

A Project/Dissertation  
Report on  
E-Chat Application

Submitted in partial fulfillment of the requirement for  
the award of the degree of Btech CSE



Under the Supervision of

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GALGOTIAS UNIVERSITY, GREATER NOIDA**

**CANDIDATE'S DECLARATION**

I/We hereby certify that the work which is being presented in the project, entitled “ **Ur Info: E CHAT APPLICATION**” in partial fulfillment of the requirements for the award of the **BACHELOR OF TECHNOLOGY IN COMPUTER SCIENCE AND ENGINEERING**

submitted in the **School of Computing Science and Engineering** of Galgotias University, GreaterNoida, is an original work carried out during the period of **JULY-2021 to DECEMBER-2021**, under the supervision of **Mrs Dr Kirti Shukla, Assistant Professor, Department of Computer Science and Engineering** of School of Computing Science and Engineering , Galgotias University, Greater Noida

The matter presented in the project has not been submitted by me/us for the award of any otherdegree of this or any other places.

AYUSH DUBEY-18SCSE1010389

KUMAR KARTIKEY-18SCSE1010246

This is to certify that the above statement made by the candidates is correct to the best of my knowledge.

Supervisor (Mrs.Dr Kirti Shukla,  
Assistant Professor)

## **CERTIFICATE**

The Final Thesis/Project/ Dissertation Viva-Voce examination of  
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has been held on \_\_\_\_\_ and  
his/her work is recommended for the award of **BACHELOR OF**  
**TECHNOLOGY IN COMPUTER SCIENCE AND ENGINEERING.**

*Signature of Examiner(s)*  
*Supervisor(s)*

*Signature of*

**Signature of Project Coordinator**

**Signature of Dean**

**Date:**

**Place:**

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## INTRODUCTION-

Chatting is a method of using technology to bring people and ideas “together” despite of the geographical barriers. The technology has been available for years but the acceptance it was quite recent. Our project is an example of a chat server. It is made up of 2 applications the client application, which runs on the user's Pc and server application, which runs on any pc on the network. To start chatting client should get connected to server where they can practice two kinds of chatting, public one(message is broadcast to all connected users) and private one(between any 2 users only) and during the last one security measures were taken.

Online chat in a less stringent definition may be primarily any direct text-based or video-based (webcams), one-on-one chat or one-to-many group chat (formally also known as synchronous conferencing), using tools such as instant messengers, Internet Relay Chat (IRC), talkers and possibly MUDs or other online games. The expression *online chat* comes from the word *chat* which means "informal conversation". Online chat includes web-based applications that allow communication – often directly addressed, but anonymous between users in a multi-user environment. Web conferencing is a more specific online service, that is often sold as a service, hosted on a web server controlled.

# CHAPTER-01

## ABSTRACT

Project on: Sockets Programming in PHP-Building a Chat Server

Title: Web Based Chat Application

We aim to design a chat application in the area of chatroom server using Frontend tools such HTML, CSS, JS and PHP for backend.

Chat application is a feature or a program on the Internet to communicate directly among Internet users who are online or who were equally using the internet. Chat applications allow users to communicate even though from a great distance. Therefore, this chat application must be real-time and multi platform to be used by many users.

The most important features of IChat are:

- Easy and quick communication.
- Unlimited data transfer without the size restriction.
- Group chat

IC can be further implemented in the area of voice and video calling and can be used in the large organizations by hosting the application. IC can be further implemented by providing security algorithms to encrypt the data transfer without the size restrictions for a larger scale.

IC has dealt with implementing a chatting application on small scale using latest technology in web development. IC has features such as text messaging, group chat, data transfer. The main objective of IC was to develop an application which provides the data transfers without the size restrictions and hence has been implemented.

To increase efficiency of managing the **Chat Application, Online Chat**. It deals with monitoring the information and transactions of Users. Manage the information of **Chat Application**. Editing, adding and updating of Records is improved which results in proper resource management of **Chat Application** data.

- We can have one-on-one chatting.
- It helps to connect long distance people.
- It helps to maintain safety of chat

## **CHAPTER-02**

### **Literature Reviews/Comparative study**

#### **Intro –**

- Communication is a mean for people to exchange messages. It has started since the beginning of human creation. Distant communication began as early as 1800 century with the introduction of television, telegraph and then telephony. Interestingly enough, telephone communication stands out as the fastest growing technology, from fixed line to mobile wireless, from voice call to data transfer. The emergence of computer network and telecommunication technologies bears the same objective that is to allow people to communicate. All this while, much efforts has been drawn towards consolidating the device into one and therefore indiscriminate the services.
- A web chat is a system that enables users to communicate in real time using simply accessible web interfaces. It is a kind of web online chat distinguished by its simplicity and accessibility to users who don't want to require the time to install and learn to use specialized chat software. It is a chatting application that will help to communicate with friends using the internet. This application is having AES encryption. In this chat application project, there is one entity namely the user. User needs to register and obtain credentials to login onto the application.

## **CHAPTER-03**

### **Problem Formulation**

Define and implement a “chat” protocol for interaction between a chat server and a chat client.

Chat rooms have become a popular way to support a forum for n-way conversation or discussion among a set of people with interest in a common topic.

Chat applications range from simple, text-based ones to entire virtual worlds with exotic graphics. In this project you are required to implement a simple text-based chat client/server application.



## **CHAPTER-04**

### **Required tools**

- Xampp/Wampp Server  
(Localhost)
- PHP(Socket
- Programming/
- Backend  
HTML,JS,BS4,CSS3  
(Frontend)

---

## **CHAPTER-05**

### **Feasibility Analysis**

Feasibility studies assess the viability of an idea, a technology or a new business. We map relevant aspects related to the development of your idea. This can elaborate on the business strategy, foreseen market, competition, potential obstacles (technical and/or commercial) and risks, and the investments needed to bring your innovation to the market.

A feasibility study allows to, after considering all significant factors, assess the feasibility and commercial attractiveness of your next innovation.

It gives you clear understanding and helps you pursue a successful business. Examples of what we can help you learn, unbiased:

- Potential obstacles and risks in your route to market
- Understand the demand for your products or services
- Assess your Unique Selling Points and how they really stand out
- Assess your foreseen commercialization strategy and revenue model
- The (level of) investment you need to bring your innovation to the market

Analysis of variance was used to determine the relationship, if any, between treatment condition and alcohol consumption. Power analysis was then used to consider what sample size would be required to raise any effect to significance for a formal trial.

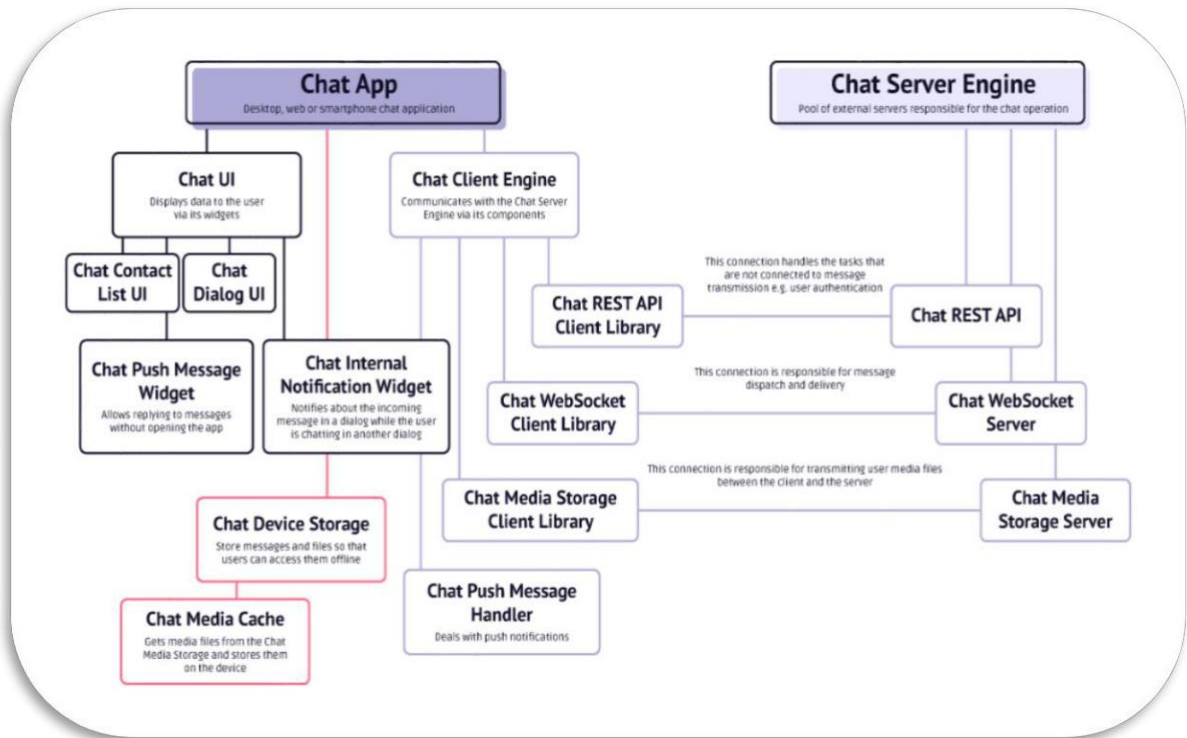
## **CHAPTER-06**

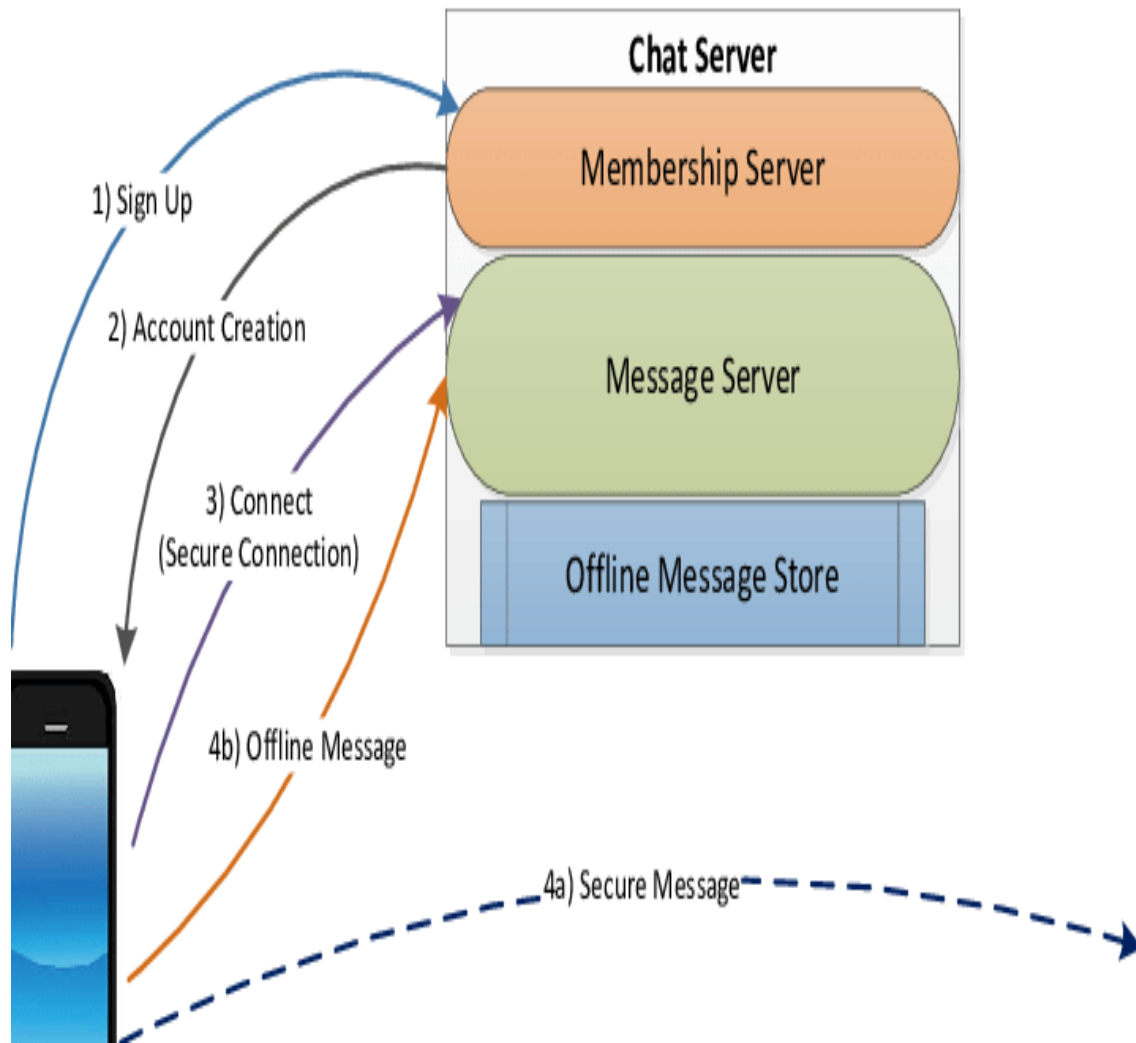
### **MERITS OF PROPOSED SYSTEM**

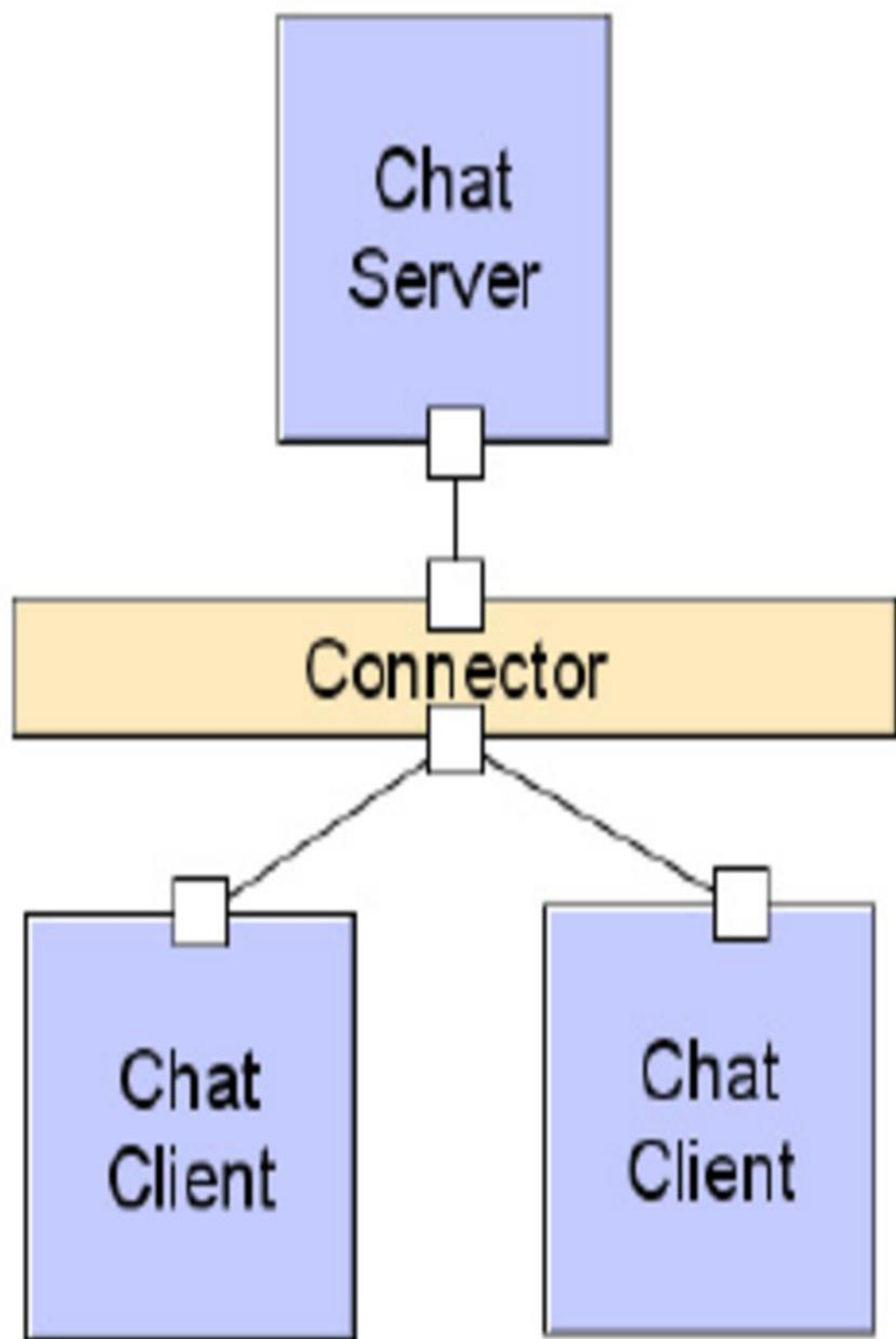
- 1: Reduce expenses**
- 2: Increase Scale**
- 3:Improve customer service and loyalty**
- 4:Discover customer pain points.**
- 5:Faster problem resolution.**
- 6:Customer convenience**
- 7:Competitive advantages.**
- 8:Expand market reach.**
- 9:Proactive outreach**
- 10:Reports and analytics**

# CHAPTER-07

## ARCHITECTURE









Client 1

client sends  
message to  
the server



even  
the s

## cometchat

### User modules:

After registration is done user will get user id and password using these details he can log in to the application and use all features.

There are options for users to change password. User can view the list of available users online and offline and perform chat operations.

### Chatting Module:

Under chatting modules user can view a list of available users with online and offline status. He can select the user and send request after acceptance he can chat with the user.

User will have setting options for changing font and color. User can enter a message and use the send button to send a message which is displayed under the upper window.

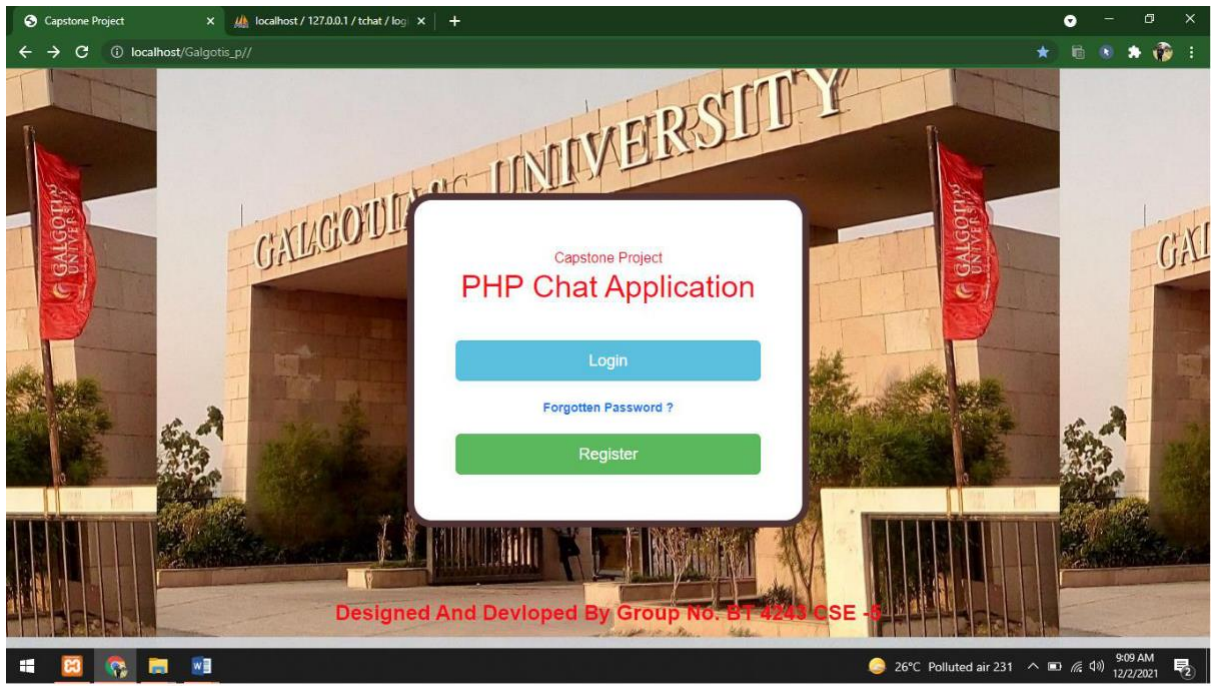
User can chat with multiple users at a time he can view list previous chats and delete messages.

A chat consists of two major parts:

Chat app or client part, which is a desktop, web or smartphone chat application.

Chat Server Engine or server part, which is a pool of external servers responsible for the chat operation. This is the place where all the chat magic happens.

# SYSTEM EMPLEMENTATION-



## Capstone Project - Chat Application using PHP

Chat Application Login

Enter Username

Enter Password

Login





# LOGIN ID-



## Capstone Project - Chat Application using PHP

Chat Application Login

**Enter Username**

**Enter Password**



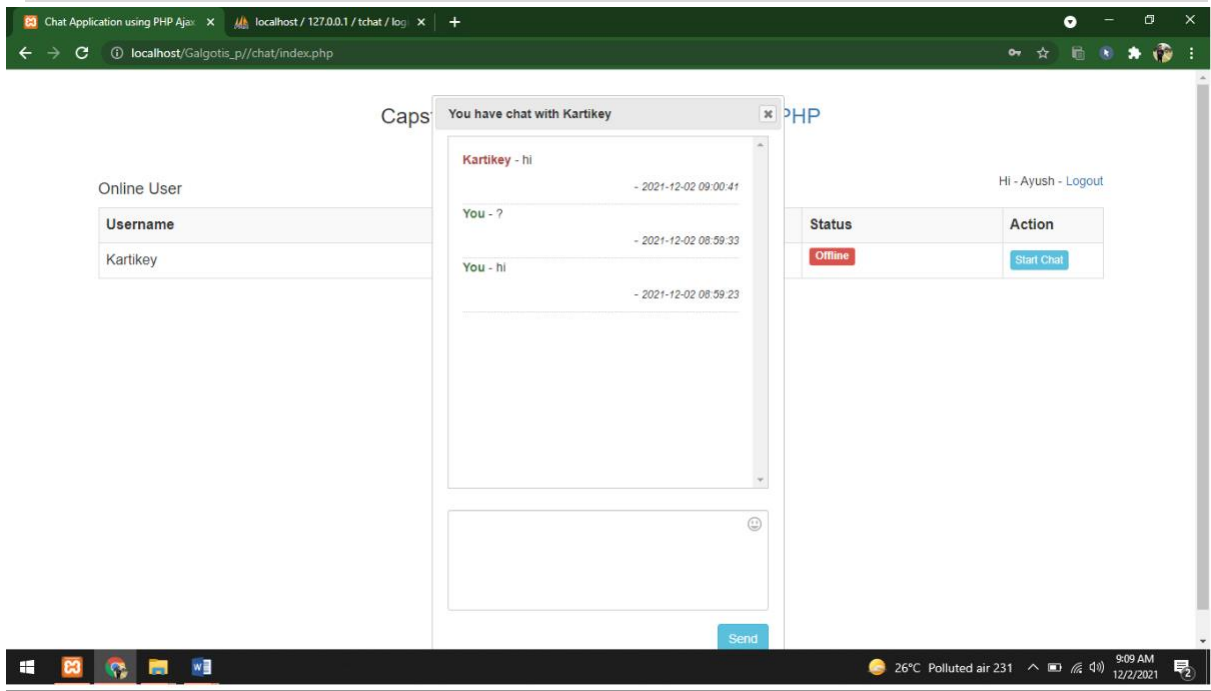
## Capstone Project - Chat Application using PHP

Online User Hi - Ayush - Logout

Username	Status	Action
Kartikey	Offline	<input type="button" value="Start Chat"/>



# CHAT PAGE-



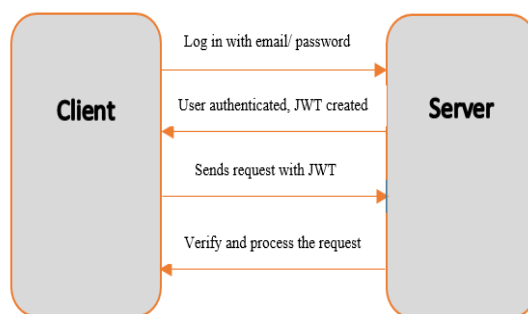
## USER INVOLVEMENT

No one knows if an app is really effortless to use, but should its process be changed for greater ease of access? The individual consumer is the best judge. More and more IT firms are now separating their quality assurance tasks into two parts:

- A final group that evaluates the app's functionality and simplicity of use.
- Apps that are difficult to use will lie on the shelf, regardless of how well they are created.
- A group that examines the app's technical quality

### Facebook Messenger

- Instant chat app Facebook Messenger is accessible on Android and iOS platforms and is widely used. Chatting and secret talks are the two kinds of communication that may be used with this app. End-to-end encrypted is not provided via ordinary chat, but rather by employing TLS to protect interaction and storing all communications on its servers. Telegram's private chat is based on the same concept.



### Secure Mobile Chat Requirements: -

In The following are some guidelines for building a safe chat application:

Req1: The chat server's credential storage must be secured.

Req2: Either a secured session or TLS is required. Each session has a different key to unlock it. Ensuring no one except the intended recipient is able to view the communications.

Req3: In order to ensure the security and confidentiality of messages, they must be secured.

Req4: Encrypted data of local storage is required.

Req5: Rather than being saved on the chat server, texts are kept locally on the user's computer.

Req6 If you're not buddies, you can't send each other messages.

## **Exchanging Messages: -**

Once the text body has been filled in, the programme uses the XSalsa20 encryption technique to encrypt it, and the Poly1305 verification key computation method to generate the MAC. Having a unique password and nonce for every message increases security since if one key is discovered, it will not be used to decrypt prior communications. In order to send a secure communication, the user's session key must be used to secure communications.

MAC comparisons are used to determine whether the secured text matches the receiving one once it has been received from FCM. Otherwise, the originator session key is used to decode it if the outputs aren't exactly the same. The message content is then checked in the similar manner as the message headers. The text may now be decrypted with the help of the key and nonce. In order to show the text, the message is first encrypted and saved locally.

The demand of chatting and texting apps is on the rise. This is due to the fact that individuals enjoy chit-chatting. When it comes to working with a coworker or looking in on a love one, texting is the preferable means of communication.

Communities can be built using chatting and texting apps that other kinds of communication can't.

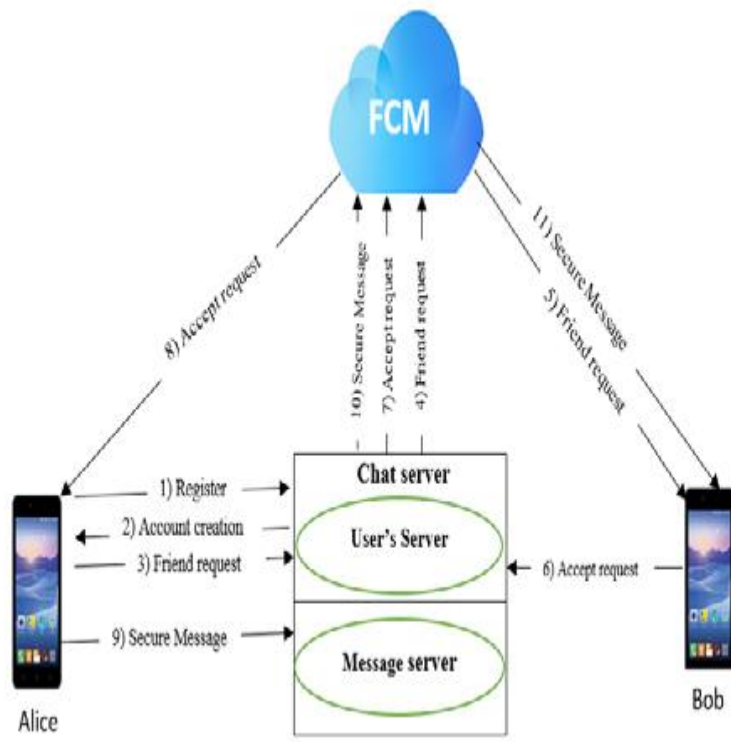
Real-time chat platform architectural design may be a daunting challenge to grasp. It's a job we've done before, so we're confident in our ability to do it. We'll crumble the structure of a messaging service in this post to help you figure out the best method for integrating chat into application or site.

## **Registration an account**

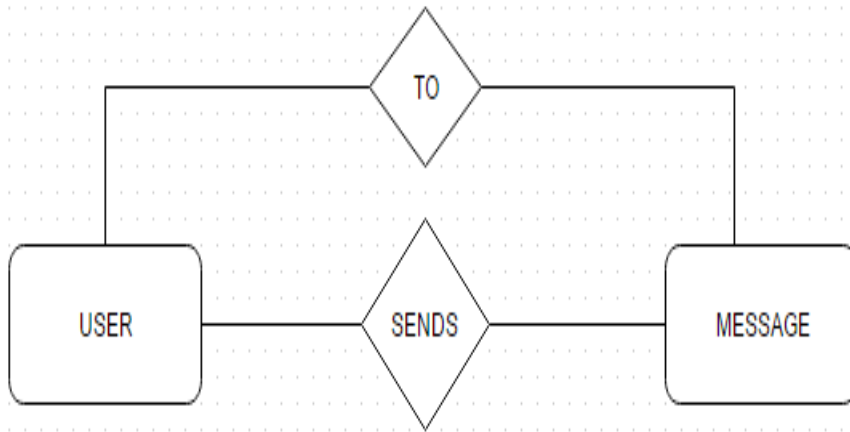
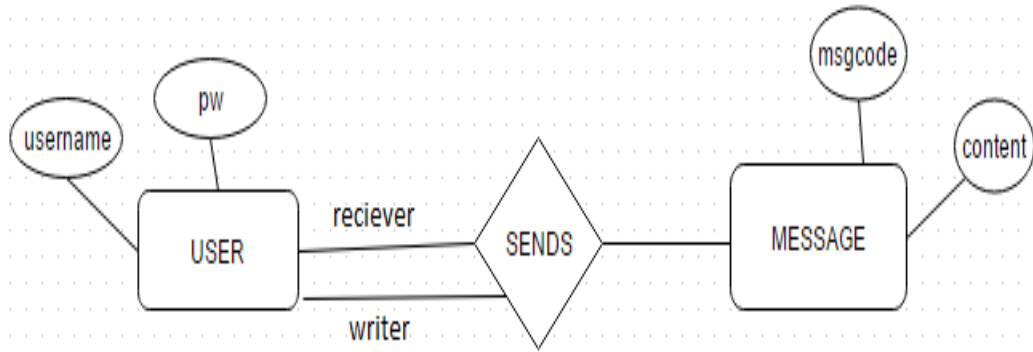
In order to protect the internal memory key from unauthorized users or other apps, a passcode lock should be activated first before app can be started to establish a Keystore that serves as a safe box to keep it.

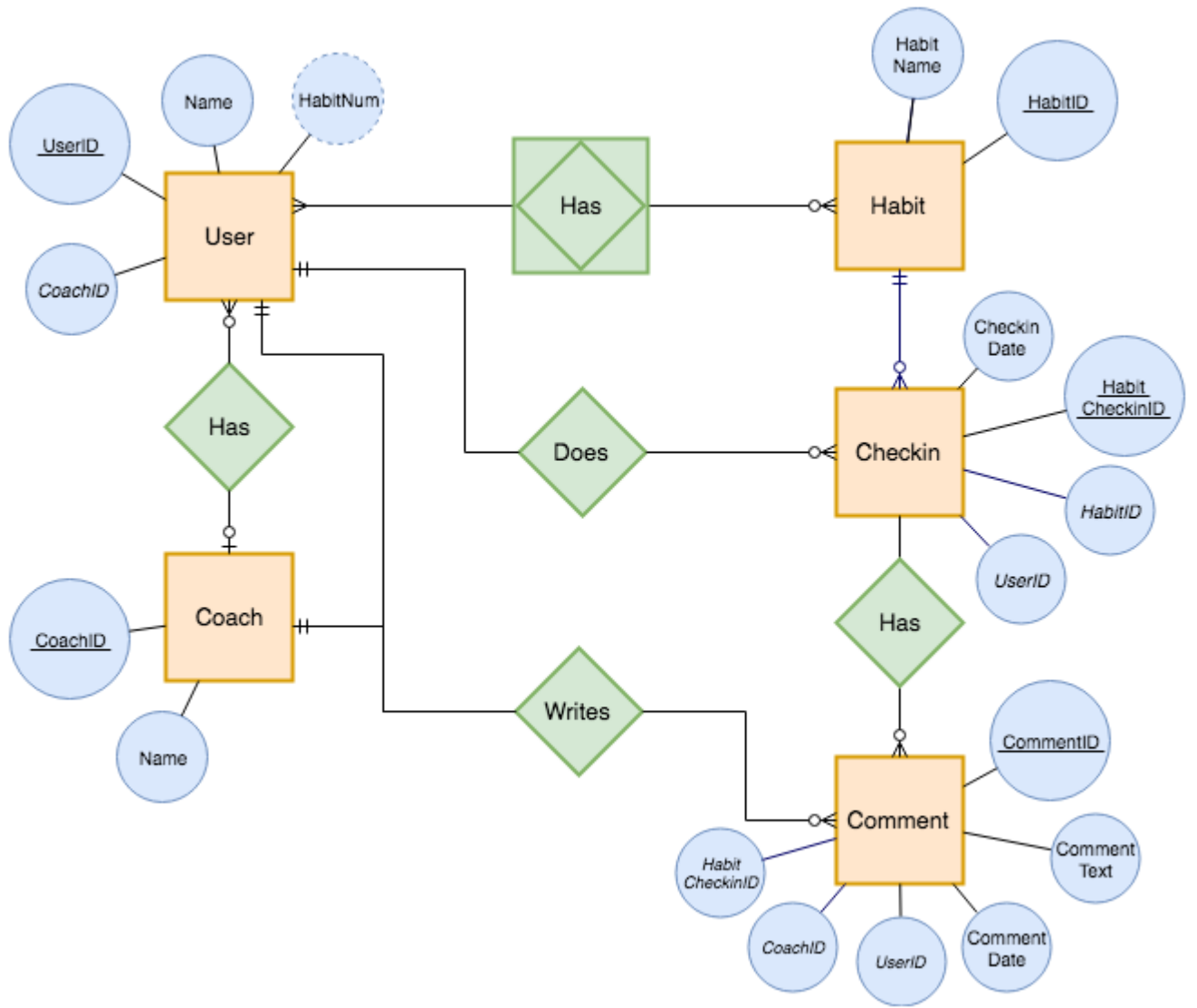
Just one gadget may be associated with each login, which is identified by the device id. Username and password are also one-of-a-kind features.

To create a new account, you must provide your name, email address, and password. The XSalsa20 method is used to secure the key, which is subsequently provided to the server along with the login details. User IDs are generated by the server when verification is complete. After that, the client program receives an acceptance message for registration process, and the customer data is saved locally.



# ER DIAGRAM





## CASE STUDY

The importance of sending messages on mobile devices was the reason why I decided to participate in the [UpLabs Chat Challenge](#). The brief of the challenge was to create a chat interaction flow for an app or website, with the following points in mind:

- the interface has to break to rules of the conventional boring chatting interfaces
- users must be able to attach files seamlessly without affecting the ongoing chat
- users should able to shift easily between several chats
- it has to be unique, also it has to solve the UX problems we are facing in the today world
- Since I'm one of the Y generation folks, I'm pretty much glued to my phone all day long. While it has many disadvantages, it also allows me to have a deeper understanding of UX problems, which are not obvious when we text on our phones.
- You must be familiar with the feeling when your chat partner asks more than one question right after another, so you always have to address in your reply which question you are answering at the moment. This slows down the chatting process and it also gives opportunity for big misunderstandings.



## Use case Diagram

Level 0	Level 1	Level 2	actor
Chat application	Authentication system	Register Login logout	user
Chat application	Contact form	Friend list Find friend Add friend Remove friend	user
Chat application	Chat form	Send message	user
Chat application	maintenance	User profile Data base	admin

# User Experience in E-Chat Application

## What is User Experience (UX) Design?

User experience (UX) design is the process design teams use to create products that provide meaningful and relevant experiences to users. This involves the design of the entire process of acquiring and integrating the product, including aspects of branding, design, usability and function.

## What UX Designers do goes Beyond UI Design

“User Experience Design” is often used interchangeably with terms such as “User Interface Design” and “Usability”. However, while usability and user interface (UI) design are important aspects of UX design, they are subsets of it – UX design covers a vast array of other areas, too. A UX designer is concerned with the entire process of acquiring and integrating a product, including aspects of branding, design, usability and function. It is a story that begins before the device is even in the user’s hands.

“No product is an island. A product is more than the product. It is a cohesive, integrated set of experiences. Think through all of the stages of a product or service – from initial intentions through final reflections, from first usage to help, service, and maintenance. Make them all work together seamlessly.”

— Don Norman, inventor of the term “User Experience”

Products that provide great user experience (e.g., the iPhone) are thus designed with not only the product’s consumption or use in mind but also the entire process of acquiring, owning and even troubleshooting it. Similarly, UX designers don’t just focus on creating products that are usable; we concentrate on other aspects of the user experience, such as pleasure, efficiency and fun, too. Consequently, there is no single definition of a good user experience. Instead, a good user experience is one that meets a particular user’s needs in the specific context where he or she uses the product.

## UX Designers consider the Why, What and How of Product Use

As a UX designer, you should consider the Why, What and How of product use. The Why involves the users' motivations for adopting a product, whether they relate to a task they wish to perform with it or to values and views which users associate with the ownership and use of the product. The What addresses the things people can do with a product—its functionality. Finally, the How relates to the design of functionality in an accessible and aesthetically pleasant way. UX designers start with the Why before determining the What and then, finally, the How in order to create products that users can form meaningful experiences with. In software designs, you will need to ensure the product's "substance" comes through an existing device and offers a seamless, fluid experience.

## The Why, What and How of UX Design



## **UX Design is User-Centered**

Since UX design encompasses the entire user journey, it's a multidisciplinary field – UX designers come from a variety of backgrounds such as visual design, programming, psychology and interaction design. To design for human users also means you have to work with a heightened scope regarding accessibility and accommodating many potential users' physical limitations, such as reading small text. A UX designer's typical tasks vary, but often include user research, creating personas, designing wireframes and interactive prototypes as well as testing designs. These tasks can vary greatly from one organization to the next, but they always demand designers to be the users' advocate and keep the users' needs at the center of all design and development efforts. That's also why most UX designers work in some form of user-centered work process, and keep channeling their best-informed efforts until they address all of the relevant issues and user needs optimally.

User-centered design is an iterative process where you take an understanding of the users and their context as a starting point for all design and development.

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## **Conclusion:**

The main objective of the project is to develop a Secure Chat Application. I had taken a wide range of literature review in order to achieve all the tasks, where I came to know about some of the products that are existing in the market. I made a detailed research in that path to cover the loop holes that existing systems are facing and to eradicate them in our application.

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