

*Project Research Article*

## Website build using AJAX and SQL Server 2008

Suvarna Arango<sup>†</sup>, Kamayani Tiwari<sup>†</sup>, Priyanka D'souza<sup>†\*</sup> and Sharan Varghese<sup>†</sup>

<sup>†</sup>Information Technology Department, Xavier Institute of Engineering, Mahim (W), Mumbai, India

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### Abstract

*This project aims at creating a website for Xavier Institute of Engineering. The website will allow the students and the professors and other visitors to connect and visit the website and look for the relevant information. This website will be a hub for all the students and teachers to interact with each other. It will be a representation of college to the outside world. The website will inculcate all the activities that happen in the college. It will also show all the basic information of the college like the courses offered, fees structure, etc. The website will also exhibit the cultural, technical and sports festivals. Students and teachers will be allowed to access the website through their individual ID and password. It will also be accessible by the non-teaching staff. The interface of the website will be dynamic and special features like uploading notes by the professors will be allowed. Regular updates related to the academic and extra-curricular activities will also be shown on the website.*

**Keywords:** Password generator, HTML5, Dynamic website, JavaScript, AJAX, SQL Server 2008.

### 1. Introduction

As internet is the present era of life, we choose to make the website for Xavier Institute of Engineering, and to showcase the college on the internet. The website is created to narrow down the gap between the students and teachers as well as the parents.

The website for Xavier institute of Engineering enables the students and others to interact with the college. It provides a platform for the students, parents of the students and also the professors to connect and network with the college more effectively and get regular updates about the events in the college. Various techniques are added in order to create an efficient and reliable website:

Storage for large amount of data: Using techniques like K-means Clustering, we tend to organize data so that large data can be easily monitored and used.

Authentication of the user: If a user or a visitor of the website is a student, he will be authenticated by his individual ID and password through which he will be able to see data that is not shared by other students. Also for professors, with their ID and password, they can upload notes for students and other relevant documents that will be accessible to the students.

The website lets the visitors see information about the college, the teaching staff and also the non-teaching staff. They can also see recent events happening in college. They will not have any ID and password and hence they will only be able to see general information

which includes information on courses, fees structure, recent academic and extra-curricular activities, information on professors and the college staff and recent updates on the website.

Initially, a one-time ID and password is distributed among the teachers and students of the college by the admin. Later the password and ID is changed by the individuals and then they are allowed to use their individual IDs and password for accessing and uploading data on the website.

It facilitates the parent of the students to be updated keeping the interface quite easy to understand yet attractive and simple. The website will be categorized in menus and each menu will contain information related to the menu. Various animations, video- visualization and images will be shown on the website with the aim to provide an ease of access to the viewers.



The website's interface will be developed in HTML5 and the scripting will be done using JavaScript, that is front-end will be HTML5 and CSS whereas the backend will be SQL.

\*Corresponding author: **Priyanka D'souza**

A database will be maintained for student's ID and their respective passwords. The students will get to use the ID and password generated by the admin by using Random Password Generator and made available to the professors and students. Professors can upload data such as notes, attendance record, etc. Students can view this data using their passwords.

Other viewers can view general data regarding the college staff, both teaching and non-teaching, information regarding principal and professors and also about the location of college and other information related to the events in college.

The web-pages will contain information in the form of text, images, and videos. Recent notifications will also be available and displayed on the website. The Administrator will serve the back-end. He will be responsible for updating the information on the cultural, technical and sport events and even other important events. A separate section of 'frequently asked questions' will be added where the user can ask question about the working of the menus in website.

## 2. Literature Review

Server-side scripting is a technique used in website-design which involves embedding HTML which results in a user's request to the server website being handled by a script running on the server-side before the server the server responds to the client's request. Server-side scripting is used to provide an interface to the client and to limit client from accessing the database. On the basis of the above theory, authors of (Stefen Tilkov *et al*, 2010) explain the use of JavaScript for better and reliable server-side scripting. It proves that with the use of html5 along with JavaScript, reliable end system can be made. The authors focus on the use of JavaScript over HTTP.

Node.js works on the concept of I/O event model. I/O operations are handled by means of higher order functions, that is, functions taking functions as parameters. A node server process takes command line using something like node <scriptname>.

The most important feature of our website lies in the interface, which will be completely user interactive, both to the user and administrator. It will allow the teachers to upload information like important files, papers, etc. Even the college's recent achievements will be uploaded on the website. The important notifications will be presented by a pop-up as soon as the person logs in. For example, if there is a change in the time-table of exam, the student will be notified as soon as he logs in. Later, he can navigate to the page and see the detailed information. The authors in (Sylvain Halle *et al*, 2010) mention the use of AJAX for the response time to be less. With the example of working of an e-commerce site, use of AJAX is shown. When the target service is known in advance, our interface driver can detect a service's contract non-conformance by generating runtime test sequences using Runtime server Testing.

## 3. Methodology

### 3.1 Updating of contents of the website

The important contents on the website will be the Time Table, Information regarding Alumni, and information about the events related to CSI, IEEE, or other events. The events need to be deal and updated on the website as soon as possible. There may be a requirement where existing data in MySQL needs to be modified. You can do it by using SQL UPDATE command. This will help modify any field value of the table.

Using the UPDATE syntax, we can update the contents of the table consisting information about students, notifications, teaching staff, non-teaching staff, non-teaching staff. We can use the update syntax to update data when there is a change in the number of students for assigning roll numbers to the students or to enter marks of those students and to assign pass class to them. It will also facilitate in entering the number of teaching and non-teaching staff in different departments. Thus, it will facilitate the administrator to

1. Upgrade one or more field together.
2. Specify any condition using WHERE clause.
3. Update values in a table at any time

### 3.2 Ajax or Asynchronous JavaScript

It is a collection of technologies use to develop rich and interactive web applications. A typical Ajax clients runs locally in the Web browsers and refreshes its contents at a fly in response to users input. The Ajax request is initialized by using the XMLHttpRequest().

It is generally used on the client side along with XML. It is used to send or retrieve data from a server asynchronously in the background. It improves the behavior of existing page by making it response faster. It retrieves data by using XMLHttpRequest(). Even though XML is mentioned in the function, XML is not required and it is not necessary for it to be asynchronous. It is just not a simple technology but a group of technologies, HTML and CSS can be used to as a mark-up and to style information dynamically.

### 3.3 Maintenance of Website: More maintenance less work

The website will run on the back-end using MySQL. We will be storing data of about 200 students and all the faculty members, both teaching and non-teaching. The database will be accessed by the Administrator, who will have all the rights on the database. The most important issues that we will be dealing for the maintenance of the website will be:

Many websites get hacked every day due to the owner/webmaster neglecting to update the core code. That is the reason, we will make sure that web applications go through continuous development for bug elimination, performance and security. The core

code can be set to update automatically any time a new version of our CMS, which is Java, is released. Module and feature update is equally important for delivering secure and up-to-date technology.

The process of publishing content on the website involves several tasks including writing, reviewing, editing, formatting, updating, organizing and categorizing content. This process can be controlled by setting up rules and conditions. As the college has different departments where every teacher belongs to different departments and even every student belongs to a different department, content will be categorized on the basis of Departments.

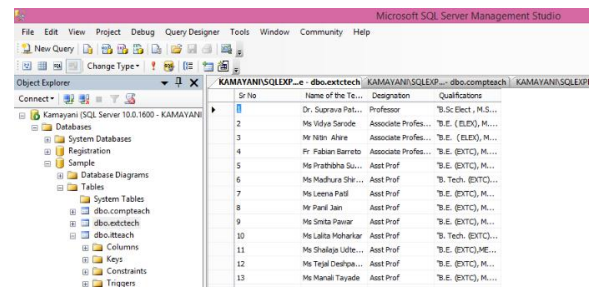
Promoting Seasonal Content on the Home Page will ensure that the students or others are not deprived of any important detail. If a certain registration is supposed to be done by a student for some workshop, he can be notified about it on the Home page which will navigate the student to the registration page or other related page.

#### 4. Results and Conclusion

##### 4.1 Results

The password generator works by storing the predefined pattern of the password in the database. If the password in the database matches the password entered by the user, the user is directed to the next page or else he may face messages.

SQL Server Management Studio is a software application first launched with the Microsoft SQL Server 2008 that is used for configuring, managing, and administering all components within Microsoft SQL Server. The tool includes both script editors and graphical tools which work with objects and features of the server.



(c)

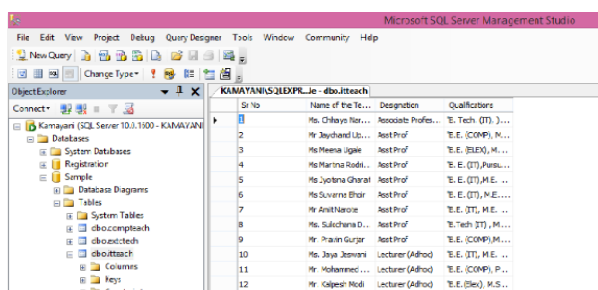
Fig 4.1 (a) (b) (c) showing database for the faculty of the college website

The password is generated randomly by use of different letters and symbols for which JavaScript is used.

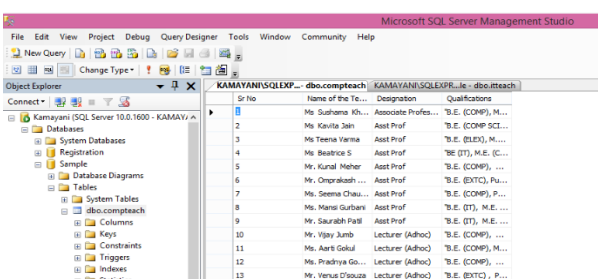
We will also use AJAX. It is a collection of technologies use to develop rich and interactive web applications. A typical Ajax client runs locally in the Web browsers and refreshes its contents at a fly in response to users input. The Ajax request is initialized by using the XMLHttpRequest().



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(a)



(b)

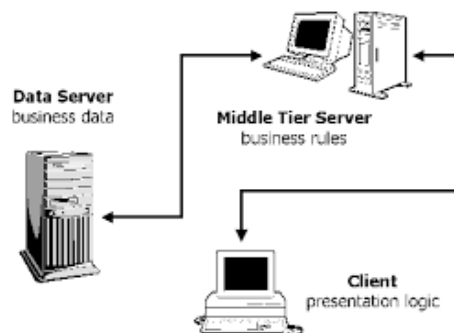


Fig 4.2 System Architecture for College website

#### Conclusion

Our idea and concept will help us narrow the gap between the student and the college itself. It will also improve the look and feel of the entire college website

which will help us create a better image in the eyes of visitors. The website will act as a portal for students from where they can co-ordinate and exchange note with their respected teachers. The website will also display the attendance of every student which will help parents to keep track of their child. The website will help the students and teachers to collaborate more effectively. As the growing phase of Internet, also as a part of the Engineering course, the use of a website is a must. The website will help reduce the physical efforts taken by individuals and will have a good effect on the today's modern society.

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