



A User Interface Design for Semester Course Registration System

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ABSTRACT: In every institute or college it is very laborious process to allocate the courses to the students based on their choice. And there may be chances of missing suitable courses and of time conflicts because of the misguidance by the other students due to the lack of knowledge on the course plan as well as timing schedules. It is very difficult process by the hand of coordinator to allocate pre-specified subjects based on their performance in the previous semesters. To ease this laborious process we have developed a user interface by the name “A User Interface Design for Semester Course Registration System”. In the proposed plan of registration system the process is made online to get rid of unnecessary human to human contact and communications. In the website itself the programme of course plan for a specific semester will be displayed to the students. The whole website will be organized by the coordinator/s. First, the students register into website by giving their academic details then login to give their priority to the all the subjects based on their interest. Second, the coordinator or the administrator allocate the subjects to a specific student by the knowledge of his given details in the registration process. In our proposed system the coordinator would allocate the subjects to a specific student based on his previous semester or year percentage/cumulative grade point average of marks he obtained. Last, the students again login to verify his courses given for that particular semester by the coordinator. For this application design and development we used ASP.NET of Microsoft Visual Studio 2010 as frontend and MySQL 2008 R2 as backend as well as database management server.

KEYWORDS: Human Computer Interaction, Website, User Interface, Advising, Course Planning, Microsoft Visual Studio 2010 ultimate, MySQL Server 2008 R2.

I. INTRODUCTION

The semester course registration is a tedious process to the students as well as to the coordinators if it is not online. To ease this process it should be made online so that students can communicate with the coordinators and vice versa through the online system. To make it online we have developed a website which helps the students as well as the coordinators. The website is nothing but a user interface which acts as a mediator between the humans and a machine. So, the students and coordinators communicate through this interface. Here, our project main intention is to develop a website for online student course registration system. For designing the interface we have used “Microsoft Visual Studio 2010” as a platform and to maintain the database “The SQL Server Management Studio 2008 R2 has been used”. In the project the student’s priority given to the interested subjects and cumulative grade point average of the earlier semester/year play a main role [1] while administrator or coordinator is allocating the subjects to the students. We involved the administrator in the process of automation of the system because to maintain and organize the website if there are any modification to be done or if there is a change in the course plan for every year/semester. As of now it is considered for one semester course plan. In brief, every student gets an access into the system after the registration done by the setting the credentials to his/her account. Once the student gets an access he/she will be permitted to propose the prioritized subjects list based on his/her interest. The students can access the website for a particular time given by the admin. Later the admin logs into the site for allocating the subjects to the students applied. The SQL Server Management Studio acts as the backend to maintain the database consistent whereas the .NET Framework in the Microsoft Visual Studio is used to develop the website. As it is a project of the domain the human computer interaction, the guidelines and golden rules to develop a user interface stated by the domain experts are used anonymously. To make it user friendly the designing techniques and rules [2] are implemented in the system. It will be very helpful to any organizations in advising the students about that particular year/semester course plan and timing schedules online



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itself. And also helpful to get rid of the burdensome of the coordinator/administrator even though he/she involved in the process of allocation.

II. RELATED WORK

Mohammad S. Laghari [1] developed a java applet for student registration system to advise to the students and for course registration. Though there are several online student registration systems, there is a necessity of consulting administrator before registering to get advised by the coordinators about timing schedules, to get knowledge about professors, and to choose relatively same domain subjects for that particular semester. In this paper the author tried to explain and to design that there should not be face to face interaction several times unnecessarily. For this he devised a system that specifies everything online itself. So, the author mainly focused on advising the students before registration for the courses online itself about each and everything to avoid unnecessary human to human communications with the coordinators. And he focused not only on the registration of the courses in only one semester but also for all the semesters at a time and it can be modified further in the future at the time of coordinator allocating subjects for a particular semester at a specific time. He developed it in java computer programming language. Now it is in testing for the better results and improvements to be done. Once it is tested the author is in a plan to convert it into java applet and to host it in the web so that students can access to this website. We chose this paper as basis to propose and implement our idea in the student course registration system. From this paper we found that it is very helpful in designing website as it used java programming language. Reena Saini [2] and Prakash R. Kolhi et al [3] mainly focused on the eight golden rules to develop a graphical user interface and how to design a good interface. The GUI is a greater accomplishment of the Human Computer Interaction because it is easily tolerated by the regular users or/and novice users. The eight golden rules are as follows 1. Strive for consistency, 2. Allow frequent users to use shortcuts, 3. Provide feedback, 4. Communicate through dialogue boxes, 5. Preventing simple errors and handling, 6. Reverse of actions, 7. Control of system, and 8. Reduce short-term memory load on the users. Before designing the website, it is required to be done with the following aspects. Those are 1. Don't invite the users to make mistakes, 2. Give the user a hint, 3. Train the users, 5. Provide useful platforms, 6. Satisfy the user's curiosity and 7. Follow the standards.

II. PROPOSED SYSTEM

Aim of the proposed system is to design a complete course registration system online. In the proposed system the .NET technology is used as frontend for good look of the website and for easy designing and used the SQL server management studio as backend to maintain database consistent. The .NET is actually called Microsoft visual studio.NET introduced in 2002. It is not a language but it is a platform to develop a software application. The combination of .NET language and .NET technology is a software application. When we install visual studio the .NET framework also gets installed automatically as a component. The .Net architecture includes several types of supporting languages, applications, class libraries and execution engine. The supporting languages include C#.NET, VB.NET, VC++, JSCRIPT, etc. C#.NET is used to develop web and windows applications where as VB.NET is used to develop console type of applications. Likewise, each language supports different types of applications hence this layer is named as supporting language layer. It also contains Common Language Specification field as the name suggests it specifies the common language between the different types of the supporting languages and different types of forms that include Windows, console and web forms [4]. Windows form is a platform to develop Microsoft windows applications. As the .NET framework provides object oriented set of classes it is used to develop a rich windows application. The form acts as a local user interface. The console form is a platform to develop business applications that can be accessed everywhere in the world through a medium. The web form is a platform to develop applications for a small organizations or institutions that can be accessed by only the authorized personalities in that organization. The proposed system is the type of web form application. For the proposed system, ADO(Active Data Object) and XML(Extensible Markup Language) files act as mediator between the frontend application Microsoft visual studio and backend SQL server management studio. For the proposed system the SQL language is used to store and retrieve the data that stored in the table format in database. For every access of the table there should be a connection between the visual studio and the database. To maintain connection permanent for every access we have created a file by the .CONFIG to avoid repetition of same query in every file. This code in this file acts as permanent connecting media between frontend and backend. For every data we used in the proposed system is stored in a table format. For every



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access of the data the .CONFIG file gets called and the active data object file in .NET framework acts as mediator between SQL server and Microsoft visual studio.

III. IMPLEMENTATION

To implement the proposed system “A User Interface Design for Student Course Registration System” we used the C#.NET programming language that supports a web application as our proposed system is also a web application. In C#.NET every file’s extension is .ASPX.CS where ASPX specifies .NET framework and CS specifies a particular language that is C#(C Shop). For connectivity .CONFIG file and for default style sheet .MASTER file that includes .CSS file. There should always be a connectivity between the frontend and backend to avoid writing connection query in every component file of the website. For this to happen .NET provides a facility that a .CONFIG file in which we can write a query that connects the visual studio and database management studio whenever accessing the data. The working process of the .CONFIG file is that it includes the connecting query as a string and the components of the website. If we want to run queries for our system, let us assume that we open database management studio, first of all the components the ADO.NET and .CONFIG file gets executed to establish connection between the frontend and backend by displaying a pop up window where we need to authenticate the process of connectivity. The master page in the .NET framework is nothing but the default style sheet for every component of the system. Though a style sheet can be formed by CSS (Cascading Style Sheet) files but to apply it to every component we .NET framework facilitates .MASTER file. So for every component it includes .CSS file by default to maintain its consistency in every page. As discussed that the program in C#.NET language supports web applications, the home page and other components get an extension .ASPX.CS that specifies it is C#.NET file. In the proposed system the home page is user login page with two buttons for administrator login and new registration. In the registration page the student gives his/her details with credentials to get access into the Website. Whenever student logs in, a subject list will be shown to give his/her priority for that particular semester and send button to send proposal to the administrator. Later, administrator logs in to allocate the subjects to the students based on the prioritized CGPA according to their priority given to the subjects. The administrator page consists of two grids, one table, two list boxes, two selection buttons, one confirm button and one logout button. The first grid is for selecting the specific grade point average because the allocation process will be done based on the prioritized CGPA. In the grid we listed 1 to 9 numbers so that if we select any number that shows us the information of the students who has the CGPA greater than or equal the CGPA we selected from the grid. For example, if we select 8 from the grid then a table will be displayed that contains the information like user id, name and CGPA of the students who has the CGPA greater than or equal to 8 up to 9. We followed this procedure for selecting the CGPA that will be obviously in decreasing order to allocate the subjects because the process is prioritized to the Cumulative Grade Point Average of marks they obtained in the previous semesters. The second grid is to select the specific student by his user id shown in the table. The administrator should prefer to select the students in the decreasing order of CGPA of the students they mentioned while the registration process. Whenever the administrator selects a student, the subject proposal of that particular student will be displayed automatically. For the system the total number of subjects for a semester is 10, the number of subjects for a student in a semester is 4 and for each subject the number of seats is 2 for our convenience while the executing. Whenever the administrator selects four subjects and goes for send button the message will be displayed by saying that proposal successfully sent if the number of seats do not exceed 2 in those particular subjects. If at all there is an exceeding of number of seats in a subject of those 4 subjects, the message will be displayed by saying that the first subject seats are over if it is the first subject in which seats are filled up. Likewise, for the four subjects the same message will be displayed according to the position of the 4 in the right list box. If there is no any problem while sending the proposal to the particular student the administrator processes it for all the students registered. The logout option will direct the administrator to the home page. In the last, the student verifies his home page to know his/her subjects for the particular semester.

IV. RESULTS

In the proposed system we explained that the automation of advising and registration is to be implemented. In the implemented system we have got satisfied results that advising the students before going to opt the subjects and course registration. When coming to the automation process we involve the administrator in the allocation process. The



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allocation of the subjects automatically validated by the package and automatically done by the system we developed. But the process of selection of the subjects is left to the administrator so that he/she can visualize the process of the selection while allocating the subjects simultaneously by running the SQL server management studio. Any how we have got very satisfied result that to avoid the laborious work with hand and notices to be displayed in notice board for every semester for every branch likewise. This system can be used by any of the branches or institutes because before letting the students to access it the administrator should verify and list the subjects for that particular semester. That is why we involved the administrator in the system we developed.

V. CONCLUSION AND FUTURE WORK

In this project we have developed a course registration system for a particular semester by following the papers “An Automated Course Advising System” and “User Interface guidelines”. We have developed a complete registration website for choosing the courses in a particular semester. We are succeeded in omitting the unnecessary face to face communications between coordinators and students by the system developed. And we involved the administrator in the automation process for any modifications in semester wise subjects or for adding any late students to that particular course. And our frontend application .NET framework helped us a lot in implementing the website in an easier way when compared to other technologies. We can improve the system by adding some more information like timing schedules of the classes, subjects list and corresponding professors followed by their experience to advise the students in opting the courses. We can also reduce the laborious work for the administrator while allocating the subjects by displaying a message when the cursor moved on the subject to be selected before going to send it. Based on study of the action sequences of the students and administrators, we can develop the user friendly interface. The data mining and machine learning algorithms can be applied to the action sequences collected using human computer interaction technology to develop user friendly interface. These algorithms help us to get to a point that specifies our decision to make on the user interface design.

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