A Versatile Web portal for Campus Connection

Anshula Gupta
Department of Computer Science
KIET Group of Institutions
Delhi-NCR, Ghaziabad
Uttar Pradesh, India
anshula.gupta@kiet.edu

Harsh Vardhan
Department of Computer Science
KIET Group of Institutions
Delhi-NCR, Ghaziabad
Uttar Pradesh, India
harsh.vardhan@kiet.edu

Sakshee Varshney
Department of Computer Science
KIET Group of Institutions
Delhi-NCR, Ghaziabad
Uttar Pradesh, India
sakshee.1923co1045@kiet.edu

Shivi Saxena
Department of Computer Science
KIET Group of Institutions
Delhi-NCR, Ghaziabad
Uttar Pradesh, India
shivi.1923co1019@kiet.edu

Sandhya Singh
Department of Computer Science
KIET Group of Institutions
Delhi-NCR, Ghaziabad
Uttar Pradesh,India
sandhya.1923co1125@kiet.edu

***Abstract*—As we all know that pandemic has brought a huge change in everyone's life and work from home has become THE NEW NORMAL. Along with multiple benefits, it has numerous drawbacks. One such drawback is the lack of interaction among peers. This hinders the flow of information in the hierarchy. In order to cope up with this problem, we have come up with a solution "KCONNECT" that aspires to bridge the communication gap. KConnect is a networking platform that will help students to connect with each other and gain relevant knowledge about new opportunities regarding career, scholarships, club activities and higher studies. The results of the study show the implementation of a web portal as an effective way to allow students increase connections and stay updated.**

Keywords—Student networking portal, online web portal, solving queries, authorized connection, exploring opportunities

I. INTRODUCTION

A web portal is a platform that collects information from various sources and integrates them into a single page for information. This enables users to receive relevant information tailored to their individual needs. The development of such portals offers several advantages for companies and organizations.

Portals, as collections of resources, are therefore not only used to store content information and user specific information but the student networking portal is the online platform that allows students to log in to their website to enhance their connection and access the important information. The web portal is versatile and offers multiple opportunities for the users to interact and gain knowledge. It also provides links to helpful web resources such as upcoming opportunities. The online student portal allows the students to easily connect with the other students and access important information anytime and anywhere. The portal is commonly used by colleges and organizations that need to provide information and necessary updates to a large number of students.

According to existing portals there is no possibility for the students to ask queries and get answers accordingly by connecting with peers of the institution. Moreover, there is no feature which could show all the opportunities at one place. This platform will provide an easy process to apply for opportunities. The existing portals do not provide a well-established fully functional system to interact and get associated with various communities.

The holistic goal of this research is to define a new and enhanced version of the framework for students. This framework is an extension of the current networking portal for students which will help the people belonging to a single community to interact on a virtual platform designed exclusively.

II. LITERATURE REVIEW

Over the past ten years i.e. from 2012 to 2022, there have been 337 conferences, 98 journals, and 4 magazines. Figure 1 shows a comparison of all the documents that were made accessible.

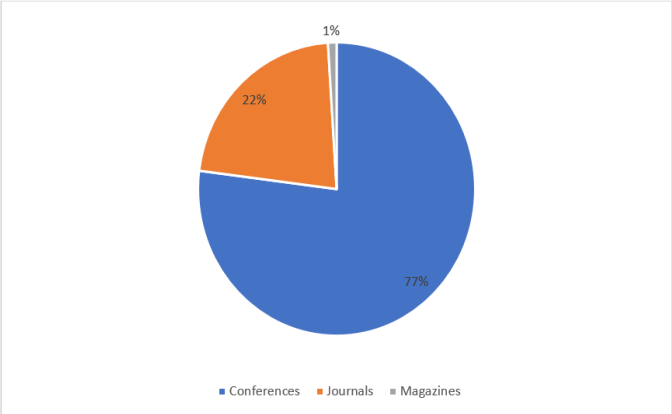

Figure.1. Published Article by Type [2012-2022]

Figure 2 introduces the total number of publications published annually. It makes it evident that, between 2012 and 2022, there has been a huge increase in the number of documents. In addition to this, we can observe general growth.

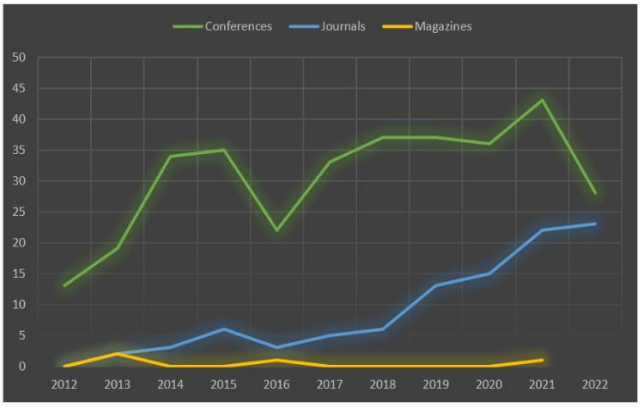

Figure.2. Documents by year [2012-2022]

The table shown in table 1 gives a brief distinctive contribution made in multiple research papers based on web portals. Web portals have proved to be a great benefit when used purposefully. The various contributions show the unique objectives in order to benefit the society.

TABLE 1 MAJOR CONTRIBUTIONS IN WEB-BASED PORTALS

References	Major Contributions	Objective
[3]	Introduced the idea of information management and cultivating teamwork in colleges for improving mental health.	To improve the mental health of college students.
[4]	Offered a web tool where students could file complaints and get remedy.	To provide an effective grievance support platform.
[6]	Developed a 3D game to create an actual campus environment where user can roam.	To provide a virtual 3D campus tour.
[10]	Created a MEAN stack portal at institute level.	To develop an event organization portal.
[12]	Developed a web portal for supporting student activities.	To provide students with a support system portal.

III. CAMPUS CONNECTION PORTAL ARCHITECTURE

A. Networking Portal Design

Figure 3 shows the use-case diagram of a campus networking portal which is managed by the IT cell of any organization. The user can use the portal to view the profiles, explore multiple opportunities and connect with other users to solve any query by registering and joining the spaces. The registrations are based on the authentication of users i.e. only with people with authorized domain in their ID can be registered. All such entities are represented by use-case. The use case also uses admin actor as shown. The admin provides services to the users such as students and staffs after successful authentication according to their specific needs. The admin is also responsible for adding new opportunities and making announcements in a timely manner.

Figure.3. Use-case diagram of the Campus connection portal

B. Networking Portal Flow Of Actions

Figure 4 depicts the generic flow of actions in the networking portal. Along with this, the portal functions as a general network system, the general networking system provides users with communication medium that allows connection among peers. Users can log in to access various information resources and communities. Users can browse the community based on different domains, choose from different categories available according to their interests and obtain information about that particular domain. Additionally, users post questions to the feed and get answers to their questions. Users can also follow spaces explore opportunities.

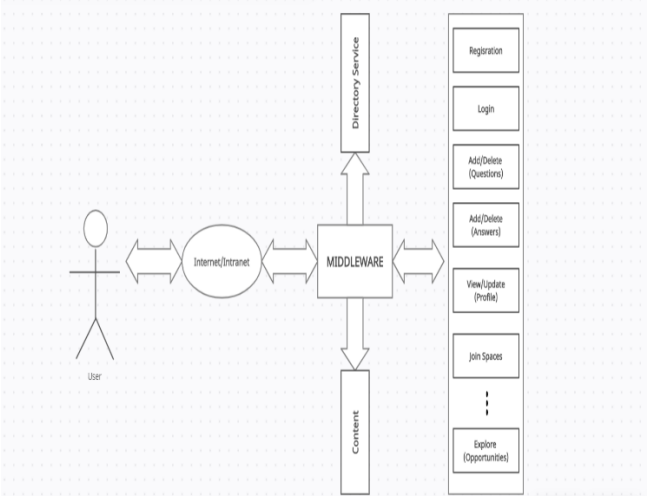

Figure.4. Flow of actions of the Campus connection portal

C. Networking Portal Activity Diagram

Figure 5 shows the proposed architecture for the portal that can be used for improving the interaction of members from a particular organization. As shown in fig 3, each user has to register themselves on the portal in order to use the services. After successful registration, all the supported features would be made available. Each user can perform the following operations-Post queries, post answers, view profile, add/delete posts, view notifications and many more.
With the help of this, it becomes much easier to interact with peers and other people belonging to the same organisation. The users are allowed to post their questions in the common feed that will generate a notification for all the other registered users. Anybody who belongs to that organisation can answer.
Apart from this, each user can also view profile where all the questions and answers posted by that particular user will be displayed. A user can also explore the upcoming opportunities and register for them.

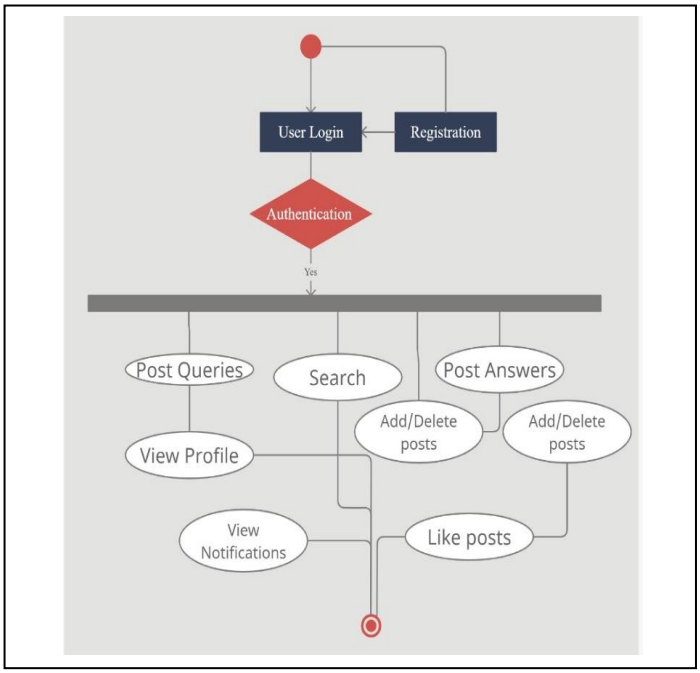

Figure.5. Activity diagram of the Campus connection portal

C. Netwoking Portal Architecture

The web portal acts as a medium for people to connect and interact. It provides an ease in solving problems and expanding networks by connecting with people with similar interests. The portal consists of several tools that enables to develop a fully functional, authentic and secure portal. In order to make a web portal, it is important to understand its architecture. As shown in fig 4, we have proposed a basic architecture of the portal including REST API and integrated with database to store information about users. Here the database such as MongoDB can be used which works well for large amount of data. The user creates the profile which is validated and stored in the database. Each time a user tries to log in to the site, authentication is done using the stored information. After successful login, user utilizes the features of portal. The REST API can handle various types of calls and formats so it provides huge amount of flexibility in dealing with data. Each time a user enters some information it is stored in the database.

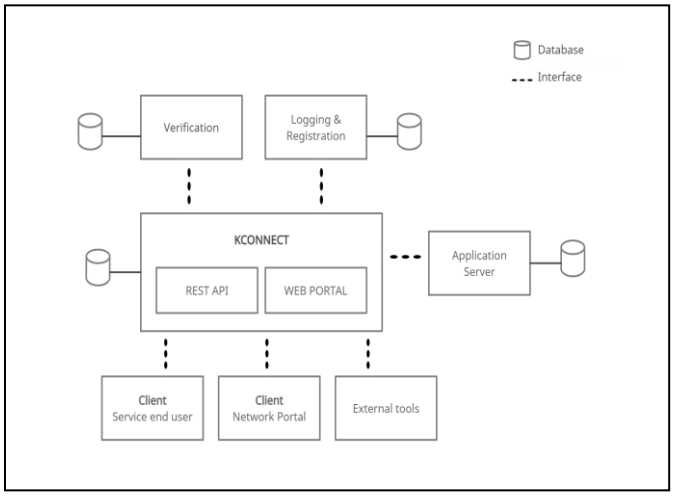

Figure.6. Architecture of the Campus connection portal

IV. PROPOSED APPROACH

The given approach has been proposed to enable community and peer interaction within any organization. This is specifically designed for an organization to provide an ease for interaction and networking within it. The organization for this approach consists of admin, students and every other member of the organization. The admin is responsible for managing the portal and validating users to give specific access. The IT-unit of organization is responsible for updating system and making necessary changes in the database. Each user needs to sign up and create their profile, also they can update it whenever they want. The user can explore opportunities in the events tab and register for the same using direct link to them. The students can ask their queries by adding their questions and posting them. The portal also consists of delete feature to delete the query or reply. The user can view top queries in the feed section and reply with relevant answers. The user can upvote a query or answer by liking it. Moreover, a user can join spaces according to their interest and gain important information. Suppose a user has some query regarding any of the upcoming event related to any space, he/she can join that space and post the query. The members of that particular space can reply to the query by adding their answers through which the user can get significant answer to their problems.

A. Functions Of Portal

1) Register: A user needs to register by making their profile to use the portal. Each user has some id related to the organization which is used as a method of permitting access to only valid users.

2) Log In: If a user is authorized, he/she can login using id and password created during registering.

3) Add Questions: A user can add their queriesusing the add question tab so as to get relevant questions.

4) Add Answers: If any user knows the answer of any query posted he/she can reply accordingly and gain likes for satisfactory answering.

5) Explore Events: A user can find all the upcoming events and opportunities at a place and register for the events of their interest by directly clicking on links.

6) Join Spaces: A user can join any of the spaces of their interest and learn about important events associated and discuss their thoughts and queries.

7) View/Update Profile: A user can update his/her profile from time to time and make necessary modifications.

V. RESULT AND DISCUSSION

To summarize, in this project, we created a portal to answer users' questions about placement, clubs, events, and future opportunities. We also looked into different ways to compare the proposed method to other accepted methods.
Figure 7 shows the approximate number of visits on the web portal throughout the year.

Figure.7. Visitor experience of the Campus connection portal

User surveys were conducted as shown in figure 8 with partners as participants, revealing various flaws in the existing system and how the proposed portal could significantly improve things.

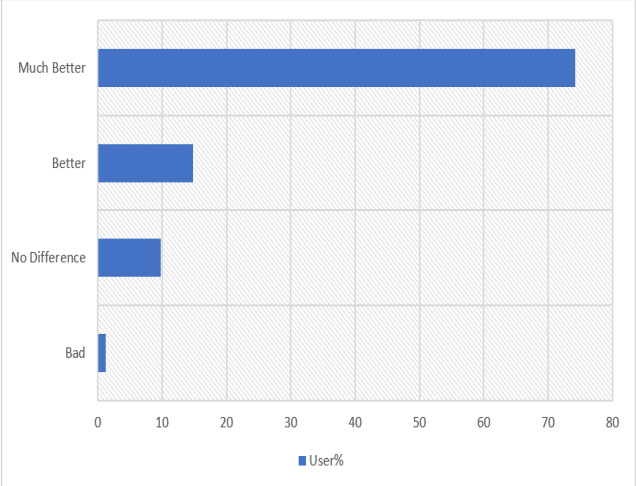

Figure.8. Users feedback for the Campus connection portal

The web-based networking system that is proposed can be used by any organization by simply changing the structure. The base model is built around a networking portal intended for peer and hierarchical connectivity and query resolution, which can be modified for a particular organization. This is an authenticated connecting portal implemented with the security protocol. Here, appropriate security protocols have been used to create the network portal and authorize the members. Only authorized users can access the network portal databases or any other information. A dedicated web servers allows maintenance of the web portal and ensures that requests are processed quickly and securely.
An interactive interface makes it easy for users to post and resolve queries. This portal has been designed to comply with the restrictions and requirements. The network portal helps members to connect easily. The feed section is designed to post queries. Users can follow hashtags and view information regarding their interest through notifications. Users can easily like, add and delete queries.

TABLE 2 COMPARISON BETWEEN CONVENTIONAL FRAMEWORK AND NEW FRAMEWORK

	Conventional Framework	**New Framework**
Distribution	Difficult	Supported
Coupling	Tightly-Coupled	Loosely-Coupled
Interoperability	Not Supported	Supported
Maintainability	Difficult	Easy to maintain
Cost	Relatively high	Relatively low
Complexity	More complex	Less complex
Extensibility	Difficult to extend	Easy

VI. CONCLUSION AND FUTURE WORK

The idea is to make a web- based portal that will serve the people by connecting people virtually. Every organisation will have the privilege of working remotely and still stay connected with each other. This web portal will not only help the people solve their queries but will also provide a common platform to share events and announcements all at one place. The portal has very high future scope as it can hold the position of one sufficient platform to serve all needs of the organisation.
Moreover, a mobile app can be developed for the same as a part of further study as current trends reveal an increase in use of mobile apps because of easier access and portability.

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