like that. It is an innovative idea with a lot of potential of supporting current business market. Though the features in Close Contact are very impressive, I can still suggest some more. It would be better if with SMS and Newsletters marketing, they could introduce forums and online advertisement.

I have learned a lot from this thesis. Work in PHP was also very interesting. I faced a lot of difficulties regarding different implementation details in PHP and I had searched a lot of books to resolve those issues. Model, view and control architecture is quite impressive to study and to implement. The understanding of basic business need of a system (which you can is actual requirement of the system) is the core idea to understand the domain model. The business model of the system reflects what to include in problem domain model, about the environment and interactions.

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