



A WEB APPLICATION FOR VIRTUAL CLASSROOM SYSTEM (ECORD)

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ABSTRACT: ECORD is an online teaching and learning environment that allows students to interact, communicate, and discuss in real time. It is supposed to be similar to a traditional classroom, except that physical presence is not required. Students can take part in discussions and attend classes from afar. While working in groups, ECORD is an online teaching and e-learning platform that allows users to collaborate, communicate, see and discuss presentations, and interact with learning resources.

Keywords: ECORD, HTML, CSS, Javascript, Node Js, TypeScript, Virtual classroom, Learning system.

I. INTRODUCTION

The medium is frequently a video conferencing application that allows multiple users to be connected at the same time via the Internet, either connecting all nodes together or connecting everyone with one central node, allowing users to participate from virtually anywhere. Of course, one or more instructors and students will be present. However, an active

instructor is not always required to supervise students in a classroom or class; in this setting, students can proceed at their own pace, with the instructor only present to evaluate the students.

A virtual classroom provides the following benefits: students are not limited to the courses available in their geographic area;

→ Learning is more interactive because the nature of the environment forces the student's attention.

→ Students can openly discuss all the issues regarding the subject with other students and instructors.

II. LITERATURE REVIEW

Dennis Shaul An try has been made to observe the definition of e-getting to know, to study the literature to be had on e-getting to know with the goal of bringing pertinent elements to the fore and to signify a fixed of critical [2] Through an integrative examine, relying on every a literature examine and an empirical study, this paper identified multiple strategies to define effectiveness, with 'getting to know outcome' due to the fact the most outstanding definition. The authors highlighted

the benefits of reflected photo on and explanation of the way in which the ones definitions are applied in research and practice. [3] this has confirmed that students desire a hybrid learning environment. Seventy-nine percent of university college students admitted to getting drowsy and/or falling asleep sooner or later in their on-line classes. Specific suggestions are given for teachers to hold university college students active and engaged in on-line learning. [5]E-Learning knowledge of structures is gaining interest amongst academicians and college students due to its time and place independence which offer rookies an excellent flexibility of gaining knowledge of. Most of the e-gaining knowledge of structures is deployed through the use of the Internet. This paper describes numerous e-gaining knowledge of structures designed and advanced through individuals, Institutions or universities to guide gaining knowledge of process.

[6] It presents the blessings of the study room gaining knowledge of in addition to digital gaining knowledge of. It can cause higher usage of assets and time. This paper presents an evaluation of VCR vs the conventional study room.[7] This proposed hardware/software program application setup is a very automated solution controllable from a single PC. It allowed entire scholar interaction and use of multimedia inside the lecture. Although the pleasant best modified into completed via use of multicasting, the students connecting via modem can also take interactive detail inside the lectures. [8] This book tells current educational, societal, and technological changes that deliver on-line education to the

forefront. This affects the way tutors train and university college students learn. This moreover transforms how those sorts of stakeholders interact with each other. In order to efficiently deal with those sorts of challenges, we consider the virtual school room as a cyber physical system (CPS) which integrates computational and physical processes.

[9] In order to decorate the academic function of e-learning, a virtual classroom with clever virtual instruction has been developed. Architecture of the virtual classroom machine is presented. The clever virtual instructor can recognize the environment and make its non-public choice to enhance the interaction amongst instructors and a long way off university college students to some degree. [10]. Due to the pandemic, many groups have switched to far off artwork via video conferencing, but the complexity of organizing video conferencing arises due to the restricted sort of people at the same time, similarly to the need for big and actually organized conference rooms. The purpose of this article is to format and place into impact an open deliver video conferencing prototype Jitsi that solves the meeting challenges.

Here they look at every HTTP live streaming and CCN, and advocate a format of CCN live streaming, that may be a media streaming technique based on CCN. Finally, we demo our CCN live streaming on an Android client, and conduct evaluation experiments. The outcomes show that the CCN live streaming is a low-price scheme and much less hard to set up and configure in operation in comparison with HTTP live streaming. The educational operation of e-learning, a virtual room with

intelligent virtual tutor has been developed and a design of the virtual classroom system is presented. The intelligent virtual tutor will understand setting and create its own call to reinforce the interaction between tutor and remote students in a point

III.BACKGROUND

A. MYSQL: MySQL is an open source DBMS developed and distributed by Oracle Corporation. It is compatible with most major operating systems such as Windows, Linux, etc. It can be used to develop different types of applications, but it is mainly used to develop web applications. MySQL uses the GPL (GNU General Public License), so anyone can download and install it to develop applications that are freely published or distributed. However, if a user wants to develop a commercial application using MySQL, they need to purchase the commercial version of MySQL.

B. JAVASCRIPT: JavaScript (js) is a light-weight object-oriented programming language which is used by several websites for scripting the Web pages. It is a complete, interpreted programming language that, when applied to an HTML document, enables dynamic interactivity on websites. It was introduced in 1995 to add programs to web pages in the Netscape Navigator browser. Since then it has been adopted by all other graphical web browsers. With JavaScript, users can create modern web applications to interact directly without having to refresh the page every time. The traditional website uses js to provide various forms of interactivity and simplicity

C.HTML: HTML stands for Hypertext Markup Language. It is a language of the World Wide

Web. It is a standard text formatting language used to create and display pages on the web. HTML makes text more interactive and dynamic. You can convert text to images, tables, links.

D.MongoDB: MongoDB stores data in flexible documents similar to JSON, which means that fields can vary from document to document and the data structure can change over time. The document model maps to objects in your application code, making it easier to work with.

E.CSS: CSS stands for Cascading Style Sheet. It is a style sheet language that determines how the elements/content on the page will be seen/displayed. CSS is used to develop a consistent look and feel for all pages. CSS was developed and maintained by the World Wide Web Consortium (W3C). It was first released on December 17, 1996. The CSS working group is currently working with various browser vendors to add/enforce new features/specs for all browsers.

F. Node JS: Node.js is an open-source, cross-platform, back-end JavaScript runtime environment that runs on the V8 engine and executes JavaScript code outside of a web browser. Node.js allows developers to use JavaScript to write command-line tools and for server-side scripting: running scripts on the server to create dynamic web page content before the page is sent to the server's web browser.

G. Web Browser: A Web browser is a customer software program that uses HTTP (Hypertext Transfer Protocol) to make requests of Web servers at some point of the Internet on behalf of the browser user. Most browsers help electronic mail and the File Transfer Protocol (FTP), but a

Web browser isn't always required for those Internet protocols and further specialized customer packages are more popular.

IV.METHODOLOGY

When localhost/Record server is opened you will be viewing the main page of the project Record or Virtual Classroom System will be viewed and in the right-hand corner you will be able to view Home and Login/Register.

Home: It's an icon in the web page that will take the user to the starting point of the site.

Register: will give User to register or login into your account

In the main page you will be able to view three modules which are

- i. Dashboard
- ii. Student login
- iii. Faculty login

If a Student/Faculty logs in he will enter into the Student portal from which he will be able to login through his username and password.

If the Student/Faculty is new, he can create a new account using his email & password.

After Student logs in, he will be able to view a window.

- i. Dashboard
- ii. Courses

Faculty Dashboard: you will view

- i. Dashboard
- ii. New Courses to add

Dashboard: The already logged in user can check his/her courses she/he took up.

Course: when Student/Faculty clicks on courses or new courses, he/she will be able to view different specializations pertaining to the Student/Faculty joining to class he can choose a particular course or stream. When a course is created from faculty or admin, it'll ask for

course code and course name.

Login Students, Faculty and Admin have a not unusual place login platform from wherein they're directed to their respective use page.

Access Virtual Sessions: Here, one-of-a-kind customers have required facilities, i.e becoming a member of lecture rooms for college students, growing new lecture rooms for faculty, handling operations for admin etc.

This consists of stay broadcast periods, interactive whiteboard, exams and a doubt forum.

Live Broadcast Stream: Faculty can provoke stay look at periods and college students can be a part of and engage with the stay session.

Permissions and Validation Students and Faculties have many dependencies.

Admin can permit or block gets right of entry to and particular functions for positive customers.

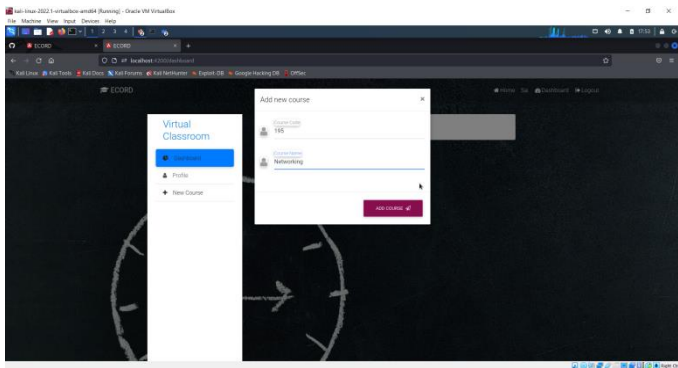
Based on this, customers have one-of-a-kind utilization rights for database entities. View or Update Profile Information

The database maintains music of college students and instructors records and profile facts. This allows enhancing the machine primarily based totally on utilization records and statistics. View or Update Course Materials Faculty is permitted to provide new publications to the scholars together with all of the applicable facts and useful sources helping the same.

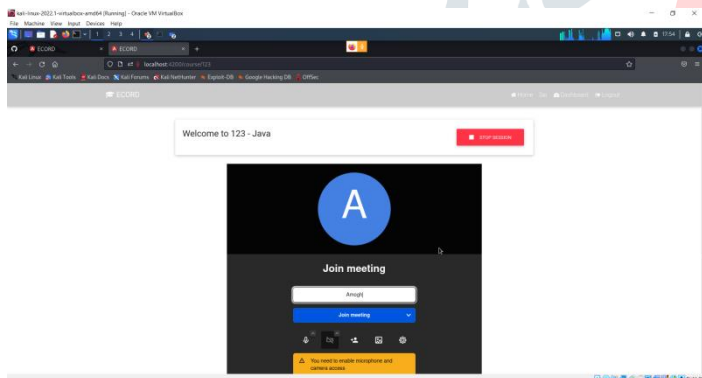
V.SCREENSHOTS



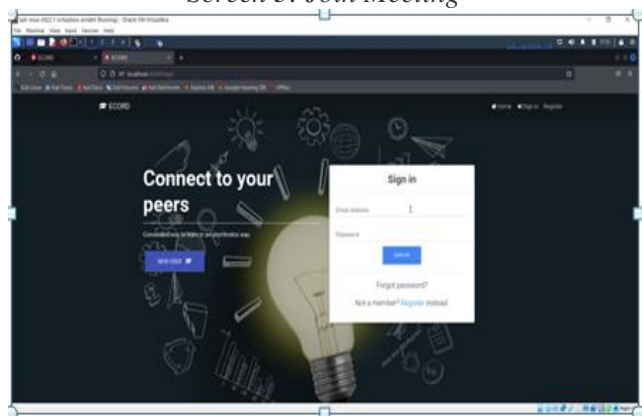
Screen1: Home Page



Screen 2: Add New Courses



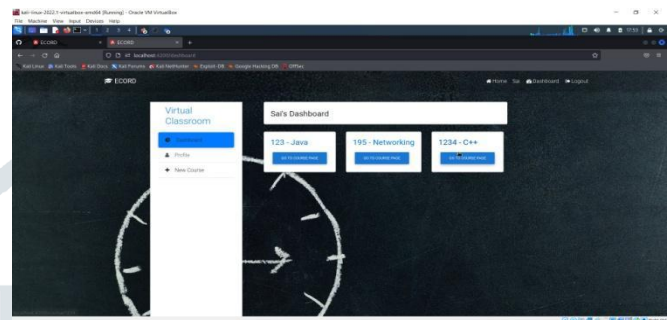
Screen 3: Join Meeting



Screen 4: Connect to Peers



Screen 5: Ecord System Settings



Screen 6: ECORD Display

VI. CONCLUSION

We have followed an iterative software development model. In the first release of the software, we focused on the key aspects of the software to be used by the customers. We started with live video conferencing (real time communication) which is the integral component of our software. In the second build, we focused on important aspects of the application, especially the course page. These include a course available list, course registration, discussion forum and course materials. No new functional requirements have been added. All the non-functional requirements (performance requirements) have been added. We were able to incorporate most of the functional requirements as specified in the Software Requirements Specifications in the first and second build. This version is still prone to bugs and other minor issues as it has not been heavily tested, but we aim at getting feedbacks through this release and make the required changes in the future versions of the software to ensure customer specification.

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