HCI PROJECT REPORT

On

WEB UI APPLICATION

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What is a web application?

- A web application (or web app) is application software that runs on a web server, unlike computer-based software programs that are run locally on the operating system (OS) of the device.
- Web applications are accessed by the user through a web browser with an active network connection.
- These applications are programmed using a client–server modeled structure—the user ("*client*") is provided *services* through an *off-site server* that is hosted by a third-party.
- Examples of commonly-used web applications include: web-mail, online retail sales, online banking, and online auctions.

Web application as a Human Computer Interaction

- Web development must consider good design in order to satisfy user interaction.
- Human-Computer Interaction (HCI) supports developers in designing useful, usable and pleasant computing technologies.
- Enforcement of the use of HCI knowledge can strengthen the policy of integrating UX principles in the Web development process by the appropriate authority.
- HCI and Web Science are interdisciplinary fields concerned with the intersection of people and technology.
- We can see strong overlaps between HCI and Web Science, particularly in usability, cultural awareness, the evaluation of Web-based systems, interfaces for Web/mobile/ubiquitous computing, and macro-HCI: affective experience, aesthetics, motivation, social participation, trust, empathy, responsibility, and privacy.

Web Chat Application

A **web chat** is a system that allows users to communicate in real-time using easily accessible web interfaces. It is a type of Internet online chat distinguished by its simplicity and accessibility to users who do not wish to take the time to install and learn to use specialized chat software. This trait allows users instantaneous access and only a web browser is required to chat. Users will always get the latest version of a chat service because no software installation or update are required.

Web chat software is sometimes used in a business context as **live support software**, also called live support, live help or live chat. In this case, the web chat software is integrated with a website to allow for a customer to chat with the business representative or the website owner. Live support on a web chat channel can be provided by both human agents as well as virtual agents and chatbots. In many cases, both humans and live chat tools work in tandem to improve the digital customer experience.

The following are web-based live support applications, which enable website visitors to chat with the sales or support people of the website in real-time. Webmasters only need to paste a piece of code onto the web pages to get them working.

- Comm100 Live Chat
- eGain
- LiveChat
- LivePerson
- Podium
- Velaro

Application UI

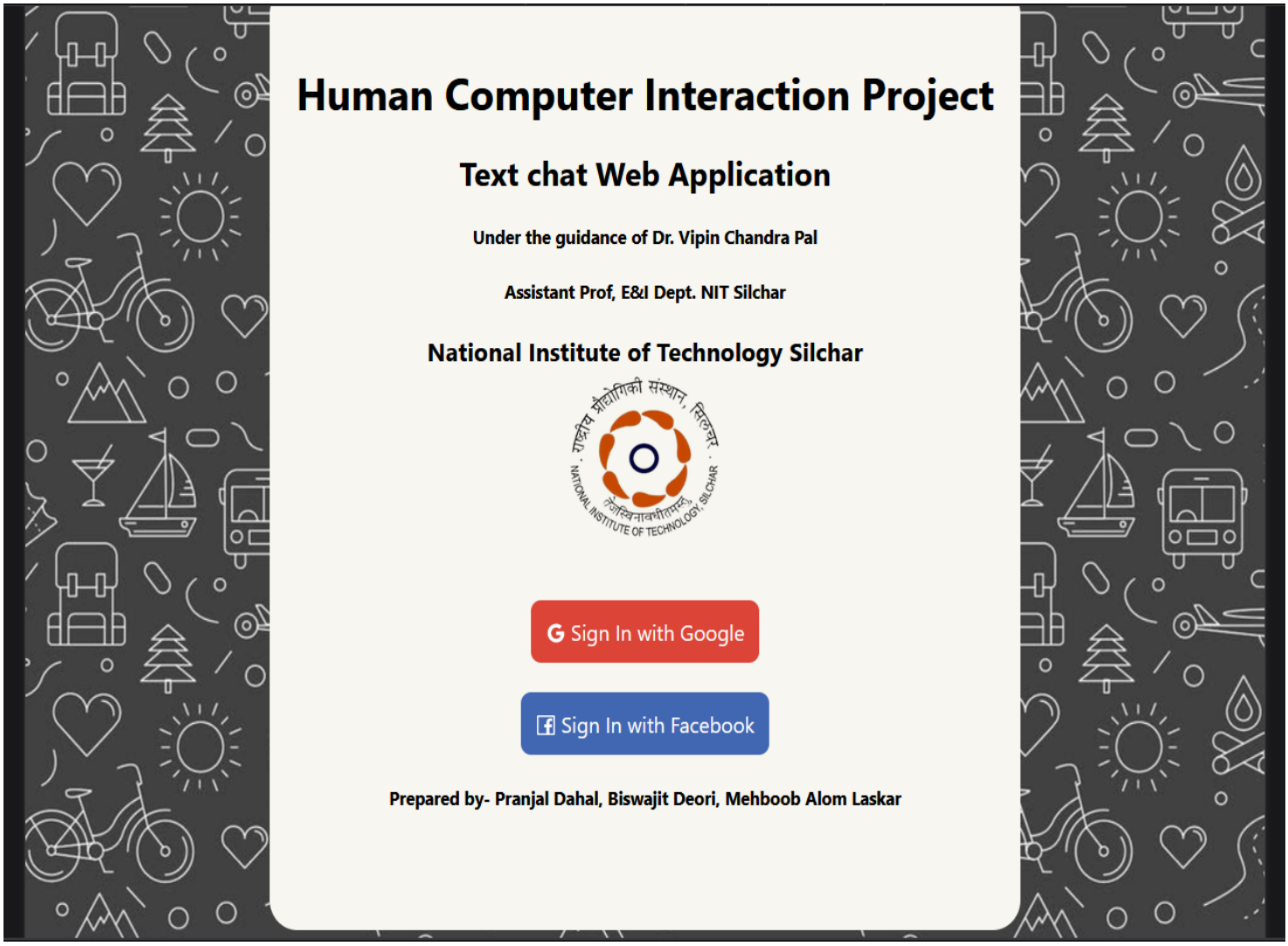

Fig 1: Landing page of chat application

- The landing page of this chat application has the sign in option with Google and Facebook which is through the firebase framework which handles every user login processes.
- It also has the cover page for introduction of the project with the developer's details.

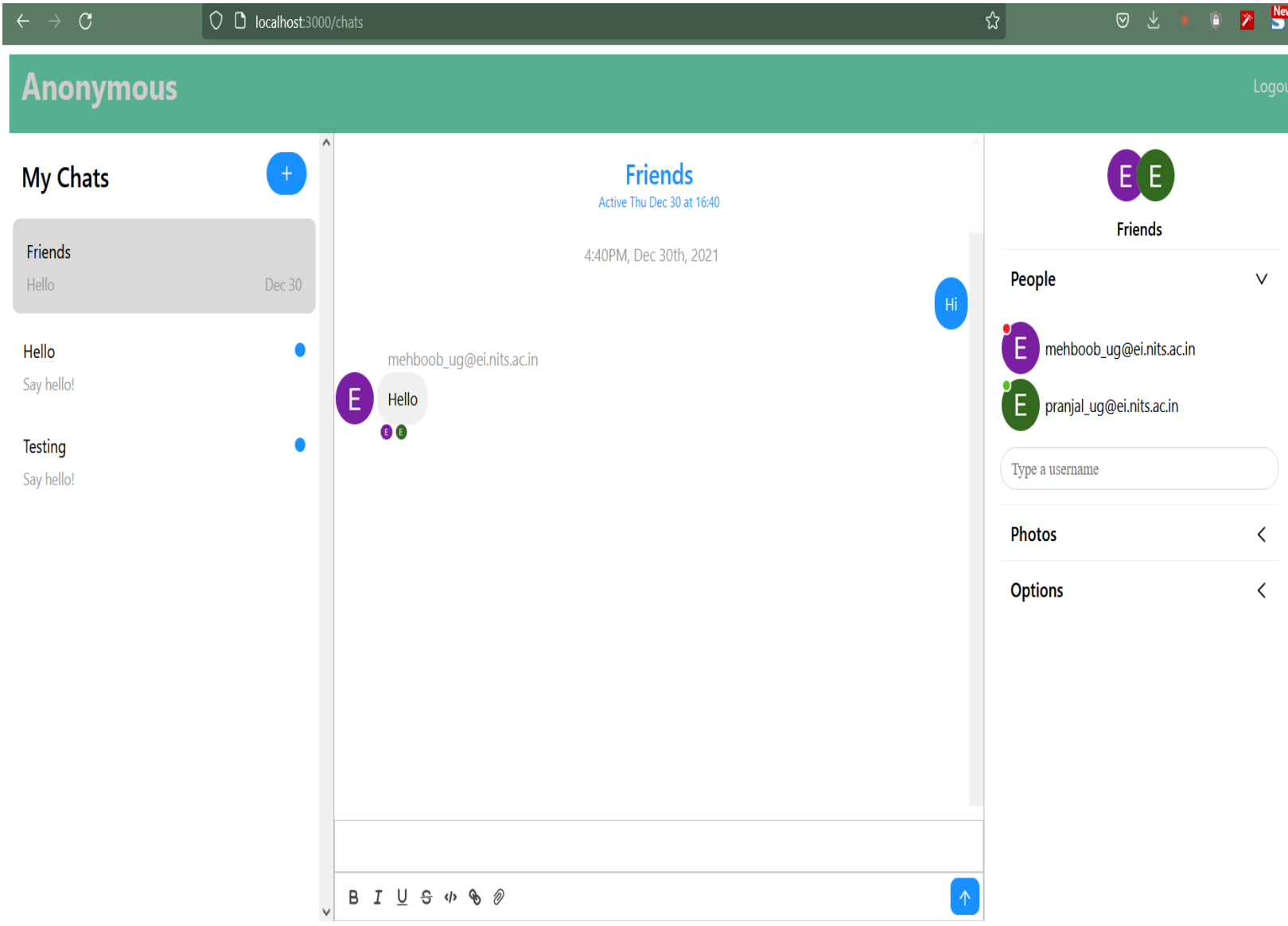

Fig 2: Chat application UI

- The above figure shows the main page of the application. Users must be logged in first to access this page.
- A user can create a channel and can add people according to their wish and start chatting with them.
- Along with text chat ,users can share documents,images and videos as attachments with other users.
- It is a complete real time application and also it shows the active status of other users.

Development Tools and softwares used

1. Visual Studio Code:

Visual Studio Code is a source-code editor made by Microsoft for Windows, Linux and macOS. Features include support for debugging, syntax highlighting, intelligent code completion, snippets, code refactoring, and embedded Git. Users can change the theme, keyboard shortcuts, preferences, and install extensions that add additional functionality.
Visual Studio Code is a source-code editor that can be used with a variety of programming languages, including Java, JavaScript, Go, Node.js, Python 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).

2. Socket IO:

Socket.IO is a JavaScript library for realtime web applications. It enables real time, bi-directional communication between web clients and servers. It has two parts: a client-side library that runs in the browser, and a server-side library for Node.js. Both components have a nearly identical API. Like Node.js, it is event-driven.

Socket.IO primarily uses the WebSocket protocol with polling as a fallback option, while providing the same interface. Although it can be used as simply a wrapper for WebSocket, it provides many more features, including broadcasting to multiple sockets, storing data associated with each client, and asynchronous I/O. It can be installed with the npm tool.

3. React Chat Engine:

Chat Engine is an API which makes it easy to build chat services. Building a chat from scratch takes a lot of time, code, and is expensive hence the chat engine can build our chat idea in minutes. It provides a Rest API to host our chats, and NPM components to help with our Chat UI. React chat engine servers can host all our chat needs, and it makes chat components pretty.

4. React JS:

React (also known as **React.js** or **ReactJS**) is a free and open-source front-end JavaScript library for building user interfaces based on UI components. It is maintained by Meta (formerly Facebook) and a community of individual developers and companies. React can be used as a base in the development of single-page or mobile applications. However, React is only concerned with state management and rendering that state to the DOM, so creating React applications usually requires the use of additional libraries for routing, as well as certain client-side functionality.

5. JavaScript:

JavaScript is a lightweight, interpreted **programming** language. It is designed for creating network-centric applications. It is complementary to and integrated with Java. **JavaScript** is very easy to implement because it is integrated with HTML. It is open and cross-platform. Javascript is the most popular **programming language** in the world and that makes it a programmer's great choice. It helps in developing great front-end as well as back-end softwares using different Javascript based frameworks like jQuery, Node.JS etc. Javascript is everywhere, it comes installed on every modern web browser. For example Chrome, Mozilla Firefox , Safari and every browser we know as of today, supports Javascript.

Javascript helps to create really beautiful and crazy fast websites. We can develop our website with a console-like look and feel and give the best Graphical User Experience. JavaScript usage has now extended to mobile app development, desktop app development, and game development.

6. Fire base:

Firebase is a platform developed by Google for creating mobile and web applications. It was originally an independent company founded in 2011. In 2014, Google acquired the platform and it is now their flagship offering for app development. It is a Google-backed application development software that enables developers to develop iOS, Android and Web apps. Firebase provides tools for tracking analytics, reporting and fixing app crashes, creating marketing and product experiments.

Firebase offers a number of services, including:

- Analytics – Google Analytics for Firebase offers free, unlimited reporting on as many as 500 separate events. Analytics presents data about user behavior in iOS and Android apps, enabling better decision-making about improving performance and app marketing.
- Authentication – Firebase Authentication makes it easy for developers to build secure authentication systems and enhances the sign-in and onboarding experience for users. This feature offers a complete identity solution, supporting email and password accounts, phone auth, as well as Google, Facebook, GitHub, Twitter login and more.
- Cloud messaging – Firebase Cloud Messaging (FCM) is a cross-platform messaging tool that lets companies reliably receive and deliver messages on iOS, Android and the web at no cost.
- Realtime database – the Firebase Realtime Database is a cloud-hosted NoSQL database that enables data to be stored and synced between users in real time. The data is synced across all clients in real time and is still available when an app goes offline.