Enterprise Chat System

Design Document v1.1

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1. Preface

The product, which is to be developed, must perform secure chat communication through internet and must secure confidential data against 3rd party breaches. The entire application is divided into three modules- Frontend, Backend & database. The remainder of the document describes the design details and unit test plan of each module.

Release v1.1 on 2016-05-22

- Changes were made in section 6 unit test plan.

Release v1.0 on 2016-05-01

-Initial release

The remainder of the document is organized as follows. In Section 2, Glossary and Abbreviations of terms used in the document is provided. Section 3,4,5 adds different modules- frontend, database and backend with detailed design and unit test plan. In Section 6, References are added.

2. Glossary and Abbreviations

- **PHP**: Hypertext Preprocessor
  PHP is open source general-purpose scripting language and an interpreter used for web development and which can be embedded into HTML.
- **HTML5:** Hyper Text Markup Language, version-5
  It is standard markup language used to create web pages. HTML 5 is used for presenting WWW, Web Wide Web. Additional features and style can be added using CSS and JavaScript along with HTML.
- **AJAX**: Asynchronous JavaScript and XML
  AJAX is the method of data exchange with a server and updating a part of web page, without reloading the entire page. It can transmit and receive information in a various format - JSON, XML, HTML, and even text files.
- **GUI**: Graphical User Interface
  GUI allows the user to interact with graphical icons and visual indicators with electronic devices.
- **SQL:** Structured Query Language
  A **SQL** is used for inserting and selecting information from a database.

- **API**: Application Programming Interface
  It is a set of programming instructions, routines and protocols to build web-based software or applications.

- **REST**: Representational State Transfer
  REST is an architectural style and is an approach to communicate development of Web services. Web services using REST architecture are called RESTful APIs.

3. Setting Up Server Configuration:

The product will be implemented on the Apache server with MYSQL database. The interaction between the server and database is done through PHP scripting. The apache server, MYSQL database and scripting languages for interpreters are available on the single platform called XAMPP. The XAMPP package is available in windows, Linux, MAC configurations. This package must be installed to implement the product. The detailed instructions for the setup of the XAMPP are shown below:

- Go to https://www.apachefriends.org/download.html and download XAMPP package.
- Run the package and launch the XAMPP installer.
- The XAMPP set up wizard will guide through the installation process.
- After the installation launch the XAMPP control panel and start Apache server and MySQL database.
- Open web browser and type the URL: http://localhost/phpmyadmin/ XAMPP server is now ready to use.

4. Module 1: Front end

This module offers a web GUI interface for the user to interact with the application.

4.1 Detailed Design

It must perform the following two tasks:

1. Sign-up Page: To register a New User using User name, mail ID and Password through Web-GUI and store the user credentials at database. The details about the user will be sent to his email.
2. Authentication: (Login Page): It contains two types of interfaces one for user and other for administrator. When the user provides email id and password the page gets redirected to user page or administrator page based on their permissions allotted at the database.
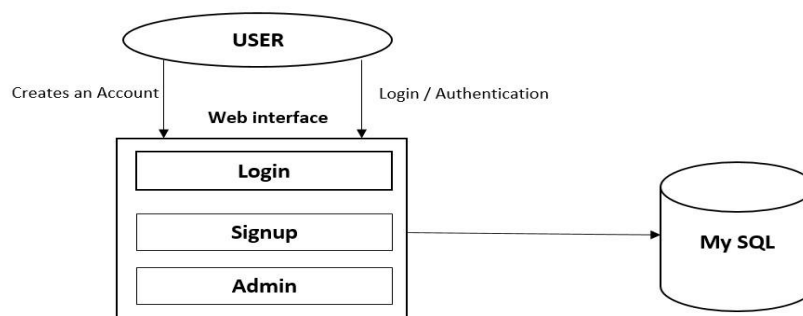

Fig.1 Frontend module

The front end module is designed using JavaScript, JQuery and CSS along with HTML to provide a web based GUI.

- JavaScript: It is dynamic language and is programming language of HTML and web.
- JQuery: It is a standard JavaScript library for client side scripting using HTML. Its features include DOM (Document Object model) elements selection, search and manipulation.
- CSS: Cascaded Style Sheet is a style sheet language for presenting a written markup language.

5. Module 2: Database

This module describes the database management of the product. It describes various tables in the database and how they interact with the frontend and backend of the product.

5.1 Detailed Design

The product uses MYSQL database. The database interacts with both frontend and backend using PHP and AJAX script. It contains the following tables:

Table 1: Stores the user credentials namely User id, password, username, email id.

Table 2: Stores the conversation between users it contains the following columns serial number (identifier), sender, recipients, message, time stamp, IP of the sender, IP of the receiver, message read or not, status of the user, read time, message type (text message or binary file).

Table 3: Stores the contacts of the particular user. Each user will be provided with separate table to contacts.
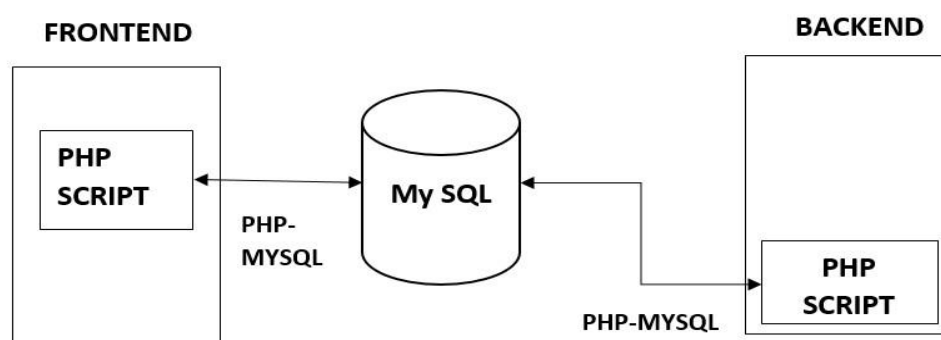

Fig.2 Database Module

PHP- MYSQLi: It is a Relational Database Driver that provides an interface between MySQL database and PHP. It includes functions to establish connection to the database.

PHP –MySQL Query: It is a functions for manipulating database create, select, insert, delete, etc.

6. Module 3: Backend

6.1 Detailed Design

The purpose of the module is to provide necessary functionalities for the users to interact with each other (sending and receiving messages, binary files) and provides functionalities to administrator (blocking user, broadcasting messages) .it interfaces with database module of high level architecture. PHP offers different APIs to connect MYSQL database, three APIs are used (APIs provided by MySQL, MySQL, PDO).
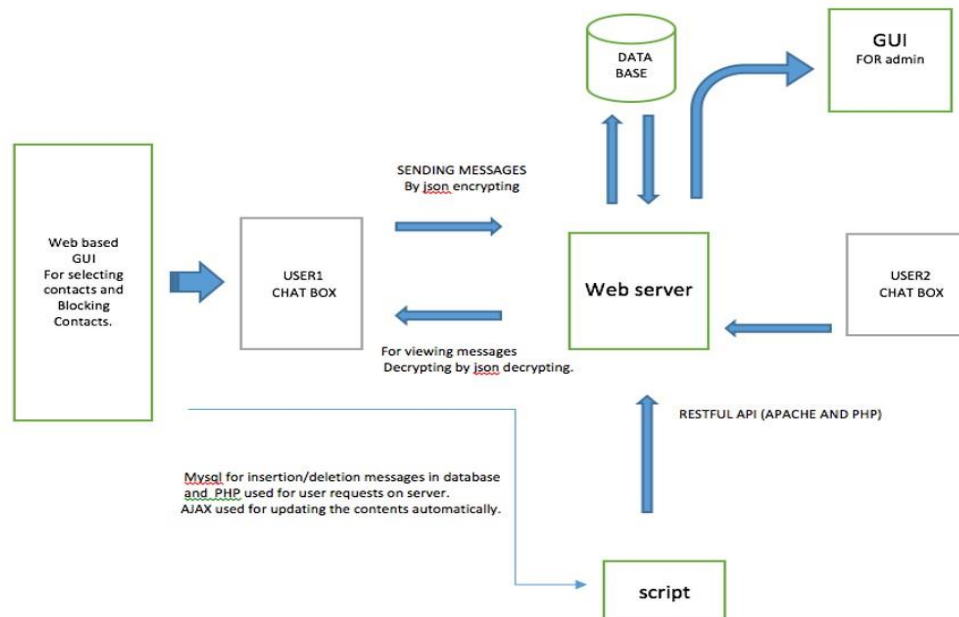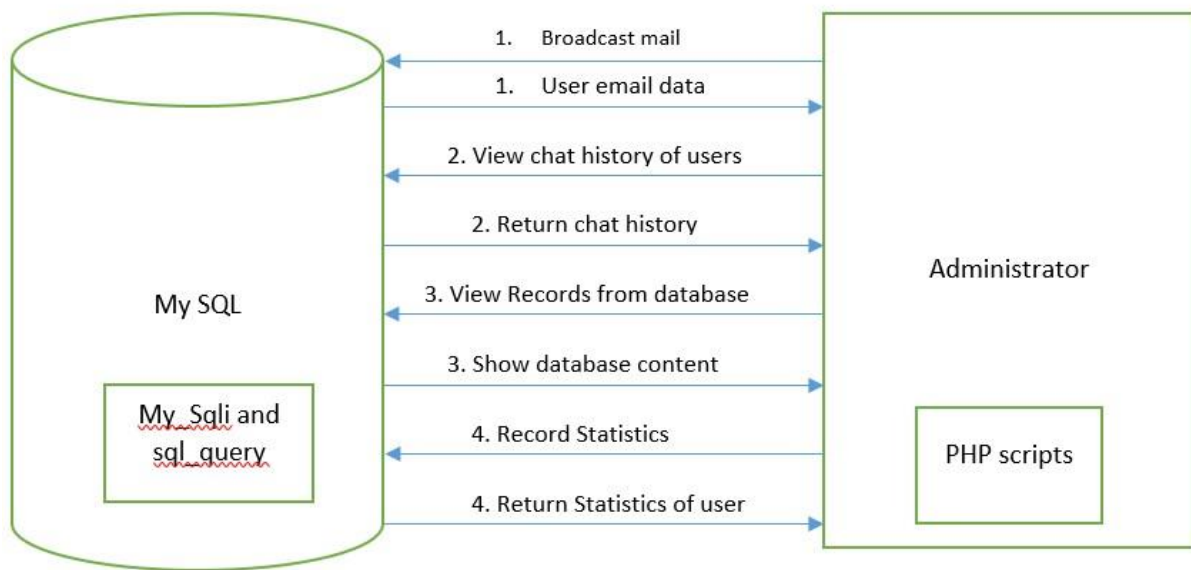

Fig. 3 User Login

Fig.4 Administrator Access

6.2 Unit test plan

6.2.1 For User Login:

- Able to add user to contact list
- Select the recipient from contact list.
- Able to send message/file.
- Able to receive message/file.
- Able to send or receive message of size upto 4KB.
- Delete conversation.
- Mark and delete selected message

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6.2.2 For Admin:

In the backend scripting, the administrator must be provided with some feature:

- To send a broadcast message in case of emergency information like server failure etc. through mail.
- Admin can view the chat conversation of any two selected users.
- Admin can monitor the records available at the database.
- Statistics of the records based on the information available at the data base must be provided to admin for controlling purpose.

7. Unit Test Plan:

7.1. Signup tests:

Test:	Signup-T1
Purpose:	Successfully creating an account
Requirements:	UR1
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. Click create an account it will be redirected to signup page Enter your credentials and product key as specified in user manual in sign up page and click "sign up" button.
Expected Result:	Registration of the user (informed by a feedback message). Feedback message is displayed in signup page. User credentials will be stored in the database on success full registration.
Result:	Success
Comment:	

Test:	Signup-T2
Purpose:	Feedback mail on successful registration..
Requirements:	U17
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. Click create an account it will be redirected to signup page Enter your credentials and product key as specified in user manual in sign up page and click "sign up" button.
Expected Result:	On successful registration a feedback mail will be sent user stating his login credentials to the registered e-mail.
Result:	Success

Comment:	This function will work only when the server system is connected to internet. This functionality work based on the mail system settings.

Test:	Signup-T3
Purpose:	Registration failure in signup page due to wrong key.
Requirements:	UR1
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. Click create an account it will be redirected to signup page Enter your credentials and product key as specified in user manual in sign up page and click "sign up" button.
Expected Result:	Feedback message is displayed in signup page stating "The entered key is not valid. This page is only for Extreme Security User" in case of entering wrong product key.
Result:	Success
Comment:	Feedback message will be displayed.

Test:	Signup-T4
Purpose:	Registration failure in signup page due to already existing username.
Requirements:	UR1
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. Click create an account it will be redirected to signup page Enter your credentials and product key as specified in user manual in sign up page and click "sign up" button.
Expected Result:	Feedback message is displayed in signup page stating existing username. Feedback message is "user already exists with same username or email id, plz use other"
Result:	Success
Comment:	Feedback message will be displayed.

Test:	Signup-T5
Purpose:	Registration failure in signup page due already existing mail id.
Requirements:	UR1
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and

	tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. Click create an account it will be redirected to signup page Enter your credentials and product key as specified in user manual in sign up page and click "sign up" button.
Expected Result:	Feedback message is displayed in signup page "already email id exists use another mail id".
Result:	Success
Comment:	Feedback message will be displayed.

Test:	Signup-T6
Purpose:	Registration failure in signup page due already existing username and mail id.
Requirements:	UR1
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. Click create an account it will be redirected to signup page Enter your credentials and product key as specified in user manual in sign up page and click "sign up" button.
Expected Result:	Feedback message is displayed in signup page "user already exists with same username or email id, plz use other"
Result:	Success
Comment:	Feedback message will be displayed.

7.2. Login tests:

Test:	Login-T1
Purpose:	Failed authentication due to wrong mail id or password in login page
Requirements:	UR2
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed.
Expected Result:	Feedback message is displayed in signup page "wrong username or password".
Result:	Success
Comment:	Feedback message will be displayed.

Test:	Login-T2

Purpose:	Successful login
Requirements:	UR2
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed.
Expected Result:	Login page will be redirected to home page.
Result:	Success
Comment:	Home page will be displayed.

7.3. After login tests:

Test:	Afterlogin-T1
Purpose:	Enabling User to manage status.
Requirements:	UR15.
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. After entering the correct credentials you will be redirected to home page.
Expected Result:	The user can manage his status between Available and Busy, by selecting the same options in manager status
Result:	Success
Comment:	Respective change will be updated in the database.

Test:	Afterlogin-T2
Purpose:	Delete account
Requirements:	UR1
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. After entering the correct credentials you will be redirected to home page. On selecting delete your account the account will be deleted.
Expected Result:	The user should be able to delete his account
Result:	Success
Comment:	Respective change will be updated in the database.

Test:	Afterlogin-T3

Purpose:	Configure account Case-Password Mismatch
Requirements:	UR3
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. After entering the correct credentials you will be redirected to home page. On clicking configure account you will be redirected to another page where in you have to enter your new credentials. You have to enter your password twice in order to commit changes.
Expected Result:	In case the passwords do not match, feedback will be given to the user
Result:	Success
Comment:	Feedback message will be displayed

Test:	Afterlogin-T4
Purpose:	Configure account Case: Redirect to login page on successful account configure
Requirements:	UR3
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. After entering the correct credentials you will be redirected to home page. On clicking configure account you will be redirected to another page where in you have to enter your new credentials. You have to enter your password twice in order to commit changes.
Expected Result:	If the passwords are matched, the corresponding changes will be updated in the database. The user will be redirected to login page where the user needs to enter his new credentials
Result:	Success
Comment:	Respective change will be updated in the database. The user will be redirected to login page on successful account configure.

Test:	Afterlogin-T5
Purpose:	Dynamic Search
Requirements:	UR8
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. After entering the correct credentials you will be redirected to

home page. When the user searches for other users in the search box, he will be provided with predictions of existing users from database.

Expected Result:	Predictions shall be provided while searching
Result:	Success
Comment:	Predictions of existing users shall be displayed.

Test:	Afterlogin-T6
Purpose:	Add User.
Requirements:	UR4,5,6,7
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. After entering the correct credentials you will be redirected to home page. On pressing the add button after the dynamic search, the user should be able to add the searched contact in his contacts book
Expected Result:	The searched contact should be added to contacts book of the user
Result:	Success
Comment:	Contacts book gets updated

Test:	Afterlogin-T7
Purpose:	Status
Requirements:	UR9
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. After entering the correct credentials you will be redirected to home page
Expected Result:	If the user logs in to his account his status must be available, if he is in chat he must be busy, if he is inactive for certain time then he is idle (in product it is 30seconds) and if he is not logged in he is offline. This information must be updated in database.
Result:	Success
Comment:	User can change his state between available and busy. User is offline if he hits signoff button. It the tab or window is closed his status will not be updated.

7.4. Chat Tests:

Test:	Chat-T1
Purpose:	Sending messages failed if the person is not in contacts
Requirements:	UR13
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. After entering the correct credentials you will be redirected to home page. On selecting chat with particular user the chat page will be displayed. If the user begins a conversation with another person who is not in contacts, then the messages should not be sent.
Expected Result:	If the user begins a conversation with another person who is not in contacts, then the messages should not be sent.
Result:	Success
Comment:	

Test:	Chat-T2
Purpose:	The user should be able to send messages to his contacts.
Requirements:	UR13
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. After entering the correct credentials you will be redirected to home page. On selecting chat with particular user the chat page will be displayed. After selecting a contact to begin a conversation, the page will be redirected to chatbox. In this window, the user should be able to send and receive the messages from the contacts.
Expected Result:	The messages should be sent and received. They are also stored in database
Result:	Success
Comment:	The messages should be sent and received. They are also stored in database

Test:	Chat-T3
Purpose:	The user should be able to delete his chat with his contact
Requirements:	UR13
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and

	tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. After entering the correct credentials you will be redirected to home page. On selecting chat with particular user the chat page will be displayed. If the user wish to clear the conversation he had with his contact, delete option is available below the send button of the chat box. On pressing this option, the entire conversation along with time stamp will be deleted. Corresponding changes are also updated in database.
Expected Result:	The user should be able to clear his conversation with his contact. This conversation should also be deleted in the database.
Result:	Success
Comment:	The database is being updated.

Test:	Chat-T4
Purpose:	Displaying timestamp information of the message.
Requirements:	UR6
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. After entering the correct credentials you will be redirected to home page. On selecting chat with particular user the chat page will be displayed. When the user sends a message to his contact, along with the message timestamp information is also sent and displayed. This information is also stored in the database.
Expected Result:	The users should be able to see when the message has been sent.
Result:	Success
Comment:	The users should be able to see when the message has been sent.

Test:	Chat-T5
Purpose:	Signoff button will be available in the chat page.
Requirements:	UR1
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. After entering the correct credentials you will be redirected to home page. On selecting chat with particular user the chat page will be displayed. If the user wishes to sign out, the signout option will be available at the top right corner of the page.
Expected Result:	On selecting signout option the page will be redirected to login page and his status will be changed to offline in the database.
Result:	Success

Comment:	Respective change will be updated in the database.

Test:	Chat-T6
Purpose:	Offline Users should receive a mail regarding message to reduce the delay
Requirements:	UR16
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. After entering the correct credentials you will be redirected to home page. On selecting chat with particular user the chat page will be displayed. If the user intends to send a message to offline user, he should be intimated with a mail to reduce the delay.
Expected Result:	Offline Users should receive a mail regarding message to reduce the delay
Result:	Success
Comment:	Offline Users should receive a mail regarding message to reduce the delay

Test:	Chat-T7
Purpose:	Text file of upto 4KB (4095 characters)
Requirements:	UR13
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. After entering the correct credentials you will be redirected to home page. On selecting chat with particular user the chat page will be displayed. After selecting a contact to begin a conversation, the page will be redirected to chatbox. In this window, the user should be able to send and receive the messages from the contacts. Text upto 4Kb should be sent and received.
Expected Result:	The messages should be sent and received of 4kb. They are also stored in database.
Result:	Success
Comment:	4kb text should exchanged.

7.5 Contacts Tests:

Test:	Contacts-T1
Purpose:	Show contact list (phone book).
Requirements:	UR8
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. After login with correct credentials you will be redirected to home page.
Expected Result:	Phone book containing the details like username, last seen, un read messages etc will be displayed.
Result:	Success
Comment:	Phone book will be displayed.

Test:	Contacts-T2
Purpose:	Dynamic status update in phone book..
Requirements:	UR4
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. After login with correct credentials you will be redirected to home page.
Expected Result:	Status of the user in the contacts in phone book will be dynamically updated from the database.
Result:	Success
Comment:	Status of the users in the phone is dynamically displayed.

Test:	Contacts-T3
Purpose:	Number of unread messages.
Requirements:	UR5
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. After login with correct credentials you will be redirected to home page.
Expected Result:	Number of unread messages from the contacts in the phone book will be displayed.
Result:	Success

Comment:	Number of unread messages will be displayed.

Test:	Contacts-T4
Purpose:	Last seen information.
Requirements:	UR6
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. After login with correct credentials you will be redirected to home page.
Expected Result:	When user clicks chat button ,the seen information of the users in the contact book will be updated.
Result:	Success
Comment:	Last seen information will be displayed in the contact book.

Test:	Contacts-T5
Purpose:	Block a contact by a user.
Requirements:	UR7
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. After login with correct credentials you will be redirected to home page. Click on "block" button
Expected Result:	The contact will be blocked and the contact will not receive any message or file from the user.
Result:	Success
Comment:	Contact will be blocked.

Test:	Contacts-T6
Purpose:	File upload
Requirements:	UR14
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. After login with correct credentials you will be redirected to

	home page. Click on "files" on the phone book. The page will be redirected and the user have to browse the files from his local system and click upload.
Expected Result:	Files will be uploaded and sent to the corresponding contact.
Result:	Success
Comment:	Files will be uploaded and sent to the corresponding contact which is of any extension.

Test:	Contacts-T7
Purpose:	Number of files received
Requirements:	UR14
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. After login with correct credentials you will be redirected to home page.
Expected Result:	Files will be uploaded and sent to the corresponding contact. The number of files exchanged between the user and his contact will be displayed.
Result:	Success
Comment:	Files will be uploaded and sent to the corresponding contact

Test:	Contacts-T8
Purpose:	File download (in .bin format)
Requirements:	UR14
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. After login with correct credentials you will be redirected to home page. Select 'files' in corresponding contacts. Select the file you want to download form the list.
Expected Result:	Corresponding file will be downloaded in .bin format.
Result:	Success
Comment:	Required Binary file is downloaded.

7.6 Admin Tests:

Test:	Admin-T1
Purpose:	Create Admin account. Case: entered wrong key.
Requirements:	UR1
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. Click on "new admin" in admin page. Enter the credentials along with the product key in the respective fields and click submit.
Expected Result:	A feedback message "authentication error" will be displayed in case of entering wrong key.
Result:	Success
Comment:	Feedback message for entering wrong key.

Test:	Admin-T2
Purpose:	UR1
Requirements:	SR1,SR3,SR2,UR2
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. Click on "new admin" in admin page. Enter the credentials along with the product key in the respective fields and click submit.
Expected Result:	A feedback message "you have successfully registered" will be displayed in case of entering correct key.
Result:	Success
Comment:	Feedback message will be displayed in case of entering correct key stating "you have successfully registered"

Test:	Admin-T3
Purpose:	Broadcast mail
Requirements:	UR10
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. After login with correct credentials you will be redirected to

	home page. Sign in as admin from admin login page. Select the broadcast mail. Type the subject and message in the respective fields.
Expected Result:	Mails will be sent to users.
Result:	Success
Comment:	Mail functioning may change depending on mail server system.

Test:	Admin-T4
Purpose:	To display chat history
Requirements:	UR11
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. After login with correct credentials you will be redirected to home page. Sign in as admin from admin login page. Select the chat history. Select any two different users to view chat details.
Expected Result:	Sender, receiver, message & timestamp will be displayed of the selected users.
Result:	Success
Comment:	In case you have selected same user a pop up states "select different users"

Test:	Admin-T5
Purpose:	To display database records.
Requirements:	UR11
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. After login with correct credentials you will be redirected to home page. Sign in as admin from admin login page. Select the view records. Select any table from the list.
Expected Result:	Corresponding database tables will be displayed (namely, credentials, infobase and contacts).
Result:	Success
Comment:	Database records are displayed.

Test:	Admin-T6
Purpose:	Admin Block/Unblock an user.

Requirements:	UR1
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. After login with correct credentials you will be redirected to home page. Sign in as admin from admin login page. Select the view records. Select table 1 (credentials) from the list.
Expected Result:	Admin can block and unblock a user from this page. If he is blocked the user cannot receive message and files and even cant login after current session.
Result:	Success
Comment:	User cant be blocked during the current session.

Test:	Admin-T7
Purpose:	Admin Delete an user.
Requirements:	UR1
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. After login with correct credentials you will be redirected to home page. Sign in as admin from admin login page. Select the view records. Select table 1 (credentials) from the list.
Expected Result:	The user is removed from all database tables (namely, credentials, infobase & contacts)
Result:	Success
Comment:	The user has to signup after his account is deleted.

Test:	Admin-T8
Purpose:	To display database statistics –individual statistics.
Requirements:	UR12
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. After login with correct credentials you will be redirected to

	home page. Sign in as admin from admin login page. Select the view record statistics. Select individual statistics.
Expected Result:	Individual user statistics are displayed (namely, messages sent and received, binary files sent and received and total volume traffic)
Result:	Success
Comment:	Individual user statistics is tabulated as output.

Test:	Admin-T9
Purpose:	To display integrated statistics
Requirements:	UR12
Environment:	XAMPP software is installed and necessary code(PHP/SQL) is written in text editor and saved. Make sure whether apache server and MYSQL database is running which can be done simply by control panel provided by software. Required databases are connected using these scripts and tables are created and configured using URL http://ip_server/file_path in browser.
Operation:	Type IP of the server system in the browser. A login page will be displayed. After login with correct credentials you will be redirected to home page. Sign in as admin from admin login page. Select the view record statistics. Select integrated statistics.
Expected Result:	Integrated statistics are displayed (namely, messages sent and received, binary files sent and received and total volume traffic)
Result:	Success
Comment:	Integrated statistics is tabulated as output.

8. References

[1]. Ian Sommerville. Software Engineering. 9th ed. [2]. Xtreme Security Project Request, available at link https://drive.google.com/file/d/0B-IPzXOrtPFSeWZVY1pzSnRIV0E/view