Sentence

Abstract Online Discussion Forum is a platform where students can start a conversation with their peers & teachers in the form of posts. Other members can voluntarily respond to these posts via Asynchronous discussion that allows them to read and respond in their own time. Which means, not every single member has to be logged in simultaneously for the discussion to proceed unlike platforms like Zoom & Google Meet. Our study found that participation in online discussion forums has a positive impact on student's academic & social growth. Hence, our work focuses on providing for students with fewer resources or students with introverted personalities, the ability to engage in discussions with their peers as well as their teachers in order to get accurate information about their college activities with an option of an anonymous environment. Our emphasis is on building a CQA based web application that will enable students to access particular information/resources with an optional anonymous environment with the assistance of other students as well teachers to find appropriate information/resources in order to achieve cognitive and social growth using efficient development tools for developing a user friendly and fully responsive platform that is accessible on all modern devices while also using cloud services to safely store the user data. Keywords - Asynchronous online discussion forum, Community Question Answering, Web Application, Cognitive growth, Social growth, User interface, Anonymous environment, Responsive Web Design(RWD). INTRODUCTION: It is often said that students learn best from their peers, hence it is better to promote interactions between students and teachers. inside and outside of the class. Especially in modern times like today, when there is a lot of information being thrown at students which can be overwhelming & confusing at times. A Web based discussion forum is one way of facilitating these interactions. Online Discussion Forum is a CQA platform where students can start a conversation with their peers & teachers in the form of posts. Other members can voluntarily respond to these posts via Asynchronous discussion. Asynchronous discussions are online discussions that occur independent of time and space. Members don't have to be online at the same time, and can read and contribute to the conversation in their own time. Asynchronous discussion allows students to read and respond "out-of-time" i.e. not every member of the forum has to be logged on at the same time for the discussion to proceed unlike platforms like Zoom & Google Meet. Study has suggested that participation in online discussion forums can improve a student's academic performance & social skills[1]. This platform encourages introverted students to take part in college related discussion & clear their doubts thanks to the anonymous environment provided in the forum. Similar existing systems include Quora, Google Classroom, Facebook Groups and Reddit. Although Quora provides a platform for asking questions to other members, it is not helpful in terms of specific college matters where students can communicate with their fellow college peers and teachers because of its large scale of users. The very clear limitation of Google Classroom in this context is the lack of student participation. Majority of google classroom posts are created by teachers and there is very little scope for students to provide feedback. In Addition, it is not suitable for non-academic applications as it is just a Learning Management System. It does not provide an anonymous environment which results in decrease of student participation which is already low. The limitations of Facebook groups in our context are that there is no anonymous environment and posting documents/files is a complicated process. Although it is perfect for non-academic discussions, it is not suitable for academic discussions. As Reddit is a link aggregator, it is not possible to directly post documents/files in the group. Additionally, Reddit's interface may prove to be complicated for non-experienced users. A common limitation of both these applications is the presence of too many advertisements which can annoy users. Additionally, as the user feed of these applications consists of other posts of pages/communities followed by the users, it is very unlikely that every college post will appear in the feed. OBJECTIVES The objectives of this study are as follows: To allow users to post questions, information or other resources including multimedia resources. To allow other users to respond to posts with appropriate answers/replies as well as upvote/downvote posts. To provide users with a comfortable environment for asking doubts anonymously i.e. without revealing identity or openly as themselves. To provide the ability to message other users privately to discuss a topic. To allow users to use the web application on all devices such as Desktops, Tablets, Mobiles etc. To Notify users of any activity involving them on the forum. To Boost Student-to-Student & Student-to-Teacher interaction. SCOPE To build a CQA based web application that will enable students to access particular information/resources with an optional anonymous environment with the assistance of other students and teachers to find appropriate information/resources in order to achieve cognitive as well as social growth using efficient development tools for developing a user friendly and fully responsive platform that is compatible with all modern devices while using cloud services for safely storing all of user data. LITERATURE REVIEW During our research of existing systems & previously implemented online discussion forums we found the following factors/reasons leading to success or failure of those systems: Challenging and non-redundant discussion threads encourage better online participation among students. Students with their limited time resources, have higher order cognitive

contributions and a reasonable amount of social posts in online discussion forums[1]. Effective design of the forum helps to sustain the interest in students. Feedback from students suggests further improvement on design of the forum on organizing the content & sending notifications to the students[1]. Difficulties reported by students & teachers include difficulties with forum structure, lack of visualization tools and flexibility, difficulty sending files, difficulty with forum interface, lack of social media-like features etc.[2]. Students have an optimistic attitude towards educational systems. Compared to traditional discussion forums, CQA systems are better prepared for large numbers of students/questions and for long-term deployment when valuable knowledge stored in discussions from the previous academic years can be efficiently reused[3]. Teachers' presence in the system is perceived by students positively and significantly encourages their participation[3]. Small-group discussion can lead to increased learner participation in asynchronous online discussion, and self-selected small groups comprising mostly friends and acquaintances were more likely to witness strong social interactions and active participants during the online discussion process[3]. RESEARCH METHODOLOGY This study adopted convenience sampling. Sampling was carried out by interviewing randomly selected students. A structured questionnaire was used for data collection. The questionnaire consisted of three different sections, the first section was about the personal profile of respondents and second, were designed to evaluate using overall experiences with the quality of services they had received from similar existing technologies and the last was dealing with additional features they desired in the systems. METHODOLOGY The application starts by displaying the home page, making it clear to the potential users what purpose it serves. The name of our web application will be 'CampusTalk'. The homepage will contain calls to actions for login or registration. If the user is logging in for the first time, he/she has to first join the forum of his/her institute. If the institute's forum is not present then the user will have an option to create a new forum for his/her institute. If it's not their first time then they will be redirected to their personalized feed containing posts from the forums they have joined. Keep in mind that a user can be a member of a maximum of 3 forums at a given time. Below are DFD that are used to construct this application. : Here users can interact with the application through any device like mobile, computer, tablet etc. and many other devices making it fully responsive. User Interface of the system: This section includes Homepage, Login & Signup section, Join Forums section, Create New Forum section. A. Homepage Here users can find out the purpose & details of how the web application works along with call to action buttons for Sign up & Log in. Login & Signup Page Here the users can log in to their account using their email & password or create a new account. Users can also sign in with google C. Join Forum Here the users will be shown a list of existing forums. Users can join their institute's forum by finding it in the list or they can click on the 'Create Forum' button if their institute's forum is not in the list. Create New Forum Here the users can create a new forum for their institute by filling out a form with details of their institute. SOFTWARE REQUIREMENTS Below mentioned are the technologies that we have used to develop this web application: HTML is the most basic building block of the Web. It defines the meaning and structure of the contents of the web page. Each page contains a series of connections to other pages called hyperlinks. Every web page you see on the Internet is written using one version of HTML code or another. CSS is a simple mechanism for adding styles to Web documents. CSS defines how HTML elements are to be presented on screen, paper, or in other media. CSS saves a lot of work. It can control the layout of many web pages simultaneously. JavaScript, is a programming language that is one of the core technologies of the World Wide Web, alongside CSS and HTML. Over 95% of websites use JavaScript on the front-end for web behavior, often incorporating third-party libraries and frameworks. React.js was developed at Facebook to fix code maintainability issues due to the constant addition of features in the app. An open-source framework now, React stands out because of its virtual DOM, which offers its exceptional functionality. An ideal framework for those who anticipate high traffic and need a stable platform to handle it. Node.js is an open-source, cross-platform, back-end JavaScript runtime environment that runs on the V8 engine and executes JavaScript code outside a web browser. Node.js brings event-driven programming to web servers, enabling development of fast web servers in JavaScript. Programmers can develop scalable servers without using threading, by using a model of event-driven programming that uses callbacks to indicate the completion of a process. Express is a back end, open-source framework for Node.js. It is created for developing APIs and web apps. It is considered the standard server framework for the Node runtime. MongoDB is a source-available cross-platform document-oriented database, classified as a NoSQL database program which uses JSON-like documents with optional schemas. It means you can store your records without worrying about the data structure such as the number of fields or types of fields to store values. HARDWARE REQUIREMENTS Hardware- RAM- 1GB Hard Disk- 20 GB RESULT Below are some of the results/consequences obtained from this web application: Asynchronous Communication provides more flexibility to users. It is easily scalable. Asynchronous learning is usually more cost-effective than classroom learning. It provides geographical freedom. Easy to access additional materials. It is self-paced, users can learn at their own pace. More clarity regarding extra-curricular activities. Boosts participation of introverted users. Here are some of the snapshots of 'CampusTalk' A college student's life is already complicated as it is, the least we can do is to provide them a platform to make it a tiny bit easier. There are students of all kinds of personalities in colleges. but there is no single platform or tool where all of them can feel comfortable to reach out for help. CampusTalk will provide them with an environment for them where they can ask & share without having to worry about what others will think about them. The socially enthusiastic students will have social media features like 'upvotes' and 'downvotes', the introverts will have the anonymous mode, the busy ones will have the notifications to remind them of important posts.

| **Report Title:** | Asynchronous Online Discussion Forums for Colleges |

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Sentence wise detail:

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with an optional anonymous environment with the assistance of other students as well teachers to find appropriate information/resources in

order to achieve cognitive and social growth using efficient development tools for developing a user friendly and fully responsive

platform that is accessible on all modern devices while also using cloud services to safely store the user data.

Keywords - Asynchronous online discussion forum, Community Question Answering, Web Application, Cognitive growth, Social growth, User interface, Anonymous environment, Responsive Web Design(RWD).

INTRODUCTION: It is often said that students learn best from their peers, hence it is better to promote interactions between students and teachers.

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Especially in modern times like today, when there is a lot of information being thrown at students which can be overwhelming & confusing at times. A Web based discussion forum is one way of facilitating these interactions. (0)

Online Discussion Forum is a CQA platform where students can start a conversation with their peers & teachers in the form of posts. Other members can voluntarily respond to these posts via Asynchronous discussion. (1)

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not every member of the forum has to be logged on at the same time for the discussion to proceed unlike platforms like Zoom & Google Meet.

Study has suggested that participation in online discussion forums can improve a student's academic performance & social skills[1].

This platform encourages introverted students to take part in college related discussion & clear their doubts thanks to the anonymous environment provided in the forum.

Similar existing systems include Quora, Google Classroom, Facebook Groups and Reddit.

Although Quora provides a platform for asking questions to other members, it is not helpful in terms of specific

college matters where students can communicate with their fellow college peers and teachers because of its large scale of users.

The very clear limitation of Google Classroom in this context is the lack of student participation.

Majority of google classroom posts are created by teachers and there is very little scope for students to provide feedback.

In Addition, it is not suitable for non-academic applications as it is just a Learning Management System.

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Additionally, as the user feed of these applications consists of other posts of pages/communities followed

by the users, it is very unlikely that every college post will appear in the feed.

Students with their limited time resources, have higher order cognitive contributions and a reasonable amount of social posts in online discussion forums[1].

and many other devices making it fully responsive.

User Interface of the system: This section includes Homepage, Login & Signup section, Join Forums section, Create New Forum section. A.

Homepage Here users can find out the purpose & details of how the web application works along with call to action buttons for Sign up & Log in. CSS defines how HTML elements are to be presented on screen, paper, or in other media. (3)

CSS saves a lot of work.

It can control the layout of many web pages simultaneously.

JavaScript, is a programming language that is one of the core technologies of the World Wide Web, alongside CSS and HTML.

Over 95% of websites use JavaScript on the front-end for web behavior, often incorporating third-party libraries and frameworks. React.

js was developed at Facebook to fix code maintainability issues due to the constant addition of features in the app.

An open-source framework now, React stands out because of its virtual DOM, which offers its exceptional functionality.

An ideal framework for those who anticipate high traffic and need a stable platform to handle it. Node. js is an open-source, cross-platform, back-end JavaScript runtime environment that runs on the V8 engine and executes JavaScript code outside a web browser. Node. (4)

An ideal framework for those who anticipate high traffic and need a stable platform to handle it. Node. js brings event-driven programming to web servers, enabling development of fast web servers in JavaScript. (5)

Programmers can develop scalable servers without using threading, by using a model of event-driven programming that uses callbacks to indicate the completion of a process. (6)

Express is a back end, open-source framework for Node. js.

It is created for developing APIs and web apps.

It is considered the standard server framework for the Node runtime.

MongoDB is a source-available cross-platform document-oriented database, classified as a NoSQL database program which uses JSON-like documents with optional schemas.

It means you can store your records without worrying about the data structure such as the number of fields or types of fields to store values.

HARDWARE REQUIREMENTS Hardware- RAM- 1GB Hard Disk- 20 GB RESULT Below are some

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It is easily scalable.

Asynchronous learning is usually more cost-effective than classroom learning.

It provides geographical freedom.

Easy to access additional materials.

It is self-paced, users can learn at their own pace.

More clarity regarding extra-curricular activities.

Boosts participation of introverted users.

Here are some of the snapshots of 'CampusTalk' A college student's life is already complicated as it is,

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Match Urls:

0: https://www.researchgate.net/publication/224061306_Students'_Perspective_on_the_Impact_of_a_Web-based_Discussion_Forum_on_Student_Learning

1: http://www.ijsrd.com/index.php?p=Archive&v=9&i=12

2: https://www.researchgate.net/figure/Student-faculty-interaction-measures_tbl5_225471807

3: https://www.irjet.net/archives/V7/i11/IRJET-V7I1167.pdf

4: https://tsunami.as.gov/sams_teach_yourself_node_js_in_24_hours_pdf

5: https://en.wikipedia.org/wiki/Iojs

6: https://www.merriam-webster.com/dictionary/process

Keywords Density

One Word	2 Words	3 Words
student 3.38%	online discussion 0.97%	online discussion forums 0.39%
user 3%	discussion forum 0.87%	students start conversation 0.19%
forum 2.9%	web application 0.77%	open source framework 0.19%
students 2.61%	anonymous environment 0.68%	optional anonymous environment 0.19%
discuss 2.51%	information resources 0.48%	assistance students teachers 0.19%

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