FULL STACK – II PROJECT
(2020-2021)

Project Title: "We-CHAT"
SYNOPSIS

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<u>ABSTRACT</u>

We are creating "A Web-browser based application" named "**We-chat**".

As we know, every Website has a front-end as well as a back-end. So, **Front-end** is a practice of converting data to a graphical interface, through the use of HTML, CSS, and JavaScript, so the users can view and interact with that data and,

Back-end development refers to server-side development. It focuses on databases, scripting, and architecture of websites.

Code written by back-end developers helps to communicate the database information to the browser.

So, in this project we are using: -

- CSS
- JavaScript
- Html

As a front- end for our real time-chat web-page.

And for back-end: -

- Node.js

Another technology that will be used in this project is named as Socket.io (will be explained below).

<u>CONTENT</u>

Problem Statement

Q1. What we are creating?

We are creating "A Web-browser based application" named "**We-chat**".

Web-Browser based application is an application that runs within the web browser via Internet without accessing the operating system of any individual computer. The advantage of browser-based applications is that they can run in Windows, Mac, or Linux machine.

Q2. What is our idea about?

In today's era, we all are aware of the need to communicate with each other. However, we the people are so busy in our own lives, we forget and sometimes ignore that *the world beyond us exists.*

One solution to this is **Virtual Communication**.

Communicating virtually with people is when individuals interact without being face-to-face but through words and texts that are sent at a higher speed than letters. We can share information, comment, and ask questions, develop social etiquette.

Communicating virtually make us elevate from being digitally literate to digitally fluent, collaborate using appropriate virtual tools and system and they are cost-effective too.

So, putting our efforts into this application, we are going to create We-chat.

In that, we will be using Socket.io (to establish a connection between server and client i.e., two-way connection) and many more technologies that have been discussed below.

Technologies and Tools Used

Web Development:

Web programming, also known as web development, is the creation of dynamic web applications. Examples of web applications are social networking sites like Facebook or e-commerce sites like Amazon.

Web development is a specific field of software engineering that focuses on building web pages. Web pages, or web apps, are codebases that are downloaded and run in our web browser (e.g., Google Chrome) each time a user navigates to the website address. This differs from other software which is usually downloaded once and run as a standalone application on your computer or phone. We can also think of web development as being split into two main categories: front end and back end.

Front end is what we see when we open a web page or app. Code is downloaded from a server and is rendered to the screen by a web browser. What happens when we interact with the code is also considered front end. This is often referred to as the 'Presentation Layer' or 'Client' in software development terms.

The front end is built out of three languages: HTML, CSS, and JavaScript.

Socket.io: -

Socket.io is the two-way connection between the server and the client.

As we know Http, Https protocol is a one-way connection between server and client. So in this, we are going to use WS(web socket), WSS(web socket secure) protocol to establish the connection between the server and client too.

As we know a webpage consists of a front end as well as a backend.

Front-End: -

It is the practice of converting data to a graphical interface, through the use of HTML, CSS, and JavaScript, so the users can view and interact with that data and they are explained below.

HTML: -

The first version of Html was written by Tim Berners-Lee in 1993. Since then, there have been many different versions of Html. We are using Html 5 in our project.

Html is a programming language used to describe the structure of information on a webpage.

Front end developer uses Html as to make the structure of their ideas or we can say a raw website. In that, design our idea by using CSS, JS.

CSS:

CSS is used for styling the Webpages. CSS is of three types i.e. internal CSS, external CSS, inline CSS. It describes how Html elements are to be displayed on the screen. It involves many designing for the bare Mark-up to create it attractive.

JavaScript: -

JavaScript was created by Brendan Eich in 1995. It is the programming, Scripting language that allows implementing complex features on web pages. JS helps the web developer to make a dynamic and interactive webpage by implementing a custom client-side script.

Another part is a back-end.

Back-End: -

Back-end development refers to server-side development. It focuses on databases, scripting, and architecture of websites.

Code written by back-end developers helps to communicate the database information to the browser.

So, in this project, we will use node.js as a backend, explained here

Nodejs:

Node.js was developed by many developers but the original author was Ryan Dahl in 2009.

Node.js is an open-source, cross-platform that executes JavaScript code outside a web browser.

It also works as a backend. And we are going to use it as a backend.

VISUAL STUDIO : Visual Studio Code is a source-code editor that can be used with a variety of programming languages, including Java , JavaScript , Go, Node.js and C++. It is based on the Electron framework, which is used to develop Node.js Web applications that run on the Blink layout engine. Visual Studio Code employs the same editor component (codenamed "Monaco") used in Azure DevOps (formerly called Visual Studio Online and Visual Studio Team Services).

Future Scope

In the extension of the "We-Chat", we would be adding some modules into it.

Some of the modules are enlisted below:

- **Emoji:** As we all know in today's world emotions play a vital role, but virtually we cannot show or present our felling. So, to nullify these cons, emoji is there so that people can present their expression by texting some emoji. So, we will be providing a module for emoji/emotions in the future.

- **Grammarly:** In this era, "**Formal Chatting**" is also an important aspect, which requires proper English and vocabulary. So, the module for the proper vocab and grammar would be included in the extension of the project.

- **Different languages:** By default, the chatting language would be English. But if the user wants to text in other language like "French", "Hindi"," Spanish" etc, they can do with the help of some imports.

- **A box of users:** We would be adding a box in which the name of users chatting in that server at a time with simple HTML and an amount of CSS to enhance it.
  And many more.

<u>System Requirements</u>

Computer System is made up of units that are put together to work as one in order to achieve a common goal. The requirements for implementation of the new system are:

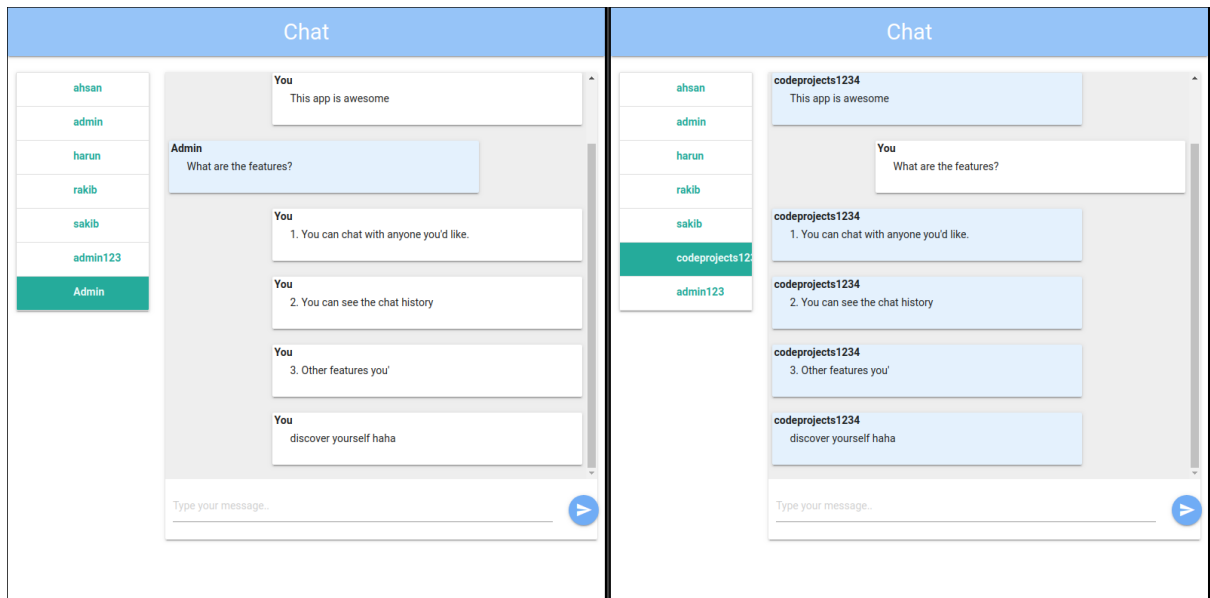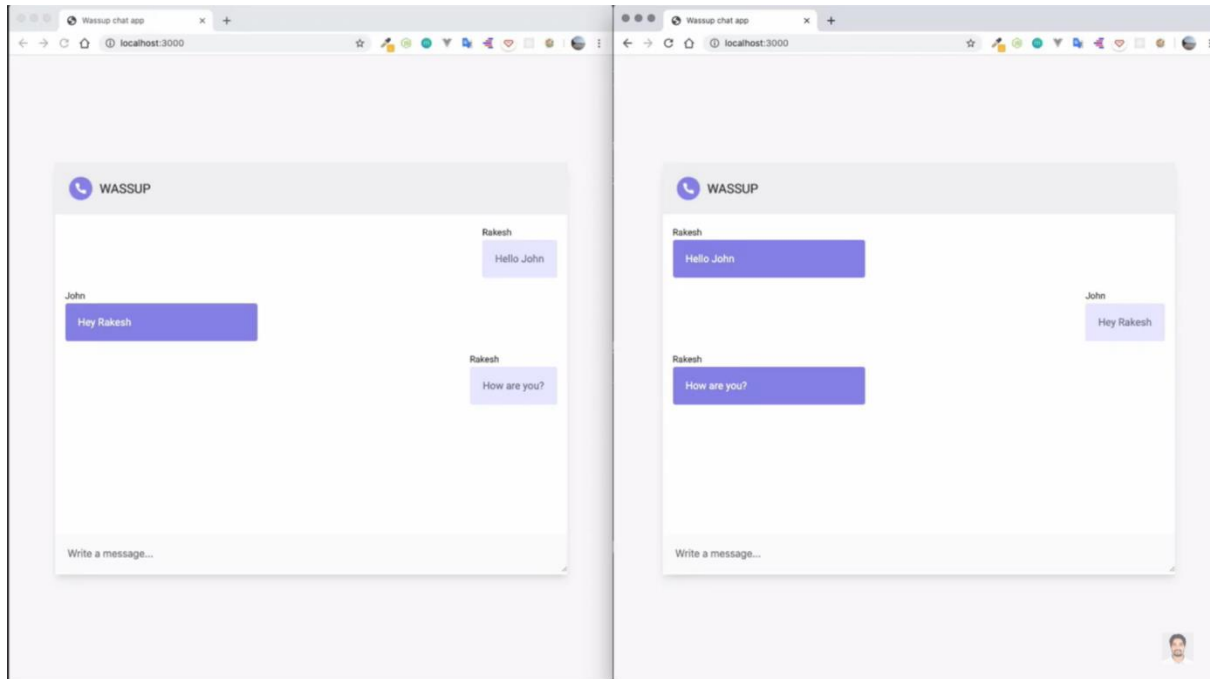- ❖ The hardware
- ❖ The software

<u>Hardware:</u>

- Processor: Intel i3
- RAM: 4 GB
- Hard disk: 256GB

<u>Software:</u>

- Microsoft Windows 7/8/10 or Linux
- Vs Code or any other text editor
- Chrome or any other browser.

We-Chat

<u>**Sample Screenshots**</u>

<u>References</u>

- **https://www.w3schools.com/html/default.asp**

- **https://www.beta-labs.in/**

- **https://getbootstrap.com/**

- **https://stackoverflow.com/**