Final Project Report

<< NGO MANAGEMENT SYSTEM >>

Project Supervisor
<< RIZWANA NOOR >>

Submitted By

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Software Projects & Research Section,
Department of Computer Sciences,
Virtual University of Pakistan

CERTIFICATE

This is to certify that << MUHAMMAD SALMAN >> (<< BC110400325 >>) have worked on and completed their Software Project at Software & Research Projects Section, Department of Computer Sciences, Virtual University of Pakistan in partial fulfillment of the requirement for the degree of BS in Computer Sciences under my guidance and supervision.

In our opinion, it is satisfactory and up to the mark and therefore fulfills the requirements of BS in Computer Sciences.

Supervisor / Internal Examiner

<< RIZWANA NOOR >>
Supervisor,
Software Projects & Research Section,
Department of Computer Sciences
Virtual University of Pakistan

_____
(Signature)

External Examiner/Subject Specialist

<<External Supervisor Name>>

_____
(Signature)

Accepted By:

_____
(For office use)

EXORDIUM

In the name of Allah, the Compassionate, the Merciful.

Praise be to Allah, Lord of Creation,
The Compassionate, the Merciful,
King of Judgment-day!

You alone we worship, and to You alone we pray for help,
Guide us to the straight path

The path of those who You have favored,

Not of those who have incurred Your wrath,
Nor of those who have gone astray.

DEDICATION

First of all I thanks to “Allah Almighty”, for everything that makes me possible to complete this project. I dedicate this project to my parents, teachers because of their co-ordination, patience, understanding, constant encouragement, support and guidance has given me the strength and knowledge to surpass all the difficulties in life. Thank you for your in-finite helpful attitude on all the challenges for the completion of this work.

ACKNOWLEDGEMENT

Starting in the Name of Allah, the Most Beneficent, the Most Merciful.

This project is a result of dedicated effort. It gives me immense pleasure to prepare this project report on “NGO MANAGEMENT SYSTEM”. I would like to thanks to our project supervisor to help and constructive suggestions on the matter in this project. I would like to thank my parents and teachers who have helped me in making this project successful.

PREFACE

This project attempt to bring under one cover the entire hard-work and dedication put in, by me, in the completion of the project. And many thanks to Virtual University of Pakistan, where I learned how to do research work. I hope this report will be beneficial for others in future.

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CHAPTER 1

Gathering & Analyzing Info

1.1 INTRODUCTION:

It is a web-based application, which will keep record of all the users/companies by the maintaining their accounts record separately and the web application will provide an immediate access to the user through the proper login and logout functionality, whenever he/she wants to access the website to perform any task. For example, he/she wants to donate money for charity purposes and the user can also view his/her online records.

1.2 PURPOSE:

The purpose of software requirement specification is to define the overall structure of the application. What is the use of application? What is the main functionality of the application? and how the user will use it. We will make an online web-based application called "NGO MANAGEMENT SYSTEM". It is a desktop based application, which is used to provide the different secure features to the users for their privacy. The "NGO MANAGEMENT SYSTEM" application will give an opportunity to those people who want to donate their money, assets or want to work as voluntarily (free of cost) online. In this phase, our purpose is gathering and analyzing information about the project. In this phase, we identify the user and the using criteria.

1.3 SCOPE:

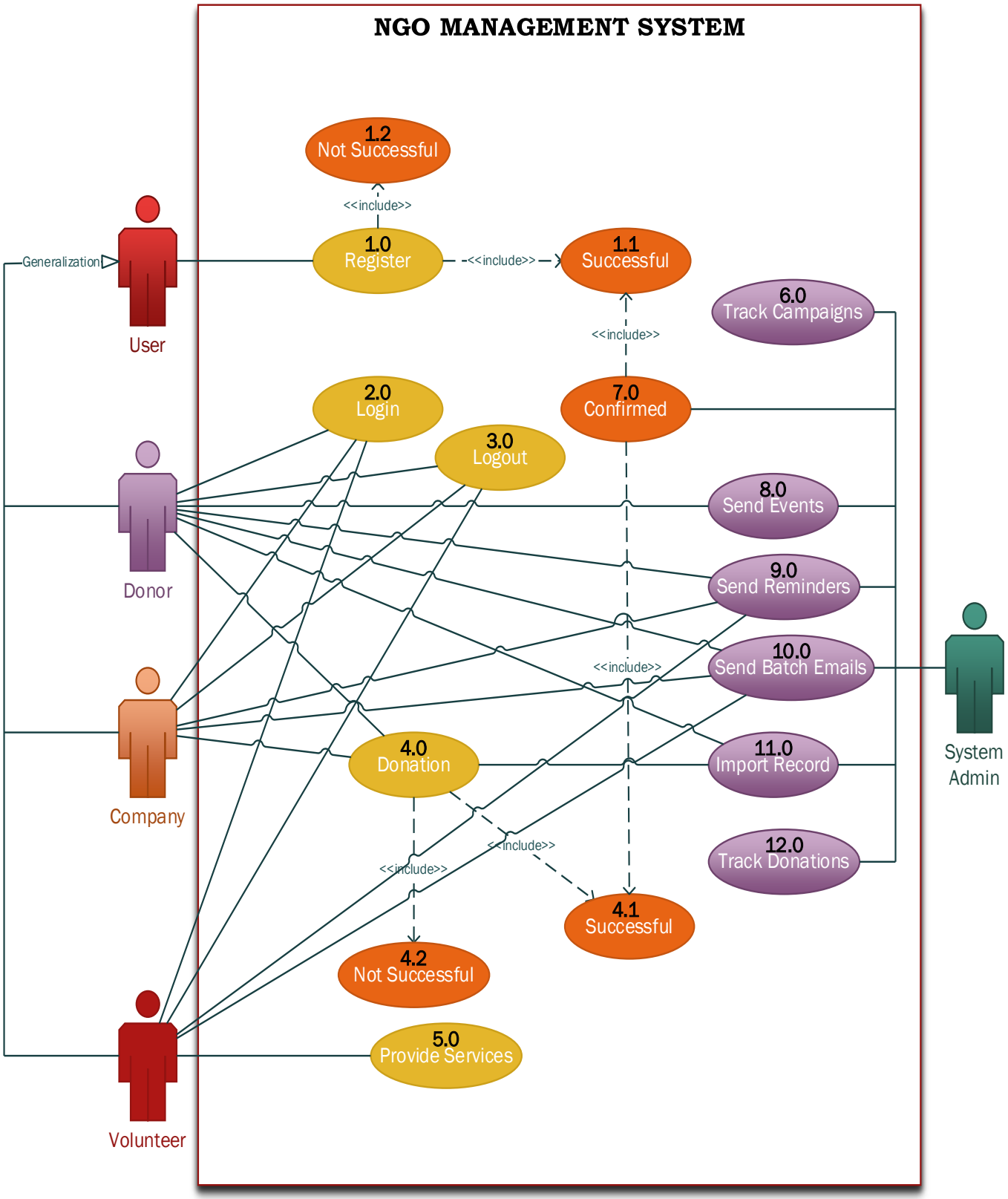
This project is very much helpful for those people who want to donate their money or any valuable asset online without hesitation. This project application will create a proper mechanism where every single user will have an opportunity to create their own account and perform their tasks and the users will updated for their every single donation.

1.4 DEFINITIONS, ACRONYMS AND ABBREVIATIONS:

- SRS: Software Requirement Specification.
- NGOMS: Non-governmental Organization Management System.
- ERD: Entity Relationship Diagram.
- DBD: Database Diagram.

1.5 USE CASES AND UASGAE SCENARIOS:

1.5.1 Use Case Diagrams:



1.5.2 Usage Scenarios:

Use Case Scenario	
Use Case title	Registration
Use Case Id	NGOMS-Reg-1.0
Actors	Donor/ Company /Volunteer/Administrator
Description	This use case is used to register the user after providing all the information to the registration form by the user.
Alternative Paths	In case of any misfield the system shows an error to the user.
Pre Conditions	User needs to fill the registration form to get the benefits of a registered user.
Post Conditions	After now, the registered user will be able to access all the information available on the website.
Author	S160246546 (BC110400325)
Exception	Invalid Credentials/Database exceptions.
Modification History	Version 1.0

Use Case Scenario	
Use Case title	Successful <<include>>
Use Case Id	NGOMS-Suc-1.1
Actors	Donor/ Company /Volunteer/Administrator
Description	The system shows the successful message to the user, who registers in the website.
Alternative Paths	All actors are optional to cancel or use the go back option.
Pre Conditions	User needs to be properly placed his or her information to get the successful message.
Post Conditions	After filling all required field and press the submit button without any error, user will get successful message.
Author	S160246546 (BC110400325)
Exception	Invalid Credentials/Database exceptions.
Modification History	Version 1.0

Use Case Scenario	
Use Case title	Not Successful <<include>>
Use Case Id	NGOMS-NSuc-1.2
Actors	Donor/ Company /Volunteer/Administrator
Description	The system show the not successful message to the user, who wants to register in the website but due to some particular reasons got an error.
Alternative Paths	All actors are optional to cancel or use the go back option.
Pre Conditions	User needs to be properly placed his or her information to avoid the not successful message.
Post Conditions	After filling all required field and press the submit button, user will get not successful message due to some database limitations etc.
Author	S160246546 (BC110400325)
Exception	Invalid Credentials/Database exceptions.
Modification History	Version 1.0

Use Case Scenario	
Use Case title	Login
Use Case Id	NGOMS-login-2.0
Actors	Donor/ Company /Volunteer/Administrator
Description	This use case performs necessary user authentication in order to give access to the user to required information.
Alternative Paths	All actors are optional to cancel or use the go back option.
Pre Conditions	User need correct id and password in the system to enter in his/her account.
Post Conditions	After successfully login the donor, volunteer or administrator enter his account and can perform any task.
Author	S160246546 (BC110400325)
Exception	Invalid Credentials/Database exceptions.
Modification History	Version 1.0

Use Case Scenario	
Use Case title	Logout
Use Case Id	NGOMS-logout-3.0
Actors	Donor/ Company /Volunteer/Administrator
Description	When any user donor, volunteer or administrator press logout button the online system suddenly close the account and user can't use online system option any more.
Alternative Paths	All actors are optional to cancel or use the go back option.
Pre Conditions	For using logout option first you must login in your account on online NGO management system.
Post Conditions	After logout the donor, volunteer or administrator can't use the option of online NGO management system and need to login again in his/her account.
Author	S160246546 (BC110400325)
Exception	Invalid Credentials/Database exceptions.
Modification History	Version 1.0

Use Case Scenario	
Use Case title	Donation
Use Case Id	NGOMS-Don-4.0
Actors	Donor/ Company /Volunteer/Administrator
Description	Any registered donor user will click on donation button then enter into donor page for donation.
Alternative Paths	All actors are optional to cancel or use the go back option.
Pre Conditions	Donor user need correct id and password for login in the system.
Post Conditions	After donor user login it will click on donation button.
Author	S160246546 (BC110400325)
Exception	Invalid Credentials/Database exceptions.
Modification History	Version 1.0

Use Case Scenario	
Use Case title	Successful <<include>>
Use Case Id	NGOMS-Suc-4.1
Actors	Donor/ Company /Volunteer/Administrator
Description	The system shows the successful message to the user, when he/she will does any kind of donation.
Alternative Paths	All actors are optional to cancel or use the go back option.
Pre Conditions	User needs to be properly placed his or her information to get the successful message.
Post Conditions	After filling all required field and press the submit button without any error, user will get successful message.
Author	S160246546 (BC110400325)
Exception	Invalid Credentials/Database exceptions.
Modification History	Version 1.0

Use Case Scenario	
Use Case title	Not Successful <<include>>
Use Case Id	NGOMS-NSuc-4.2
Actors	Donor/ Company /Volunteer/Administrator
Description	The system shows the not successful message to the user, when he/she wants to donate in the website but due to some particular reasons got an error.
Alternative Paths	All actors are optional to cancel or use the go back option.
Pre Conditions	User needs to be properly placed his or her information to avoid the not successful message.
Post Conditions	After filling all required field and press the submit button, user will get not successful message due to some database limitations etc.
Author	S160246546 (BC110400325)
Exception	Invalid Credentials/Database exceptions.
Modification History	Version 1.0

Use Case Scenario	
Use Case title	Provide Services
Use Case Id	NGOMS-PSer-5.0
Actors	Donor/ Company /Volunteer/Administrator
Description	Volunteer user after successfully login into the system, it will provide any kind of free services for the NGO management system for their social or management improvement.
Alternative Paths	All actors are optional to cancel or use the go back option.
Pre Conditions	User need to be properly placed his or her correct id and password in order to login into the system after registration.
Post Conditions	The user will provide his or her free services without any wages/salary.
Author	S160246546 (BC110400325)
Exception	Invalid Credentials/Database exceptions.
Modification History	Version 1.0

Use Case Scenario	
Use Case title	Track Campaigns
Use Case Id	NGOMS-TCam-6.0
Actors	Donor/ Company /Volunteer/Administrator
Description	This use case describes that system should be able to track the fund raising campaigns from website.
Alternative Paths	N/A
Pre Conditions	The system should be able to track different fundraising campaigns from website.
Post Conditions	This online fundraising track campaigns update the online NGO management systems automatically.
Author	S160246546 (BC110400325)
Exception	Invalid Credentials/Database exceptions.
Modification History	Version 1.0

Use Case Scenario	
Use Case title	Confirmed
Use Case Id	NGOMS-Con-7.0
Actors	Donor/ Company /Volunteer/Administrator
Description	The system sends the confirmation email to all successful users.
Alternative Paths	N/A
Pre Conditions	User needs to be properly placed his or her information to get the confirmation email.
Post Conditions	Wrong information provided by the user will lead to the not successful message.
Author	S160246546 (BC110400325)
Exception	Invalid Credentials/Database exceptions.
Modification History	Version 1.0

Use Case Scenario	
Use Case title	Send Events
Use Case Id	NGOMS-SEve-8.0
Actors	Donor/ Company /Volunteer/Administrator
Description	This use case describes that how system sends invitation event like fund raising program to all regular donor users.
Alternative Paths	The system admin is optional to cancel event information or use the go back option.
Pre Conditions	User need to make an online donation to get the invitation events information.
Post Conditions	The invitation events will update the registered users about online system updates.
Author	S160246546 (BC110400325)
Exception	Invalid Credentials/Database exceptions.
Modification History	Version 1.0

Use Case Scenario	
Use Case title	Send Reminders
Use Case Id	NGOMS-SRem-9.0
Actors	Donor/ Company /Volunteer/Administrator
Description	This use case describes that system should remind the user for scheduled tasks and appointments.
Alternative Paths	The system admin is optional to cancel reminder information or use the go back option.
Pre Conditions	The user needs to have an account to receive reminder emails.
Post Conditions	The registered users get alert of reminder email on scheduled basis.
Author	S160246546 (BC110400325)
Exception	Invalid Credentials/Database exceptions.
Modification History	Version 1.0

Use Case Scenario	
Use Case title	Send Batch Emails
Use Case Id	NGOMS-SBEma-10.0
Actors	Donor/ Company /Volunteer/Administrator
Description	This use case describes that system should be able to send all emails in a batch to the user contacts.
Alternative Paths	The system admin is optional to cancel batch email information or use the go back option.
Pre Conditions	The user needs to have an account to receive batch emails.
Post Conditions	The batch email sends to the registered user to their contacts.
Author	S160246546 (BC110400325)
Exception	Invalid Credentials/Database exceptions.
Modification History	Version 1.0

Use Case Scenario	
Use Case title	Import Record
Use Case Id	NGOMS-IRec-11.0
Actors	Donor/ Company /Volunteer/Administrator
Description	This use case describes that system should be able to import the registered users donation record and online donations.
Alternative Paths	N/A
Pre Conditions	The system should be able to import the user's record from the website.
Post Conditions	This online imported record should be open easily without giving an error.
Author	S160246546 (BC110400325)
Exception	Invalid Credentials/Database exceptions.
Modification History	Version 1.0

Use Case Scenario	
Use Case title	Track Donations
Use Case Id	NGOMS-TDon-12.0
Actors	Donor/ Company /Volunteer/Administrator
Description	This use case describes that system should be able to track the user donations from the website.
Alternative Paths	N/A
Pre Conditions	The system should be able to track different users from website.
Post Conditions	This online web-system tracks all users from online NGO management systems automatically.
Author	S160246546 (BC110400325)
Exception	Invalid Credentials/Database exceptions.
Modification History	Version 1.0

1.6 SUPPLEMENTARY REQUIREMENTS:

1.6.1 Usability:

The word usability means that user-centered approach for which effort required to learn, operate, prepare input, and interpret output of a program. Both the design and development process are focused around the prospective user — to make sure their goals, mental models, and requirements are met — to build the features that are simple and much helpful for user e.g. during registration to make their account, during session login or logout etc.

1.6.2 Reliability:

The extent to which a program can be expected to perform its intended function with required precision, it means, the application should not take much consumption of time to load pages.

1.6.3 Supportability:

The web app system supports simple user interface with English language, which can be easily understandable by everyone.

1.6.4 System Requirements:

1. Operating system : Windows 8/Windows 8.1/Windows 10
2. RAM : 512 MB/1GB
3. Processor : Pentium(R)Dual-core CPU or Above

CHAPTER 2

Planning the Project

2.1 INTRODUCTION:

Planning is the process of organizing tasks and activities to achieve the goals. In any web or software development its means to set the activities like which methodology should be selected for developing project , what should be the work plan of the project, what should be the structure of the development team, who will perform the which task , Planning also contain the project time table or schedule of the activities of project.

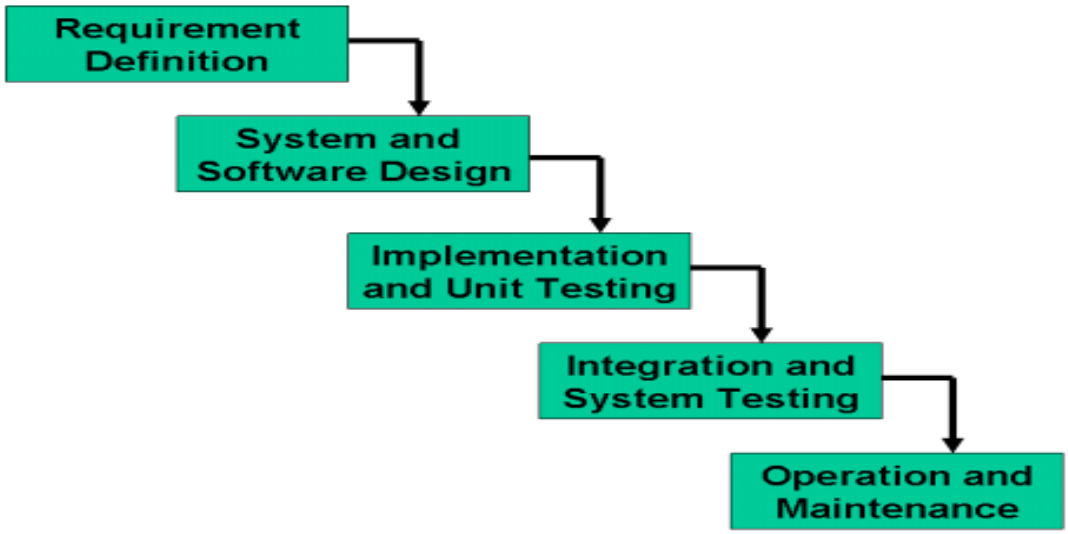
2.2 METHODOLOGY:

In software engineering, a software development methodology is a splitting of software development work into distinct phases or stages containing activities with the intent of better planning and management. It is often considered a subset of the systems development life cycle. The methodology may include the pre-definition of specific deliverables and artifacts that are created and completed by a project team to develop or maintain an application.

2.3 AVAILABLE METHODOLOGY:

a. THE WATERFALL PROCESS MODEL:

The waterfall model as it is clear from its name is a software development model in which development is carried out as water flows progressively downwards. Different phases of project, such as requirements analysis, design, implementation, testing, integration, and maintenance are carried out in a predefined sequence. Thus, the waterfall model is also known as linear sequential model, in which every next phase of the project is started after completion of the earlier phase. This model is depicted in the following diagram.



Advantages of the Waterfall Model:

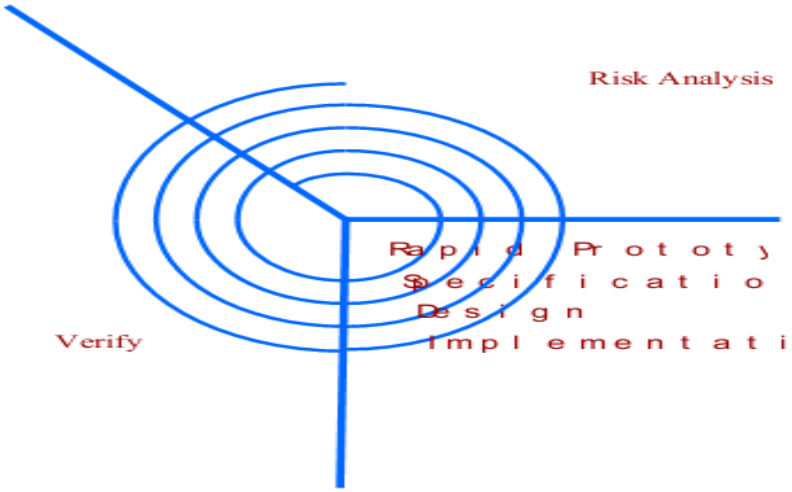
- Easy to understand and implement.
- It is easier to set schedule for the tasks to be completed within a specified time period.
- The other advantage of this model is that only after the work for a particular phase is over, does the other phase start, due to which there is no overlapping of phases or the product does not have to go through different iterative steps.
- This model is the easiest to implement in the eyes of most of the mangers, due to its linear model. Since the processes of this model are carried out in linear manner, the cost of resources is reduced to a large extent, which in turn helps in reducing the cost of the project considerably.
- Lastly, the documentation and testing happens at the end of each phase, which helps in maintaining the quality of the project.

Disadvantages of the Waterfall Model:

- Idealized, doesn't match reality well.
- Difficult to integrate risk management.
- The problems with one phase are never solved completely during that phase and in fact many problems arise after that phase is signed off.
- The partition in different phases is not quit flexible.
- As the requirements of the customer go on getting added to the list, not all the requirements are fulfilled, this results in development of a newer version of the system; this increases the cost of system development.

b. THE SPIRAL PROCESS MODEL:

The Spiral Process Model is a process which combines the iterative nature of prototype with the linear nature waterfall model. The spiral model has four phases: Planning, Risk Analysis, Engineering and Evaluation. The spiral model also caters risk management explicitly within software development. Thus it is helpful to identify major risks of both technical and managerial nature and how to avoid or minimize these risks to keep the software development process under control. In Spiral Process Model the project life cycle is divided into phases, and each phase is executed in all of the iteration of the Spiral Model. The diagram for this model is as given below:



Advantages of Spiral Process Model:

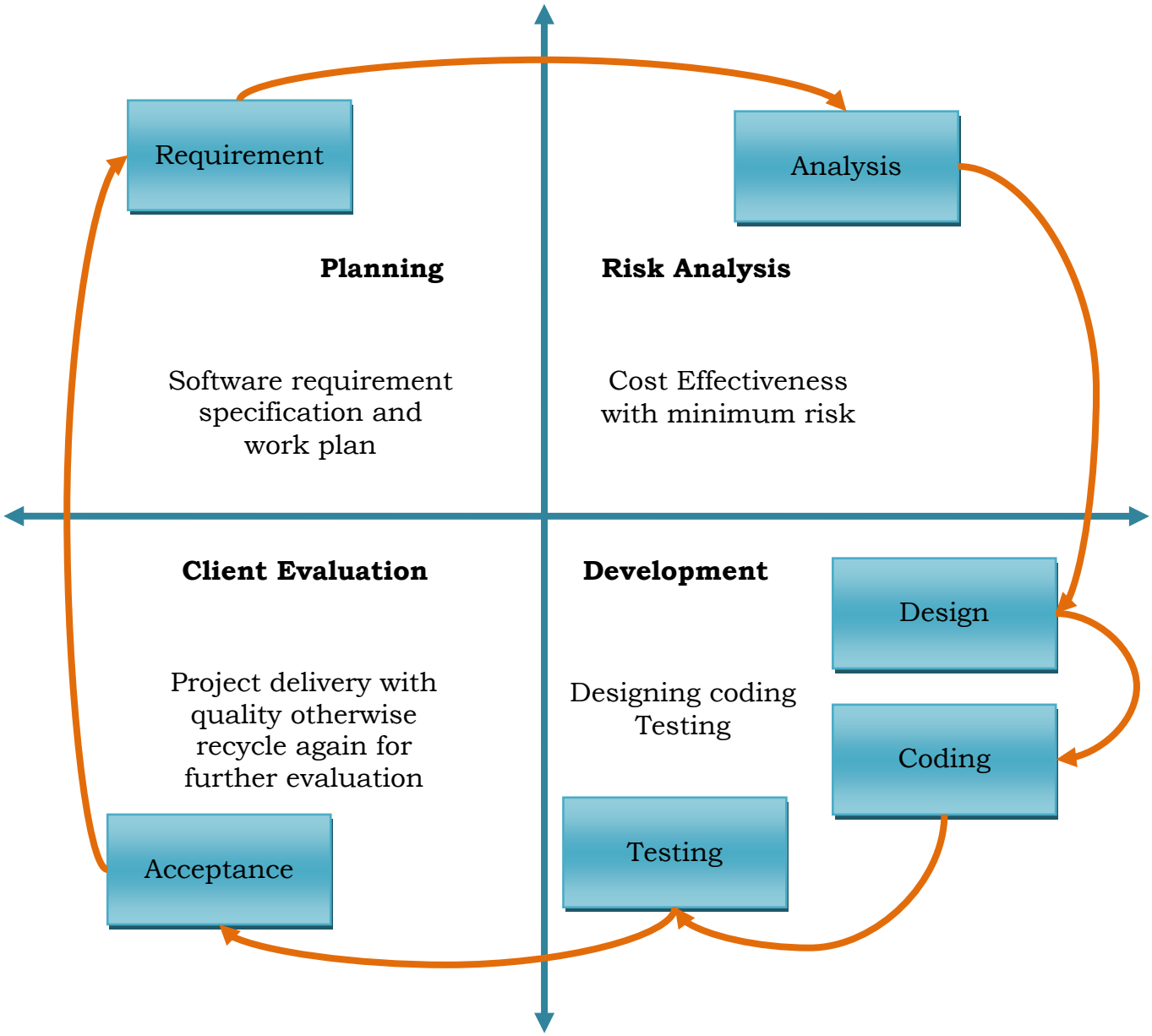
- High amount of risk analysis.
- Good for large and mission-critical projects.
- Estimates (i.e. budget, schedule, etc.) become more realistic as work progresses, because important issues are discovered earlier.
- It is more able to cope with the changes that software development generally entails.
- Working on the project gets started earlier, which is good to make a designer interested in the project.

Disadvantages of Spiral Process Model:

- Highly custom-made limiting re-usability.
- Applied differently for each application.
- Risk of not meeting budget or schedule
- Doesn't work well for smaller projects

2.4 CHOSEN METHODOLOGY:

The chosen Methodology for NGO Management System is VU Process Model. The VU process model is combination of waterfall and spiral models. The waterfall model is a sequential design process, in which every next phase of the project is started after completion of the earlier phase where as the spiral model is helpful to identifying major risks of both technical and managerial nature and how to avoid or minimize these risks to keep the software development process under control. The VU Process model has properties of both process models such as sequential process nature of waterfall model and risk management nature of spiral model.



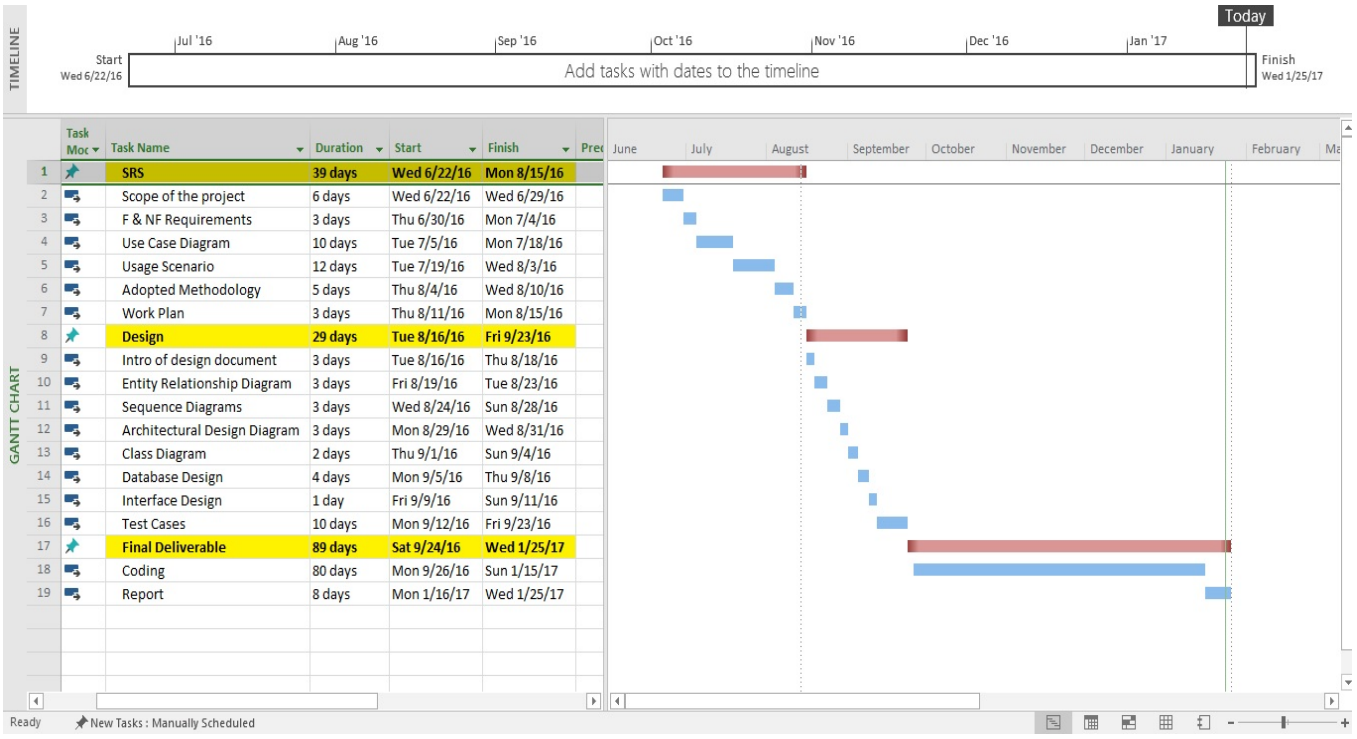
2.5 REASONS FOR CHOSEN METHODOLOGY:

The reasons are due to which VU Process Model is preferred as a working methodology. These are listed below:

- Due to no prior experience or expertise of such software project. As it is easy to revert back to an earlier in VU model.
- It is also facilitate to take feedback from clients and incorporate changes needed accordingly.
- It facilitates performing risk analysis effectively to eliminate losses occurs due to doubtful development models, resource requirements, project constraints, and time.

- The VU Process Model allows addition of product element at later stage when they become available or recognized ensuring that there is no conflict between requirements and design.
- The VU Process Model facilitates early user involvement in the system development effort. User's knowledge about the project rises as the project mature, so user can interface effectively with management.
- This method is consistent with approaches that have multiple software builds and releases and allows for making an orderly transition to a maintenance activity.
- The VU Process Model is suitable for projects with heavy user interfacing, such as Production Rejection Assessment System (PRAS).
- The VU Process Model provides the flexibility to implement changes in design at several stages of the project.
- The VU Process Model facilitates constriction of large systems in easy small segments.

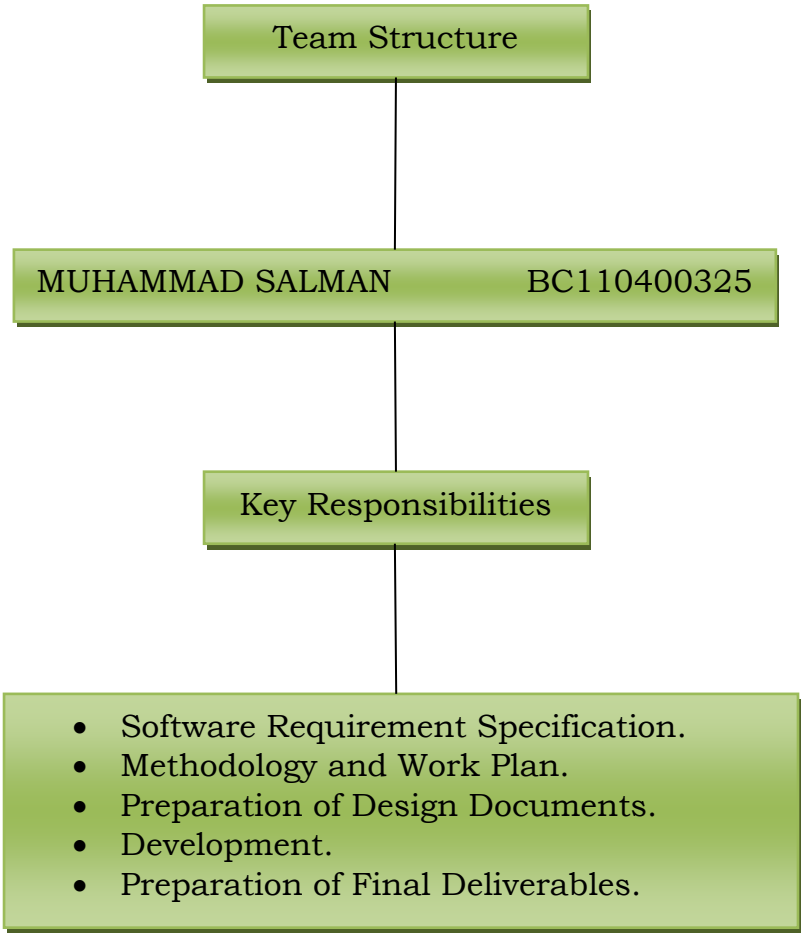
2.6 WORK PLAN:



	Task Mode	Task Name	Duration	Start	Finish
1		**SRS**	**39 days**	**Wed 6/22/16**	**Mon 8/15/16**
2		Scope of the project	6 days	Wed 6/22/16	Wed 6/29/16
3		F & NF Requirements	3 days	Thu 6/30/16	Mon 7/4/16
4		Use Case Diagram	10 days	Tue 7/5/16	Mon 7/18/16
5		Usage Scenario	12 days	Tue 7/19/16	Wed 8/3/16
6		Adopted Methodology	5 days	Thu 8/4/16	Wed 8/10/16
7		Work Plan	3 days	Thu 8/11/16	Mon 8/15/16
8		**Design**	**29 days**	**Tue 8/16/16**	**Fri 9/23/16**
9		Intro of design document	3 days	Tue 8/16/16	Thu 8/18/16
10		Entity Relationship Diagram	3 days	Fri 8/19/16	Tue 8/23/16
11		Sequence Diagrams	3 days	Wed 8/24/16	Sun 8/28/16
12		Architectural Design Diagram	3 days	Mon 8/29/16	Wed 8/31/16
13		Class Diagram	2 days	Thu 9/1/16	Sun 9/4/16
14		Database Design	4 days	Mon 9/5/16	Thu 9/8/16
15		Interface Design	1 day	Fri 9/9/16	Sun 9/11/16
16		Test Cases	10 days	Mon 9/12/16	Fri 9/23/16
17		**Final Deliverable**	**89 days**	**Sat 9/24/16**	**Wed 1/25/17**
18		Coding	80 days	Mon 9/26/16	Sun 1/15/17
19		Report	8 days	Mon 1/16/17	Wed 1/25/17

2.7 Project Structure:

2.7.1 Team Structure:



2.7.2 Project Schedule (Submission Calendar):

S.NO	TITLE	START DATE	END DATE
01	SRS Document	Wed 22 Jun, 2016	Mon 15 Aug, 2016
02	Design Document	Tue 16 Aug, 2016	Fri 23 Sep, 2016
03	Final Deliverables	Sat 24 Sep, 2016	Wed 25 Jan, 2017

CHAPTER 3

Designing the Project

3.1 INTRODUCTION:

The detailed study about different operations that are performed by a system and the relationship between them within or outside of the system is called Analysis of a system or the given project. A design document is a complete high-level solution to the problem presented. The design documentation is in general for anyone who wants to understand the system architecture and design of system. The goal of this document is to cover the high-level system architecture and design. It should be detailed enough that somebody who already understands the problem could go out and code the project without having to make any significant decisions. Further, if this somebody happens to be an experienced coder, they should be able to use the design document to code the solution in a few hours.

3.2 PURPOSE:

The main purpose of this design document is to analyze and understanding the system in detail. In this way the features and constitute parts of at least feasible solution are identified and then documented.
During design phase, the focus shifts from "what to how" i.e. in which we try to answer the questions of how to build the system.

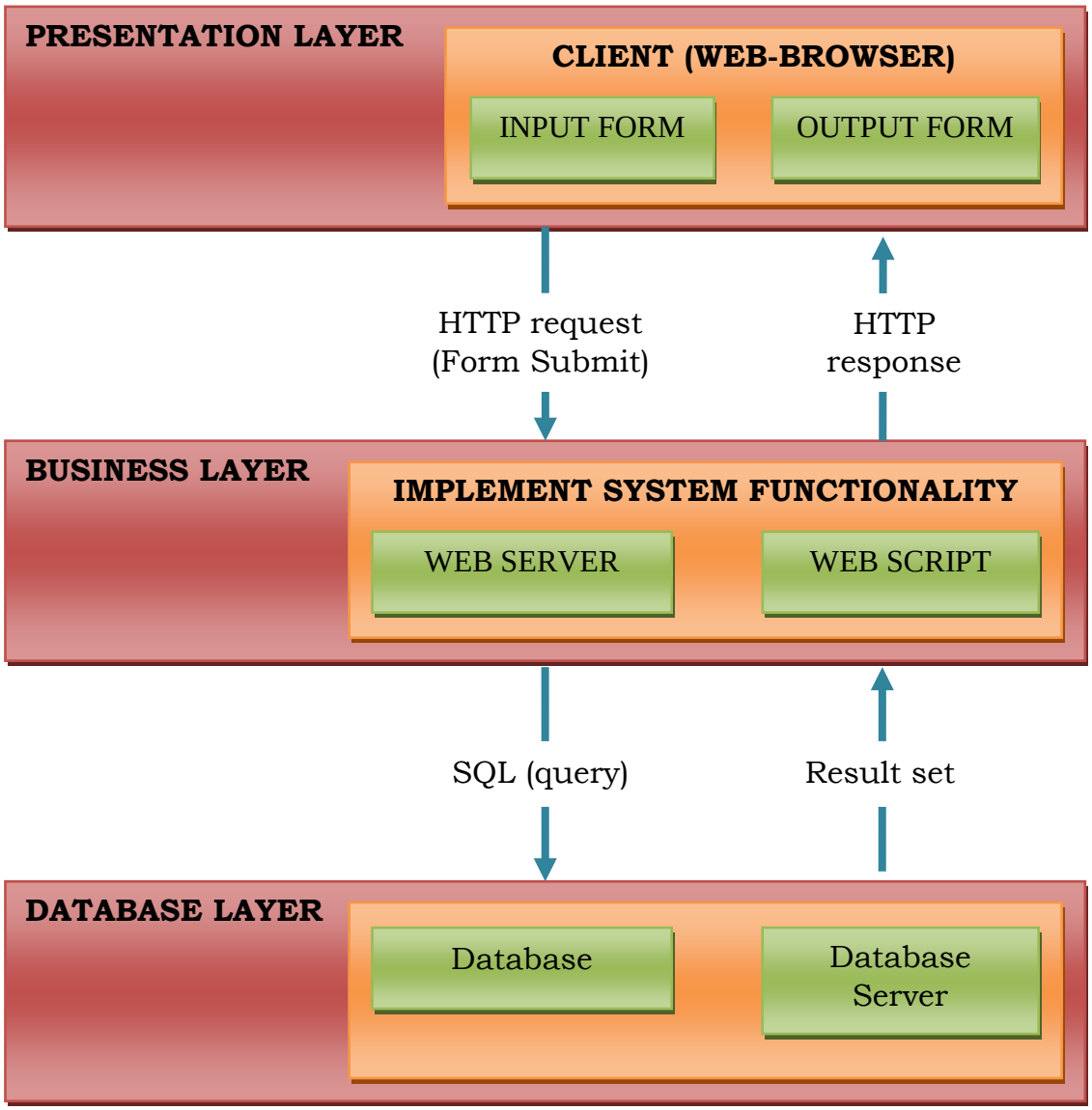
3.3 SCOPE:

The design activity provides a roadmap to progressively transform the requirements through a number of stages into the final product by describing the structure of the system to be implemented. It enables the user to organize IT requirements for a business and make the blue print of the software that is built by the person to facilitate the business operations. This document describes in detail the working of the system and its design related to the functional and Non-functional requirements. This document also contains ERD, Architecture design of system Class Diagram, Database design, Interface design and Test Cases of the software testing.

3.4 DEFINITIONS, ACRONYMS AND ABBREVIATIONS:

SRS: Software Requirement Specification.
NGOMS: Non-governmental Organization Management System.
ERD: Entity Relationship Diagram.
SD: Sequence Diagram.
ADD: Architecture Design Diagram.
CD: Class Diagram.
DD: Database Diagram.

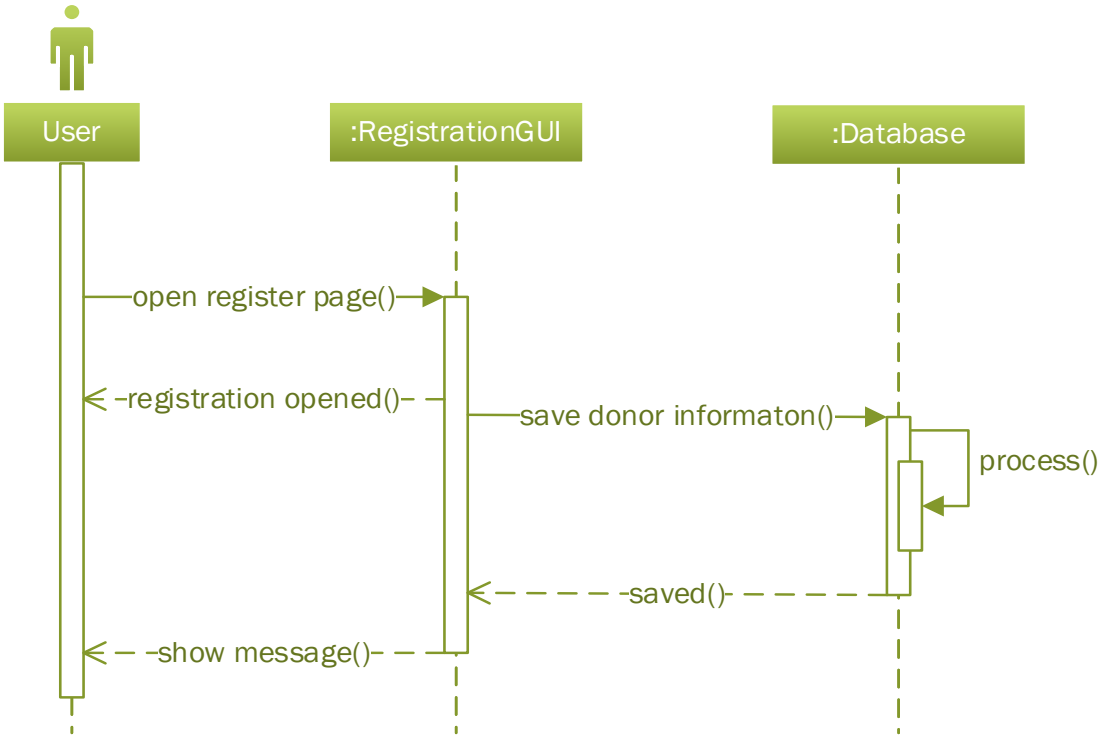
3.5 ARCHITECTURAL REPRESENTATION (ARCHITECTURE DIAGRAM):



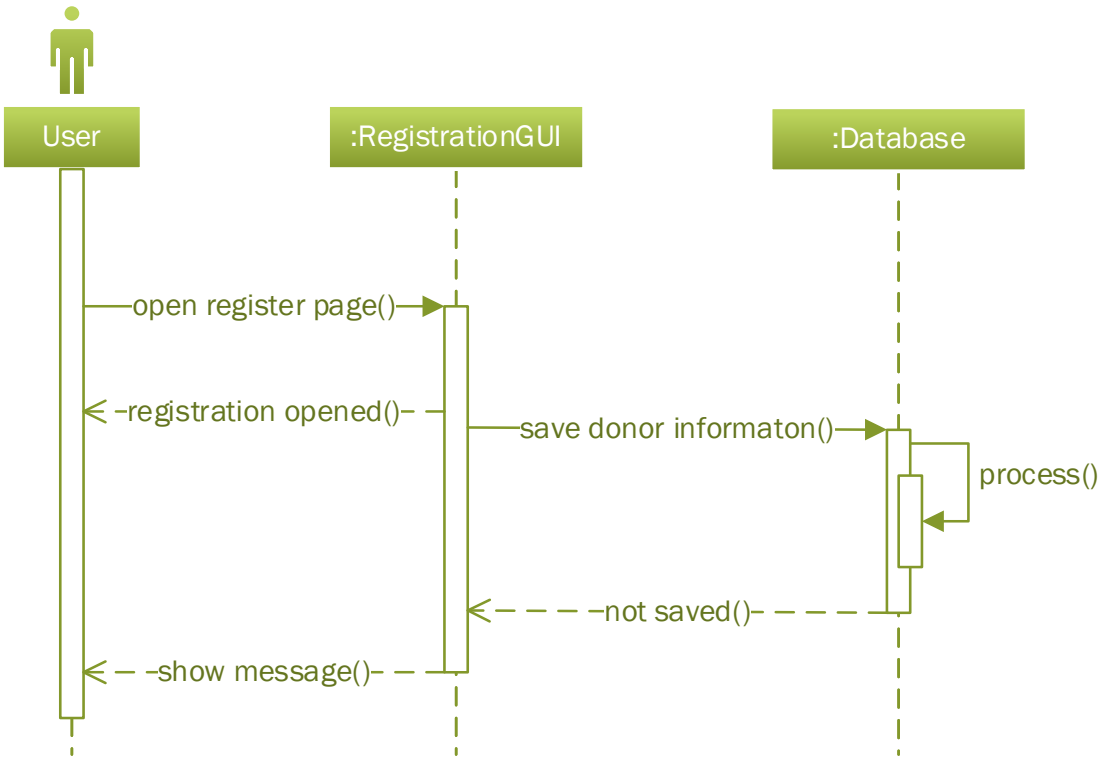
3.6 DYNAMIC MODEL: SEQUENCE DIAGRAMS

1: User Registration (Donor/Volunteer/Company)

Case 1: (Normal flow for Registration)

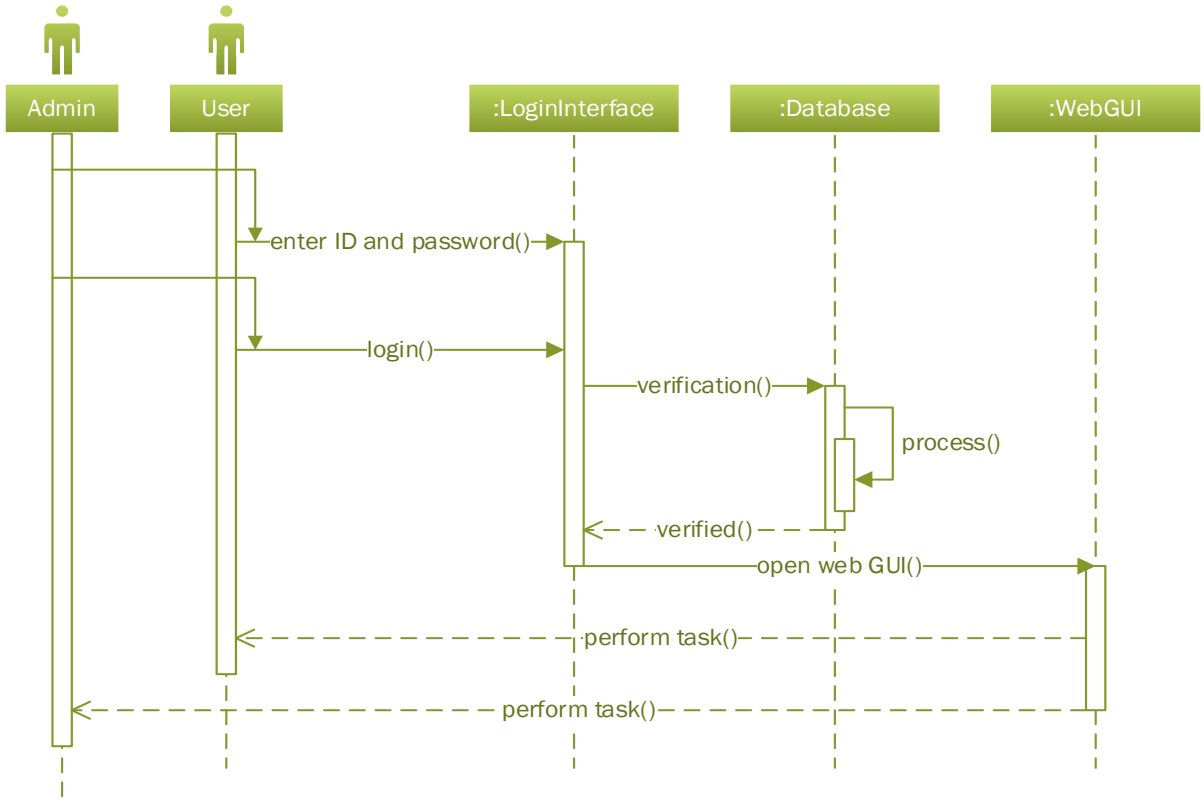


Case 2: (Exceptional flow for Registration)

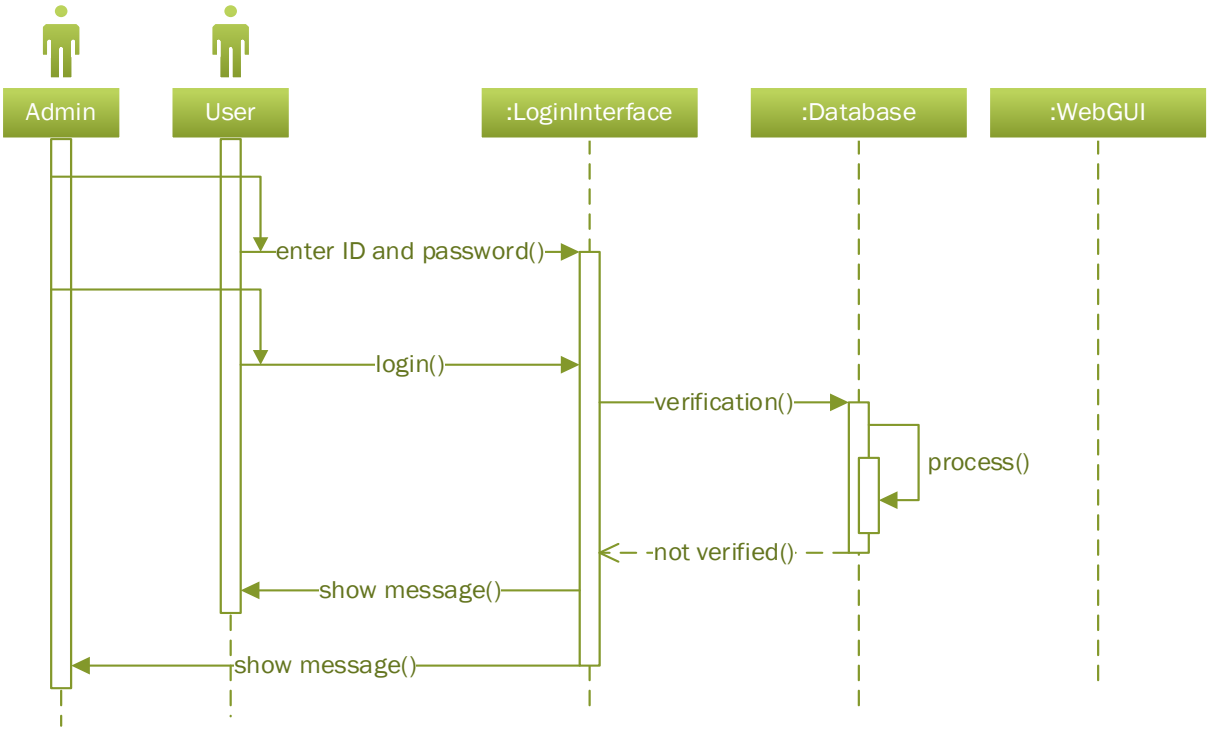


2: User Login in Web (Donor/Volunteer/Company/Admin)

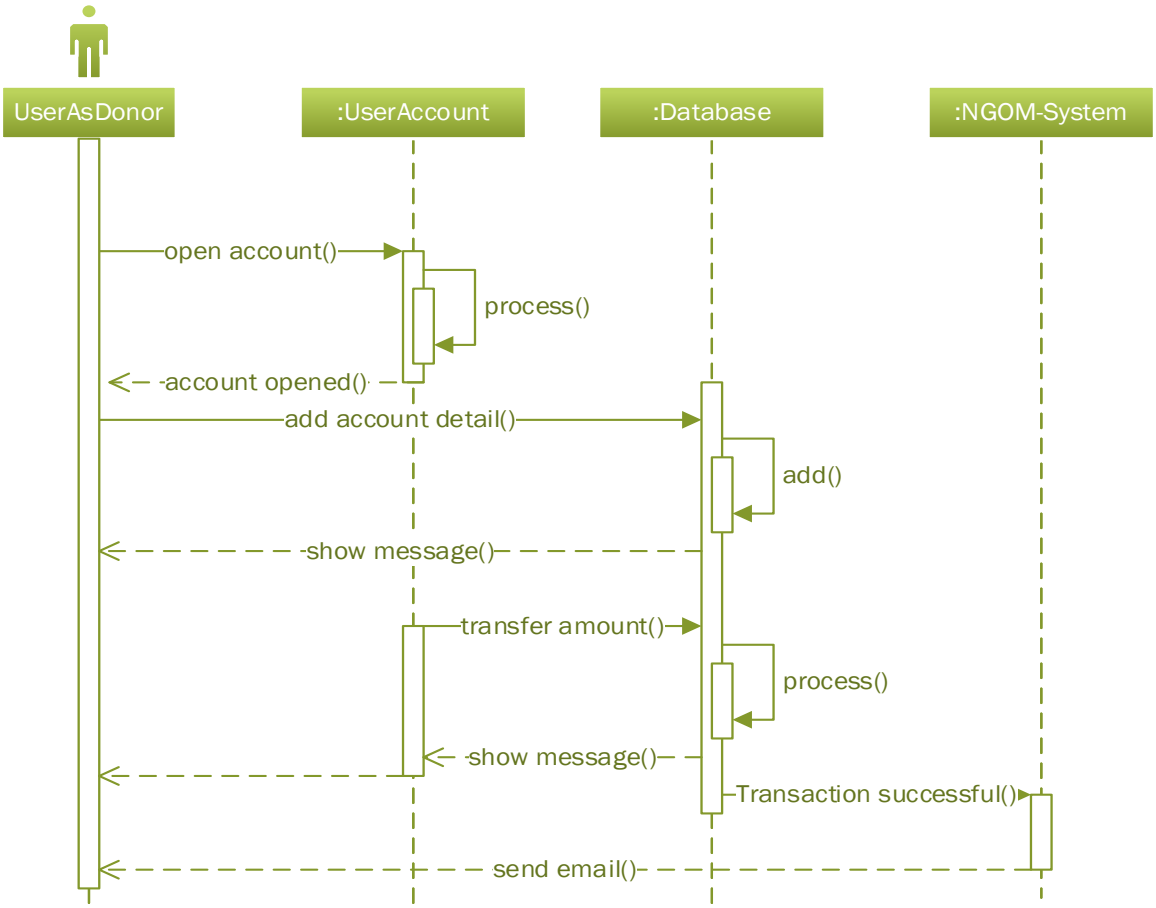
Case 1: (Normal flow for User Login)



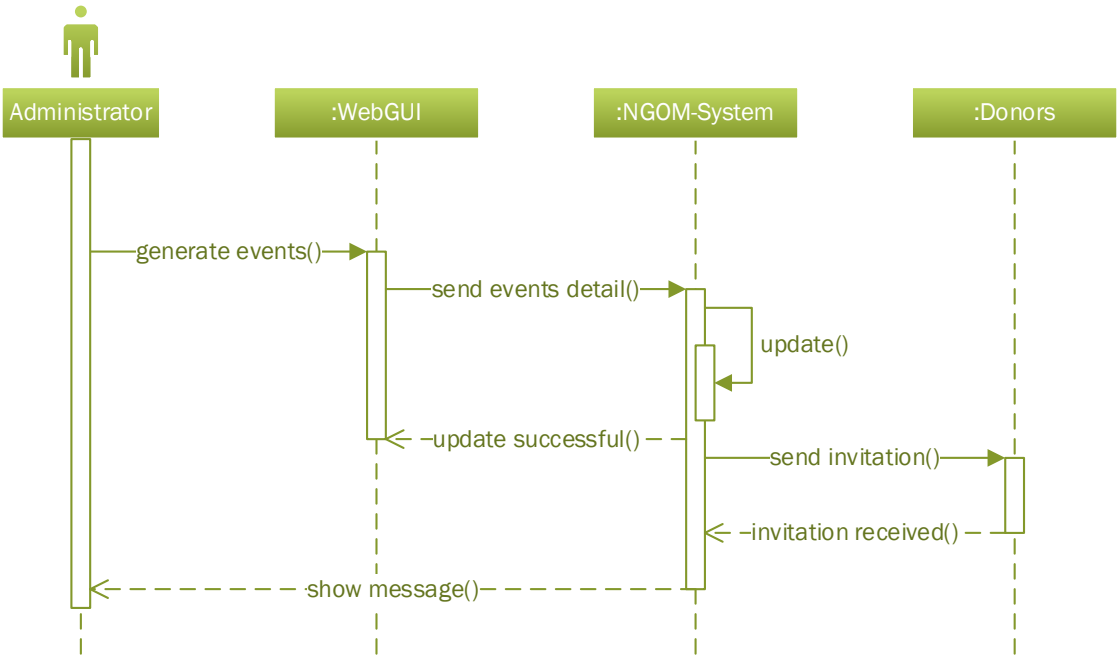
Case 2: (Exceptional flow for User Login)



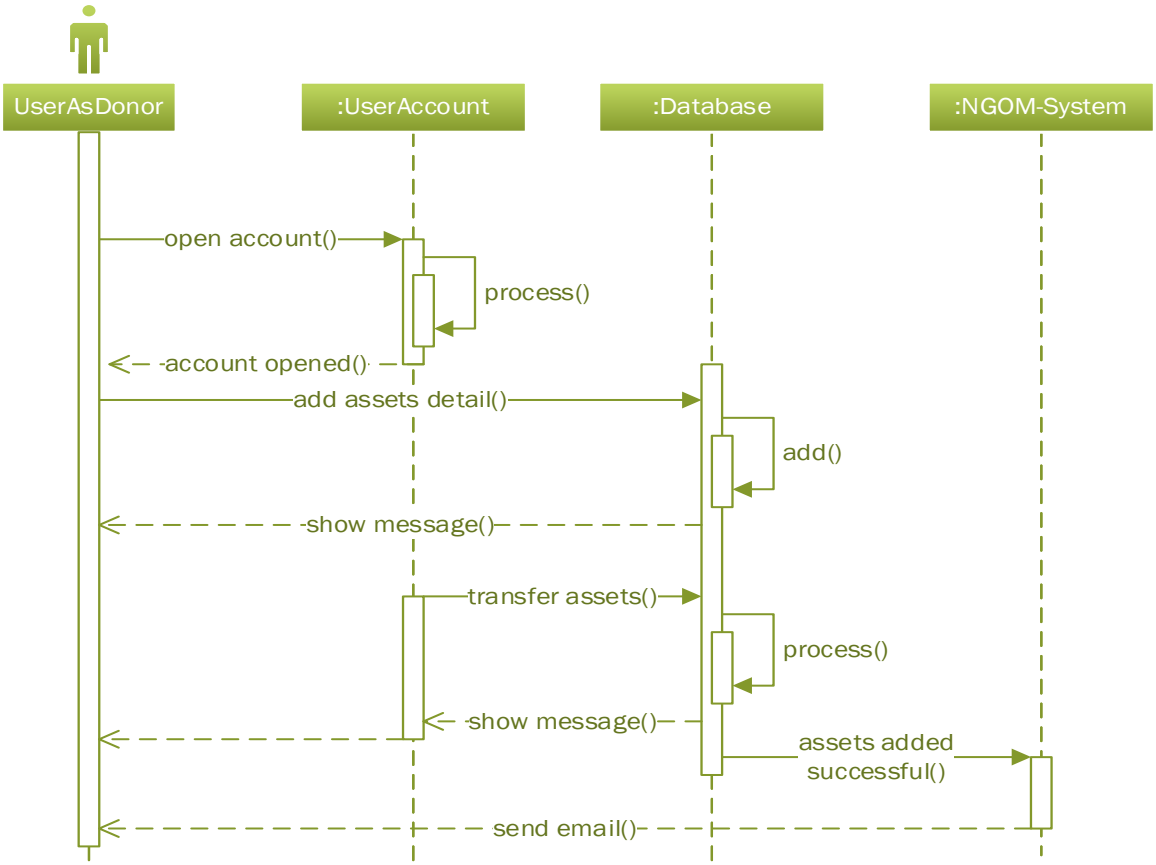
3: User Make Donation (Donor/Volunteer/Company)



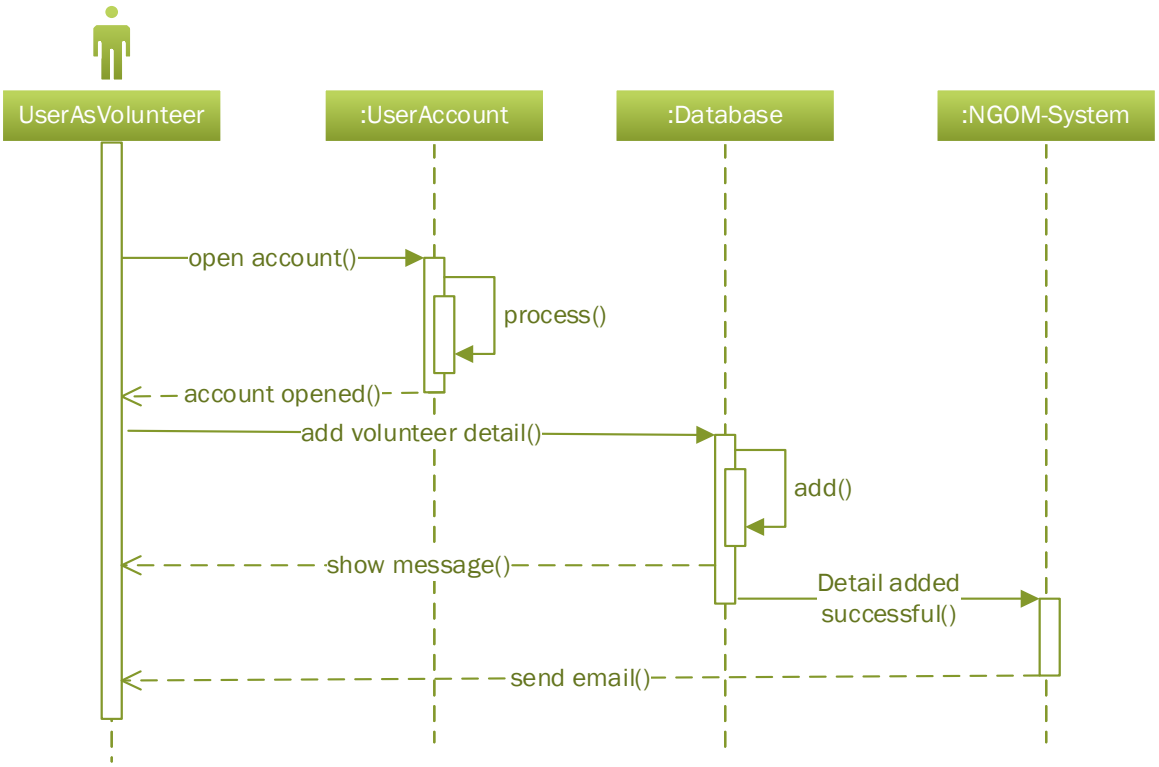
4: System Sends Invitation to Donors



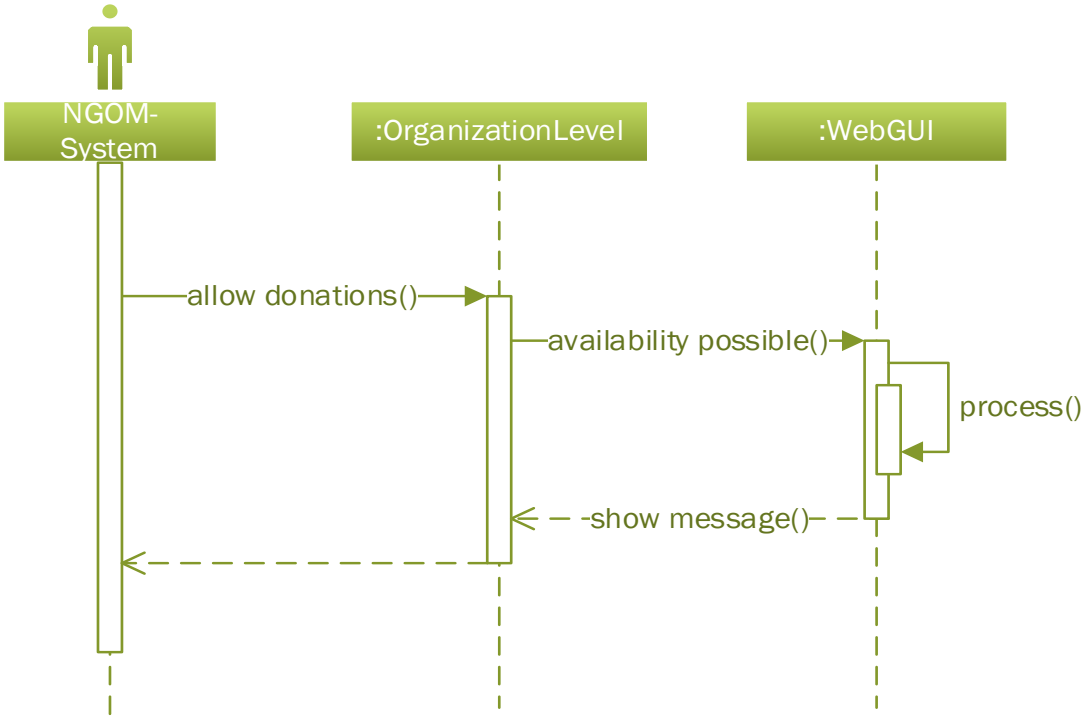
5: User Donate Things



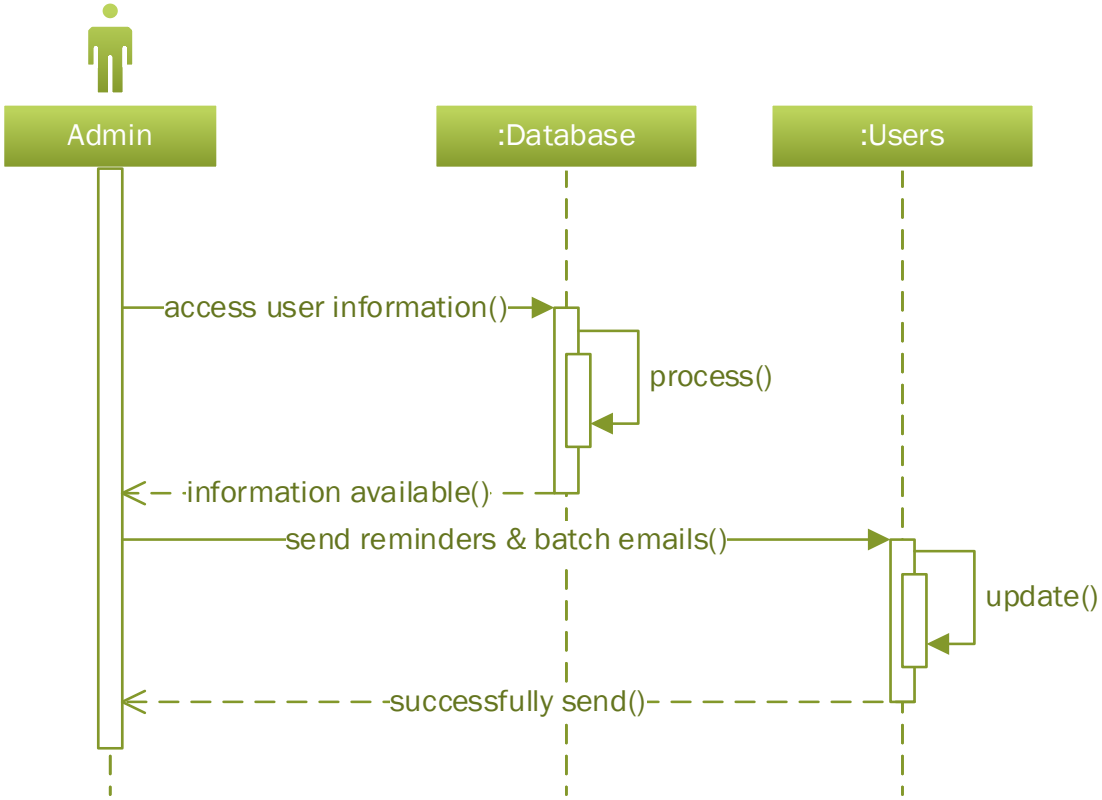
6: Volunteer User



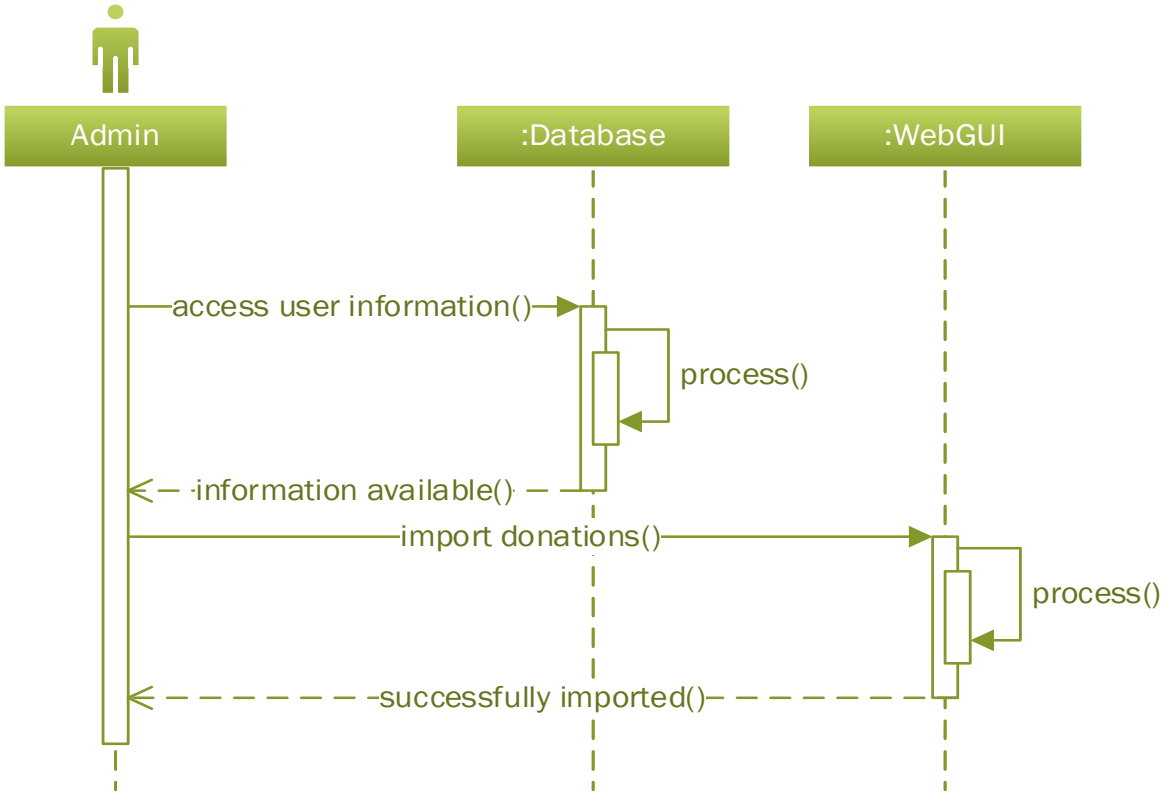
7: System Allows Organization Donation



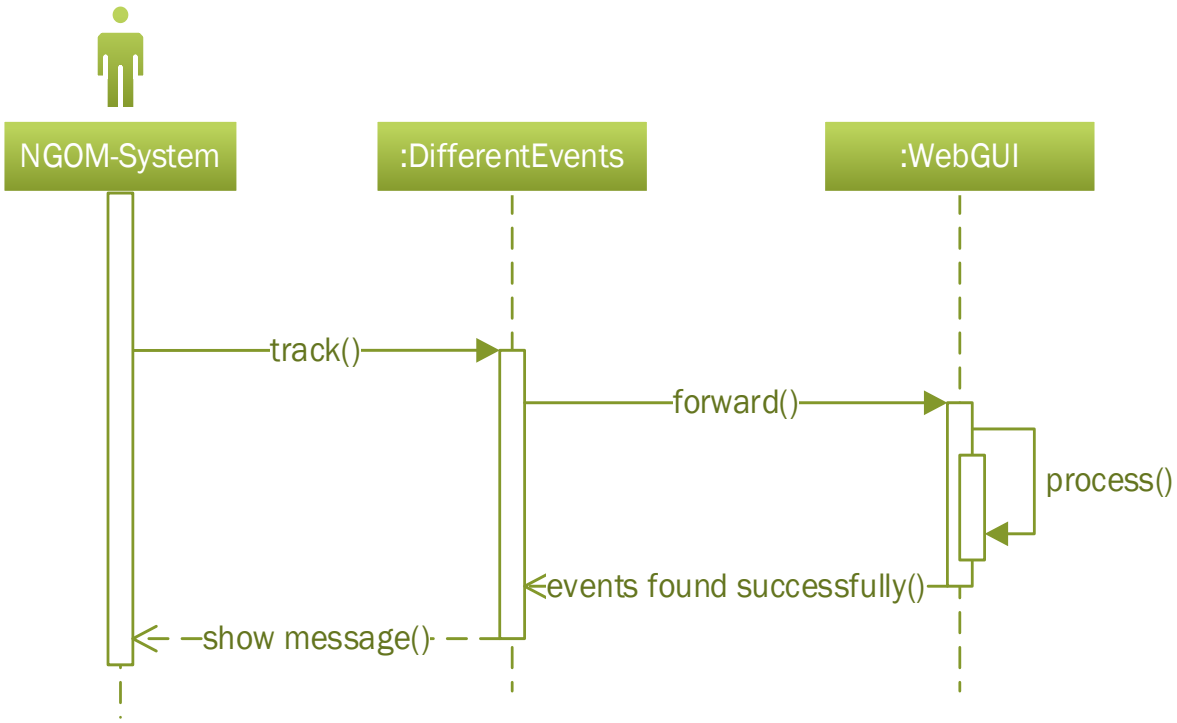
8: System Sends Reminders & Appointments



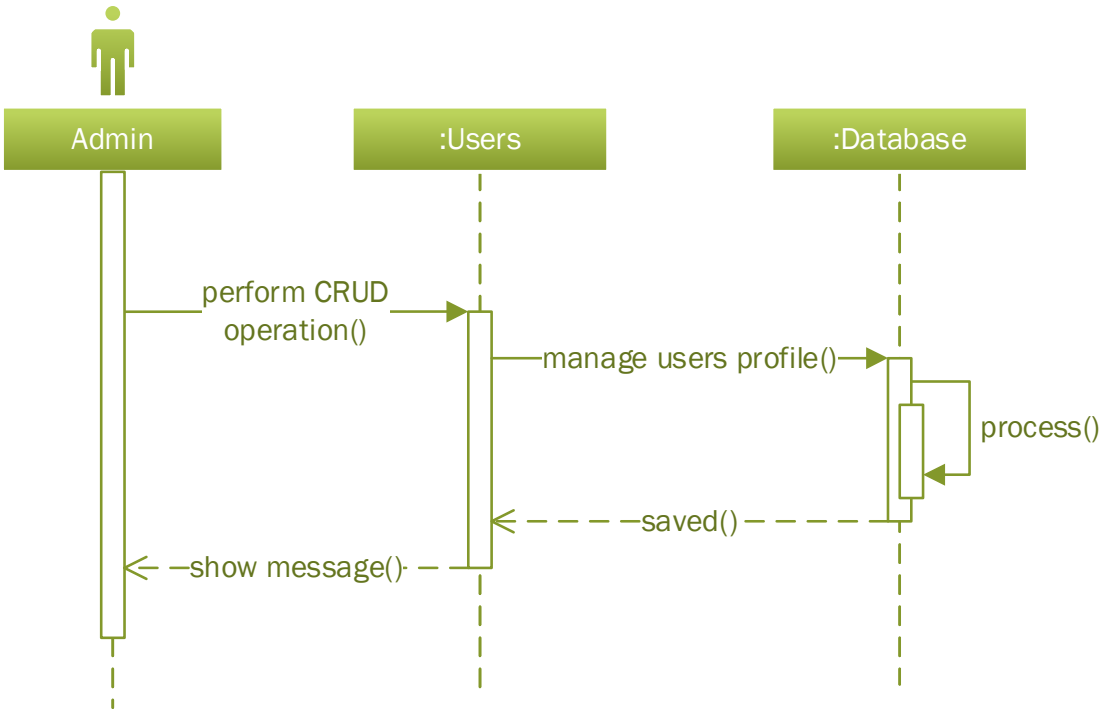
9: System Import Online Records



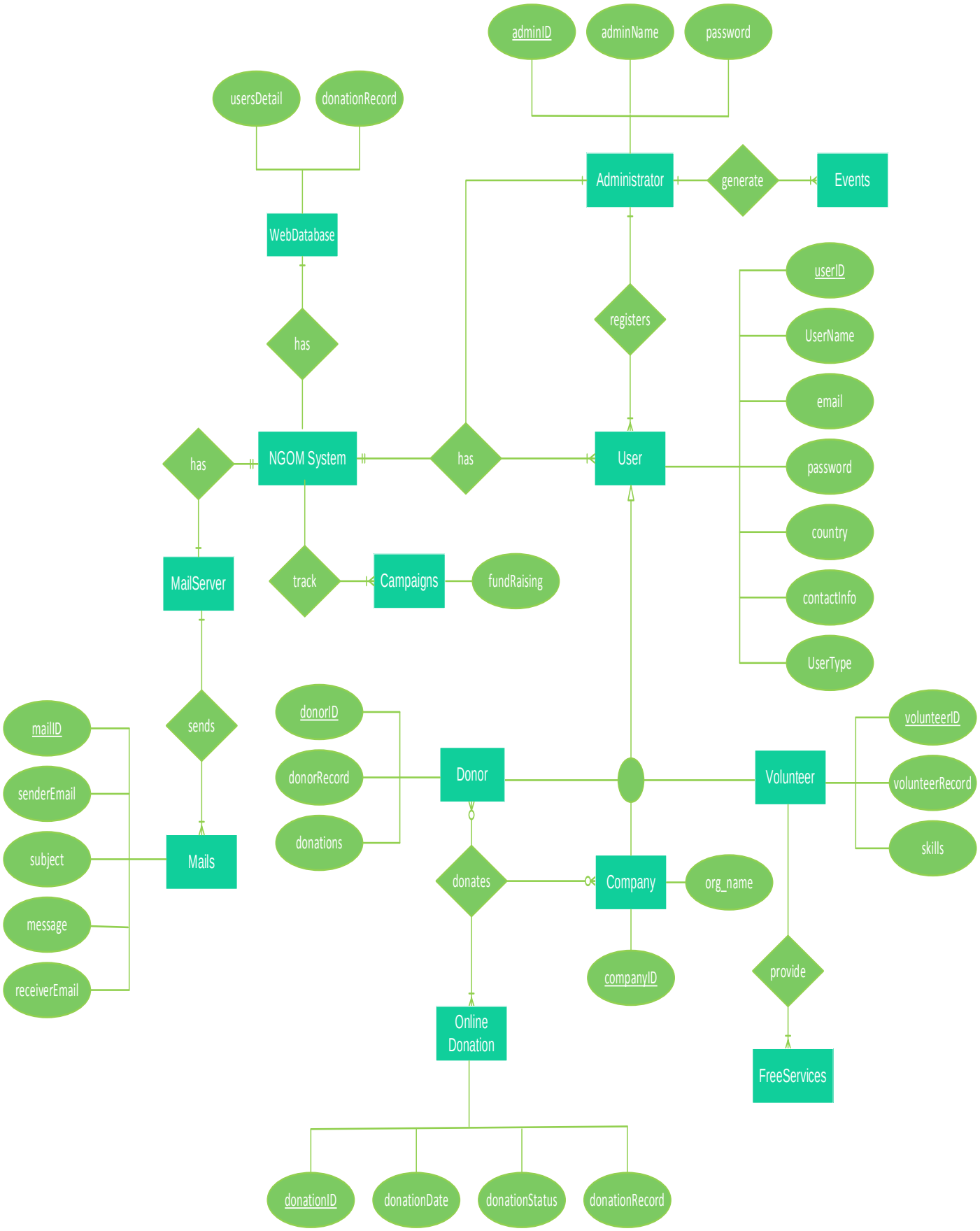
10: System Track Campaigns



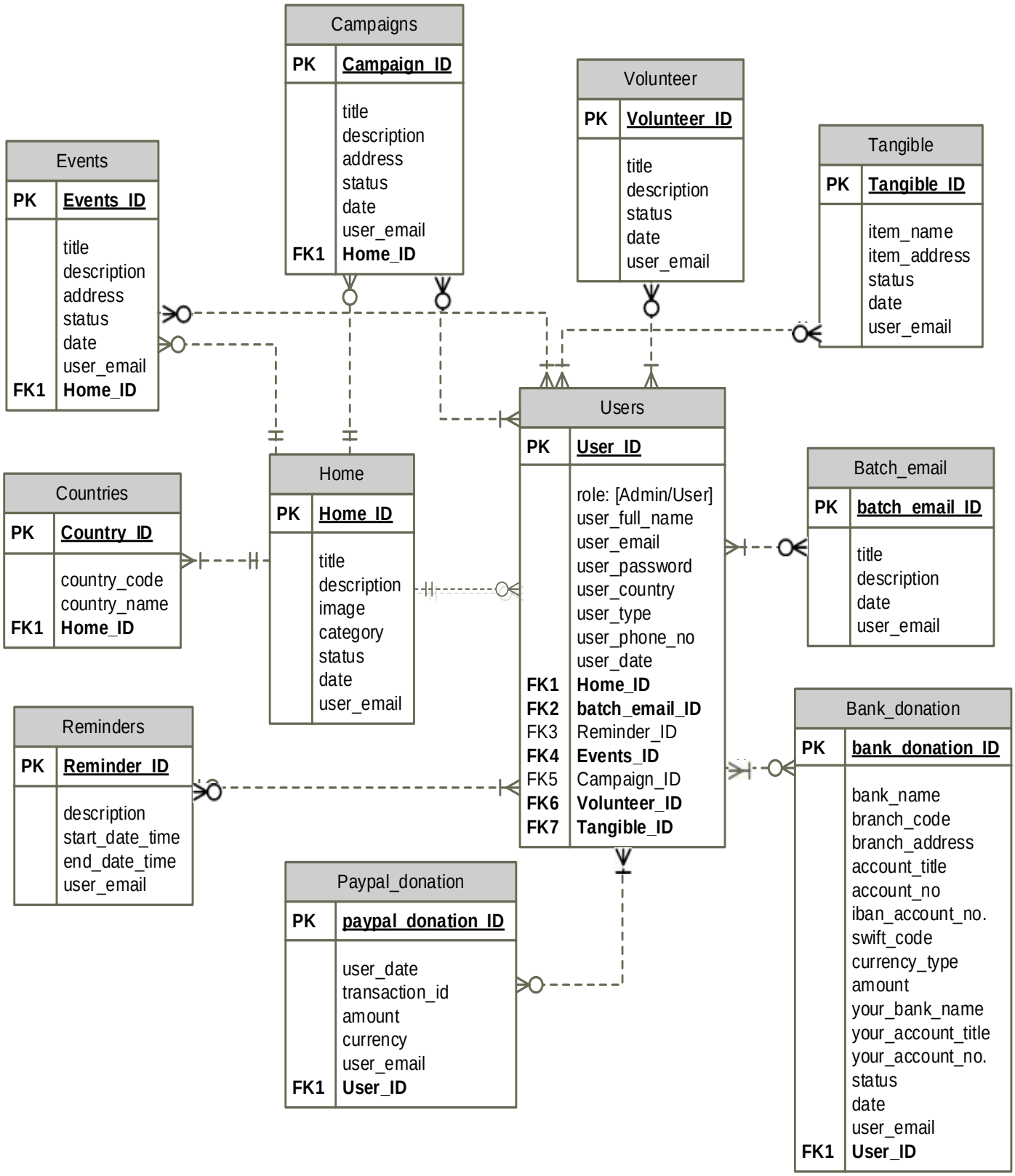
11. Admin Manage Users



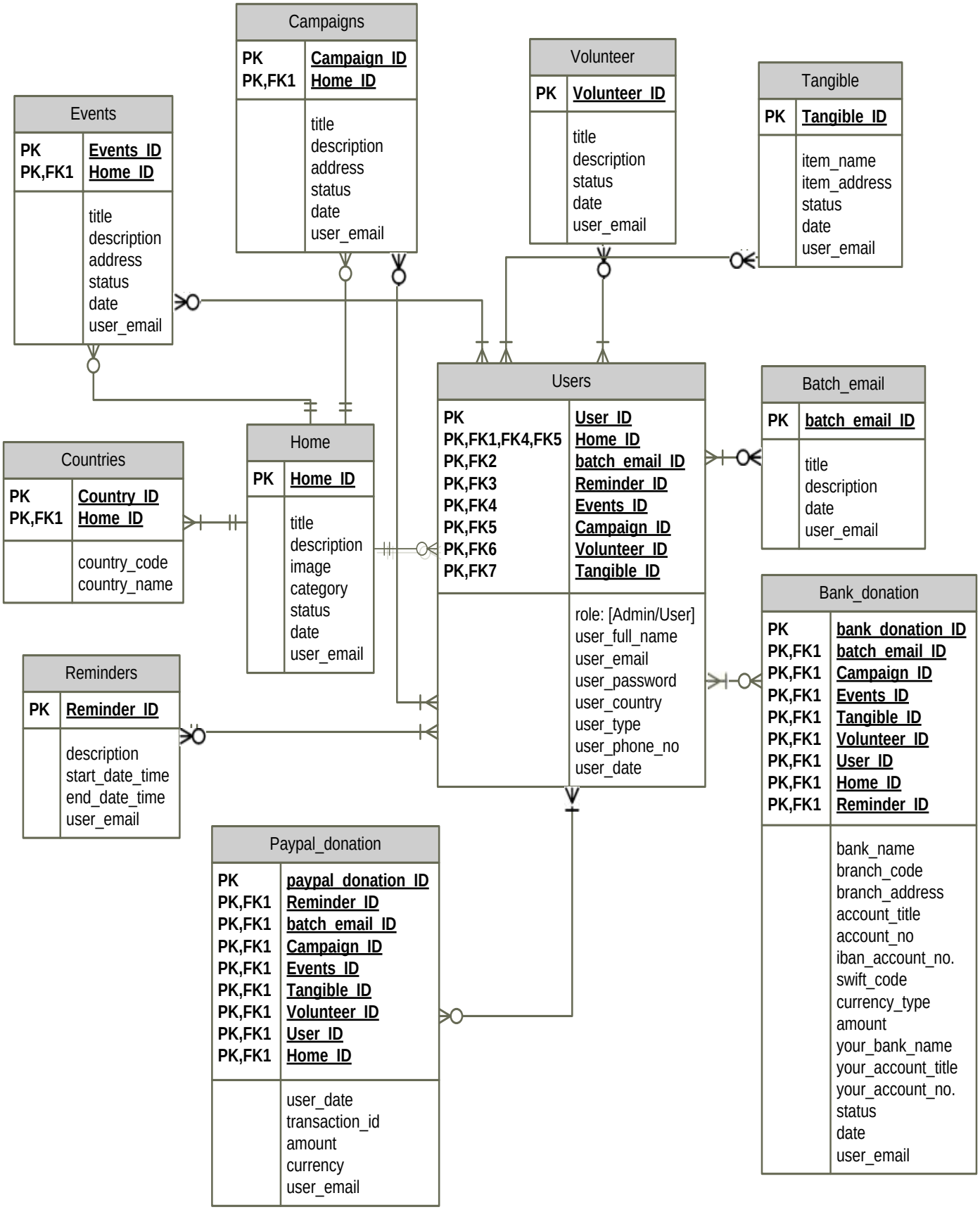
3.7 ENTITY RELATIONSHIP DIAGRAM



3.8 DATABASE MODEL (DATABASE DIAGRAM): WITH NON-IDENTIFYING RELATIONSHIP TYPE

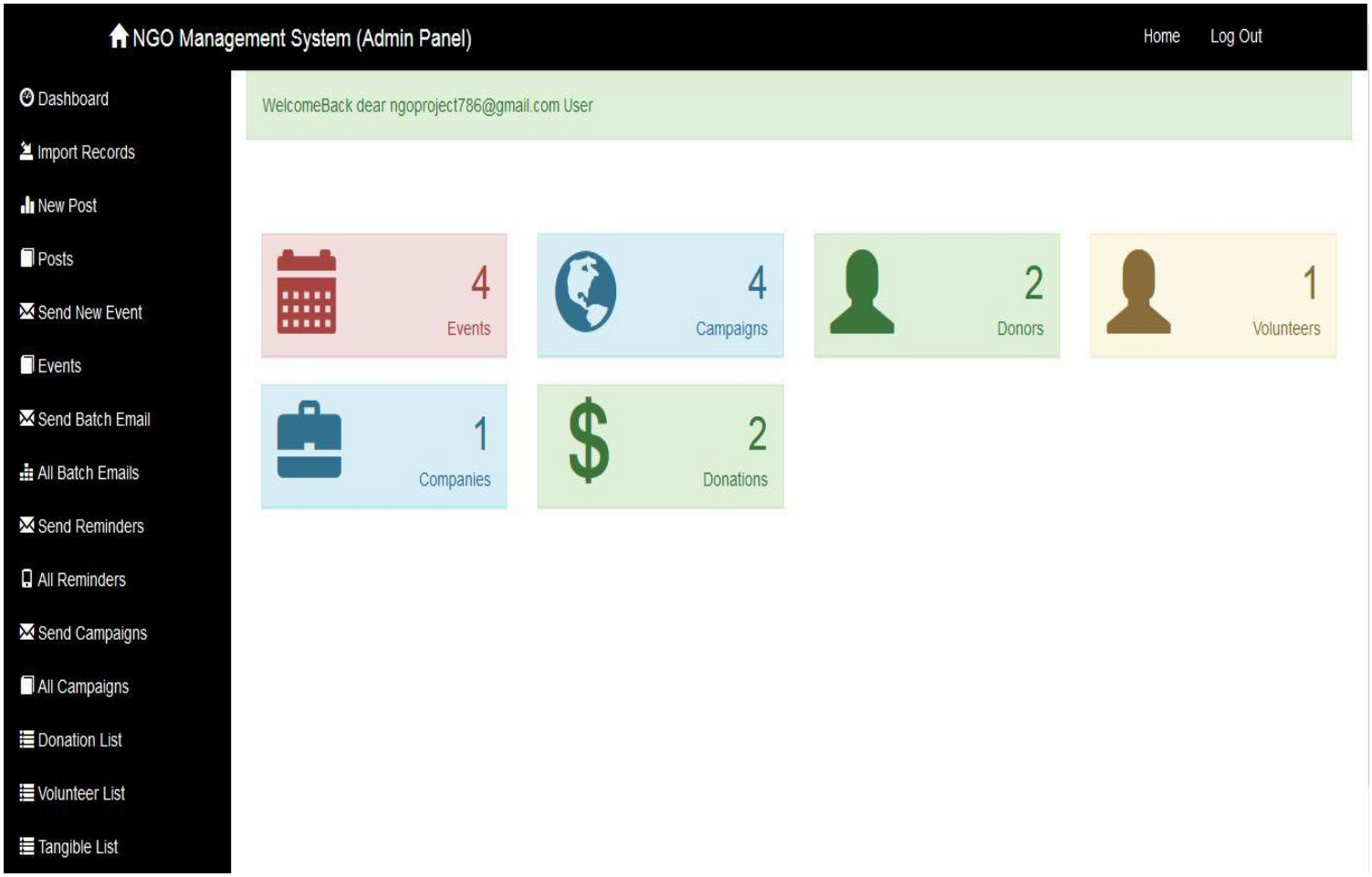


3.9 DATABASE MODEL (DATABASE DIAGRAM): WITH IDENTIFYING RELATIONSHIP TYPE

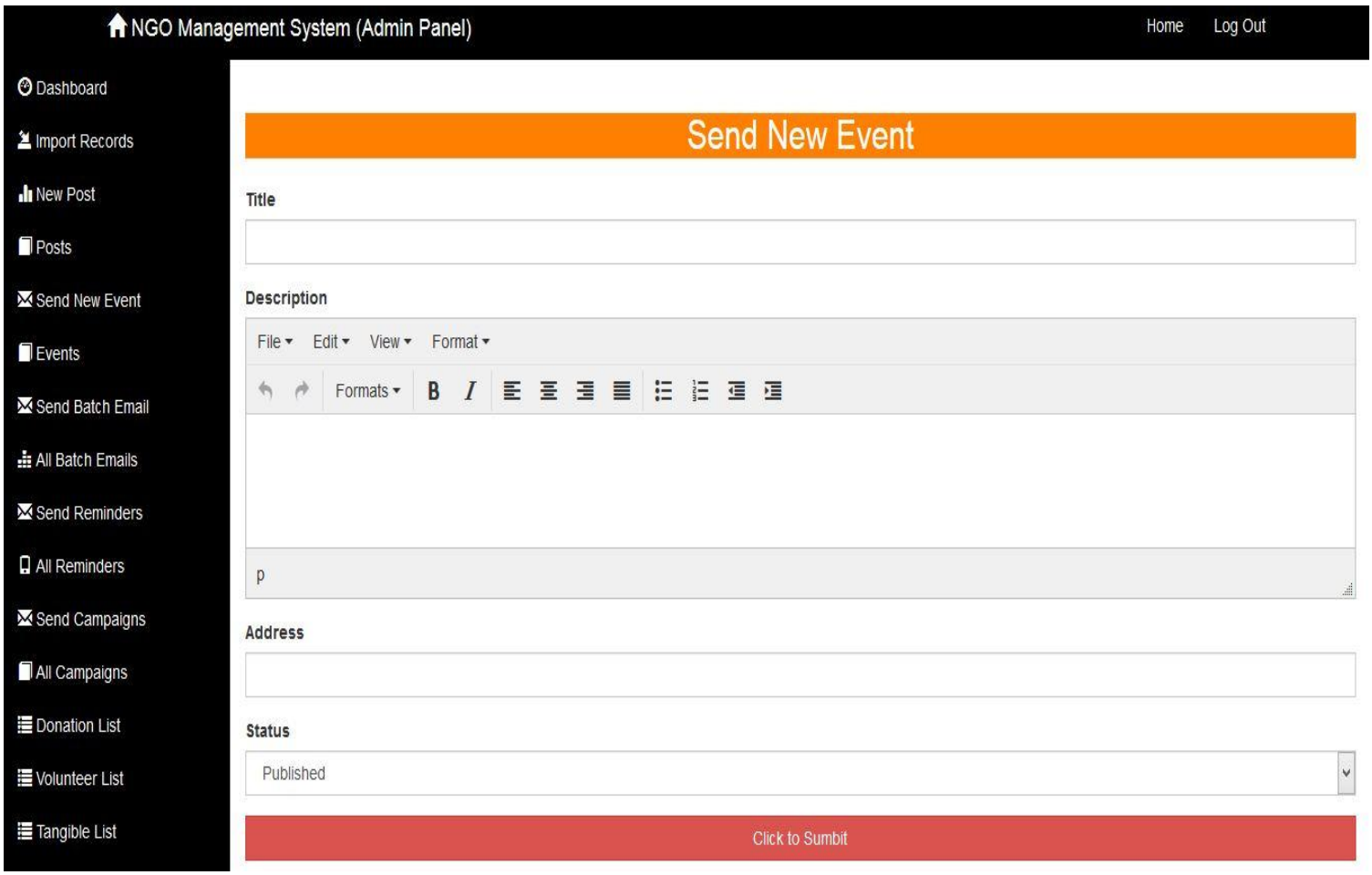


3.9 GRAPHICAL USER INTERFACES

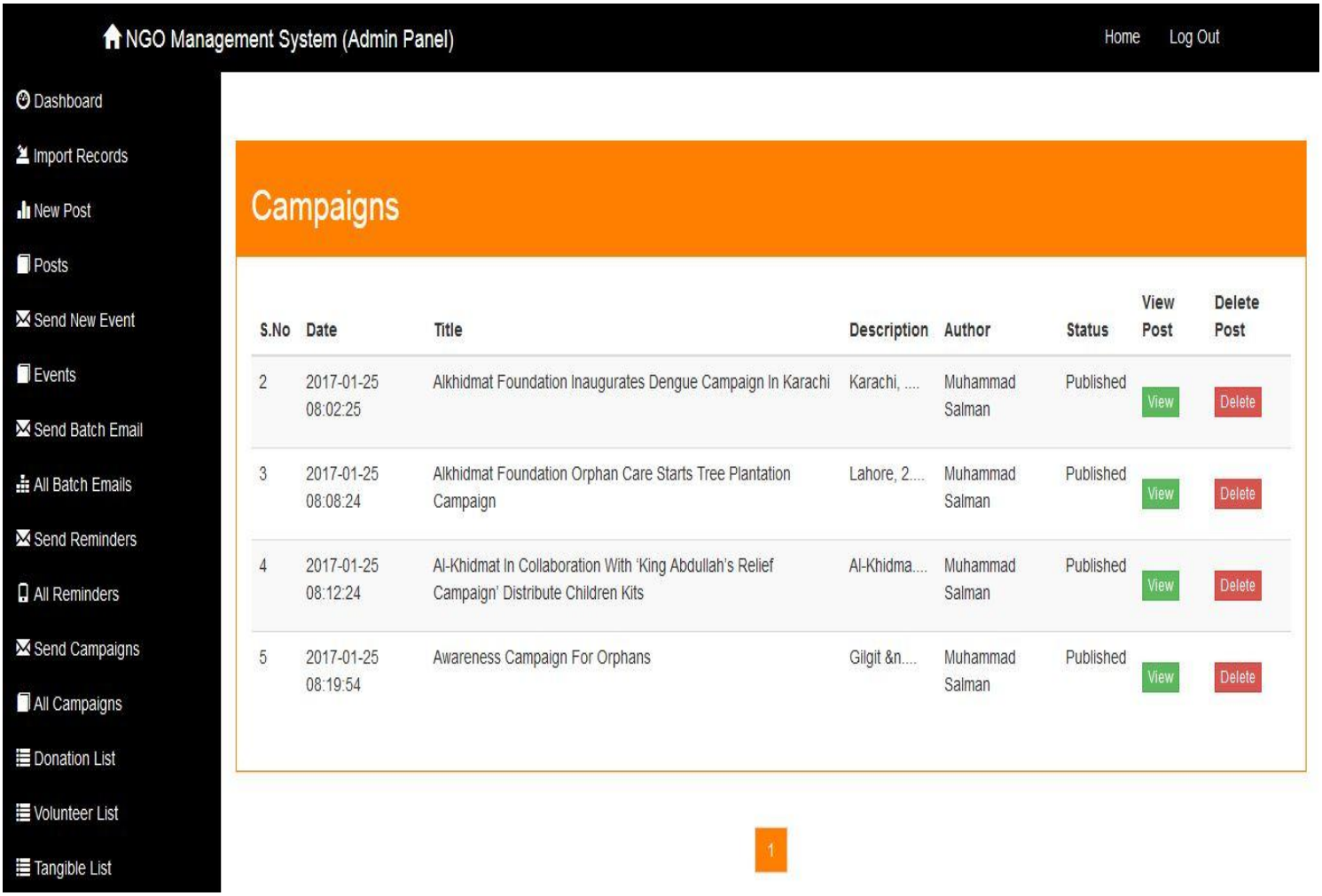
Dashboard of Admin Panel Screenshot 1



Send New Event of Admin Panel Screenshot 2



All Campaigns of Admin Panel Screenshot 3



CHAPTER 4
Development

REFERENCES

- Software Engineering-I (CS504)
- Software Engineering-II (CS605)
- Software Project Management (CS615)
- Web Design and Development (CS506)
- Database Management System (CS403)

APPENDIX