**VCLT Video Calling Website**

- By Group 3 Web Squad

**INTRODUCTION**

VCLT (Video Communication with Language Translation) is an innovative website designed to bridge language barriers and enables seamless communication between users across the globe.

In today's interconnected world, effective communication is essential for personal and professional relationships, but language differences often hinder meaningful interactions

VCLT addresses this challenge by offering a cutting-edge platform that combines video calling and real-time language translation.

With VCLT, users can connect with friends, family, colleagues, and clients in any corner of the world, breaking free from the constraints of language limitations. This website ensuring instant and accurate conversion of spoken words into the preferred language of the recipient.

**Abstract**

In this Project, We develop a Platform VCLT (a video calling website) to enable the people to communicate with each other without worrying about the language distraction.

**Application Goal**

VCLT aims to enable people to experience the High quality Video calling with no language barrier. User will be able to host Meeting and can invite others to join the Meet without worrying about unauthorized access or insecurity.

**Project Scope**

The VCLT aims to revolutionize global communication by integrating real-time language translation into video call. The platform's key features include:

* Seamless Video Calling: Users can make high-quality video calls with friends, family, or business associates across the world.
* Language Translation: The website incorporates advanced language translation technology to instantly convert spoken words from one language to another, ensuring communication between participants who speak different languages.
* Language Selection Support: VCLT provides Language Selection Option to the user, So that he/she can understand the incoming voice in their own language with the captions. VCLT provide an option to user to select the language which he/she speaks. Also user can select his own understandable language.
* User-Friendly Interface: The website has an easy-to-use interface, enabling users to connect effortlessly.
* Real-Time Translation Accuracy: The language translation system providing accurate and contextually appropriate translations to enhance conversation flow.
* Customizable Settings: Users have the option to customize their language preferences, User can select the speaking and caption language and also user can share the screen as per their need.
* Privacy and Security: VCLT prioritizes data privacy and employs robust security measures to safeguard user information during video calls and translations.
* Responsiveness: The website is accessable through different devices. Such as Desktop, Mobile Phones, etc.

**Project Functionality**

We have divided the different sections of this project as the below mentioned Modules:

* Video Calling:
* User Authentication and Registration:
* Language Selection Support:
* Language Translator:
* Privacy and Security:
* Responsive UI/UX:

**Project Functionality**

**Video Calling:-**

* This functionality enables users to initiate and participate in video calls. This website uses WebRTC (Web Real-Time Communication) technology.
* WebRTC is a set of javascript API’s that allows real-time audio and video communication within the web browsers without the need for additional plugins.

**User Authentication and Registration:-**

* Implement a secure user authentication system to allow users to register, log in, and manage their profiles.
* In this website, user will be given an option to enter his/her email address and basic details and after the email validation, user will get an 1 time OTP password, user has to fill-up that OTP in the given field to continue.
* And on tapping on the submit button the user will get the confirmation message “Successfully Registered” on the browser screen.

**Language Translator:-**

* Integrate a language translator API that can translate text and speech between different languages.
* The process includes speech to text conversion, and a language translation API.

**Privacy And Security:-**

* VCLT Ensure that all video calls and translated messages are protected for user’s privacy. We ensure that the sensitive content of the user will never be shared to the third parties.

**Responsive Design:-**

* This Functionality states that, the UI of the website must be responsive. Responsive website is website that can be operating on different-different devices according to their screen sizes.

**System Analysis**

**User Registration and Authentication:-**

* + Allow users to register and create accounts to access the video calling and language translation features. Implement authentication mechanisms to ensure secure user access and protect user data.

**User Profile Management:-**

* + Enable users to manage their profiles, including personal information, language preferences, and contact details.
  + Provide options to customize and update profile settings.

**Call Initiation and Control:-**

* + Design an user-friendly interface for initiating video calls. Implement call control functionalities such as call start, end, mute/ unmute, video on/off and also screen share.

**Language Selection:-**

* + Allow users to select spoken and caption language before the call based on their communication needs.

**Great User-Interface:**

* + It is user-friendly Application , User can easily operate this web application.

**Requirements**

**Frontend Development:-**

* HTML
* CSS
* Bootstrap 5
* JavaScript
* EJS

**Backend Development:-**

* Node.js
* Express
* Mongo DB Atlas

**Tools and Code Editor:-**

* Visual Studio Code
* Figma
* MS Word
* Canva
* WebRTC/Agora

**Database Representation:-**

As the website has one Module that is “User”, we need to store related information about the user to the database.

It include:-

* **User table**: Contains user profile information e.g. name, username, email, password etc.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Entity Name** | **Datatype** | **Constraint** | **Key** | **Reference** |
| UserId | Int | Not null | Primary Key |  |
| Username | Varchar | Not null |  |  |
| Email | Varchar | Not null |  |  |
| Password | Varchar | Not null |  |  |
| Fullname | Varchar | Not null |  |  |
| Profile\_picture | Varchar | Not null |  |  |

* **Language table:** Contains the Name of Languages that the website has.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Entity Name** | **Datatype** | **Constraint** | **Key** | **Reference** |
| Language\_id | Int | Not null | Primary key |  |
| Language\_name | Varchar | Not null |  |  |

**Conclusion:-**

VCLT website is our trial that let the people to communicate with each other without worrying about language distraction, The aim is to provide the desired feature with a High quality video preference.