

KINGDOM OF SAUDI ARABIA  
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جامعة طيبة  
كلية علوم و هندسة الحاسبات

# Takaatof

## CS 284 Project

by

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# Abstract

Takaatof is an online application that can be used by Saudi individuals to request for help and assist each other.

Although current systems for volunteering provide great opportunities, they only connect users to charities and don't allow individuals to share and express their needs. Our project, Takaatof, is designed to provide individuals the space to share and express their needs freely and safely. A mixture of forum system and security provided by Nafath is our optimum idea to build Takaatof.

**Keywords** Volunteer; Online system;

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# Chapter 1: Introduction

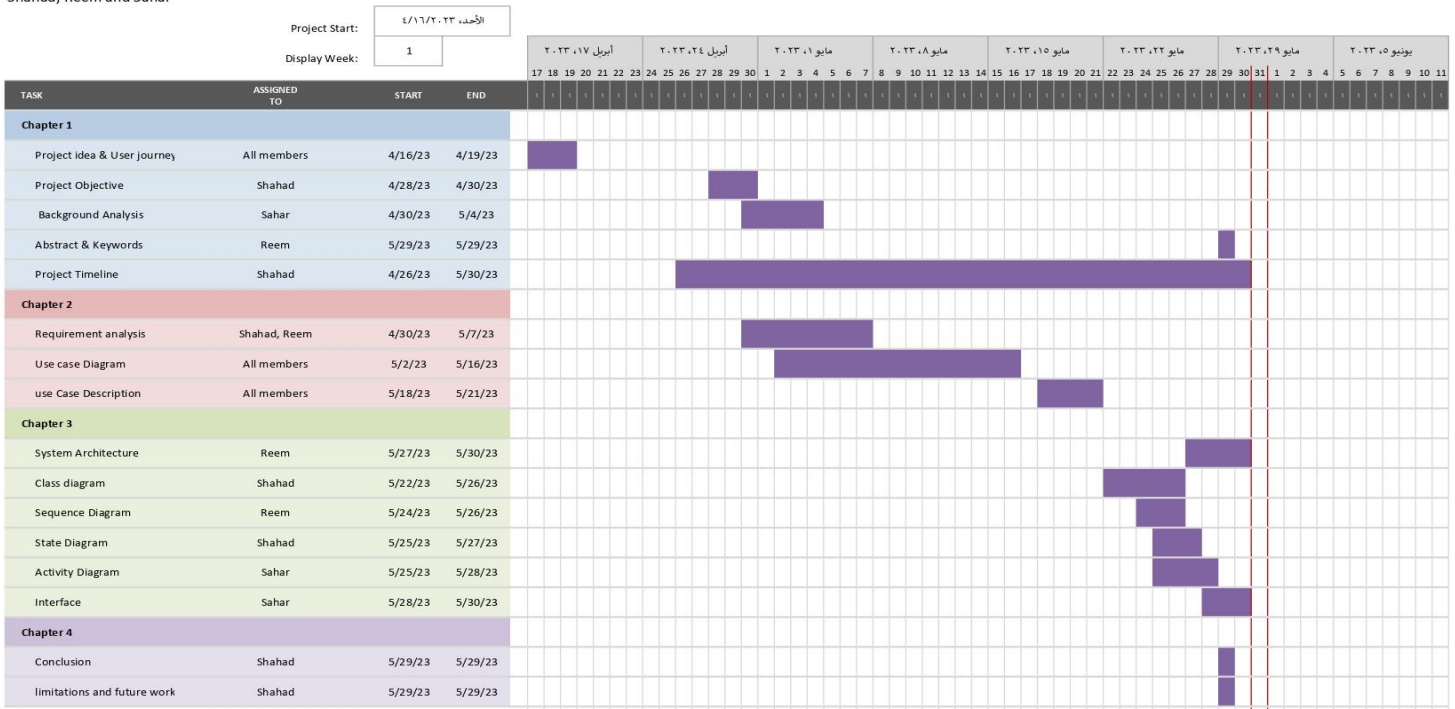
## 1.1. Project Objectives

- To study existing systems and identify best techniques and successful features.
- To develop a software solution that uses the most effective parts of these systems and meets the needs of our project.

## 1.2. Project Timeline

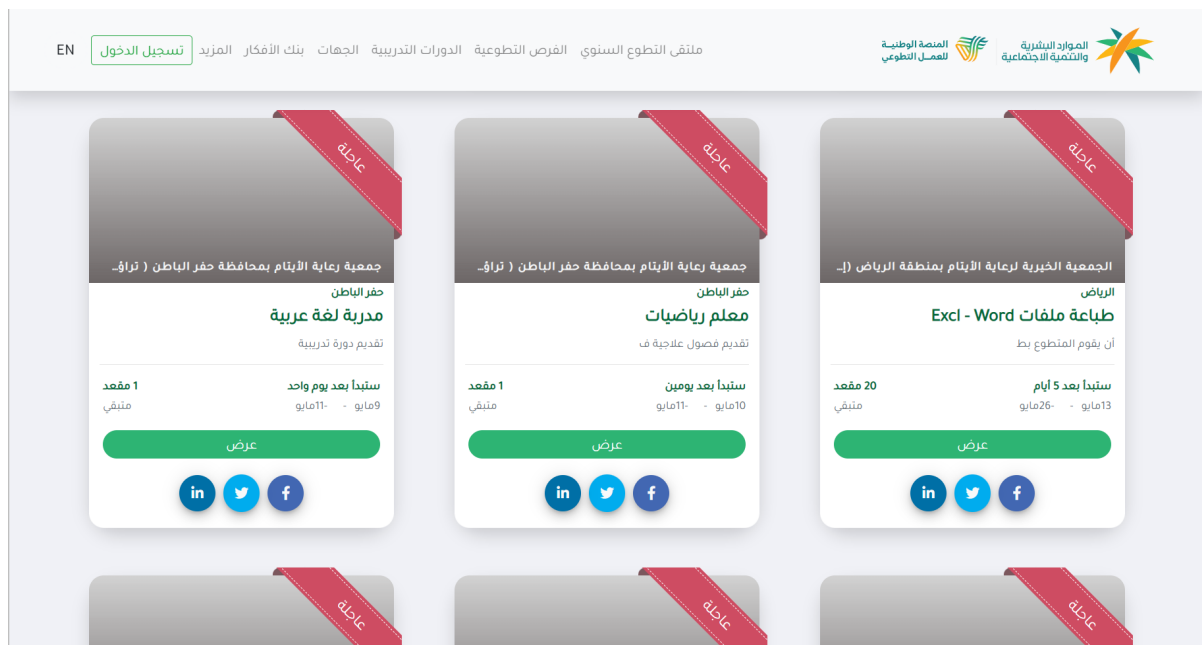
### Takaatof

Shahad, Reem and Sahar



### 1.3. Background Related work

There is currently a website for volunteer work on the Internet, such as: The Volunteer Work Platform (nvg) which is a website that allows the user to enter and view all the institutions that offer volunteer work and choose one of them, but there are conditions and a target group for each institution (such as age and experience), but the website (Takaatof) will not have a group Targeted and anyone can log in with the national ID number and provide assistance or request assistance .



# Chapter 2: System Analysis

## 2.1. Analysis of Existing Systems *(Optional)*

## 2.2. Requirements Elicitation

### Functional Requirements

1. The system shall authenticate the user by using Nafath application.

Takaatof's User should be able to do the following things:

- 1.1 Login the system.
- 1.2 Manage personal account.
- 1.3 View Requests history, ordered by recent requests.
- 1.4 View replies history, ordered by recent replies.
- 1.5 Create a request.
- 1.6 Reply to a request.
- 1.7 End the request.
- 1.8 Chat privately.
- 1.9 Report inappropriate contents, whether they were requests, replies or accounts.
- 1.10 Log out of the system.

Takaatof's Moderator should be able to do the following things:

- 1.1 Login the system.
- 1.2 View Requests history, ordered by recent requests.
- 1.3 View replies history, ordered by recent replies.
- 1.4 Manage users account state (active, banned ,removed).
- 1.5 View complaints made by users.
- 1.6 Delete Requests and replies.
- 1.7 Log out of the system.

## 2.2.1 Non Functional Requirements

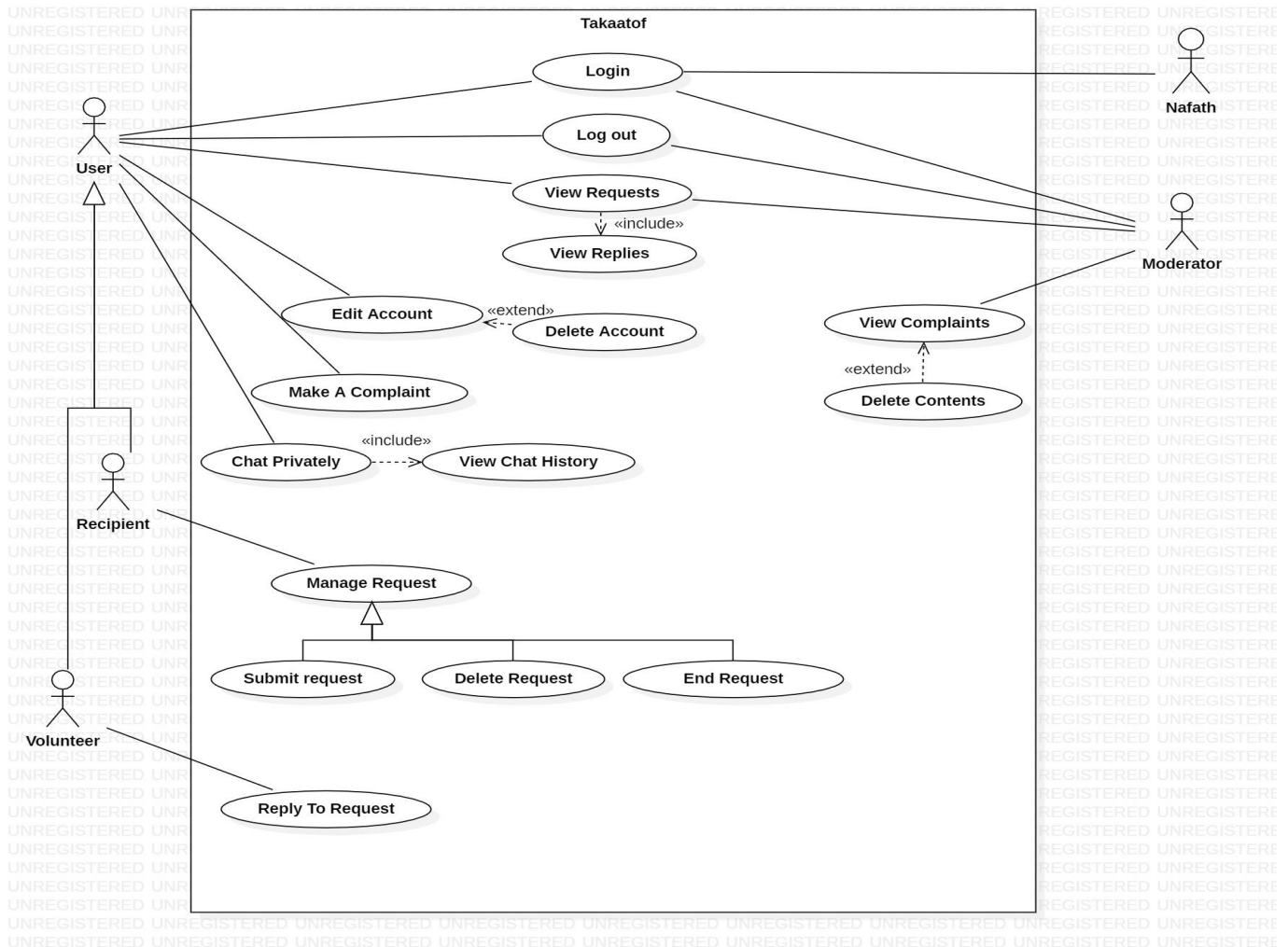
1. The system shall protect the users personal information. (Security)
2. The system should be easy to use by all kinds of users. (Usability)
3. The system downtime shall not be more than 3 hours. (Availability)

## User Requirements or Domain requirements

1. User must have an account in Nafath.
2. User must own a mobile device.
3. User must have an Internet connection.

## 2.3. Requirements Specification

Use case diagrams and description:



Use Case name	Login
Participating Actors	initiated by User or Moderator, Confirmed by Nafath
Flow Of Events	<ol style="list-style-type: none"> <li>1. User or Moderator presses the Login button.</li> <li>2. System takes the User or Moderator to Nafath login page.</li> <li>3. User or Moderator types their ID and Password.</li> <li>3. Nafath checks the data.</li> <li>4. if the data is valid the User/Moderator will be sent to Takaatof's main page.</li> </ol>
Exception Flow	[invalid data] the User or Moderator will be returned to Nafath's login page.
Entry Conditions	User or Moderator must be registered in Nafath
Exit Conditions	User or Moderator reaches the main page
Quality Requirements	User or Moderator must have an internet connection, and must download Takaatof on a mobile phone.

Use Case name	Logout
Participating Actors	User and Moderator
Flow Of Events	<ol style="list-style-type: none"> <li>1. User or Moderator clicks on logout button</li> <li>2. User or Moderator exit from their account successfully.</li> </ol>
Exception Flow	none.
Entry Conditions	User or Moderator must be logged in in order to logout
Exit Conditions	User or Moderator leaves the main page and return to login page
Quality Requirements	User or Moderator must have an internet connection, and must download Takaatof on a mobile phone.



Use Case name	View Requests
Participating Actors	User. & Moderator
Flow Of Events	1- The User or Moderator Log's in through Nafath. 2- The system will display all requests, ordered by recent order.
Exception Flow	None.
Entry Conditions	Users or Moderator must be logged in.
Exit Conditions	Users are able to view all requests.
Quality Requirements	User or Moderator must have an internet connection and must download Takaatof on a mobile phone.

Use Case name	View Replies
Participating Actors	User & Moderator.
Flow Of Events	1- The User or Moderator click on a request. 2- The system will show the replies on the request.
Exception Flow	None.
Entry Conditions	Users or Moderator must be viewing a request..
Exit Conditions	All replies are displayed.
Quality Requirements	User or Moderator must have an internet connection and must download Takaatof on a mobile phone.

Use Case name	Submit Request
Participating Actors	Recipient.
Flow Of Events	<ol style="list-style-type: none"> <li>1. The Recipient navigates to the "Make a Request" button on the app.</li> <li>2. The system presents a form to the user, requesting information about the new request, such as title of request, the city, time, and any additional details.</li> <li>3. The Recipient fills out the form with the appropriate information and submits it to the system.</li> <li>4. The system checks the form data and checks if all fields are filled out.</li> <li>5. If the form data is invalid, the system displays an error message to the user and allows them to correct the errors and resubmit the form.</li> <li>6. If the form data is valid, the system creates a new Request with the given data from Recipient.</li> <li>7. The system sends a confirmation message to the user that their request has been received.</li> <li>8. The system displays the request in the requests page for all volunteers to view.</li> </ol>
Exception Flow	If the form data is invalid, the system displays an error message to the user and allows them to correct the errors and resubmit the form.
Entry Conditions	Recipient must be logged in.
Exit Conditions	The request can be viewed on the main page.
Quality Requirements	Recipient must have an internet connection and must download Takaatof on a mobile phone.

Use Case name	Edit Account
Participating Actors	Users.
Flow Of Events	1- The User clicks on their account. 2- The User clicks on edit account button. 3- The system allows the user to change their information, such as: their Bio, Location. And can also delete their account. 4- User changes the targeted info. 5- The system updates the info.
Exception Flow	None.
Entry Conditions	Users must be logged in.
Exit Conditions	The targeted info is updated.
Quality Requirements	1- Users must have access to the Internet 2- Users must have download the application in the mobile phone

Use Case name	View Complaints
Participating Actors	Moderator
Flow Of Events	1. Moderator navigates to the "Complaints" button. 2. System displays all complaints made by users.
Exception Flow	1. Moderator finds inappropriate content on Takaatof, so they delete it. 2. System will remove content from Takaatof permanently.
Entry Conditions	Moderator must be logged in.
Exit Conditions	Moderator views all complaints.
Quality Requirements	1- Moderator must have access to the Internet. 2- Moderator must have Takaatof on their mobile phone.

Use Case name	Make A Complaint
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Participating Actors	Users.
Flow Of Events	<ol style="list-style-type: none"> <li>1. User finds inappropriate content on Takaatof.</li> <li>2. User clicks the "Report" button and fills the form with required data such as the username of the one to be reported, content, and type of content. Users can also share a screenshot of their findings.</li> <li>3. The system creates a new complaint with the given data from the User.</li> <li>4. The system sends a confirmation message to the user that their complaint has been received.</li> </ol>
Exception Flow	None.
Entry Conditions	Users find inappropriate content on Takaatof.
Exit Conditions	Users get a confirmation message that their complaint has been received.
Quality Requirements	<ol style="list-style-type: none"> <li>1- Users must have access to the Internet.</li> <li>2- Users must have Takaatof on their mobile phone.</li> </ol>

Use Case name	Chat Privately
Participating Actors	Initiated by Recipient, received by Volunteer.
Flow Of Events	<ol style="list-style-type: none"> <li>1. Recipient in their own request choose a volunteer from the replies and clicks on the volunteer account.</li> <li>2. The system displays the volunteer's account.</li> <li>3. Recipient clicks on "send a message" button.</li> <li>4. The system displays a private chat room.</li> <li>5. Recipient sends a message to the volunteer.</li> <li>6. Volunteer receive the message and can reply if they want to.</li> </ol>
Exception Flow	None.
Entry Conditions	Recipient found a volunteer in the replies to help them.
Exit Conditions	A message has been sent to the targeted user.
Quality Requirements	<ol style="list-style-type: none"> <li>1- Users must have access to the Internet.</li> <li>2- Users must have the application in mobile phone.</li> </ol>

Use Case name	Reply To Request
Participating Actors	Volunteer
Flow Of Events	<ol style="list-style-type: none"> <li>1. Volunteer clicks on a request.</li> <li>2. System displays the request, with a text box at the bottom.</li> <li>3. Volunteer writes the reply within the text box. and then press "submit" button.</li> <li>4. The system receives the reply and submit it to the request.</li> <li>5. The system displays the reply under the request.</li> </ol>
Exception Flow	None.
Entry Conditions	Volunteer is viewing a request.
Exit Conditions	The reply is displayed under the request.
Quality Requirements	<ol style="list-style-type: none"> <li>1- Volunteer must have access to the Internet.</li> <li>2- Volunteer must have the application in mobile phone.</li> </ol>

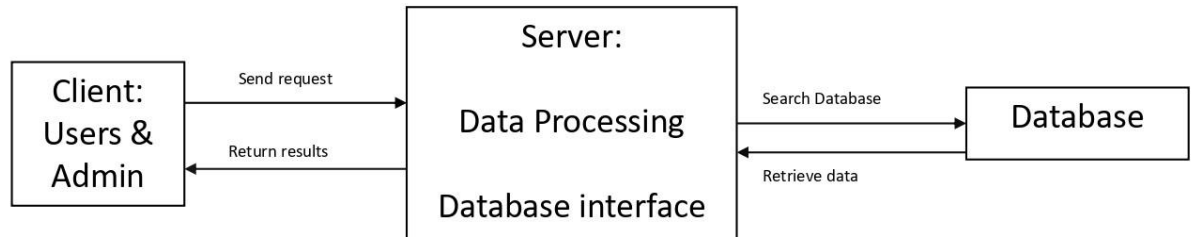
Use Case name	End Request
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Participating Actors	recipient.
Flow Of Events	<ol style="list-style-type: none"> <li>1. Recipient opens their request.</li> <li>2. The system displays the request page.</li> <li>3. Recipient navigate to the "End Request" button.</li> <li>4. The system displays a confirmation question.</li> <li>5. Recipient clicks on "Yes" to confirm their wish to close their request.</li> <li>6. System update request state.</li> </ol>
Exception Flow	<ol style="list-style-type: none"> <li>1. User clicks "No" on the confirmation question.</li> <li>2. System does not change the request state.</li> </ol>
Entry Conditions	Recipient is viewing their own request.
Exit Conditions	A confirmation message is shown to the user and the request is no longer receiving replies.
Quality Requirements	Recipient must have an internet connection and must download Takaatof on a mobile phone.

# Chapter 3: System Design

## 3.1. Architectural design

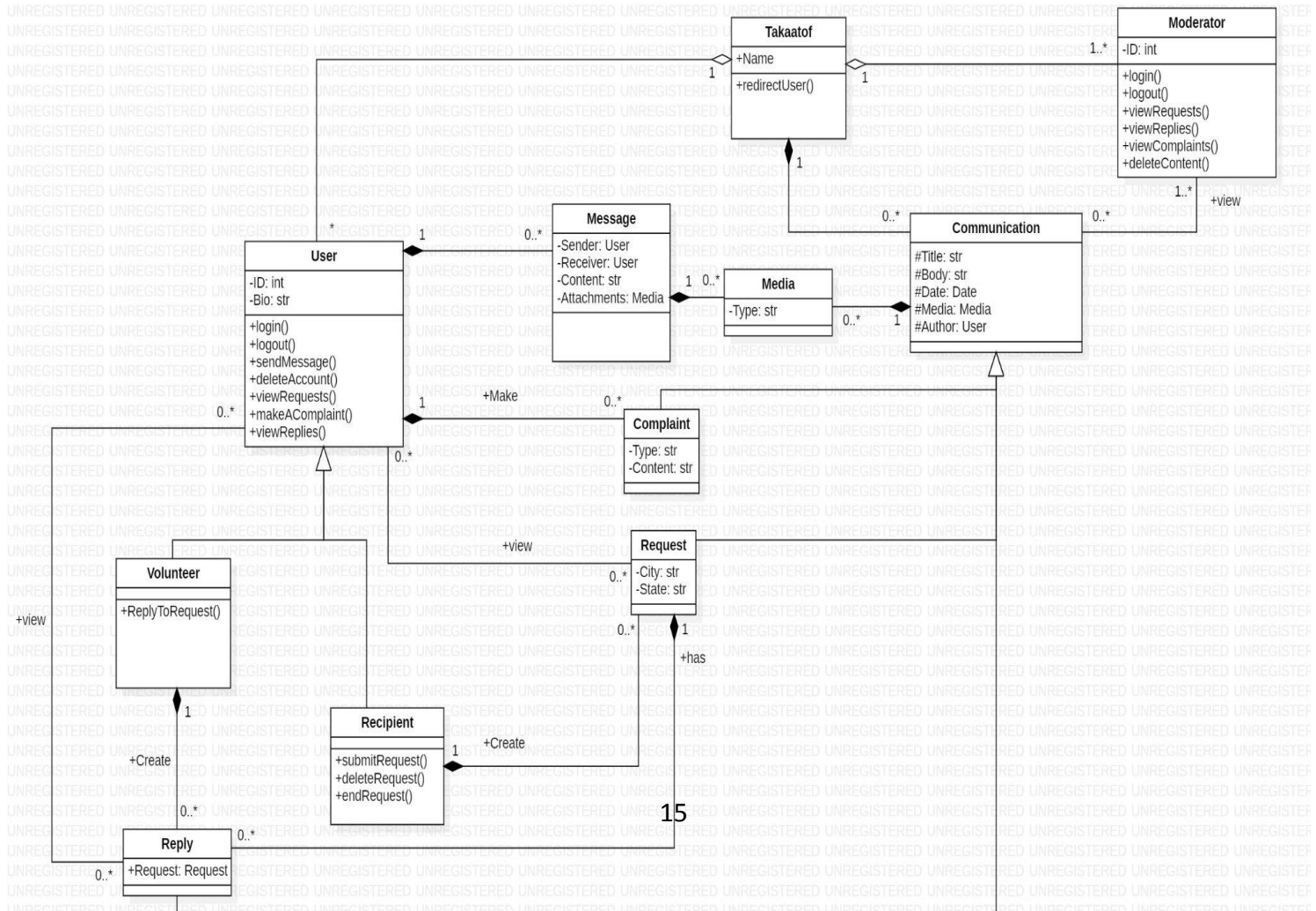
### Client-Server



## 3.2. Object Oriented Design

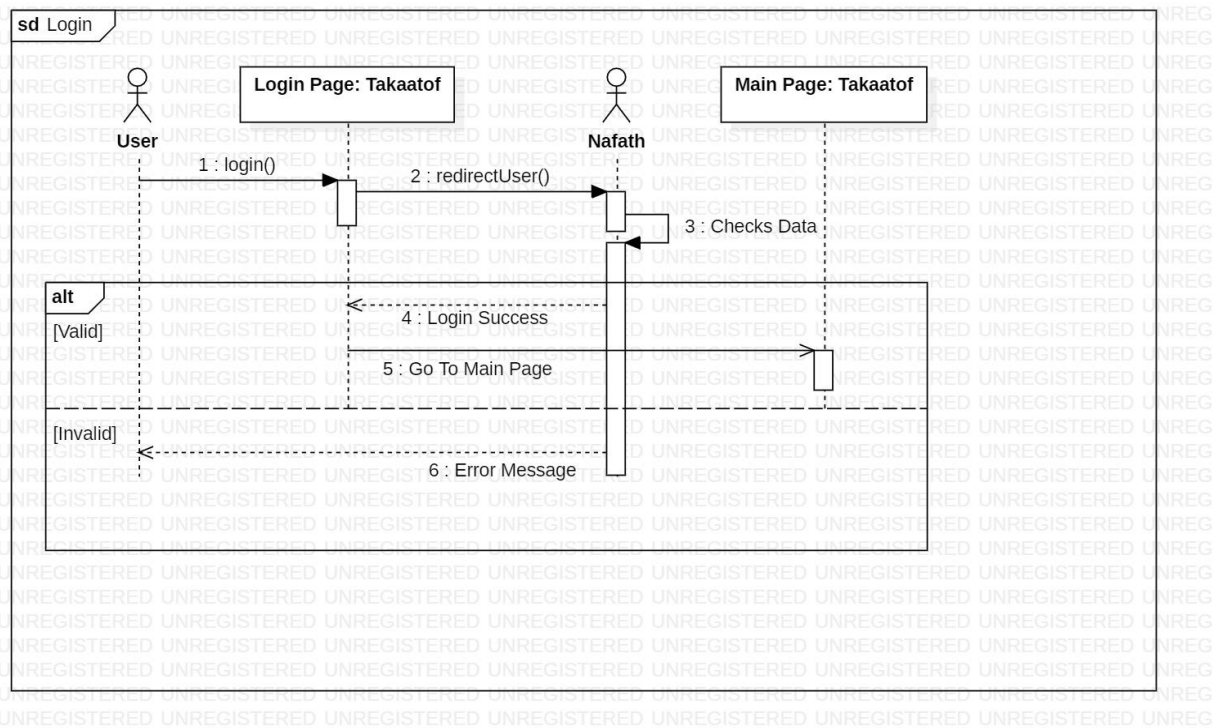
### Structural Static Models

#### 1. Class Diagram:

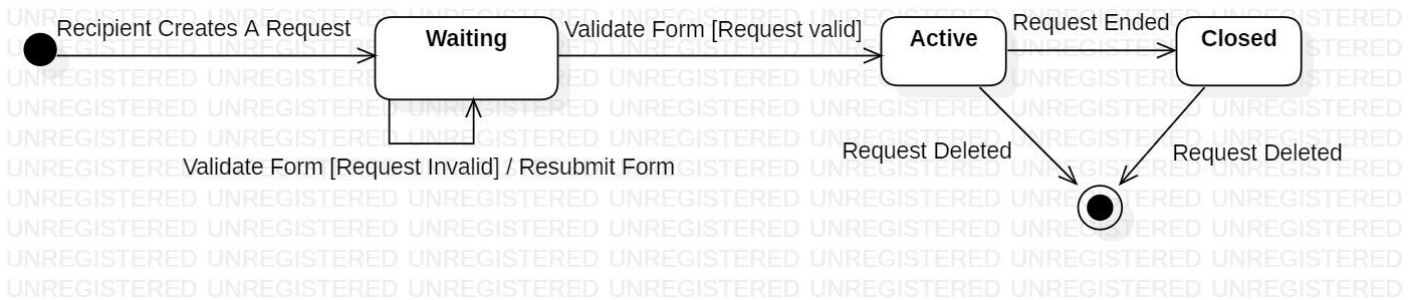


## Dynamic Models

### 1. Sequence Diagram:

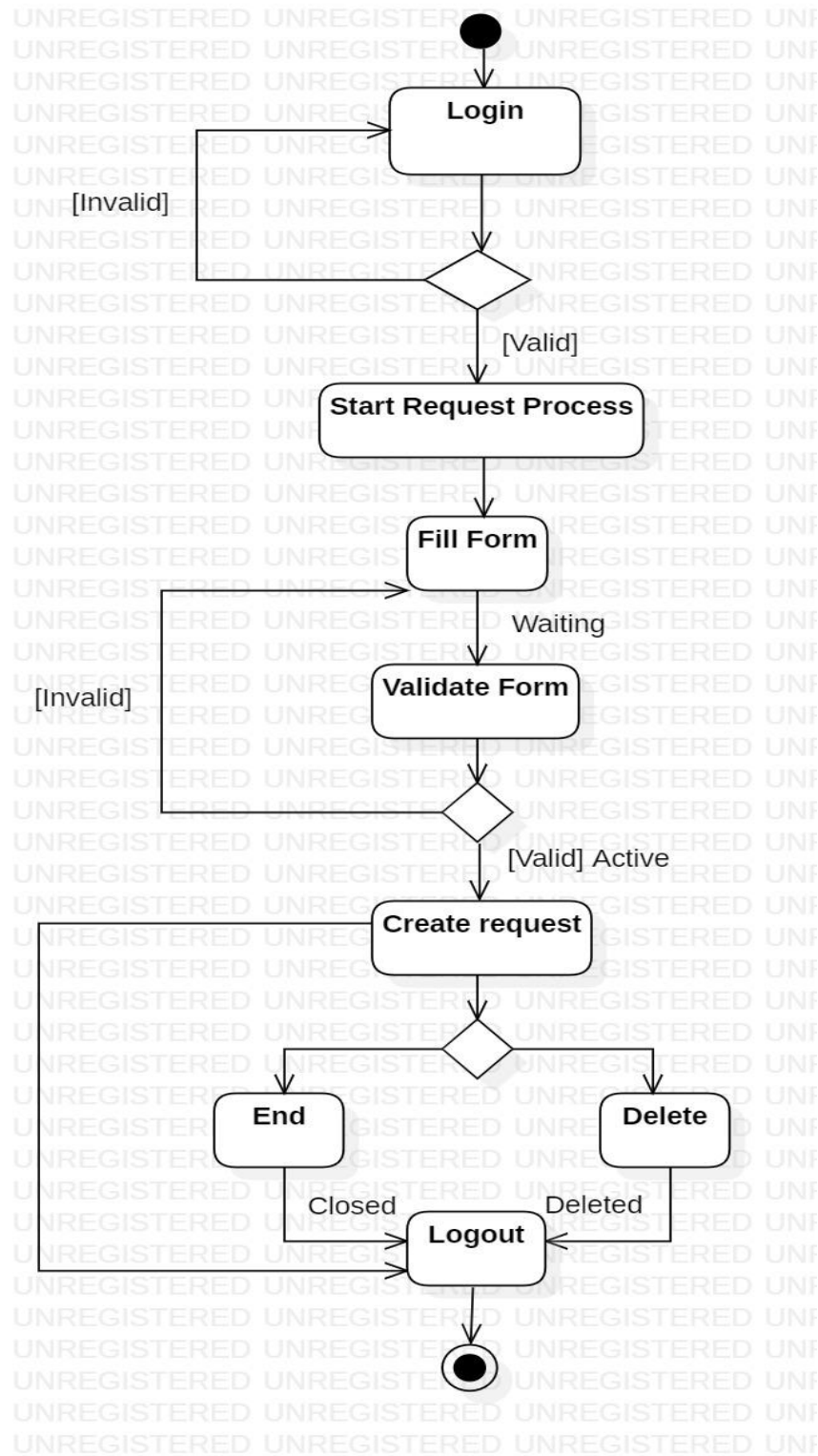


### 2. State Diagram:

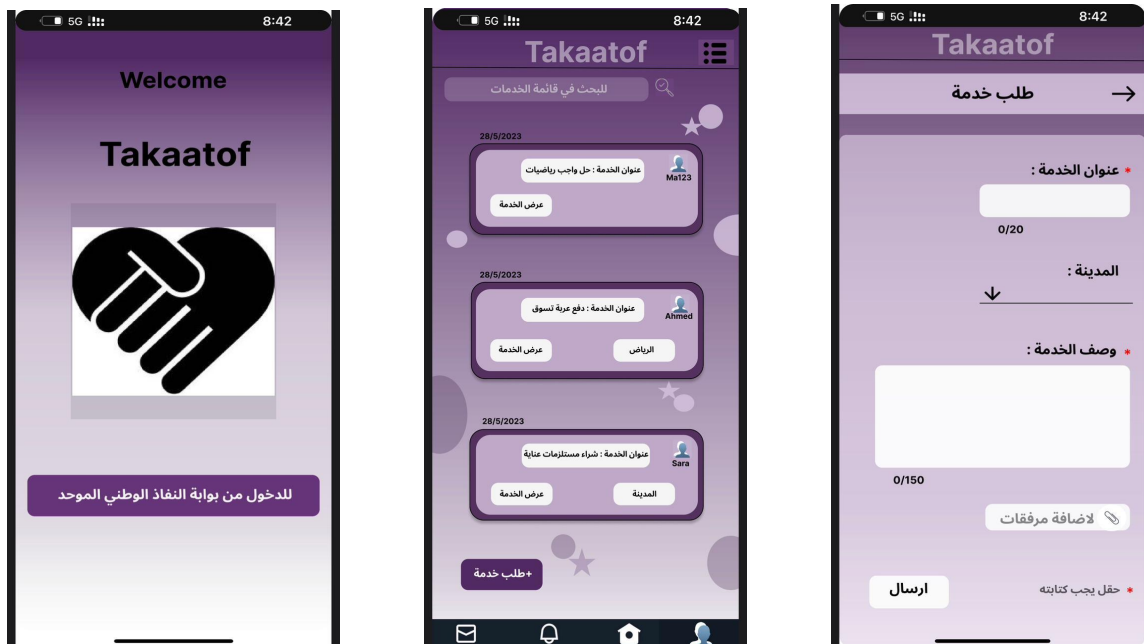




### 3. Activity Diagram:



### 3.3. User Interfaces Design



# **Chapter 4: Conclusion and Future Work**

## **4.1. Conclusion**

Overall, we have accomplished our goal of understanding and building a system solution for volunteering which is based on the “forum” model. We studied and analyzed different forums which helped us to get a better view when building our system.

## **4.2. Limitations and Future Work**

Requirement analysis was the most complicated part, we had to learn and observe how different systems drew their boundaries while maintaining necessary functionalities. In the future, we are hoping to contribute to our community with new ideas and new projects.

# References

- [1] I. Sommerville, "Software Engineering", 11th ed., Addison-Wesley, 2015.