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Virtual Event Platform: A Comprehensive Review of Design and Development Approach

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ABSTRACT: The Virtual Event Platform's goal is to enable events that are offline to take place online. Both businesses and visitors can work together, exchange information, make connections, and learn more about upcoming activities, such as conferences, webinars, workshops, and meetings. A virtual event is an online gathering that takes place online and involves participants engaging virtually rather than in person. Virtual events are online gatherings that last for several sessions and frequently include webcasts and webinars. Because they offer more flexibility, better security, and lower costs-not to mention the safety and sustainability advantages of skipping long-distance travel-digital or virtual events are growing in popularity.

KEYWORDS: Virtuality, peer-to-peer connection, Digital marketing.

I. INTRODUCTION

Virtual events are quite similar to in-person events, except instead of taking place in one specific location, they are hosted virtually via the internet. Nevertheless, attendees arrive at the scheduled time, mingle, watch performers, and listen to speakers. All of the usual, in-person event information, with the exception of that which is available online via a trade show or virtual event management platform. Attendees can pick between virtual and in-person events during hybrid events, which have become more and more popular in recent times. Virtual event material is frequently captured and made available to viewers after the event.

Depending on the nature of your virtual event, most event platforms provide a broad range of networking, engagement, and lead generation options. The event organizers, exhibitors, and attendees can all benefit greatly from the tools. The goal of a virtual booth is to have deep conversations with guests. A multitude of interactive booth designs, colour schemes, distinctive images, and web page links are available for selection. Either a page-based or 3D virtual booth design is possible. Virtual events enable interactive and educational online lectures known as webinars. Typically, a host converses with one or more speakers on a particular topic. A virtual webinar uses technologies like surveys, whiteboards, and PowerPoint presentations to inform and engage the audience.

In the case of virtual events, live broadcasts are crucial. Yes, you can record everything in advance and post it on a YouTube channel or virtual event website. That method, meanwhile, does not create the same kind of in-person relationships that a live event does. Having broadcast sessions is an essential part of organizing a virtual event. The on-demand material of virtual events is one of its best qualities. While this is also somewhat provided by physical events, it can be difficult to record every moment. This is the prime time for virtual events. You may easily view presentations, demos, product showcases, keynote speeches, and more before, during, and after the event.

Prioritizing accessibility and diversity in your virtual events is crucial, just like it is for live events. It can be difficult for people with hearing or vision problems to participate in virtual events. A virtual event platform's networking tools have to be easy to use and traverse. Numerous matchmaking sites that rely on AI-powered algorithms can assist your audience in finding connections with those who have similar interests. This is available through vFairs along with other amazing and immersive networking experiences like Spatial Connect and their Smart Matchmaking tool. In the case of virtual events, live broadcasts are vital. Yes, you can record everything in advance and post it on a YouTube channel or

virtual event website. That method, meanwhile, does not create the same kind of in-person relationships that a live event does. Having broadcast sessions is an essential part of organizing a virtual event.

II. LITERATURE SURVEY

Our main goal in creating our virtual platform is to make users happy when they participate in virtual events. We are studying what attracts users, with an emphasis on hedonic motivation (enhancement of enjoyment) and easing any concerns. We're upgrading our video conferencing at the same time with WebRTC to enable faster, more secure, and seamless online meetings. Our user-friendly software guarantees satisfaction with its intuitive navigation, excellent video assistance, and insightful suggestions. Envision a comprehensive solution wherein virtual conferences are optimized for customer satisfaction in addition to efficiency. In addition, a peer-to-peer video system is introduced, ensuring safe and joyful connections in real time for users.

In research paper titled [1] Video Conferencing using WebRTC (Web Real-Time Communication) by Rushali Deshmukh, Nayan Nnad, Aditya Pawar, Devendra Wagh, Amol Kudale, the study entitled "Video Conferencing using WebRTC(Web Real-Time Communication)" introduces a system To improve the effectiveness and efficiency of video conferencing using WebRTC technology.

In research paper titled [2] Virtual Events and Use of Technology by Kavitha Iyer, the study entitled "Virtual Event and Use of Technology" aimed to determine all factors that affect the use of virtual live events amongst the audience and investigate the role of hedonic motivation and anxiety.

In proposed paper [3] The effectiveness of virtual event during covid-19 pandemic by Han Nu Ngoc Ton, Quynh Hai Xuan Do, this essay examines a variety of internal and environmental elements that affect how much interpersonal interaction occurs during an event. Furthermore, crucial elements that guarantee privacy and broadcast quality also distance participants from one another. The responses show that because of the poor quality of the geographical and temporal sense of community, participants in virtual events do not perceive an acceptable level of interpersonal connection. Given the present pace of technological advancement, virtual events appear to be an essential component of the event industry's future. It follows that in order to improve the quality of the attendance experience, practitioners must redesign virtual events. In the future, virtual events might be run as a simulation in which participants are created using rendered projection or a self-designed alter ego.

In research paper [4] Virtual conference design: features and obstacles by William Hurst, Adam Withington, Hoshang Kolivand, according to this paper, the Covid-19 epidemic had a disruptive effect on 2020, but it also gave virtual conference providers a chance to develop tools that would facilitate remote work. For the foreseeable future, virtual conferences might also be used in our workplace. Since attending conferences is crucial to the advancement of research and the generation of creative ideas, virtual conferences may present development prospects that go beyond pandemics. Virtual conferences are increasingly becoming the go-to option for individuals looking to lessen their carbon footprint. In future research, an examination of the traits and challenges identified in this article can be extended to blogs and other grey literature, as these sources frequently contain software applications that are not taken into account in scholarly papers. Approach also implies that the inquiry can be expanded.

The paper [5] Effective learning in virtual conferences: The application of five principle of learning by Eva Hofstadter-Thalman, Jerome I Rotgans, Noelia Aybar Perez, Jonas Nordquist, more and more people are getting ready to either appear in front of the camera or plan an event or activity. Virtual conferences and other digital events are growing in popularity. Face-to-face instruction can be substituted with digital learning because the latter has the capacity to reach a far wider audience and tends to draw a greater number of nontraditional participants. Face-to-face meetings are crucial for networking and peer-to-peer learning, but digital events also require consideration in this area. It is simple to track down chatbox content, frequency, communication patterns, etc., which may result in a variety of quantitative and qualitative investigations.

In proposed paper [6] On the Requirements and Architecture of All-in-One Platform for Virtual Conferences by Kyle Park, Ganghyeon Oh, and Kideok Cho, the study entitled "On the Requirements and Architecture of All-in-One Platform for Virtual Conferences" introduces an architecture of an all-in-one platform for virtual conferences such as extensible, easily usable, video support, and recommendation features.

In research paper [7] WebRTC role in real-time communication and video conferencing by George Suciu, Stefen stefanescu, Cristian Beceanu, Marian Ceaparu, the study entitled “WebRTC role in real-time communication and video conferencing” Introduce the P2P video conferencing system based on Web Real-Time Communication (WebRTC).

III. OBJECTIVES

Achieving a successful and captivating online event experience entails a number of objectives while setting up a website for a virtual event platform. Typical objectives include the following:

1. Reach a Worldwide Audience: Make it possible for attendees from various regions of the world to join events without having to physically be present.
2. Interactive Features: To keep participants interested and encourage participation, including features like chat, Q&A sessions, surveys, and networking opportunities.
3. High-Quality knowledge: Use live sessions, pre-recorded films, presentations, and seminars to provide insightful and pertinent knowledge.
4. Virtual Exhibits: Provide online platforms where sponsors and exhibitors can display their goods and services.
5. Stability and Performance: Verify that the platform has dependable streaming, no downtime, and intuitive user interfaces.

IV. PROPOSED METHODOLOGY

The primary objective of the proposed framework is to offer the greatest website for hosting online events. Virtual webinars, conferences, meetings, and community events of all kinds will be available on the website. It will let the host plan the event's schedule and notify guests on the day of the event. Emojis, whiteboards, screen sharing, video chatting, and other internal meeting technologies are all intended to make internal discussions inside teams simple and rapid.

Attendees will be able to ask questions, poll, and communicate in real time. Additionally, the participants will be asked to provide insightful comments regarding the website. Additionally, the website will be very responsive and interactive, giving users a visually appealing and user-friendly experience.

In the below figure 1, the block diagram shows the components of the website. Starting from the home page there are two options, login as user and login as host. As given below user have access to home page, meeting, exhibition, FAQs while including this host have access to sending email and events.

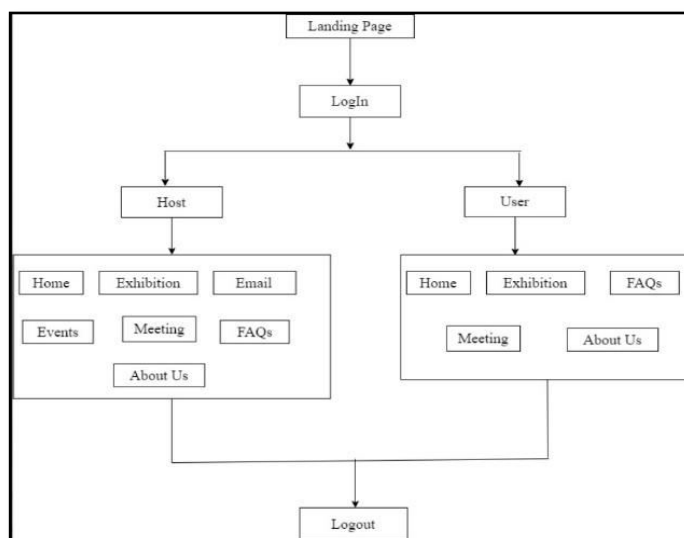


Fig 1: Block Diagram of Proposed System

The figure 2 depicts the flow of website. Starting from the landing page there are two option, login as user or login as host. Logging in as host, host can create event and send the email to registered user while users have to register for the event and after receiving the details of event through mail user can attend event.

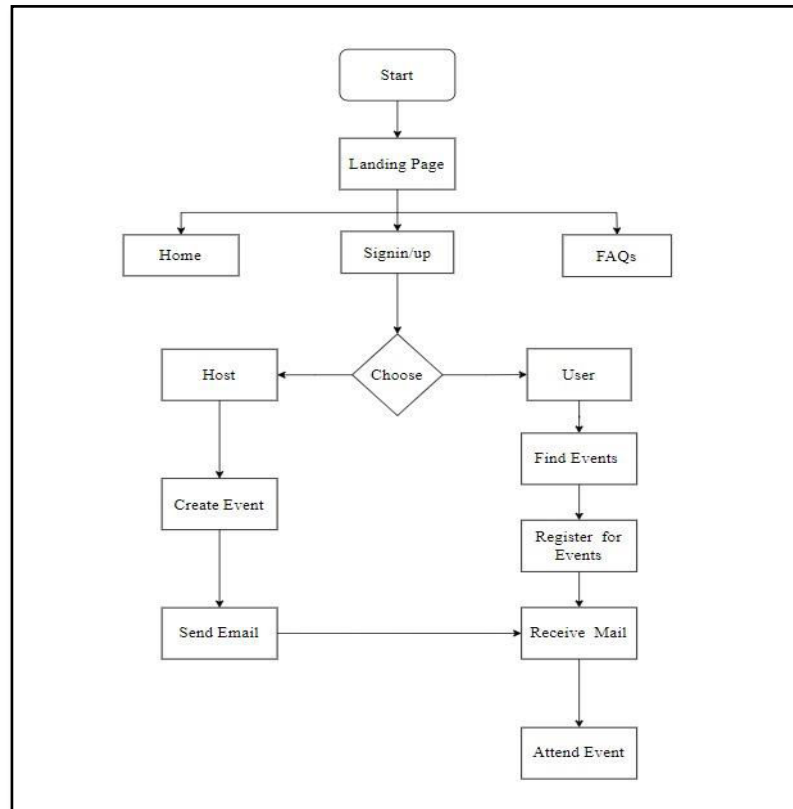
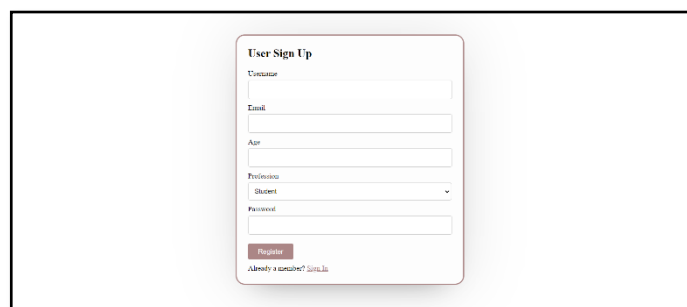


Fig 2: Flowchart of Proposed System

V. IMPLEMENTATION

USER ACCOUNT CREATION

For the new users, user need to click on the "Sign Up" button. Sign-up will take the details of the user like username, email, age, profession and password for the security of the account. After giving all these details, users can create an account by tapping on the "Register" button. Then the user will be redirected to the login page again.



The screenshot shows a web form titled "User Sign Up". It contains the following fields: Username, Email, Age, Profession (with a dropdown menu showing "Student" selected), and Password. There is a "Register" button at the bottom of the form and a link that says "Already a user? Sign In".

Fig 3: Create an account

USER SIGNING IN

If users already have an account, simply click on the "Sign In" button. Users can sign in/login in to their account using their email id and password which is set at the time of account creation. Once registered, users will have access to all of features of the website.

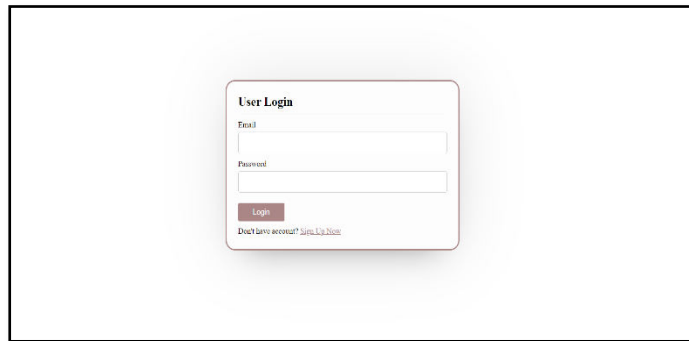


Fig 4: Sign In

USER TYPE

CatchUp: The Virtual Event Platform allows users to choose their user type as an 'admin' or 'user'. After visiting the landing page user can select their type as admin or user from the navigation bar.

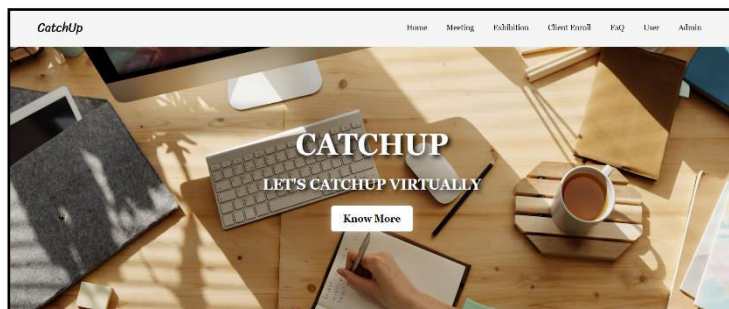


Fig 5: Landing Page

CREATE MEETING

Admin can host a meeting and User can join or attend the meeting using the provided link by the host. For hosting the meeting host need to login as an Admin.

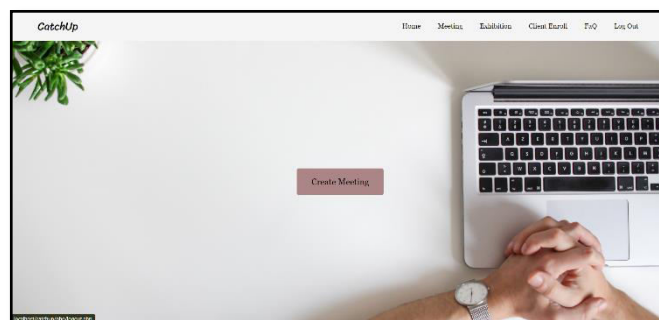


Fig 6: Create Meeting

EXHIBITION

User can see the scheduled event here. Admin can schedule and manage these events from the admin portal after login into admin. User can see the information about the upcoming or past events on this page and can attend the event after getting the details through email.



Fig 7.1: Exhibition Page(User Side)

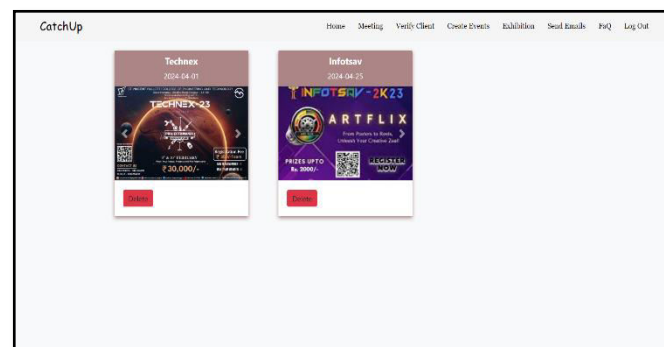
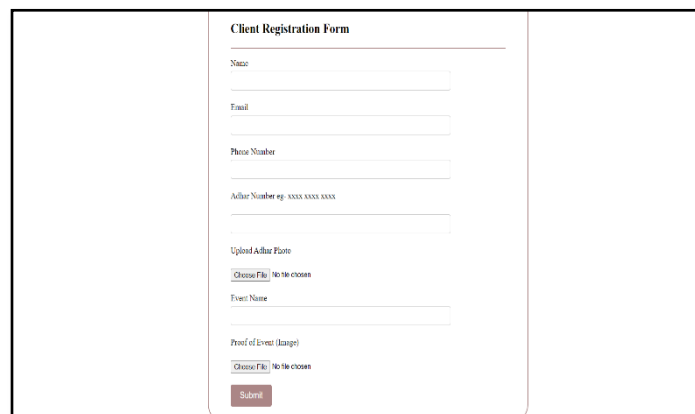


Fig 7.2: Exhibition Page(Admin Side)

CLIENT ENROLL

If client want to organize an event on the platform, the details need to be submit like name, email, phone number, adhar number, adhar card photo, proof of event. After verifying the information the client will receive email and them client can organize an event. Admin can verify the information and approve or reject it.



The screenshot shows a 'Client Registration Form' with the following fields and options:

- Name:
- Email:
- Phone Number:
- Adhar Number eg: XXXX XXXX XXXX:
- Upload Adhar Photo: (Choose File) No file chosen
- Event Name:
- Proof of Event (Image): (Choose File) No file chosen
- Submit:

Fig 8.1: Client registration form(User side)

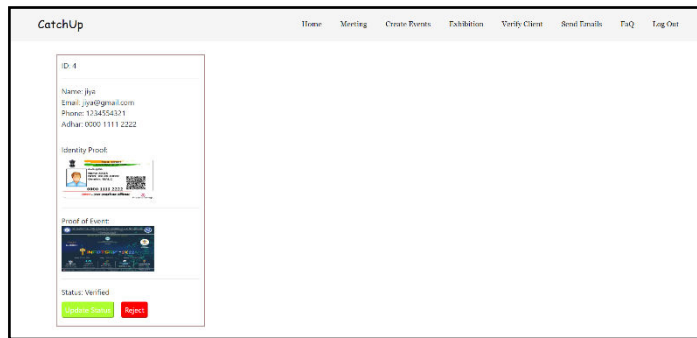


Fig 8.2: Client Verification(Admin side)

CREATE EVENT

After verifying the client successfully, client will receive the mail regarding the status of verification as approved then client can host an event on the website. Admin will get the information regarding event and will create an event. The information will include event name, event date and event images(up to five).

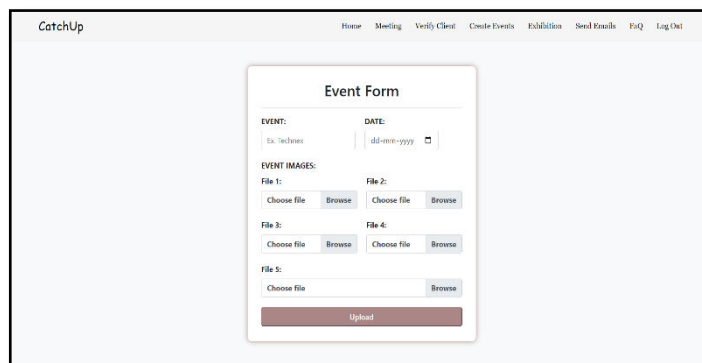


Fig 9: Event form

SEND EMAILS

After creating, scheduling or hosting event, all the registered users on the website will receive email about the event. Users can attend the event through the provided information about the event in the mail.

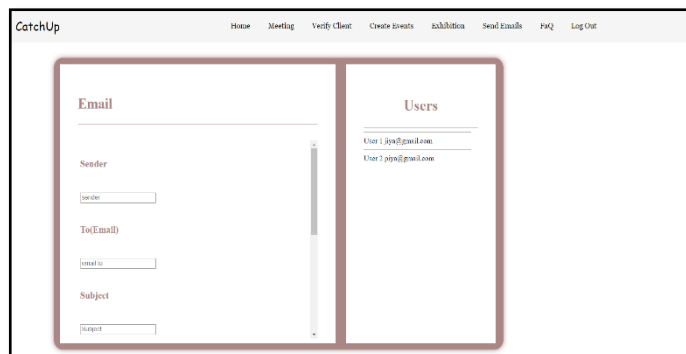


Fig 10: Send Email



VI. CONCLUSION

In conclusion, our virtual platform places a high priority on smooth, safe video conferencing. Every virtual conference is designed with ease of use and intelligent suggestions in mind. Peer-to-peer video demonstrates our dedication to safe, content-rich connections. We want every virtual interaction to be a true source of fulfilment.

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