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A Secured Website Intended for Personal and Educational Use

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Abstract

Nowadays educational institutes and colleges make redundant use of papers, manpower and also some of the inefficient traditional approaches for its management. Secured Website Intended for personal and Educational use (SWIPE) provides a simple and efficient way for its management. It can be used by educational institutes or colleges to reduce the man power, paper work, time consumption. It facilitates us to explore all the activities happening in the college. SWIPE comprises many social networking features along with the features like online admission, e-library, e-class room, e-timetable, remote leave application, tracking of attendance, exam trainer, online fine payment, book reviewer, e-election, suggestion box. It will also have faculty details, batch execution details, students details in all aspects, the various academic notifications to the staff and students updated by the college administration. Different reports and Queries can be generated based on vast options related to students, Principal, management, faculty, library, parents and alumni.

Keywords: SWIPE, Database, SQLyog, HTML

1. Introduction

The Secured Website intended for personal and educational use is designed and implemented to replace the current inefficient way of college and institution management which makes redundant use of paper [1], time and manpower.

We have seven modules in SWIPE all these modules are interactive and they can access each other's data if they are allowed to be. SWIPE makes use of user authentication and based on this it provides the features. Everything on SWIPE follows a secured way. SWIPE allows seven types of users' principal, students, management, faculty, library, parents and alumni it also allows the users to access the information, and even he can create and update the information. SWIPE server is loaded with SQLyog , which is maintained by the college administration at a high security. An account in SWIPE is created to the user as soon as he makes his entry to the college, through this account he can access the college activities. Previously, the college relied heavily on paper-work for its management. But these paper records are a traditional way of managing the college, which increases inefficiency, time and manpower. Paper records are difficult to retrieve and modify. Sometimes these paper records can't be forwarded to others.

SWIPE is the solution for all these problems, it keeps a track on all the activities of college and also collects and stores the data which are useful. It is also embedded with social networking features like chat room, mail, notify These features gives more power to SWIPE. So SWIPE is a complete website which is beyond social networking as it comprises almost all the social networking features along with the features which covers the need of administration, principal, students, faculty, library, parents and alumni. It also reduces the redundancy in data entry. The paper focuses on controlling almost all the activities of colleges or institutions which provides features needed for all seven modules of college or institution.

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1.1 Purpose

The purpose is to design and implement a Secured Website Intended for Personal and Educational use. This can be used to control all the activities undergoing in colleges or institutions. That should improve efficiency of college management by reducing the paper work, time consumption and manpower.

1.2 Objectives

- Increasing the efficiency of entire college management.
- Providing a SWIPE interface for principal, students, management, faculty, library, parents and alumni.
- To make the college management more secured.
- Decrease the redundant data.
- To make remote access of the college activities.
- Decrease the time and manpower to provides all the features undergoing in a college.

1.3 Paper Organization

The paper is organized as follows: Section II explains SWIPE system design. Section III provides technologies used in SWIPE. Section IV covers the details of the testing results and Section V the conclusion.

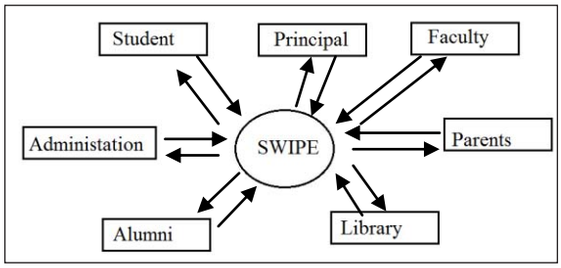
2. Swipe System Design

This deals with data flow diagram, detailed flow graph, requirement analysis, and the design process of the front and back end design of the SWIPE.

2.1 Data Flow Diagram

A Data Flow Diagram (DFD) is a graphical representation of the "flow" of SWIPE. A data flow diagram can also be used for the visualization of Data Processing [2]. DFD shows the interaction between the system and outside entities. This context-level DFD is then "exploded" to show more detail of the system being modeled. A DFD represents flow of data through a system. Data flow diagrams are commonly used during problem analysis. It views a system as function that transforms the given input into required output. Movements of data through the different transformations or processes in the SWIPE are shown in Data Flow Diagram of Fig. 1.

Figure 1 Data Flow Diagram



This paper mainly focuses on controlling all the activities of the college or institution by using a seven module approach they are administration, principal, students, faculty, library, parents and alumni. The function of the individual module is explained in detail in following flow graph.

2.2 Detailed Flow Graph

The detailed flow graph is shown in Fig. 2 .The design of the SWIPE includes the design of the login page which provides login for the students, administration , faculty, principal, parents, library i.e. library faculty, and Alumni to access the SWIPE. Every user of the SWIPE has a unique username and password .These are provided by the college administration i.e. college office. Users can change their password when needed. The login page takes user name and password, depending on the unique user name the SWIPE categorizes the user after this authentication SWIPE redirects the user to the module where he belongs.

Figure 2.a Login Page DFD

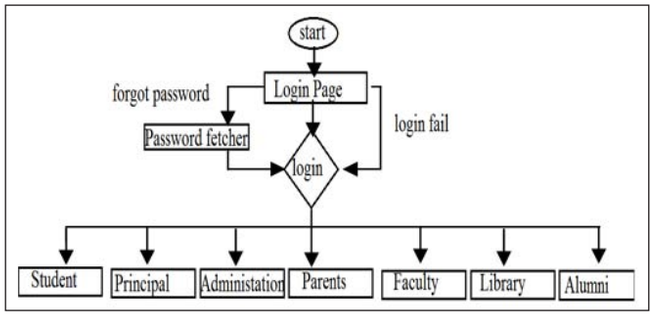


Figure 2.b Student Module Features

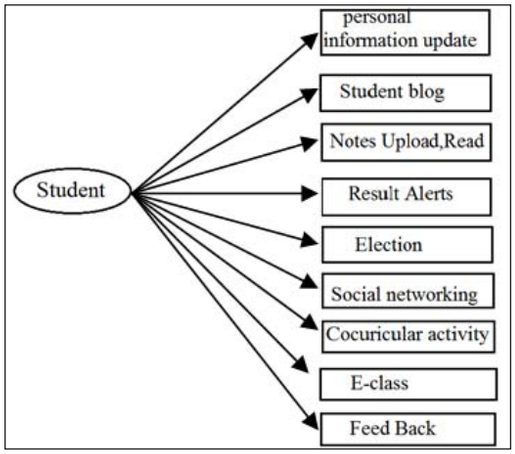


Figure 2.c Principal Module Features

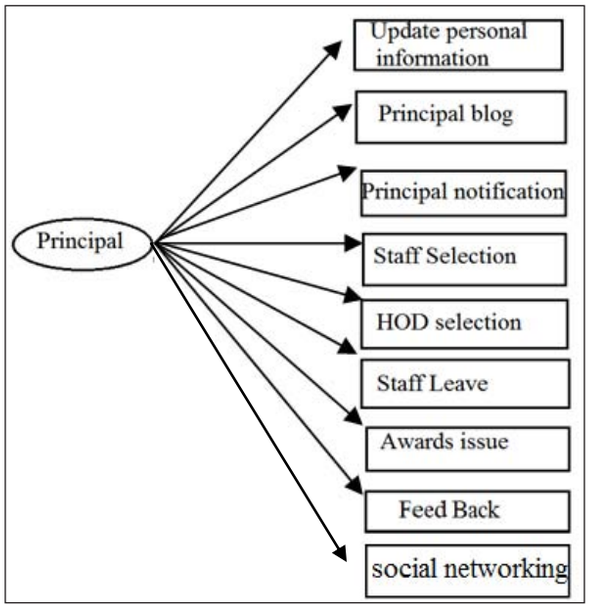


Figure 2.d Administration Module Features

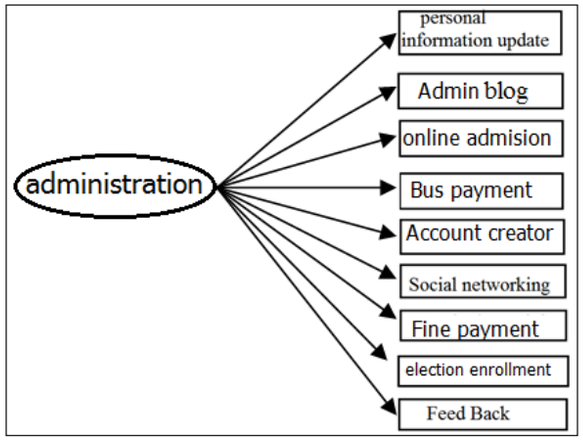


Figure 2.e Parent Module Features

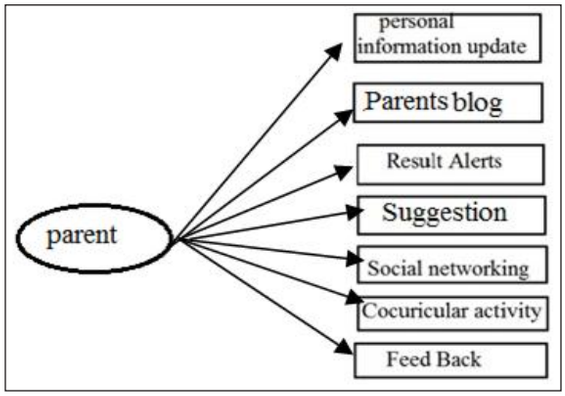


Figure 2.f Faculty Module Features

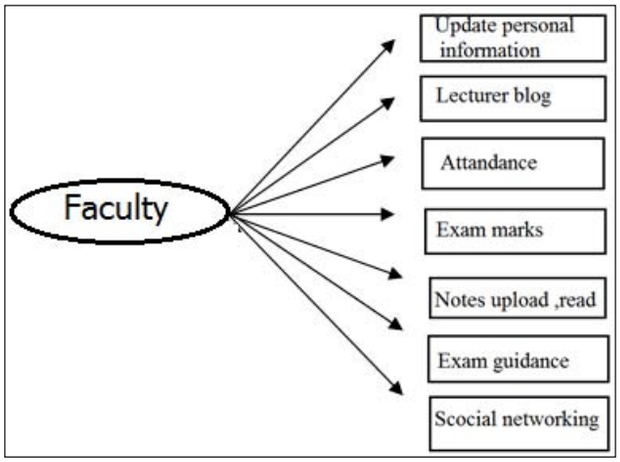


Figure 2.g Library Module Features

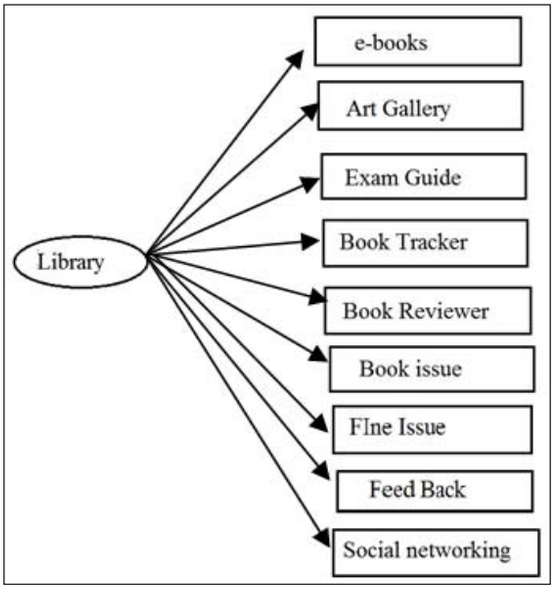
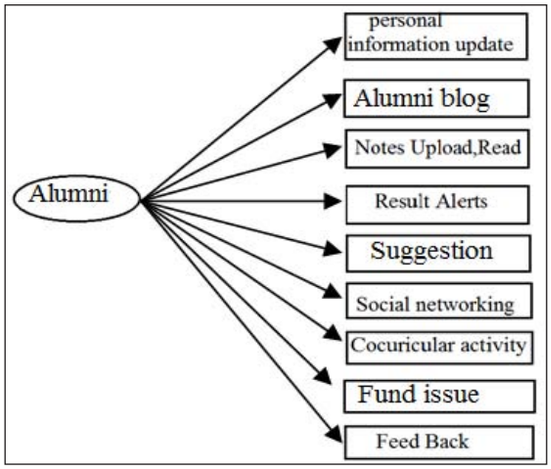


Figure 2.h Alumni Features



STUDENT: The student is of center focus in SWIPE, because in every college student plays the key role. Student can access the information of the college, course details, subject details, faculty details information and exam section information. The course details include information regarding branch he is studying, the academic curriculum of the college, information regarding the staff handling the subjects, he can give feedback on subjects staff, he can vote in the election, he can upload notes, he can visit e-library and e-class, e-class consists of videos and lectures , even he can make online admission and fees payment, he can send greetings and wishes to others and he can use social networking features like chat, notification, mail.

PRINCIPAL: In SWIPE principal is the second highest powered module. This module can be used by the principal to update his information and even he can use the blog for fetching the faculty information. He can modify the contents of home page; he can approve or deny the leaves applied by the faculty. He can appoint any faculty and even he can select Head of the Department. He can fetch the details of staff and students. Even he can access e-library, social networking features are also available of this module.

ADMINISTRATION: The administration is responsible for creating a user account as soon as he admits to the college. It needs to enter the information as soon as an account is created. It has all the admin rights; it also updates the information about the events that are going to be conducted. It is the module with highest power in SWIPE. It is also responsible for the online admission and other fees payment. Administration also includes social networking features like chat, greeting wishes mail.

PARENT: This module is used by the parents to check their lad's progress in studies and give feedback to the other modules. They can even give some useful suggestions and also Social networking features can be accessed by this module. If there lads are shortlisted in any of the activity they are informed through the blog.

ALUMNI: This module is just a replication of student module but some of the features which are available for the students are unavailable for the alumni. Whenever a student gets graduated from the college his module is promoted to alumni type from student type. Alumni module has suggestion and fund feature through which he can give suggestion to other module and he can issue fund to college.

FACULTY: The staff can update the information regarding the students attendance, internal marks of the students and any information regarding the subjects they handle. They can even update their information. They can also view the student details for better understanding the student performance and improving the efficiency of the student. The staff also gets the updates from the college regarding any events occurring in the college. The can upload videos in e-class, even they can upload and read notes, they can guide the students for exams. They can fetch other staff details, and also they can apply for the leave. This module also includes social networking features like chat, greeting wishes mail.

LBRARY: This is an important module which is used for library management. It has social networking feature along with that is also has some features like book entry maker, card entry maker, book tracker, fine issuer, book issuer and collector. If there is any fine on book library module can issue the fine directly without more calculation, and fine payment can be done at the office.

2.3 Requirement Analysis

Requirement for a SWIPE is give below

- User accounts should be created by the administration as soon as the user admits to the college.
- Every user should have a unique user name along with his identity.
- Later user can make modification in his account and he can access all other six modules with the help of blog provided for the user module.

- Administration need to modify the user account whenever it is needed and it should set its status whether the account is active or not.

2.4 Functional Requirement

Secured Website Intended for Personal and Educational use aims to improve the method and techniques used for college management, It needs to maintain the information [3].

It has seven modules administration is the major module. Administration can retrieve and modify the data of any other module. It can create and delete the account. All the seven modules uses SWIPE for querying and even they can use their modules blog to access others blog.

2.5 Non Functional Requirement

- Performance Requirements:

  The proposed system that we are going to develop will be used as a complete website which controls almost all the activities of college. Therefore, it is expected that the database would perform functionally all the requirements that are specified along with that it should provide good security.

- Safety Requirements:

  As SWIPE controls all the activities of college, the database may get crashed at any certain time due to virus or operating system failure. Therefore, it is required to take the database backup [4].

- Security Requirements:

  We are going to develop a secured database.

  There are various categories of people namely principal, student, administration, parent, library , faculty, alumni who will be viewing either all or some specific information from the database. Depending upon the category of user the access rights are decided. It means if the user is an administration type he will be having more power compared to other users of SWIPE.

2.6 Database Design Process

It is fair to say that database play a critical role in almost all areas where computers are used, including business, electronic commerce, engineering, medicine, law, education, and library science. A database is collection of a related data.

A database has the following implicit properties:

- A database represents some aspect of the real world, sometimes called the mini-world or the Universe Of

  Discourse (UOD) changes to the mini world are reflected in the database.

- A database is a logically coherent collection of data with some inherent meaning. A random assortment of data cannot correctly be referred to as a database.

- A database is designed, built, and populated with data for a specific purpose. It is an intended group of users and some preconceived application which these users are interested. Database Management System (DBMS) is a collection of programs that enables users to create and maintain a database. DBMS is a general-purpose software system that facilitates the process of defining, constructing, manipulating, and sharing database among various users and applications. Defining a database involves the specifying the data types, structures, and constraints of the data to be stored in the database. The database definition or descriptive information is also stored in the database in the form of dictionary; it is called Meta data constructing the database is the process of storing the data on the storage medium that is controlled by the DBMS. Manipulating a database includes functions such as querying the database to retrieve specific data, updating the database to reflect in the mini-world, and generating reports from the data. Sharing a database allows a multiple users and programs to access the database simultaneously. Application program accesses the database by sending queries or request for data to the DBMS [5]. A query typically causes some data to be retrieved; a transaction may cause some data to be read and some data to be written into the database.

3. Technologies Used

3.1 HTML

HTML is a hypertext markup language which is in reality a backbone of any website. Every website can't be structured without the knowledge of html. If we make our web page only with the help of html, than we can't add many of the effective features in a web page, for making a

web page more effective we use various platforms such as CSS. So here we are using this language to make our web pages more effective as well as efficient. And to make our web pages dynamic we are using Java script.

3.2 CSS

CSS Stands for "Cascading Style Sheet." Cascading style sheets are used to format the layout of Web pages and it also gives style and looks to web pages. They can be used to define text styles, table sizes, and other aspects of Web pages that previously could only be defined in a page's HTML. The basic purpose of CSS is to separate the content of a web document (written in any markup language) from its presentation (that is written using Cascading Style Sheets). There are lots of benefits that one can extract through CSS like improved content accessibility, better flexibility and moreover, CSS gives a level of control over various presentation characteristics of the document. It also helps in reducing the complexity and helps in saving overall presentation time. CSS gives the option of selecting various style schemes and rules according to the requirements and it also allows the same HTML document to be presented in more than one varying style.

3.3 Java Script

JavaScript is considered to be one of the most famous scripting languages of all time. JavaScript, by definition, is a Scripting Language of the World Wide Web. The main usage of JavaScript is to add various Web functionalities, Web form validations, browser detections, creation of cookies and so on. JavaScript is one of the most popular scripting languages and that is why it is supported by almost all web browsers available today like Firefox, We used the browser Chrome or Internet Explorer. JavaScript is considered to be one of the most powerful scripting languages in use today. It is often used for the development of client-side web development. JavaScript is used to make web pages more interactive and dynamic. JavaScript is a light weight programming language and it is embedded directly into the HTML code. JavaScript, as the name suggests, was influenced by many languages, especially Java.

3.4 SQLyog

SQLyog is most powerful MYSQL manager. SQL stands for Structured Query Language. SQL lets us access and manipulate databases. SQL is an ANSI (American National Standards Institute) standard. SQL can execute queries against a database, retrieve data from a database, insert records in a database, update records in a database, delete records from a database, create new databases, create new tables in a database, create stored procedures in a database, create views in a database, set permissions on tables, procedures, and views

4. Results of Swipe

4.1 Login Form

The SWIPE starts with login page where the registered user can enter user name and password to access the features.

Figure 3. SWIPE Login Page

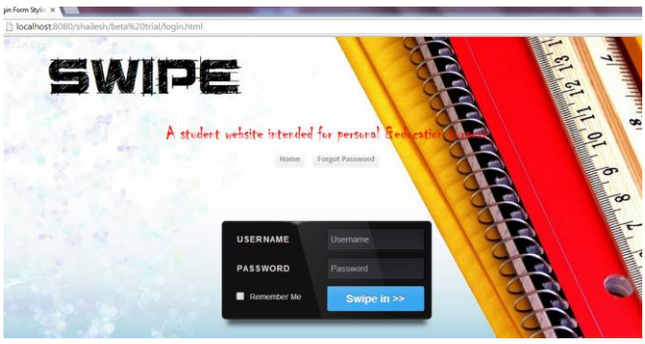
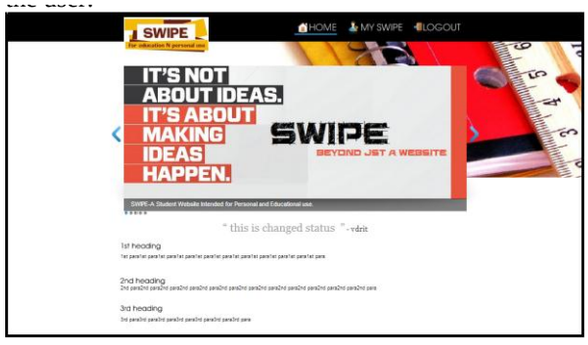


Figure 4. SWIPE Home Page



Depending on the authentication it redirects the user to the various pages. But all the modules move through a common page which is controlled by the principal by the principal blog.

User accounts are created by the administration module i.e. college office. This is the major module in SWIPE, it can create an account and even it can provide information about the user.

Figure 5. Office Blog of Administration

Once after creating a user account we can login to the module of the type to which we belong. For example consider

Username: shailesh

Password: shailesh123

Type: staff

Once after the login, through the blog of shailesh he can view his personal information as shown below.

Figure 6. SWIPE User Information Viewer

He can even modify his information through his blog with the help of user information update form. Following figure shows the modification of the principal's information.

Figure 7. SWIPE User Information Updater

All the module blogs embedded with the social networking features like chat, greeting and wishes, notification, mail. Through these social networking features one module can interact with the other.

Figure 8. Social Networking Features of SWIPE

A library module consists of features like book tracker, book reviewer, exam recurner, art gallery and help. Following figure shows the library module.

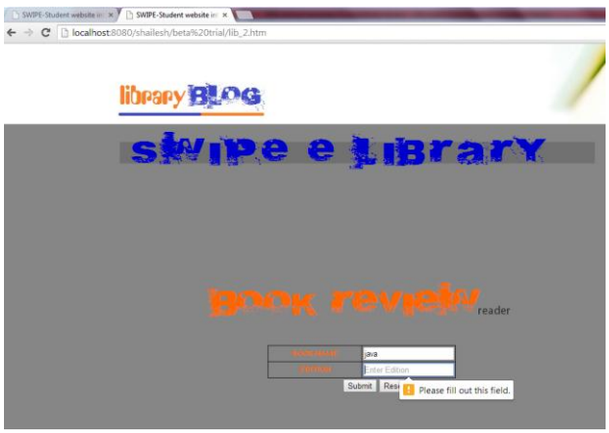
Figure 9. SWIPE E-Library

All the modules checks the data that we have entered if any mismatch occurs it will show an error message. For example consider a parent module if he want to access the information of a staff with name XXX, which is not entered in SWIPE, it will show an error message replying that staff information is unavailable. Following figure shows the same.

Figure 10. SWIPE Staff Information Fetcher

Figure 11. SWIPE Fetched Staff Information

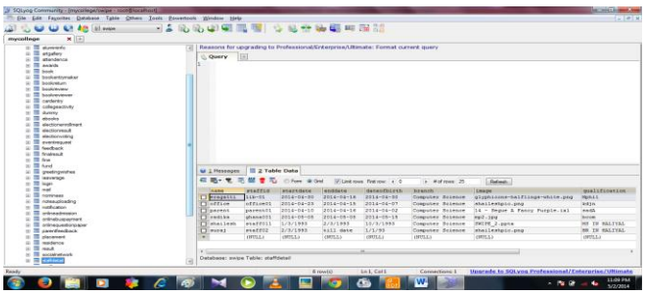
Figure 12. SWIPE Book review



All the tables of swipe do validation to check whether the field is empty or filled as SWIPE is concerned about the security. Following snapshot shows validation in SWIPE.

All the information is stored inside the SQLyog in the backend. Following snapshot shows shored information in SQLyog within a database named SWIPE. Following snapshot shows the data stored inside SQLyog.

Figure 13 Backend Information in SQLyog



5. Conclusion and Feature Enhancement

This paper assist a technique of Secured Website Intended for Personal and Educational use, which reduces the manpower, paper work, time consumption and malpractice occurring in the old traditional approach of college management. This website controls all the activities of the college. And information collected by SWIPE can be easily retrieve and modified. All the decisions are made in a secured way .It covers various areas and computation in college management. Users can access the information without visiting the college, from any remote area without any delay. So SWIPE is essential for institutes and colleges.

SWIPE is designed and implemented for college and institute management, but it can be even used for inter college communication, college and management communication.

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