

Digital Repository for Sharing and Collaboration of Wisdom

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Abstract— The Web is being extensively used by educational institutions worldwide. The pervasive use of social media has generated unprecedented amounts of social data. Social media provides easily an accessible platform for users to share information. Web 2.0 is being used in nearly all areas of higher education, including academic, administrative and support areas for people from the world to share their knowledge and help in building knowledge eco-system. There are many platforms to share the information like Yahoo Answers, Yahoo Events, Blogs, Poll, and Google Docs. But these platforms act as independent different platforms. In this paper we provide one collaborative platform with the tools which will help to share knowledge and collaborate within college to build a great knowledge eco-system.

Index Terms— Artifacts, Collaboration, Content Management, Digital Repository, Education , Knowledge Eco-system, Social platforms, Web 2.0

1 INTRODUCTION

Repositories are important for universities and colleges in helping to manage and capture intellectual assets as a part of their information strategy. A digital repository can hold a wide range of materials for a variety of purposes and users. It can support research, learning, and administrative processes. However, repository solutions are most viable and sustainable when they are built on open standards. The pervasive use of repositories has generated unprecedented amounts of social data. Social media provides easily an accessible platform for users to share information.

Web 2.0 is being used in a wide variety of ways including to encourage student reflection Web-based learning are being introduced by higher education institutions at an increasing rate, such that a systematic shift from face-to-face teaching to web-based teaching has become evident. The rise of Web 2.0 tools has led to the rapid development of a number of applications that enhance collaborative work. Repositories are a web-based application that has been used extensively to bring students together with shared interests and mind-set. In education, they have been deployed to complement traditional techniques such as lectures and tutorials.

The digital repository developed will have combination of multiple software applications and providing a common interface on a single platform which can be accessed only within a particular college environment. These applications will have various categories such as assignments, seminars, placement papers, test papers, departments of the college and their respective subjects to be chosen for their data. The various applications include documents, Question and Answers, Blogs, discussion forum and events sections.

2 BACKGROUND AND RELATED WORKS

The value of online learning has become widely accepted as an approach to enhance the classroom environment. Ever since Ivori and Ervasti, (1994) stated that productivity gains and benefits to students and academic institutions promised by learning technologies cannot be realized unless they are effectively used. In fact, little research today is being done on effectiveness in online learning.

Discussion forums (DF) were first introduced in the mid-1980s as a form of asynchronous electronic communication. Discussion forums are broadly used nowadays to connect people (globally) with the same interests in one virtual space. Most discussion forums are unstructured and open ended in function which serves as an outlet of ideas and thoughts of members. Discussion forums can be political, health related, educational, technical support, game related and in general a virtual place to share ideas and resources. Research on educational applications of databases claim that students should have access to different data resources as well as the ability to use this data in order to construct new knowledge.

The socio-cultural view of development, as described by Vygotsky (1978), claims that learning is situated within the learner's zone of proximal development, where the learner increases his/her performance with the support of an agent in his/her learning environment who can assist the individual to optimize his/her learning potential. Current studies in collaborative knowledge building (CKB) concentrate on the processes

involved in group of participant's coming together to learn and create knowledge. The focus has gradually shifted from analyzing learning outcomes (Lipponen, Hakkarainen, & Paavola, 2004) and studying effective conditions for collaborative learning (CL) to understanding the processes involved.

Forums perform a function similar to that of dial-up bulletin board systems and Usenet networks that were first created starting in the late 1970s. Early web-based forums date back as far as 1994, with the WIT project from W3 Consortium and starting from this time, many alternatives were created.

Beginning in the late 1970s, a number of vendors began developing software systems to manage paper-based documents. These systems dealt with paper documents, which included not only printed and published documents, but also photographs, prints, etc. And later EDM (electronic Document management) was developed.

3 THE PROPOSED SYSTEM

The proposed digital repository system will have various applications as listed below:

1. Documents
2. Blogs
3. Question and Answers(Q & A)
4. Discussion forum
5. Events

Each of these artifacts will be categorized on departments, subjects and categories. And these artifacts will have additional meta data such as tags, comments, likes and ratings. The categories included are assignments, test papers, seminars, placement papers, study material. Each department will have various subjects included respectively. Every student need to have a login to the application in order to view the repository or to perform any activities in any of the applications.

Login: College administrator will provide user id and password for every student which will create the controlled ac-

cess to the application. And students can change password any time from their profile.

Documents: Documents are floating within virtual sea in every college. Documents application is used to organize, index and control the documents which is an absolute necessity. The student can upload various documents related to the categories according to their respective departments. In Document section student will have to enter a title for the document, and then select the department and subject the document should belong to and also needs to choose category. Then the document needs to be described and keywords need to be entered for a document. After all this, the document can be submitted. The student will have choice to view all documents at a single glance or can view depending on the departments or categories directly.

Blogs: Blog is short for Web Log, and is a term used to describe a journal or diary that is online. Blogs provide a communication space that teachers can utilize with students whenever there is a curriculum need to develop writing, share ideas, share information and reflect on work being undertaken in the classroom. Blogs are used to provide a communication strip between students and teachers and also between teachers among themselves.

In the blogs application a teacher/student needs to be logged in to create a blog of their own choice. At initial stage when they enter into blog student can only view all the blogs but cannot perform any activities in blog. To perform activities student needs to create a blog using the "create blog" option. Student needs to provide a title for the blog and then provide the description. The data of the blog needs to be placed in appropriate department and category and can use the attachment option if student needs to attach anything. Student also needs to enter keywords for the blog posted. Then the data in blog can be saved for next updation and posting or can be posted immediately.

Question and Answers: Question and Answer (Q&A) is a platform in which student may ask specific questions, or sug-

gest answers to questions posted by others students. The Question and Answer is provided to allow an open exchange of views relevant to any category depending on the user's choice of topic. Student needs to select a particular category for their question and select their respective department. If there is any relevant attachment to the question then they can attach it to the question and then submit the question to the Q&A. The student who wishes to answer to the various questions needs to be logged in and then click the button "answer" and can answer to the question. Q&A is provided with tags, like, rating for the answer. The student can view all questions at once and select the question for which he would like to answer. The student can get particular questions based on department also.

Events: An event can be described as a public assembly for the purpose of celebration, education, marketing or reunion. Events can be classified on the basis of their size, type and context. There can be many types of events in a college such as social, religious, educational, sports, entertainment etc. in this application one can keep a notification about the events happening in the college. The student has to give title to the event and then select the category to which it belong and then select the department. The option is provided to enter the number of days on which the event is occurring and the respective dates and timings. So that any student can know details about the date and time of event perfectly. The student can also add some description to the event. The organizer details also needs to be provided for any further queries and attach any attachment if necessary and then submit the event. The events section will also have tags like raking, like and comment section.

Discussion forum: A discussion forum is hierarchical or tree-like in structure: a forum can contain a number of topics. Within a forum's topic, each new discussion started is called a thread, and can be replied to by as many students. Students have to log-in in order to post topics and reply for any of the topic. In discussion forum application the administrator of the college will have the permissions to create a new forum and

under the forums created by admin the students can create any number of new topics for the discussion. Each forum may have various topics. The student or teacher can join the discussion by adding their view to the discussion topic and hence there will be sharing of ideas and knowledge. Each topic under every forum will have tags, like and ratings for the discussion and hence this creates an encouragement for students or teachers to discuss and share their ideas. In discussion forum there will not be any categorization of any topic depending on any subject, category and hence the entire topic will be under the particular forums created by the admin.

4 IMPLEMENTATION

The implementation phase of any project development is the most important phase as it yields the final solution, which solves the problem at hand. The implementation phase involves the actual materialization of the ideas, which are expressed in the analysis document and developed in the design phase. Implementation should be perfect mapping of the design document in a suitable programming language in order to achieve the necessary final product.

The implementation of application has been done with the help of following tool:

4.1 Microsoft Visual studio 2010

Microsoft Visual Studio is an integrated development environment (IDE) from Microsoft. It is used to develop console and graphical user interface applications along with Windows Forms or WPF applications, web sites, web applications, and web services in both native code together with managed code for all platforms supported by Microsoft Windows, Windows Mobile, Windows CE, .NET Framework, .NET Compact Framework and Microsoft Silverlight. Visual Studio supports different programming languages by means of language services, which allow the code editor and

debugger to support (to varying degrees) nearly any programming language, provided a language-specific service exists. Built-in languages include C++ (via Visual C++), VB.NET (via Visual Basic .NET), C# (via Visual C#), and F# (as of Visual Studio 2010).

4.2 Web technology used is ASP.NET with the language C#:

ASP.NET is a server-side Web application framework designed for Web development to produce dynamic Web pages. It was developed by Microsoft to allow programmers to build dynamic web sites, web applications and web services. It was first released in January 2002 with version 1.0 of the .NET Framework, and is the successor to Microsoft's Active Server Pages (ASP) technology. ASP.NET is built on the Common Language Runtime (CLR), allowing programmers to write ASP.NET code using any supported .NET language. The ASP.NET SOAP extension framework allows ASP.NET components to process SOAP messages. Following diagram will help to understand relations between above all.

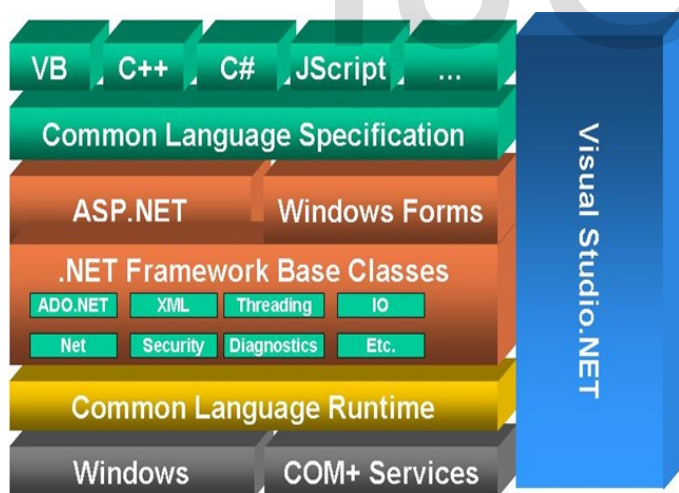


Fig 1: ASP.NET Framework

5 RESULTS (SNAPSHOTS)

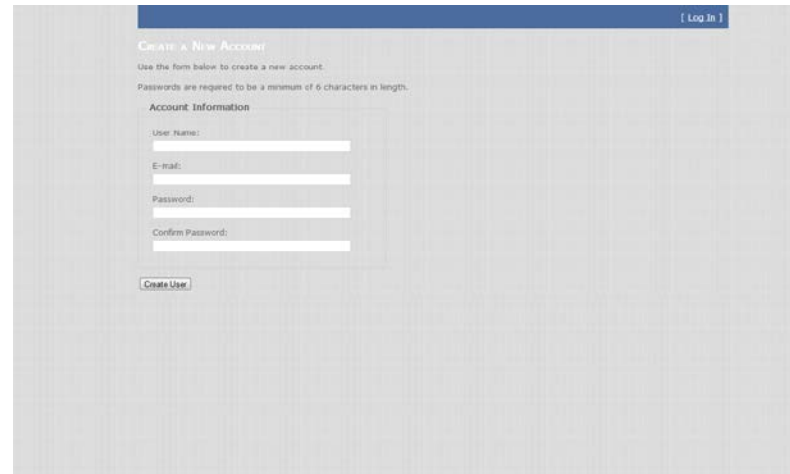


Fig 2: User Registration Form for the digital Repository

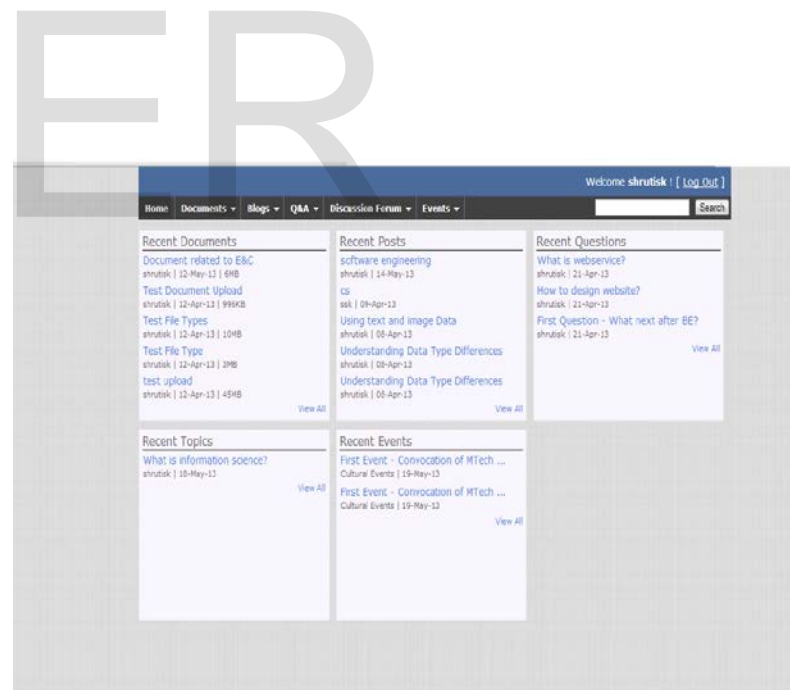


Fig 2: Home Page of Digital Repository

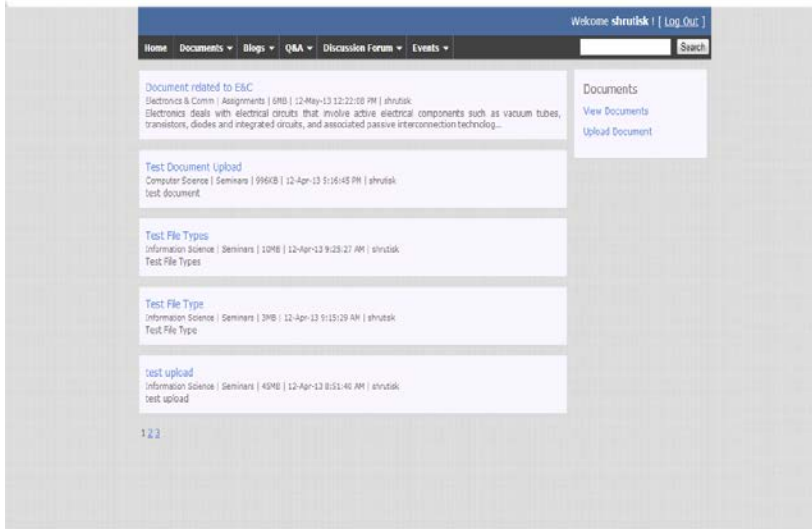


Fig 3: Document Application listing all the documents in the repository

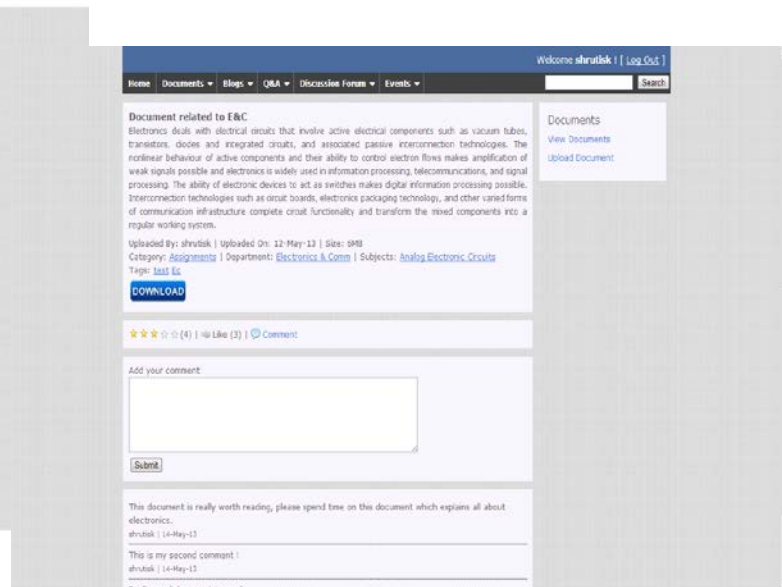


Fig 5: The sample document in document application with tags, comment and ratings, like.

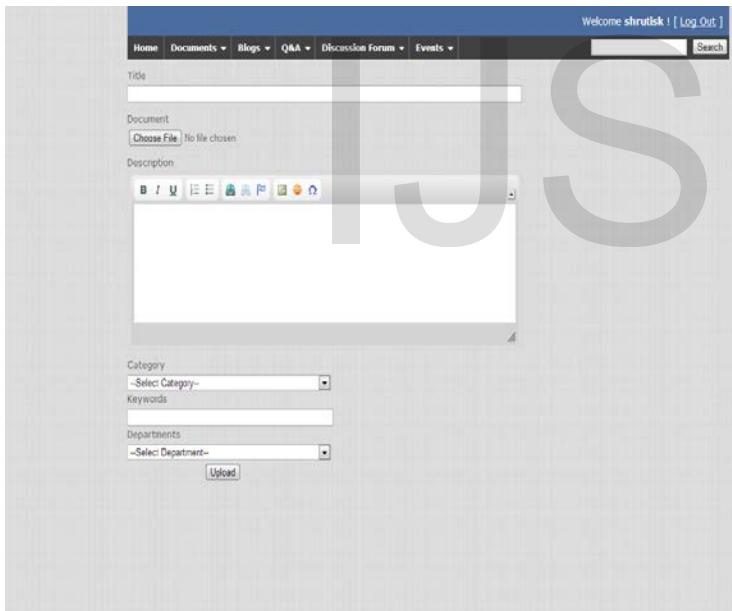


Fig4: Document Upload Page in digital Repository



Fig 6: The Blogs application of Digital Repository

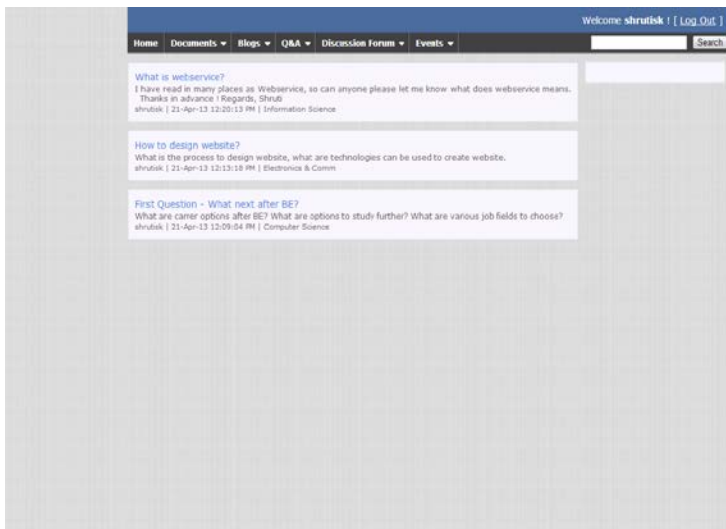


Fig7: The Question & Answer application

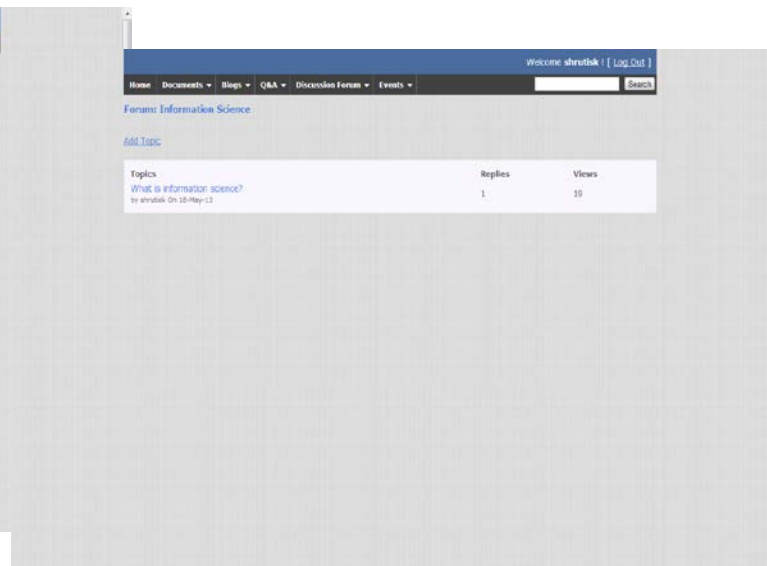


Fig 10: The Topics under a forum in discussion Forum Application.

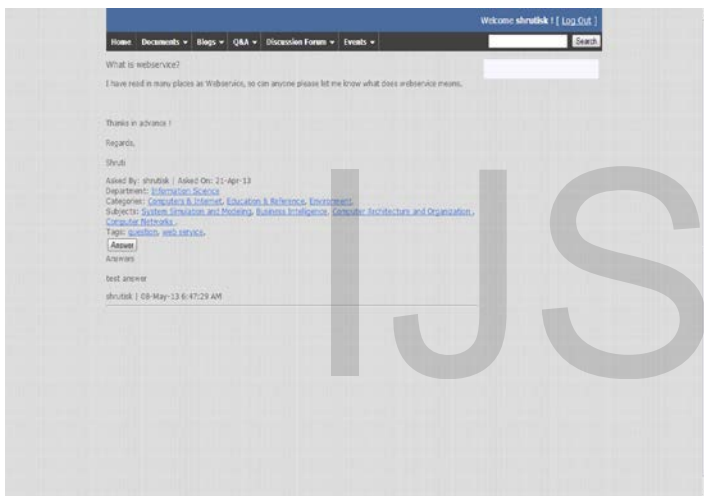


Fig 8: The Question and Answer upload section

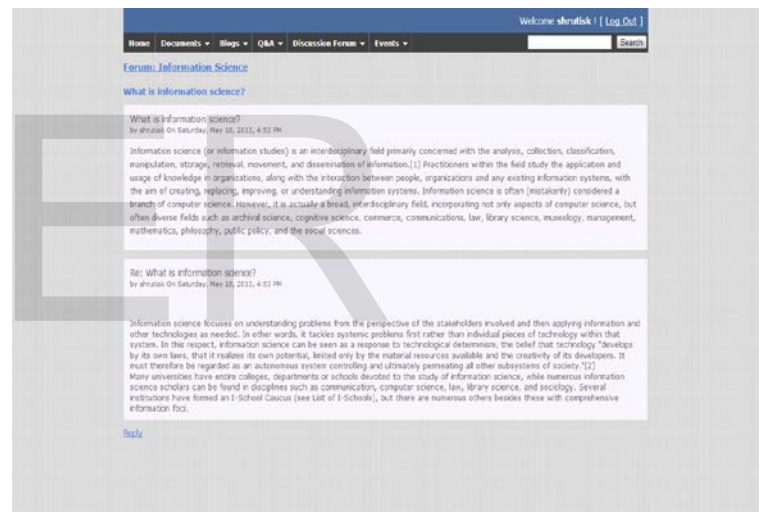


Fig 11: The Brief View of the topics of Discussion forum and corresponding posts

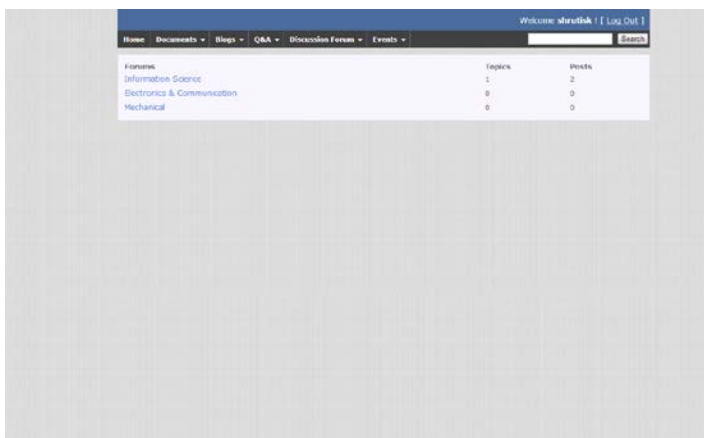


Fig 9: The Discussion Forum Application

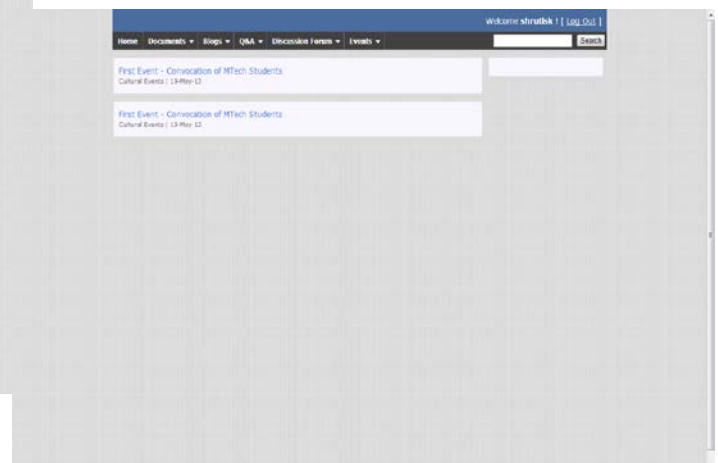


Fig 12: The Events Application of the Digital Repository

6 CONCLUSION

This project presents with a repository for an educational institute in order to share the data and information. The institute can also have a pathway for the new ideas and discussions under a single hand. A single user can have advantage with various functionalities and a network for all the groups together. A repository with no connection to internet world users commonly and hence avoiding malicious content and users from the repository. As today the college has collection of documents, this application can be useful in many ways. These applications provide a pathway for students and teachers to exchange their ideas, share the information, increase communication and build a knowledge ecosystem for the college.

7. REFERENCES

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