Virtual Classroom in PHP

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Abstract

A virtual classroom is a system that gives the same facilities for the teaching - learning process, beyond the physical limits of the traditional classroom's walls. Due to the access of the Internet, most virtual classrooms are based on World Wide Web. Wikipedia.com says, "A virtual classroom is a learning environment created in the virtual space. Virtual Classroom is a simulated classroom via Internet, which provides a convenient communication environment for distance learners just like traditional face-to-face classroom. A virtual classroom allows learners to attend a class from anywhere in the world and aims to provide a learning experience that is similar to a real classroom.

The New Virtual Classroom is a terrific resource for designing and delivering effective webinar training. Effective use of visualization, audio, and interactive features are important factors. This Virtual classroom provides students to attend virtual courses like video lectures and can also ask queries while instructor can provide answers for these queries. The interaction between the students and faculty happen via E-Mail. Students can do questioning to their faculty in the Discussion Forum section or via E-Mail. Students can view lectures as many times they want. They can check their status. These are the salient features of virtual classroom

It is basically designed for student who are unable to attend the class due to some reason. For that, it will help them to view lecture, view exam assignment at any time. we try to offer a range of facilities in this software that will maintain all student, faculty and course records in a much more efficient way with much less hassle.

I. INTRODUCTION

1.1 Introduction

Education over the Internet is the latest concept in spreading education to everyone. The conveniences of learning on line are numerous. Students and those interested in learning over the computer and can choose their own timing that is convenient to them and the classes can be taken at their own place

This Virtual Classroom System is designed in such a way that the student i.e. client can communicate with the server when it is logged on and the client can retrieve the text files from the server by issuing the request. Clients have his or her own login name and password, which help them to get connected with the server. Here the students are provided with the facility of attending the class of their choice and can choose the faculty according to their wish

This Virtual Classroom System is available anytime without any restriction that means we can access 24 hours a day. It engages students in a rich learning experience. Data transfer rate optimization matches user connection speeds. it is real time collaboration between a faculty and the student. We can share documents, application, streaming videos and many more. Developing a virtual classroom system (VCS) to promote a greater number of students to splurge into the field of Education. It integrates the benefits of a physical classroom with the convenience of a 'no-physical-bar' virtual learning environment, minus the commuting hazards and expenses. It will usher in the immense flexibility and sophistication in the existing learning platform structures, with the perfect blend of synchronous and asynchronous interaction. It provides a means of collaborative learning for the students. In the recent era of globalization, technological advancement has increased dramatically in every sphere including mainstream education. Profound investments in technology in this decade have given rise to a worldwide explosion of information. Many educational institutions have been mystified by this information chaos. They are driven by the goal to use newly found access to global data communication.

1.2 Definition

The terms "online learning," "virtual learning," and "e-learning" are interchangeable. Similarly, other terms including cyber-schools and electronic courses do not have generally understood meanings. All of these terms refer to some sort of Internet- or computer-based instruction, but two courses that are both called "online" may in fact be very different in terms of production values, level of

teacher involvement, instructional technology, and other factors.

Working definition of online learning is "any course or program conducted outside of the physical classroom using Internet-based technology for instruction." A further distinction is then made between instruction that is "fully online," meaning that at least 80 percent of learning is conducted online at a distance with little or no face-to-face component, and "hybrid" or "blended" learning, which combines online learning with face-to-face instruction.

Thus, education networking is emerging as the common shareware where there is the large turnover of information and knowledge through scraping or instant messaging and file sharing. More broadly we can say that social networking is nothing but the common file and data sharing tool. Hence, it is also a nice share point web based tool.

1.3 Objectives

1. Enhancing student-to-student and faculty-to-student communication.
2. Enabling student-centered teaching approaches.
3. Providing 24/7 accessibility to course materials.
4. Providing just-in-time methods to assess and evaluate student progress.
5. To support live on-line classes for distance learning and remote education.
6. To pool academic resources thereby improving access to advanced educational experiences.
7. To increase and improve the accessibility of educational resources to the persons with disabilities
8. To evaluate the learners performance in terms of achieving educational objectives.

1.4 Organization

The project consists of three types of users:- Administrator, student and faculty members. Admin can accept and validate the new registering student. Admin can discard any student or any faculty member. To fill all the details in sign up form is default private ensuring students view. And it is made public by the admin by validating all the information to faculty members. Only admin has the right to validate the student and faculty. Admin can upload any question in discussion forum and able to solve that query also. Admin can also add any course along

with its video lectures, can create a poll question and also can mail any notice to any faculty member.

Here the student is able to view his ready profile on his own home page with their photos and. Not only with the well designed format but also user is able to have hyperlinked to other pages like putting question over discussion forum , to see the status of the poll ,to mail its query, to do video conference for online discussion .

Discussion forum module is only for registered users. In this module user can have chat with faculty members by asking answers to their questions only. Online video conference refer to any kind of communication over the Internet, that offers a real-time direct transmission of text-based messages from sender to receiver, hence the delay for visual access to the sent message shall not hamper the flow of communications in any of the directions. It may address point-to-point communications as well as multicast communications from one sender to many receivers and voice and video chat, or may be a feature of a web conferencing service.
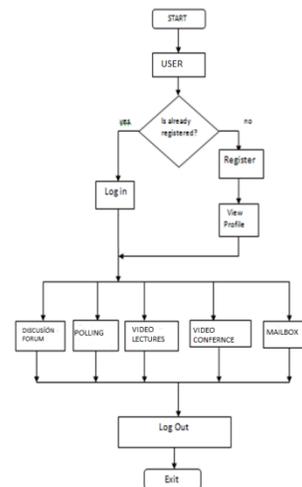

Fig:1.1 Organization of virtual classroom

II. PROPOSED WORK

Every project needs a complete analysis before it is actually start to build. The complete analysis deals with the definition of the project. It also includes the resources which are used to complete the various tasks included in the project. The detail analysis of each module included in the

project helps the developer to keep the complete track of the development of the project. In this article we have also made a blue-print of what are the aims and the requirement of the various resources of our project.

2.1 Proposed Methodology

The project consist of following modules:

[1] Sign up and login module.
[2] Admin Module
[3] Student's   Home page module.
[4] Faculty module.
[5] Discussion forum module
[6]   Video lectures module
[7] Video Conference module
[8] Polling module.
[9] Mail module

2.1.1 Sign up and Login Module
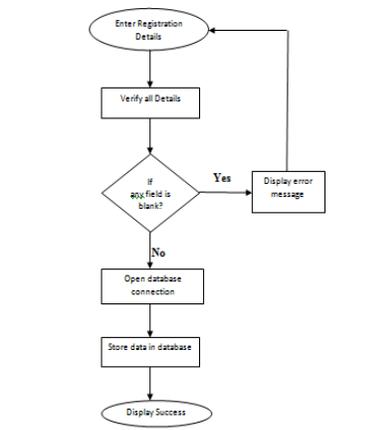
Fig 2.1 : Sign up and Login Module

If the user is not registered then he must first signed up by filling the registration form creating his own user- Id and password. If user is already registered then he can directly sign in using our log in control directing him to his home page.

2.1.2 Admin Module Admin can accept and validate the new student by accepting its signup information. Admin can discard any student by directly deleting that user. Information entered by the student is by default private. And it is made public by the admin by validating that info to the faculty members. Only admin has the right to add any entity as a student or as a faculty or can include any new course .Admin also can create a poll question and forward it to all the users as well as faculty. Admin can also display

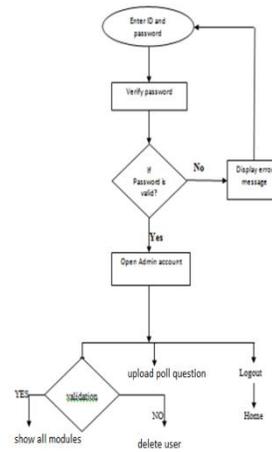the discussion forum with its course related question and answers.

Fig 2.2 Admin Module
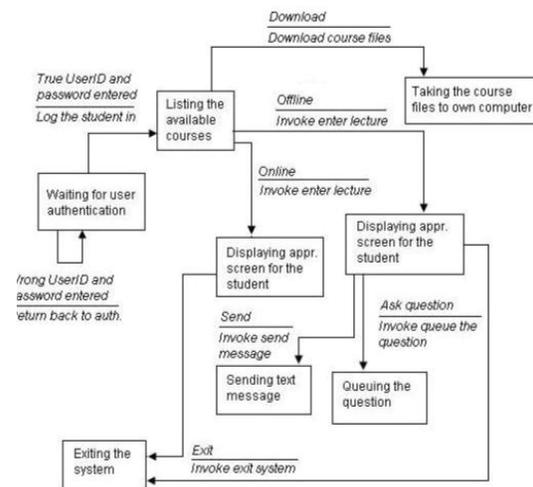
2.1.3 Student's home page module

Fig2.3: Student module

2.1.4 Faculty module

Admin has the rights to add faculty member having all the mandatory details required like name, qualification, valid Email id ,expertise , user id and password . It shows all the information about faculty and their mandatory selected course which can be edited. Faculty   members are the persons having

1298

profound knowledge in particular domain, They provide solutions to the queries asked by the students .

2.1.5 Discussion forum module

A Discussion forum, or message board, is an online discussion site where people can hold conversations in the form of posted messages. They differ from chat room in that messages are often longer than one line of text, and are at least temporarily archived. Also, depending on the access level of a user or the forum set-up, a posted message might need to be approved by a moderator before it becomes visible. Forums have a specific set of jargon associated with them; e.g., a single conversation is called a "thread", or *topic*. A discussion forum is hierarchical or tree-like in structure: a forum can contain a number of subforums, each of which may have several topics. Within a forum's topic, each new discussion started is called a thread, and can be replied to by as many people as so wish. Depending on the forum's settings, users can be anonymous or have to register with the forum and then subsequently log in in order to post messages.

User groups

A user can be any registered member of the classroom, including the principle ie admin, faculty and the students. Any user can post his or her query accordingly in the required course. Any member can then provide with a response. There can be multiple response to a query. These responses and the query will be visible to everyone and anybody can provide with the answer.

Administrator

The *administrators* (short form: "admin") manage the technical details required for running the site. Administrators may also make forum-wide announcements, or change the appearance (known as the skin) of a forum. There are also many forums where administrators share their knowledge.

Post

A *post* is a user-submitted message enclosed into a block containing the user's details and the date and time it was submitted. Members are usually allowed to edit or delete their own posts. Posts are contained in threads, where they appear as blocks one after another. The first post starts the thread; this may be called the TS (thread starter) or OP (original post). Posts that follow in the thread are meant to continue discussion about that post, or respond to other replies;

it is not uncommon for discussions to be derailed. Posts have an internal limit usually measured in characters. Often one is required to have a message of minimum length of 10 characters. There is always an upper limit but it is rarely reached – most boards have it at either 10000, 20000, 30000, or 50000 characters.

2.1.6 Video lectures module

The feasibility and effectiveness of video lectures as a form of video instruction that enables a comprehensive teaching strategy used throughout a traditional class- room course. It examines student use patterns and the videos' effects on student learning, using qualitative and nonparametric statistical analyses of survey responses and student grades. Video lectures are CD and web viewable files that present lecture materials and narrative instruction from a course's instructor. They are used as additions to classroom lectures and are not recordings of classroom lectures Video lectures serve major strategic purposes. First, they give additional teaching time to students who cannot fully understand the course material through the classroom lectures and support materials such as the textbook. Students can view and study the instructor's lectures as often as they wish until they understand material. This study resource is particularly important in teaching a broad spectrum of students. Second, video lectures allow classroom coverage of more complex and challenging subject material that is more interesting to many students.

2.1.7 Video conferencing module

A video conference is an online meeting (or a meeting over distance) that takes place between two parties, where each participant can see an image of the other, and where both parties are able to speak and listen to the other participants in real time. The components necessary to make this happen include:-

•A microphone, webcam and speakers

•A display

• A software program that captures the voice stream from the microphone, encodes it, transmits to the other participant, and simultaneously decodes the digital voice stream being received from the remote participant in the video conference (most commonly referred to as a "Codec".)

•A software program that bridges both parties together across a digital connection, managing the

exchange of voice and video between participants. At either end of the connection, the video and voice traffic is combined and delivered to each participant in the form of a real-time video image and audio stream

•An optional management tool for the scheduling of VC sessions . At a slightly more advanced level, it is also possible to provide the ability to share content from a device during a video call. The quality and type of content that can be shared depends on the rate of data exchange during the call.

Terminology used by VC users to describe the process of dialing into and participating in a virtual meeting is known as "joining a bridge". Different virtual meeting rooms are assigned unique "bridge numbers", and users join a video call by "dialing a bridge number".

The Language of Video Conferencing As VC technology has evolved, two main protocols have emerged to provide the signaling control for the establishment, control and termination of VC calls: SIP (Session Initiation Protocol) and H.323. For the encoding and decoding of visual information, the industry is moving towards the industry standard known as H.264, which was developed to provide high-quality video at lower bandwidth over a wide range of networks and systems. An extension to the H.264 protocol is Scalable Video Coding (SVC), which is established to facilitate the enablement of VC on a wider range of devices, such as tablets and mobile phones.

2.1.8 Polling module

Polling enables the users to create and participate in polls for the entire learning center to view. This is a quick and easy way of getting an opinion on a number of questions as the results are received moments after the poll has been answered. A new poll feature for teacher and some more user friendly option to the existing feature, have just been added to e-front virtual classroom. The new poll feature allows a teacher to create poll question in a live class ,which will get instance feedback from student. The result of the poll will be displayed graphically. The new poll feature can not only be used as a feedback tool, but can be leveraged as a marketing tool. Below are some often ways the poll feature can be used, Student Feedback. The poll feature can be use to get instant feedback about the class/course/teaching style/methodology etc .from student in a live-class , which can help teacher refine their teaching .Student Assessment :It can be used to assess students preparation level for any upcoming

exams and train them accordingly. Poll feature as a test .It can be used as an objective type test scores in a live session. Poll feature can be used as a marketing tool to conduct a survey, which would help a teacher to compare result and improve.
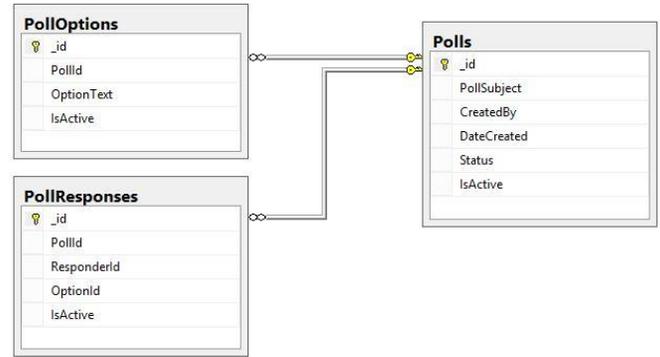

Fig2.4: ER diagram for poll

2.1.9 Mail module

Mailing is a method of exchanging digital messages from an author to one or more recipients. Mail is operated across the internet or computer networks. Mail system are based on store and forward model. Mal servers accept, forward, deliver and store messages neither users are required to be online simultaneously. The mail message consists of 3 components: the message header, the message envelope and the message body.

The mailing module is only for the registered users. In this module user can have directly conversation with any faculty members or admin by sending its query through mail. This module mainly helps to get the instant solution for the arised query. Online mail includes web-based applications that allows communication often directly addressed ,but anonymous between user in a multi-user environment whereas the admin can also communicate with all the faculty members by sending mail . The mail service requires an validation of site by getting an authentication by the web server.

2.2 System requirements

HARDWARE SPECIFICATION

Processor   :   Pentium III 800MHz

RAM   :   128 MB

Hard Disk Drive : 20 GB or higher

Keyboard : Logitech Mouse

Monitor : Resolution of 800 X 600

Floppy Drive : 3.5, 1.44 MB

Mouse : Scroll Mouse

CD-ROM Drive : 52X MAX

Printer : Ink Jet

Web cam : Standard digital web cam

Microphone : Standard microphone

LAN connection : RJ45

2.2 SOFTWARE SPECIFICATION

Hardware Interface:

- Operating System : Wamp Server
- Language Used : php

Software Interface :

- Operating System : Windows XP or Higher Version

- User Interface : Html/CSS

- Client Side Scripting : Java Script

- Programming Language : php

- Database: Mysql 5.3.5

III. Result analysis

3.1 Sign in page

Fig3.1: Sign in page

It is the first page in which student, faculty and the admin can log in. It contains two fields user -id and the password. We have used email id of the student as an user id. Also a new student or teacher can register using the sign up form.

3.2 New registration form

Fig3.2: New registration form

This is the registration form one will fill when he wants to be a member of the e learning center.

3.3 Admin module- dashboard

Fig3.3: Dashboard of admin

The admin is the whole and soul of the virtual class. He can add any entity as a student or a faculty member and is able to show its list. Only admin have the rights to generate the question for the poll. He can

1301

create any course and is able to solve any query discussed in the forum. Admin can also send mail to any faculty member
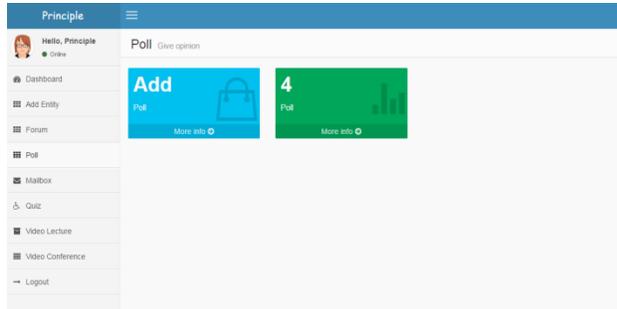
3.4 Admin module- poll

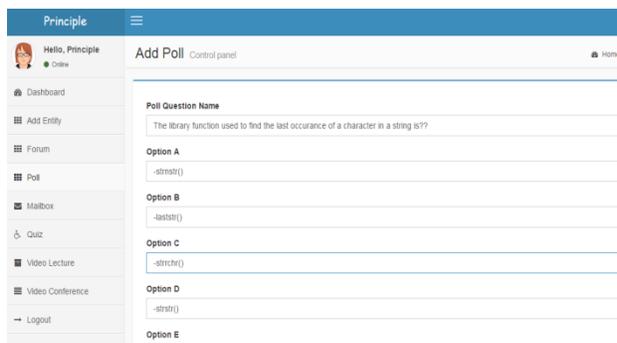**Fig3.4: Poll homepage**

Fig3.5: Admin poll screen

The above figure is a snapshot of the poll that can be viewed in a admin module. As admin has the right to generate the poll and also has right to see the status of the generated poll which is displayed in the form of graph.
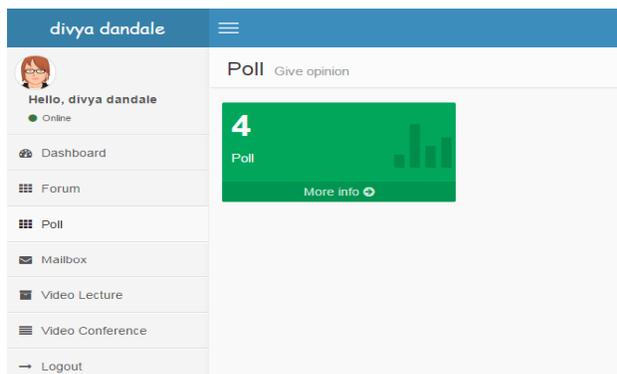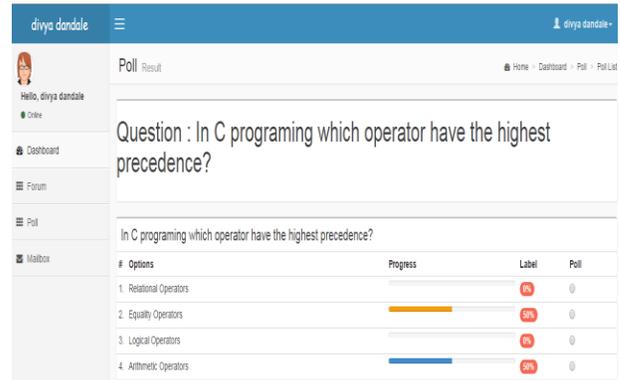
3.5 Student module-poll

Fig3.6: Poll homepage

Fig: Poll status

The above is the snapshot of the poll in the student module. The student can give response to the question asked in the poll. A single student can give only a single response. The result is displayed in the graphical manner.
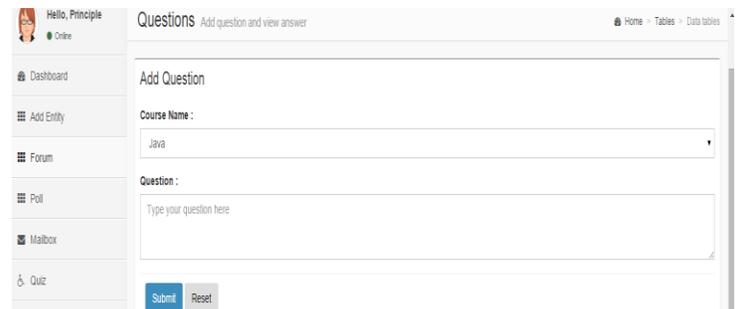
3.6 Discussion forum
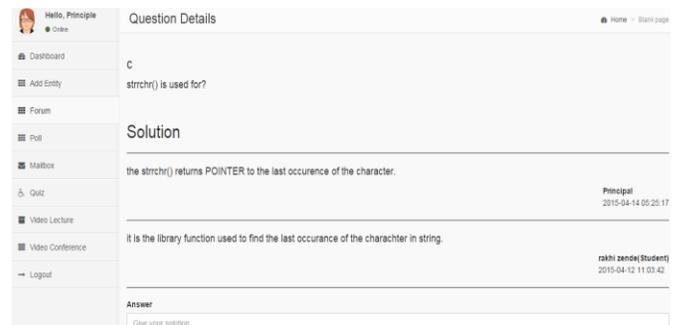
Fig3.7: Snapshot of discussion forum

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The above snapshot shows the way to raise a question before every member of the classroom and format in which the response will be achieved.
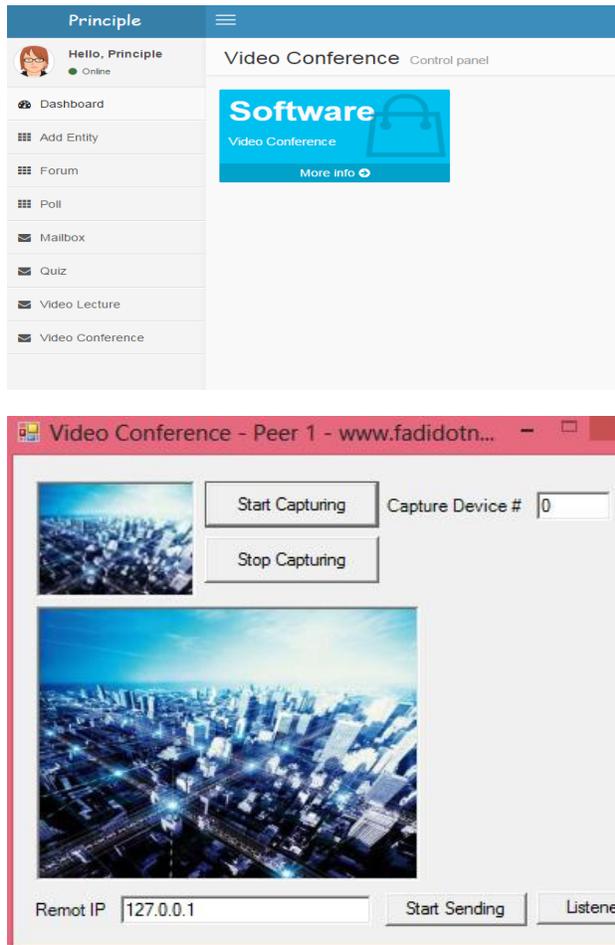
3.7 Video conferencing

Fig3.8:Snapshot of video conference module

The above are the snapshots of video conference module. We have used a video conference software in which you need to have peer1 on one of the system and peer2 on the another system .

IV. CONCLUSION

Highlighting the advantages of this site, a Learning network is emerging as a great shareware and a common SharePoint tool. Moreover, it can act as a great knowledge resource implementing the concept of knowledge management system.

It can be called as the huge turnover point for information and relationship where there is the large turnover of information and knowledge every day. With this, knowledge-based economy will reap significant rewards in just-in-time hiring, productivity, increasing profit and many more. Workplace and business increases performance of practitioners that help organizations exploits emerging practices in work smarter. It is new way to think Smarter, Learn Smarter Do Smarter.

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