

# A Design methodology to integrate social networking and e-Learning

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## ABSTRACT

Social networking has become an ever growing field and has been diversifying its applications and functions to bring in more capabilities for a social networking website. With this immense growth it was only a matter of time before e-Learning became one of its features. A Design methodology to integrate social networking and e – Learning (DMISNE) is a concept which deals with the integration of functionalities of a social networking system with an e-Learning system. This website would cater specifically only to various educational institutions. The main aim would be to create an e-learning social networking website which contains functions and data management capabilities which could perform various activities required by educational institutions. Efficiency being its main aim, all its functions must be set up in a way that keeps the users wait time to a minimum. This concept consists of a collection of various modules which work together to allow the user to perform a lot of university related activities and serve the purpose of an institution centric social networking website. Role specific profiles, file upload/download system using the cloud, a usage monitor are few of the functions that have been embedded into it.

**Key Words:** Social Networking, e-Learning, student-faculty forum

## 1. INTRODUCTION

Within the last two decades social networking has taken the internet by storm and the number of social networking websites and applications has been increasing by a large amount (Ahmad Raza Khan, 2014). There are various forms of social networking from plain message passing to communicating through pictures with texts embedded into them. With the paradigm of social networking and its user base growing at this rate, its uses and applications can also be modified and used in different areas. One such area with a lot of potential is that of e-learning. The generic sense of the term e-learning would just point to a bunch of files and documents available on the web which can be used for educational purposes (Kadry, 2013). These websites would have various subjects and lessons which a user can use to gain knowledge.

A number of forums exist online for this very purpose. There are a set of specific functions and attributes that universities and certain educational institutions use. Most of these systems exist as static entities holding data and information pertaining to various courses and subjects. DMISNE is a concept for a website built for the purpose of taking the learning process to a new dimension? The website will act as a social networking forum where the students and faculty of the university can interact and share notes, documents and also set up tests and assignments. This website is primarily intended for the use of the members of SRM University which can later on be extended if required. This website will make the use of Dropbox to store all its documents. Students can set up discussion rooms for topics or doubts regarding their subjects.

Another main characteristic added to this application is the usage tracker. The system will calculate the distribution of usage of the resources uploaded into this system and post it as a graphical entity for the admin. This will allow the admin to make decision on how the institution using this system should use their resources. This would create a portal specific to a university or a department in a university which would in a small way act like a student-faculty forum. Instead of just having a repository of information or data, this portal would function like a general social networking website with certain added features and some modified features that would aid the functioning of an educational institution. Related works: There are a number of educational institutions which employ an online portal for their activities. In most cases these portals function in a uni-directional fashion with the students on side only able to access the files (documents/notes) and not have any means of direct communication to their instructors/faculty. Few other institutions have a system where in the portal solely exists for storing and updating the course/ educational status of the users/ students. Few of these institutions make use of a common mailing system (eg. google groups) for communications and a cloud storage provider (eg. google drive) to share files (ICT-ISPC2014). Other have their own in-house storage systems where-in they employ large data storage devices to store the files. Although these systems are functioning without any problems, there are a lot of efficiency issues and areas where a faster system can be used.

Apart from that these systems make use of multiple applications/single systems to perform all their tasks. The various elements of social networking can be made use of to substitute all these system with a single integrated system. This would also mean that all the utilities and functions that are required will be available in a single place. This would prove to be a far more advantageous and simple.

**Proposed system:** The end result upon using this concept would be a social networking website containing functions which would be useful for any educational institution. This system would consist of a number of individual modules, each of which is designed in a way to assist educational institutions. Each user upon registration into the website will have a user profile through which they would access all the information and functions. The user can register as a

student or as a faculty. Depending on this their profiles would be created. Each of these profiles will have a different set of functions and access rights. The faculty would be allowed to access all the functions that are available in the system whereas users registered as students will have a smaller set of functions. Setting up tests/ assignments would be an example of a function where faculty would have access and students would not. The files and documents sharing process will be designed to store all the documents into the cloud. For security and feasibility reasons all files can be stored into a cloud storage service provider (like googledrive or dropbox) and accessed directly from the website. For this reason an efficient upload process has been designed using the drop box API and windows schedules tasks (Process explained in the next section). Another function which can be modified to serve educational institutions is that of the usage monitor. Most social networking websites like Facebook and twitter use it to map out and log trending topics and current events. We can use this feature to log and map out the fields or subjects that are being used the most and create a pattern of this usage. This will help the educational institutions to decide which field requires more resources. Many other individual modules are present in this design which will be explained in detail in the next section. DMISNE seeks to create a system that would take all the functions that are going on in any educational institution into the web. Integrating the functionalities of both of these systems to create a single entity which could perform all the functions of any educational institution is the task at hand. Each of the functions that go on in any institutions are taken and designed into individual modules and wrapped into a website.



Figure.1.E-Learning System

#### Module description:

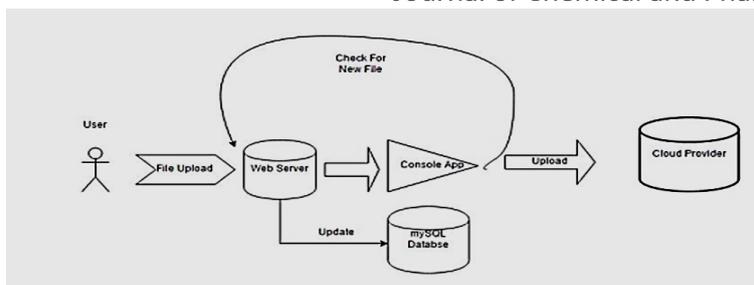
**Module 1: User Profiles:** The users can register as a faculty or a student while creating an account in this system. Both types of profiles have a different set of functions and different access rights. The users registered as a faculty will have access to all the functions except that of adding/removing users and deleting files both of which can be done only by the admin. The students can access all the functions except the cloud uploader, setting up tests/assignments and the functions given to the admin. The common functions for all the users include downloading files from the cloud, setting up discussion topics, commenting on queries and tagging users to answer queries. The users will be allowed to update all the information about them and edit them whenever they want. An important feature added to all their profiles is the possibility to enter and store their accolades, research work, projects and certifications.

**Module 2: File Upload/Download System:** This system is designed with the capability of storing all the files that are being uploaded into the cloud. A dropbox account for the organization using this system can be created and accordingly using the dropbox API these files can be accessed. Traditional system using the cloud to store files upload all the files that are to be uploaded directly into the cloud. This takes up some amount of time and hence can prove to be inefficient for large files. The upload methodology designed for this system works in two phases.

1. First, the files to be uploaded will be stored into the server.
2. On the server a console application will upload these files to the cloud and delete it from the server.

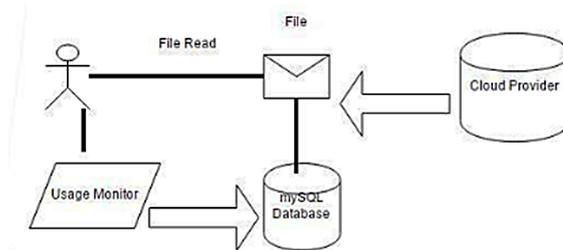
A windows scheduled task can be set up to call the console application for every 2 minutes. This way user's wait time is brought down. As this process runs completely in the background without the knowledge of the users it eliminates the wait time for users when they are uploading any file(s). All the users will have access to all the files that are being uploaded through the system into the cloud. The dropbox API will be used to ensure proper download of all the files.

**Module 3: Discussion Room:** All the users can access the discussion room feature. The users of the system have the permissions required to set up discussion rooms for topics pertaining to the course. Students with doubts can post them and other can comment or respond to them. This would work as an open group discussion room wherein any user can post put up a topic and ask other users to comment on them. In case a user puts up a topic in which he has a doubt and requires the input from another user, that concerned user can be tagged into the conversation if required.



**Figure.2.Cloud Upload Process**

**Module 4: Usage Monitoring:** The faculty of the institution employing this system will be in charge of uploading the files and documents that are required for the students. To keep track of the pattern in which the users use the uploaded files a usage monitoring system is set in place. This feature can be used to log and map out the fields or subjects that are being used the most and create a pattern of this usage. This will help the educational institutions to decide which field requires more resources.



**Figure.3.Usage monitor**

**Module 4: Messaging System:** As it exists in any of the existing social networking systems, a messaging system has been designed to allow the users to send/receive messages from any of the users that have registered into this system. This will allow the users to chat and pass on messages that are required. A sub feature of this messaging system is the announcement feature with allows the users registered as faculty to send a common message to a group of users. This can be used to send important announcements and will appear the home page of the user. These would serve as the basic requirements that are required for any educational institution. On top of this more features can be added and set up in a way that is tailored to specific institutions depending on their uses and their requirements.

## 2. CONCLUSION

In this system, a social networking website that will be used to integrate the functions of an e-learning system is created. Here all the functions of the educational institution that is using it can be performed. Certain functionalities such as file upload/download system, user profiles, admin profile and messaging system has already been set in place. Apart from this a usage tracker has been designed to monitor the file usage of the system. The system has been working properly without any errors and system problems.

**Future enhancements:** A mobile application for using the website on portable devices will have to be made. Other functionalities such as an online test creation and evaluation system can be developed. Many other functions that are generally used up in an educational institution can be implemented into this website.

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