

# Title:ChatHub-GECA

## Team members:

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**Objective:** To develop real time chat application.

## Technical details:

It is basically a chat application that will integrate features of chat applications by using technology like signalR, jquery and c sharp.net.

## Innovativeness and usefulness:

### Technology used:

1)SignalR:Today's modern apps are expected to deliver up-to-date information without hitting a refresh button. Add real-time functionality to your dashboards, maps, games and more.What is real-time functionality? It's the ability to have your server-side code push content to connected clients as it happens, in real-time.

**SignalR** handles connection management automatically, and lets you broadcast messages to all connected clients simultaneously, like a chat room. The connection between the client and server is persistent, unlike a classic HTTP connection, which is re-established for each communication.

ASP.NET SignalR is a library for ASP.NET developers that simplifies the process of adding real-time web functionality to applications. Real-time web functionality is the ability to have server code push content to connected clients instantly as it

becomes available, rather than having the server wait for a client to request new data.

SignalR can be used to add any sort of "real-time" web functionality to your ASP.NET application. While chat is often used as an example, you can do a whole lot more. Any time a user refreshes a web page to see new data, or the page implements [long polling](#) to retrieve new data, it is a candidate for using SignalR. Examples include dashboards and monitoring applications, collaborative applications (such as simultaneous editing of documents), job progress updates, and real-time forms.

SignalR also enables completely new types of web applications that require high frequency updates from the server, for example, real-time gaming.

SignalR provides a simple API for creating server-to-client remote procedure calls (RPC) that call JavaScript functions in client browsers (and other client platforms) from server-side .NET code. SignalR also includes API for connection management (for instance, connect and disconnect events), and grouping connections.

Real-time apps are those that react to changes anywhere in a connected application's system— not just those made by the current user. The canonical example of real-time is a messaging application.

## **jQuery :**

The purpose of **jQuery** is to make it much easier to use JavaScript on your website. And it can be also used to select a particular element in your web page so that you can perform operations on it. Real-time applications are programs that function within a time frame that the user senses as immediate, current or instant. On Facebook, when you send a message, the recipient receives it without having to refresh his browser. If you choose not to use it, you don't have to reference the "signalr/hubs" URL in a script element in your client code. A JavaScript client requires references to jQuery and the SignalR core JavaScript file. The jQuery version must be 1.6.4 or major later versions, such as 1.7.2, 1.8.2, or 1.9.1.

## **The advantages of using jQuery are:**

1. JavaScript enhancement without the overhead of learning new syntax
2. Ability to keep the code simple, clear, readable and reusable

3. Eradication of the requirement of writing repetitious and complex loops and DOM scripting library calls
4. Ease of use- it is more easy to use than the standard javascript and other libraries.
5. Large library – It has a lot of functions compared to javascript.
6. Strong open source community – there are a lot of plugins available for the faster development of the applications.
7. Great documentation and tutorials – the jQuery website has plenty of tutorials that are required for the beginners.
8. Ajax support – They let you develop the templates easily.

## **Database:**

Databases are also implemented here generally to store information of users like username ,id,password or it can also store messages sent and received by a user.It also contains log in details of the user.PhpMyAdmin is a web database management software written by php script. Phpmyadmin also be used in database management and maintenance tasks as well as a powerful SQL queryer.How to Backup and or Restore your MySQL Database Using phpMyAdmin. Backup your MySQL Database. Log into your cPanel account by pointing a browser to <http://IPAddressOfServer:2083> and using the credentials provided. On the Home screen, scroll down to Databases and click on phpMyAdmin. S

## **How to create database in php my admin:**

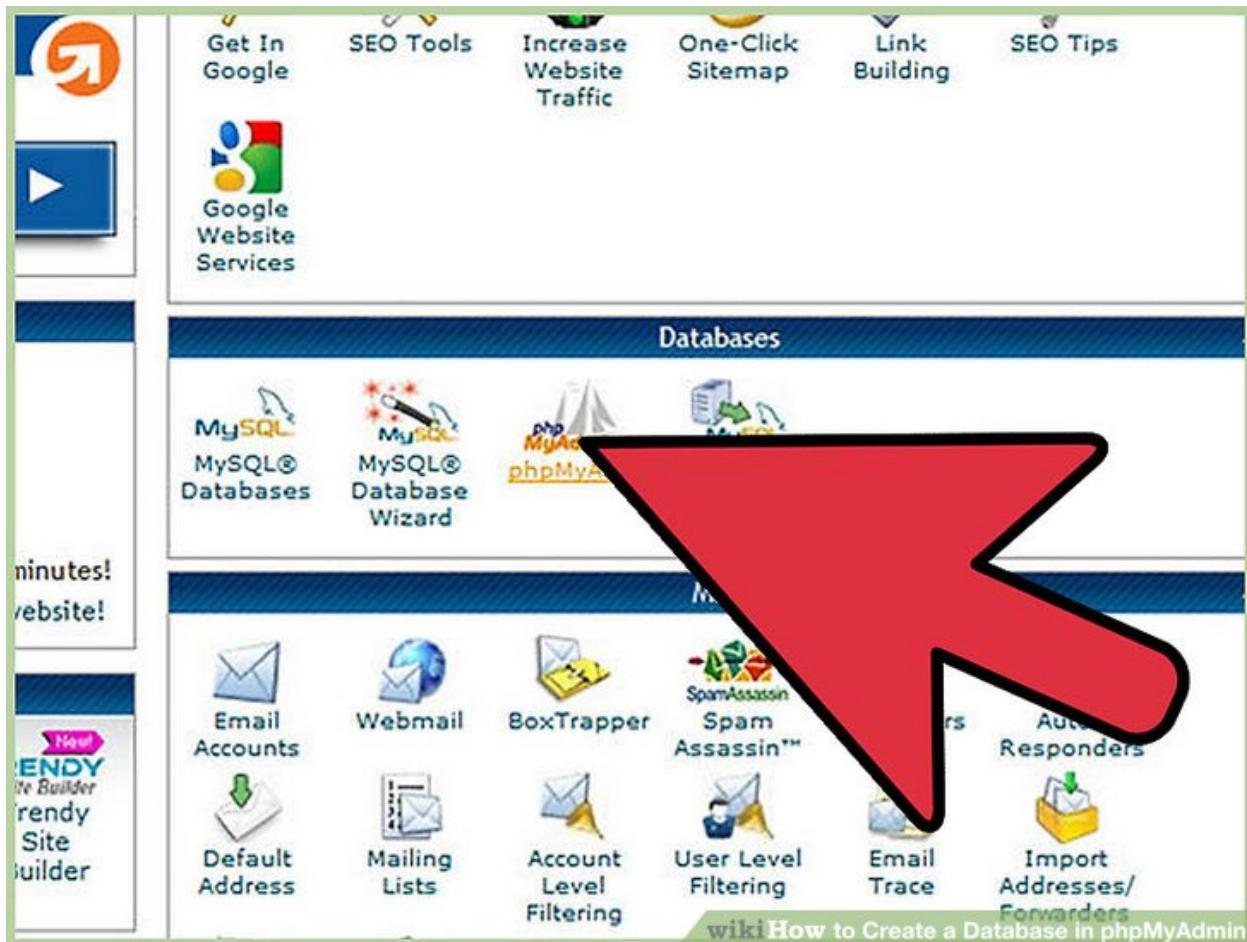
Make sure you have phpMyAdmin Installed. This guide assumes you have phpMyAdmin installed and ready to use.

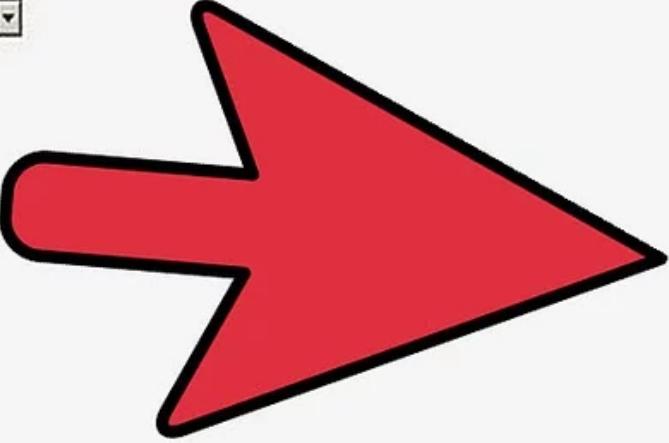
Go to your phpMyAdmin homepage. For this guide you need to navigate to the phpMyAdmin homepage. ...

Login to your phpMyAdmin Page. Make sure you are logged in to phpMyAdmin.

Enter your database name. ...

Click "Create" and then you're done! ...





**MySQL**

Collation: utf8\_general\_ci Create

Server: localhost via TCP/IP  
Server version: 5.5.8  
Protocol version: 10  
User: root@localhost  
MySQL charset: UTF-8 Unicode (utf8)

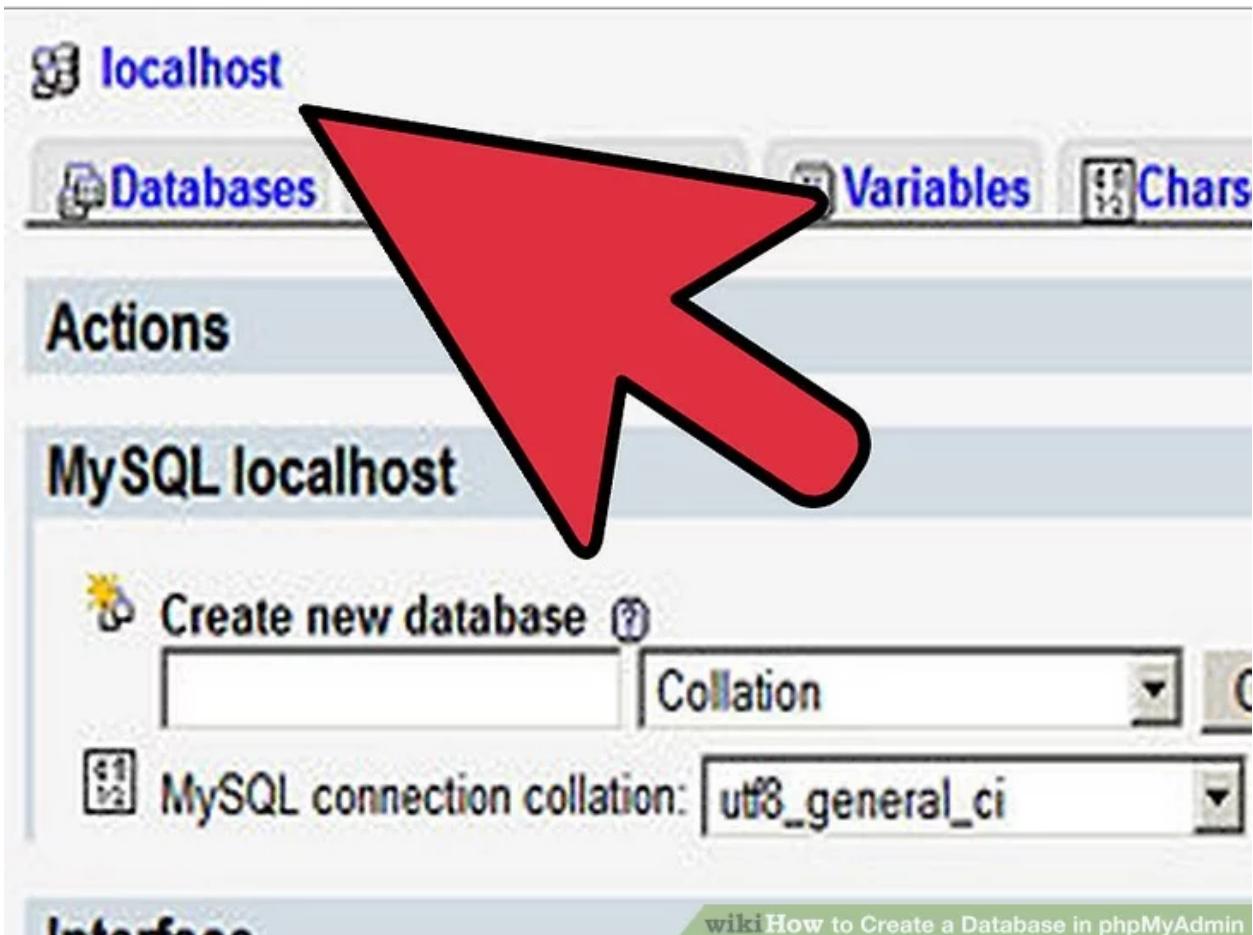
**Web server**

Apache/2.2.17 (Win32) mod\_ssl/2.2.17 OpenSSL/1.0.2-fips PHP/5.6.10  
MySQL client version: mysqlnd 5.0.7-dev - 20140625  
PHP extension: mysql

**phpMyAdmin**

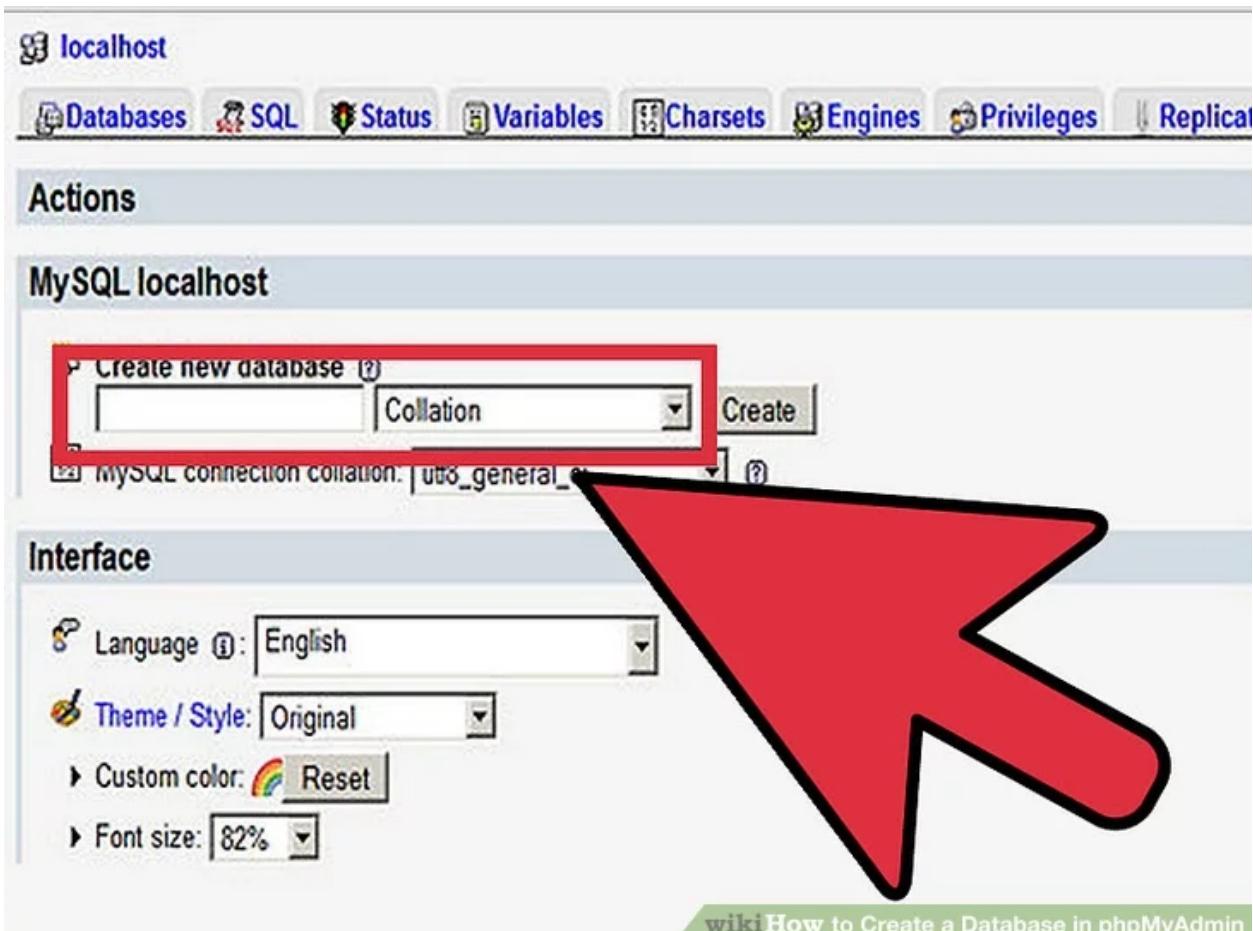
Version information: 3.3.9  
[Documentation](#)  
[Wiki](#)  
[Official Homepage](#)  
[\[ChangeLog\]](#) [\[Git\]](#) [\[Lists\]](#)

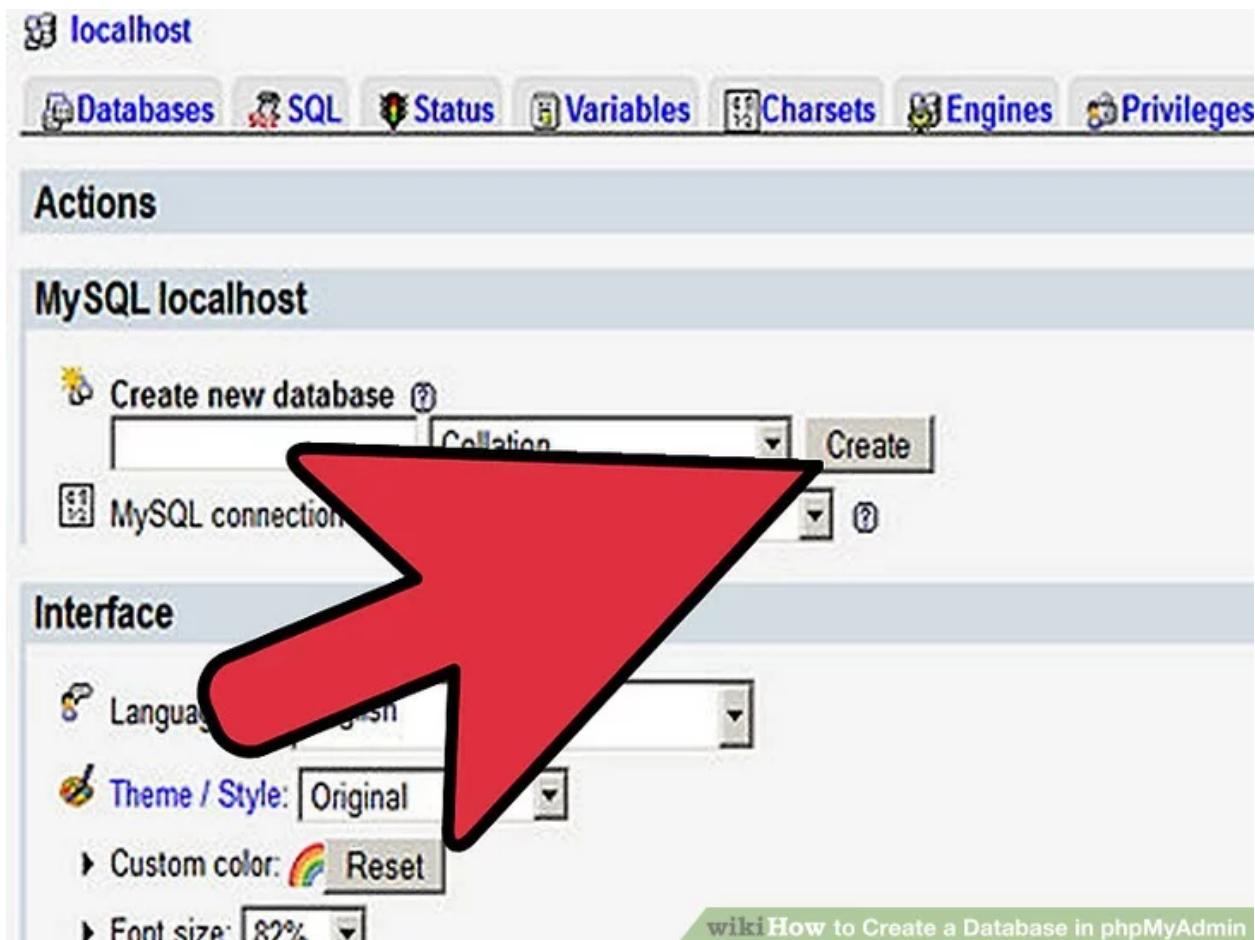
wikiHow to Create a Database in phpMyAdmin



Interface

wikiHow to Create a Database in phpMyAdmin





## Potential and advantage:

- **Fast and Reliable:**

This application will be able to handle multiple clients simultaneously. Also it uses multithreading that means you can simply put large file on upload and simultaneously do chat with other Members. It is developed using c# so it provides faster speeds of operations.

- **Private:**

As the leading chat application WhatsApp has updated their privacy policy there is a lot of chat applications at institute level so as to keep private things private and safe. This app will provide end to end encryption which promises the security and integrity of user data.

- Secure and Spam free:

Fundamental user identification factor is enrollment number which means there is no possibility of fake accounts and annoying unknown messages .  
Also there are security features added like a student can text to professors and CR only he won't be able to directly text the principal.  
There will be options to report and block or ban other unwanted members.

- Ease of access:

As this is a web application all you need is a browser to access the app.

- Groups:

Facility of group chat is available and by default groups of students in the same department , same year , same class will be available so that it would be easy for a teacher to target the message to a specific group of students without having to make their own group and ask students to join that group.

- Featuristic:

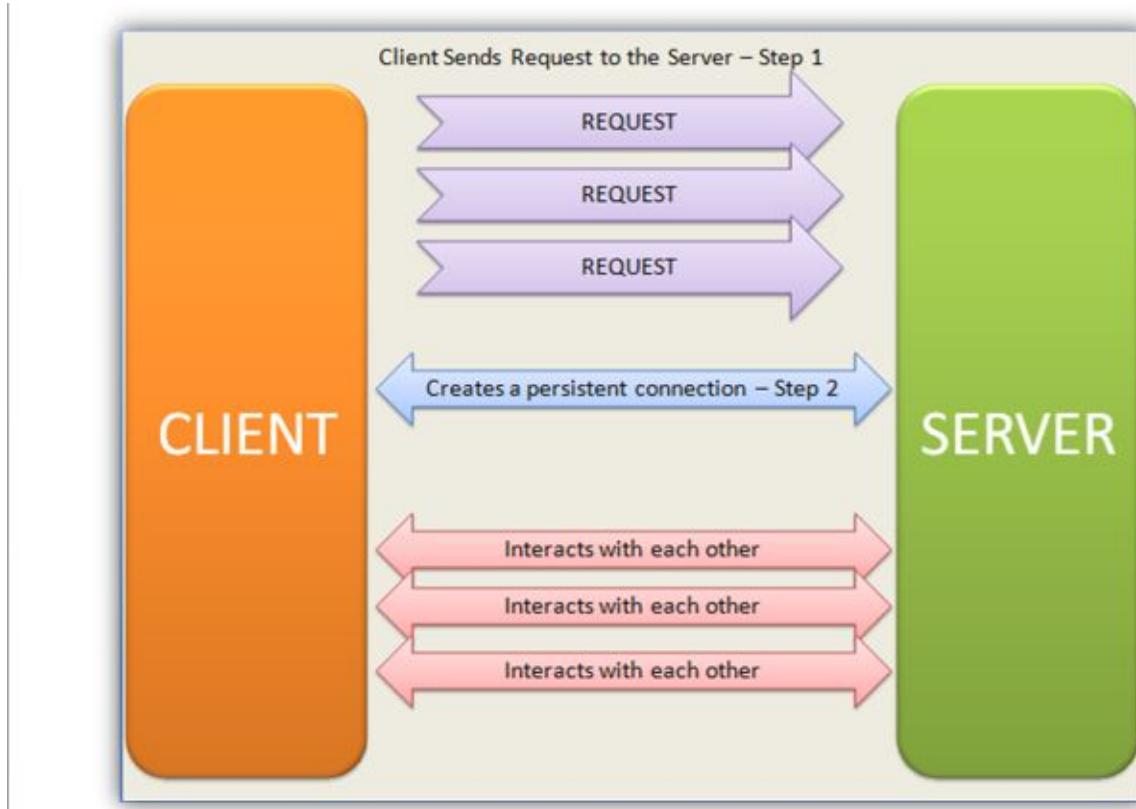
➢ **Document Sharing :** This app supports various types of file formats like pdf , jpg , jpeg, docx, and many more without the hassle of email or file sharing apps.ShareFile File Sharing Features : Audit Trail, Chat / Messaging, Collaboration, Document Management, Drag & Drop, Electronic Signature, Encryption, File Synchronization, Search, User Management, Version Control, Workflow Management "The feature that I love the most is that I do not have to check in any document.

➢ **Emoji Support :** This app supports sending emoji, as we know emojis are the best source to convey our sentiments for non verbal communication by reforming the meaning of the message.But thanks to hundreds of stickers and emojis apps available nowadays to Android phone users that make your texting full of fun and expressive. It enables you to share your feelings and emotions through colorful & expressive emojis with your friends and family.

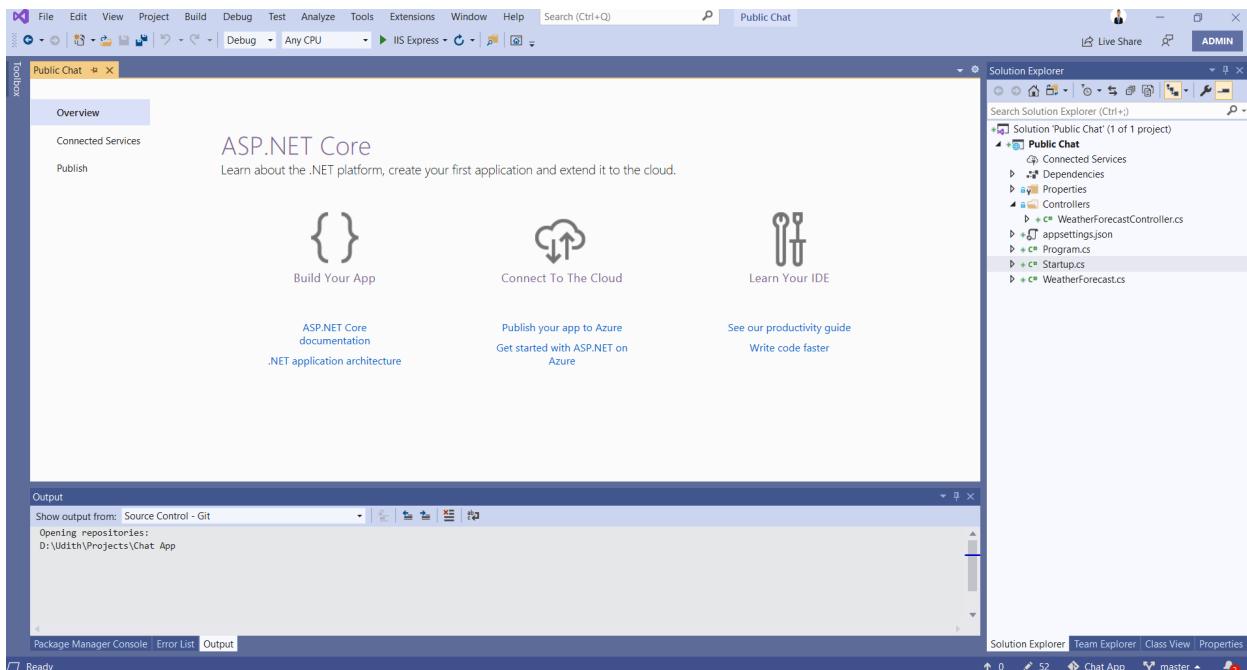
➢ **Notification Channels:** This app supports creating notification channels according to the type of notice that the teacher wants to convey to students.Change notifications enable you to subscribe to changes (create,

update, and delete) to messages in a channel or chat. Change notifications provide a low latency model by allowing you to maintain a subscription. You can also get the resource data in the notifications and therefore avoid calling the API to get the payload.

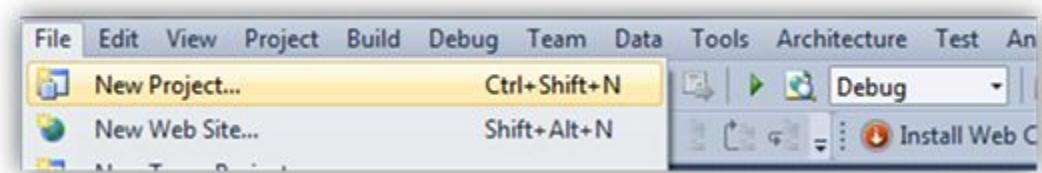
## SignalR Interactions



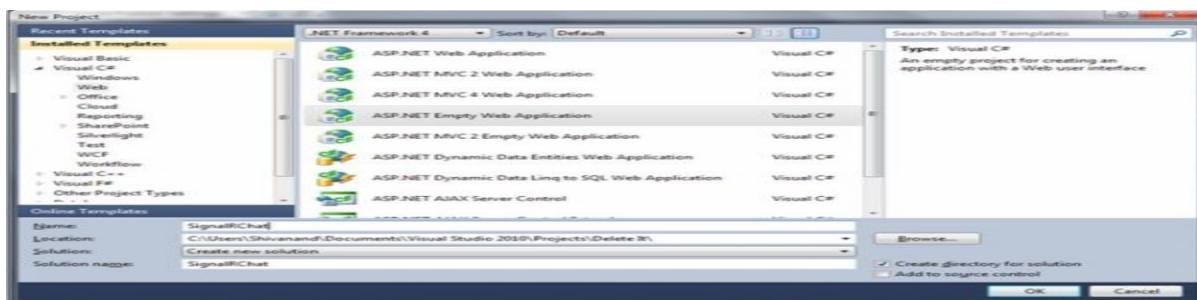
## Stepwise Screenshots:



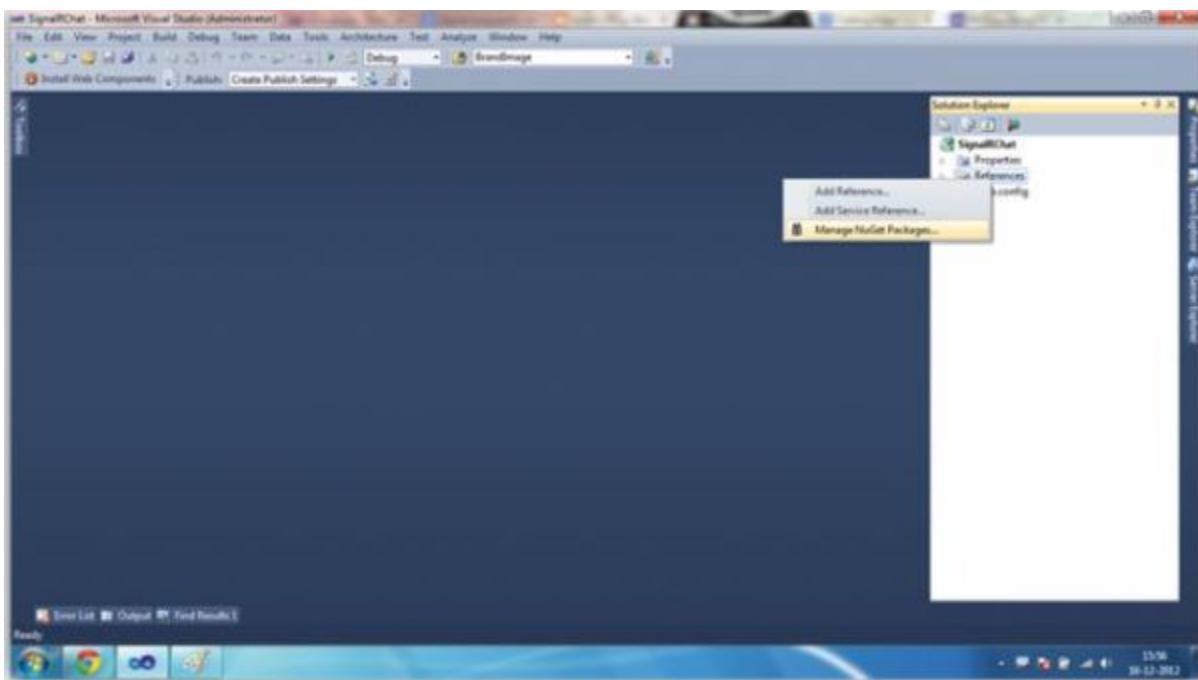
. Click on "File" and select "New Project".



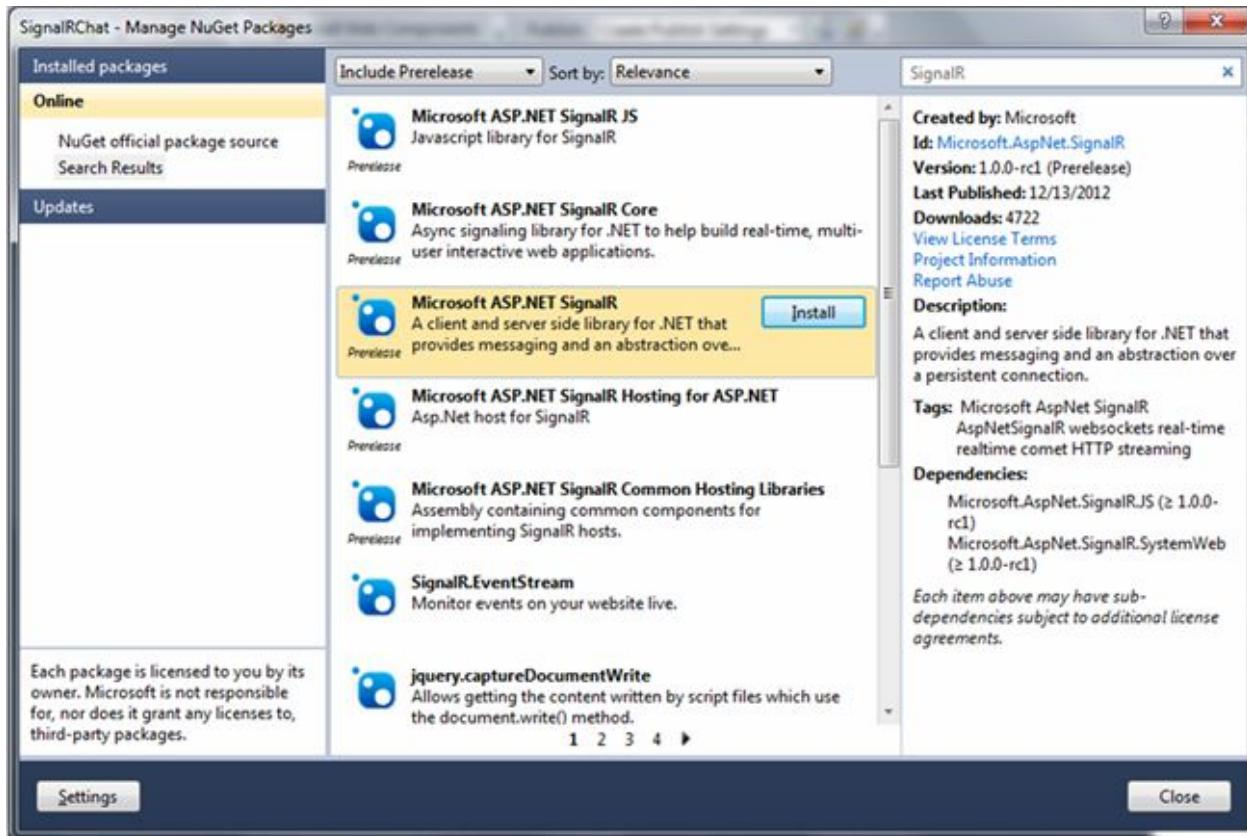
The "New Project" window opens up. In the left panel, select your preferred language and select "Web". I love C# and hence this project is created using C#. Just give your project a name and click on "Ok"



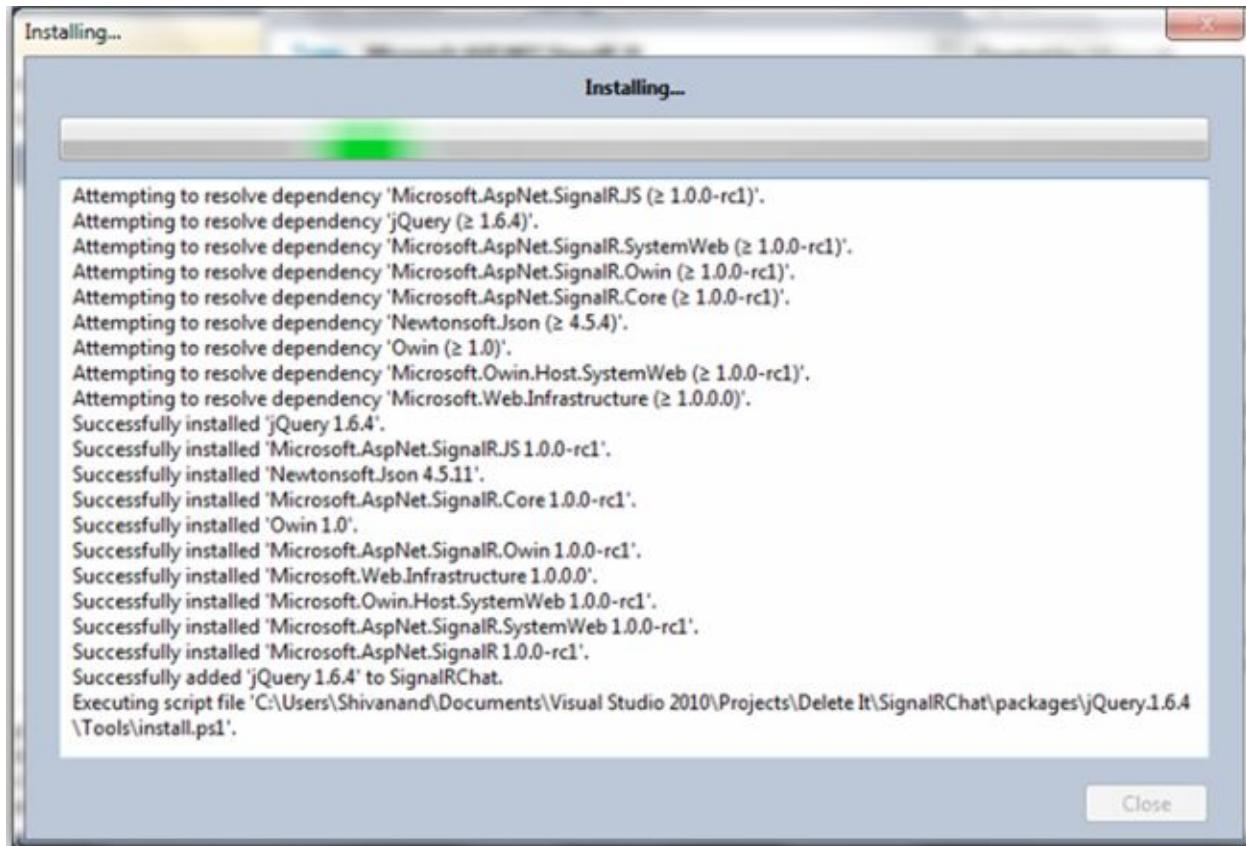
Now Visual Studio will load your project and your application will be created as shown in the image below. Now it's time to add the SignalR package. So just right-click on the "References" folder and select "Manage NuGet Packages". If you do not have the "Nuget manager", then you can download the library using the Package Manager Console



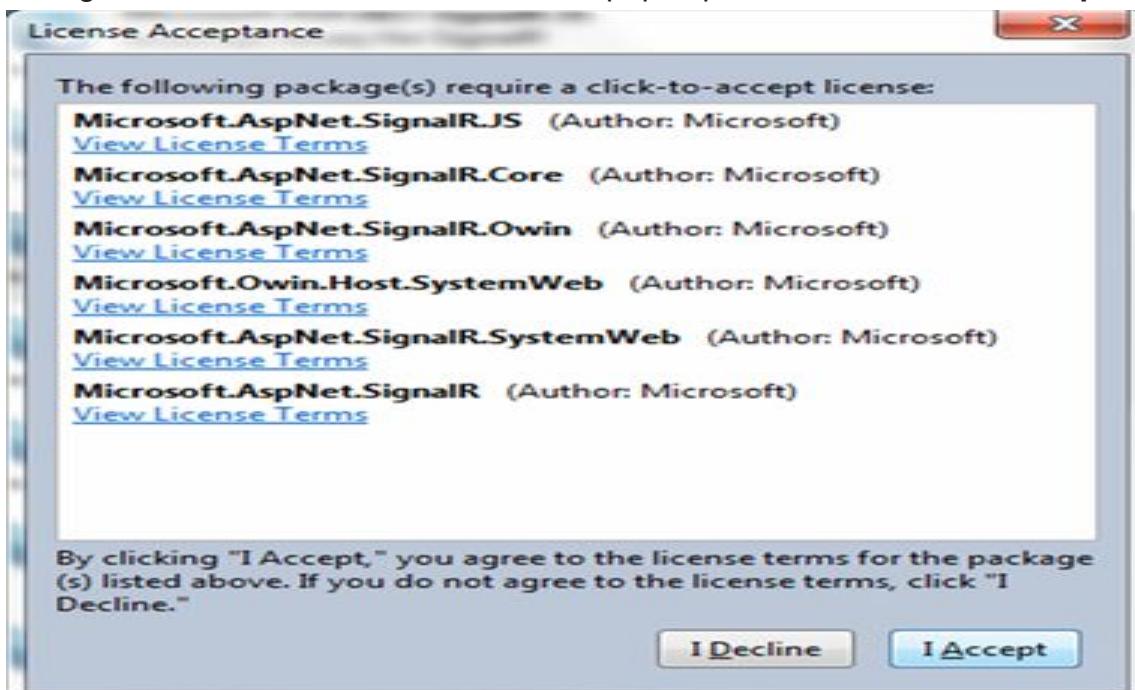
. After clicking on the "Manage Nuget Packages", a window will popup, Check the image below – Select "Microsoft ASP.NET SignalR" and click on "Install".



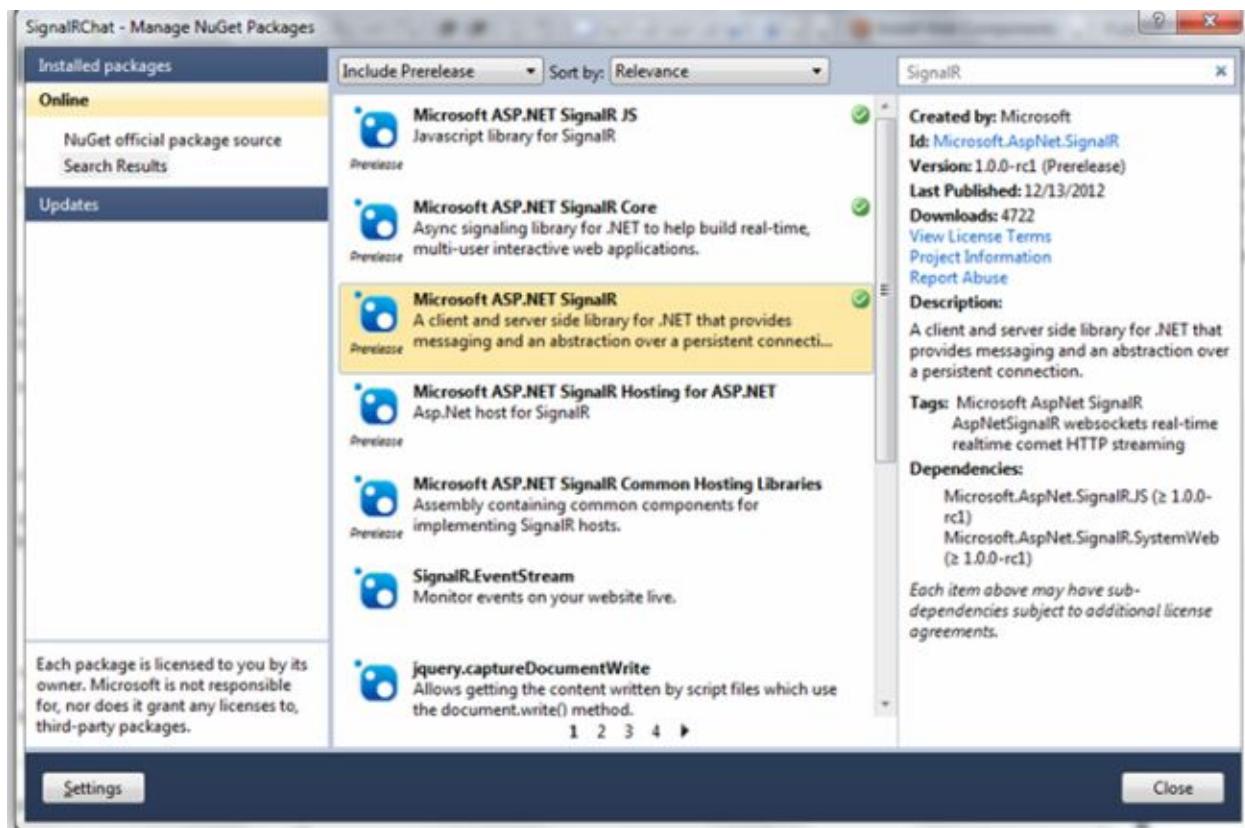
. Now the installation begins and the window should look something like this:



During the Installation, the license window pops up. Just click on the "I Accept" button.



. Once the installation is completed, the final window will look something like this:



. The following jQuery file will be installed in your application; see the "Solution Explorer" in the image below:

The screenshot shows the Microsoft Visual Studio interface with the 'SignalRChat' project open. The Solution Explorer on the right side lists the project structure, including the 'Scripts' folder which contains several jQuery and SignalR files, and the 'Web.config' file.

```
using System;
using System.Web;
using System.Web.Routing;
using Microsoft.AspNet.SignalR;
using Microsoft.AspNet.SignalR.Hosting.AspNet;

namespace MyWebApplication
{
    public class Global : System.Web.HttpApplication
    {
        public void ApplicationStart()
        {
            // Register the default hubs route: ~/signalr/hubs
            RouteTable.Routes.MapHubs();
        }
    }
}

Why does ~/signalr/hubs return 404 or why do I get a Javascript error: 'myhub is undefined'?
This issue is generally due to a missing or invalid script reference to the auto-generated Hub JavaScript proxy at '~/signalr/hubs'.
In ASP.NET MVC 4 you can do the following:
<script src="~/signalr/hubs"></script>
```

And the following references will be added. Check the Solution Explorer on the right side in the image below:

The screenshot shows the Microsoft Visual Studio interface with the 'SignalRChat' project open. The Solution Explorer on the right side shows the 'References' node expanded, listing a large number of .NET framework assemblies such as Microsoft.AspNet.SignalR.Core, Microsoft.AspNet.SignalR.Owin, Microsoft.AspNet.SignalR.SystemWeb, Microsoft.CSharp, Microsoft.Owin.Host.SystemWeb, Microsoft.Web.Infrastructure, Newtonsoft.Json, Owin, System, System.Configuration, System.Core, System.Data, System.Data.DataSetExtensions, System.Drawing, System.EnterpriseServices, System.Web, System.Web.ApplicationServices, System.Web.DynamicData, System.Web.Entity, System.Web.Extensions, System.Web.Services, System.Xml, System.Xml.Linq, and System.Xml.XPath.

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using System;
using System.Web;
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using Microsoft.AspNet.SignalR.Hosting.AspNet;

namespace MyWebApplication
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In ASP.NET MVC 4 you can do the following:
<script src="~/signalr/hubs"></script>
```

SignalR Chat | Register    X

localhost:52106/register.aspx

Apps Gmail YouTube Classroom calendar GitHub WhatsApp YouTube Music Google Meet Servletmycopy - Go... Discord | Your Place... Other bookmarks

## Register

ChatHub-GECA

Full name: \_\_\_\_\_

Designation: \_\_\_\_\_

Department: \_\_\_\_\_

Year: \_\_\_\_\_

Enrollment No: \_\_\_\_\_

Add Profile Photo:  No file chosen

I am already a member

Email: \_\_\_\_\_

Password: \_\_\_\_\_

Retype password: \_\_\_\_\_

Search

10:25 PM 10-05-2021



SignalR Chat | ChatHub-GECA    X

localhost:52106/Login.aspx

Apps Gmail YouTube Classroom calendar GitHub WhatsApp YouTube Music Google Meet Servletmycopy - Go... Discord | Your Place... Other bookmarks

## Login:

ChatHub-GECA

tojas@gmail.com

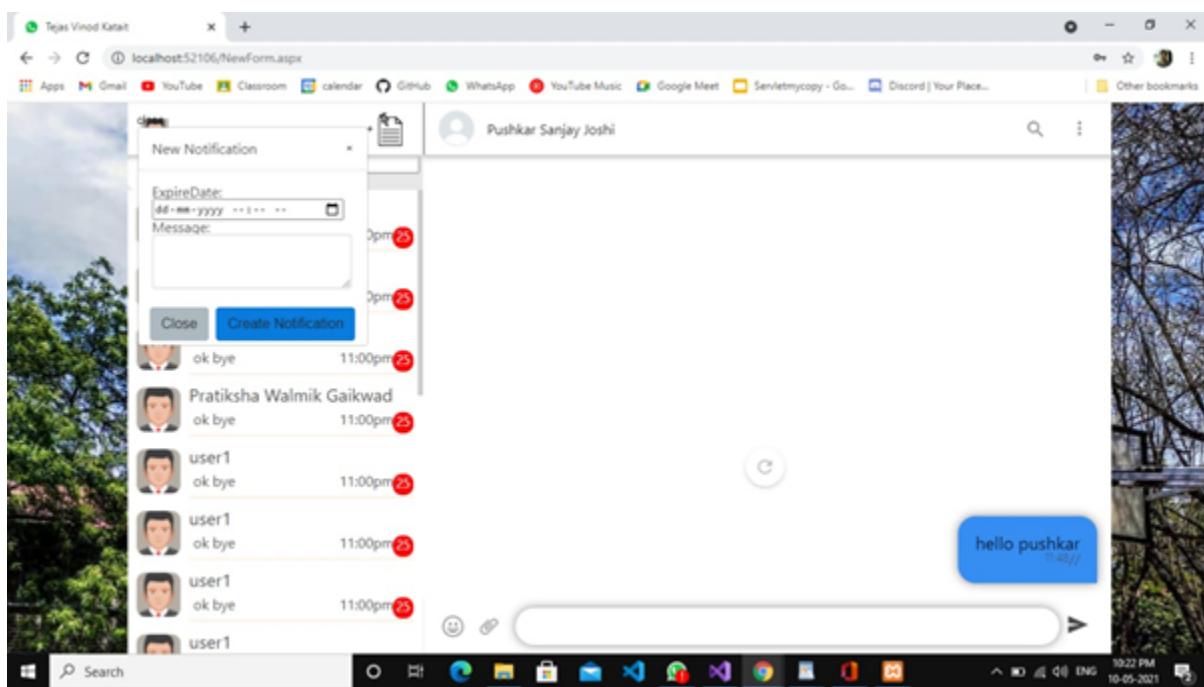
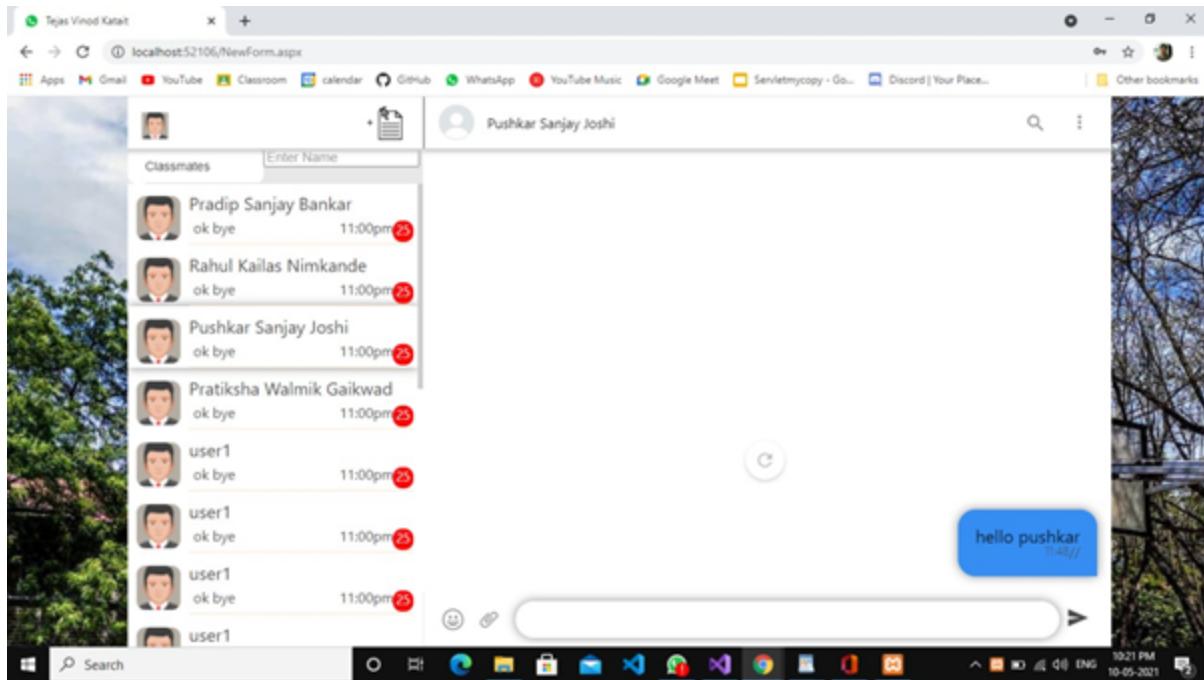
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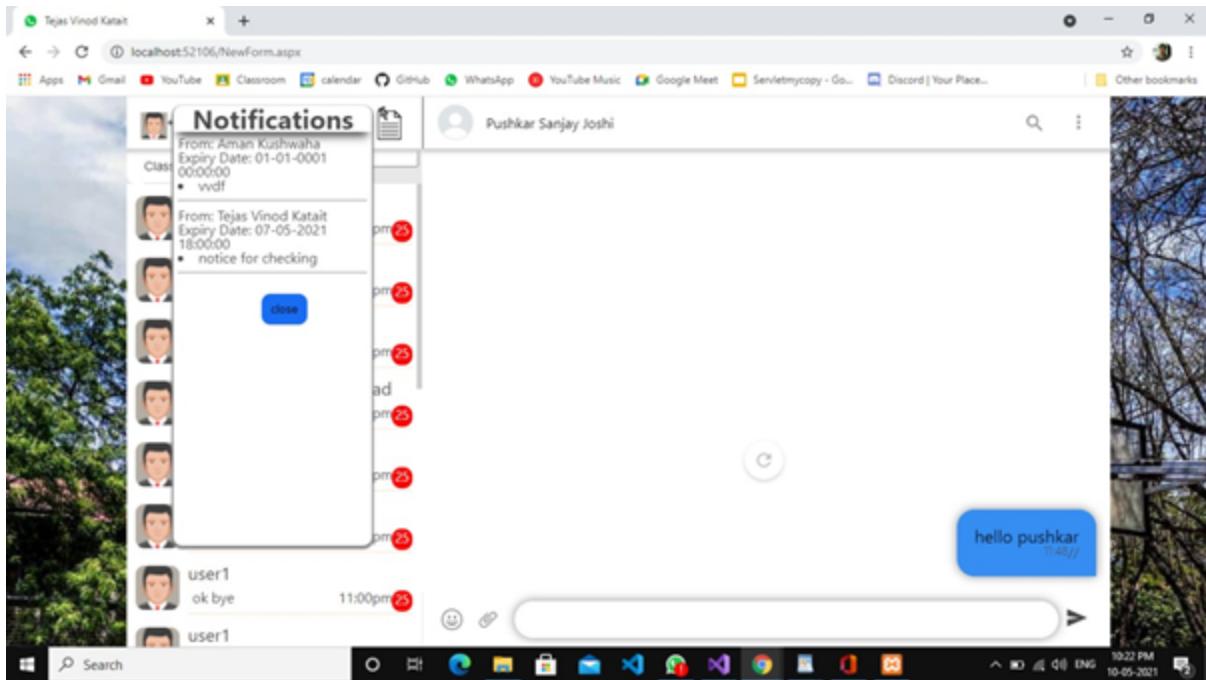
[Create an account](#)

Search

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## Future Enhancement:

In future this web application may be extended to include features such as:

- **Voice chats:** This will enhance the application to a higher level where communication will be possible via sending voice messages which is perfect for a quick hello or longer story.
- **Voice and video calls:** This app will be further enhanced to support for voice and video calls.

## Conclusion:

Hence we have implemented signal r chat app using ASP.NET, jquery, javaScript and C#.



