SXC CREDIT MANAGEMENT SYSTEM (SXC-CMS)

WHAT THE PROJECT IS ABOUT

The aim of this project is to design a computer web-based credits management system (e-credit management) that will handle the non-academic credits that is compulsory for each student in St. Xavier's College. It is a software-based credit-storage and credit-management system. In this application, students may check their current credits status by visiting the webpage, much similar to how they check their attendance online. The credit-awarding department will update the credit-count of individual students on the server. Students are able to view the credit details from anywhere. Each student can view the total number of credits obtained and the divisions in the credits, i.e. which departments have awarded him/her with how many credits. In our system, there is only one administrator who has the authority to modify the data (allotting credits, creating entries in the system for new departments and students) stored and manage it through the application. The administrator is able to log in and award credits to students depending on their work. The credit-awarding departments will have to submit the names of the students who are to receive the credits with the other details to the administrator, who will have the permission to allocate credits to the students. In addition to this, in the second phase of the project, the system will also display the upcoming events posted by the different departments thereby increasing the awareness as to how to acquire and keep track of credits.

The project (in phase I) has the following functionalities (see figure I at the end of the document):

1. Student view: Students view their credits here after entering the relevant details.
2. Registration of students[1]: The students are to be informed that to gain credits, one must register in this system. They can register with their details like roll number, year, department and name. This they will have to do once after getting admission into the college.
3. Administrator login: The administrator has to log in to the system with a username and password, which can be changed after logging in.
4. Allocation of credits: The administrator can allocate credits to students identified by his/her roll no., year and department.
5. Increment year: After an academic year, the administrator can increment the year field of every student.
6. Adding a new department: The administrator can create new departments.
7. Logout: The administrator must log out after every session as he/she has access to critical data.

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[1] This section may be removed later due to security reasons. In that case, the student registration will be done by the administrator only.

WHAT MAKES THIS PROJECT PROSPECTIVE AND USEFUL

In St. Xavier's College doing non-academic work is compulsory for every student which is measured in the form of credits[2]. In total, a student is expected to have 180 hours of non-academic credits. Students have to take a credit-sheet from the office, fill it up and get it signed by the respective teacher-in-charge, which then becomes an evidence of the amount of non-academic work done.

The reason the email overtook traditional snail mail is because of its speed, efficiency and organized file mail storage. This project will prove to be useful for the very same reasons. A computer based organized central storage of credits is not only going to make the credit-system more efficient but will also offer an option of making the credit-system more transparent and help students be more aware of the credit system. We now look at a few reasons that make the current system less efficient than this computer-based credit management system.

The current system has the following disadvantages:

1. Each time a student needs to get the credits certified by the department, he/she has to go to the office, get the form, go to the department concerned, submit the form, get it signed by the teacher-in-charge, take it back and then submit all the credit forms to the Vice Principal at the end of the course (till which time the credit forms have to be kept safely at the responsibility of the student as it is the only evidence of his/her non-academic work). This is a lengthy process and puts load on the office, the students as well as the departments.
2. Credits cannot be awarded until the credit sheets have been submitted. In other words, if there is a delay in the submission of the credit sheets to the department concerned, the credits may be delayed and it may cause even more burden on the department concerned to verify and award credits for an event that occurred in the past. If a department wants to award credits, it has to wait till the forms are submitted.
3. There is a risk of credit sheets being misplaced and lost when given to a department, as each department has a lot of paperwork to take care of.
4. Paper based forms/applications have their usual disadvantages like shortage of forms, wastage of paper, improper use of forms (i.e. when a form was taken but was neither filled up nor submitted).
5. Lack of transparency: When a student gets a credit, no one other than the authorities and the student concerned need be aware. But it may be so that a student wants to know (the right to information) the credits another student has been awarded. He/she may not have access to other students' credit-counts.

This project would solve the above problems that are associated with the current system. Not only will this project reduce unorganized paperwork but also increase the efficiency of the credit-system in real-time (no more waiting in line for getting credit sheets signed-credits will be updated as soon as they are submitted to the administrator). It will also help reduce workload on the departments and hence allow credits to be allocated as and when events come up instead of saving it all up for third year. Moreover when a student accesses the website, there will be notifications on the home page informing everyone which events are coming up and if there is any credit awarded for participation.

[2] We assume and enforce all credit entries to be made in hours. By the college rules, 1 raw credit = 30 hrs. This system does not recognize raw credits; it takes the hours interpretation of credits.

HOW IT WORKS

Students can view their credits by simply entering their details. There is a database (MySQL) that stores student details, department details, the credits and the events details that are registered from time to time. When the administrator updates the credits of a certain student, the administrator will have to provide details such as event name, department awarding the credit, etc. apart from the details of the student who will be given the credits. After all the details are submitted, the database is updated with the credit count. When the student checks his/her credit-count, the data is displayed fetching the data from the database and there is thus no data inconsistency. Students are identified in a manner similar to the way students are identified while they check their attendance. The student identification is done using the following fields:

- Roll number
- Department
- Year

Using these three fields, each student can be identified uniquely. When the details have been entered, the student details are compared with the data stored in the database. When a match is found, we know that there is a student with the details entered (otherwise an error message is shown). The credit details of this student is then read from the database and displayed. It is to be noted here that in this system, a student can view another student's credit-count. As we do not display critical data in the student view, student login is not deemed necessary making this application easier to use.

The administrator will have to log in with a username and password which are also stored in the database. After logging in, the administrator can change the login details, award credits, store new events that are coming up (which will be displayed in the home page) and add new departments and/or students (see fig. I at the end of the document). We have designed the system assuming that there will be only one administrator (the Arts and Sciences office for example), instead of each credit-awarding department having an administrator (who can directly update the credits) for the reason of security and data integrity. In the second phase of the project, there is another database that stores the details of the events that are coming up and if there are any credit that will be awarded. Using this, the events that are coming up will be shown on the home page for awareness.

The system has a simple user-interface that will be easy to understand and operate for all. When a student visits the webpage, he/she will see a form that has to be filled up with their personal details like roll number, year and department. (As mentioned above, students are not required to log in). After the form is filled up, the student will see the total number of credit hours registered in his/her name, as well as the break up of the credits event-wise and department-wise. Neither the student nor the administrator has any hint of the database. All requests (even administrator requests) are made through the web page and the bare database is not visible to anyone, thereby making the data secure. Moreover only a single administrator has the authority to change the credit-count of a student, thereby securing the data further.

TECHNOLOGY USED IN THE DEVELOPMENT OF THE PROJECT

The project is designed using the following programming languages:

- PHP and MySQL
- HTML, CSS and Javascript

ABOUT THE DEVELOPERS

The project was designed and developed by the following Computer Science honours (CMSA) students of second year (Sem 4):

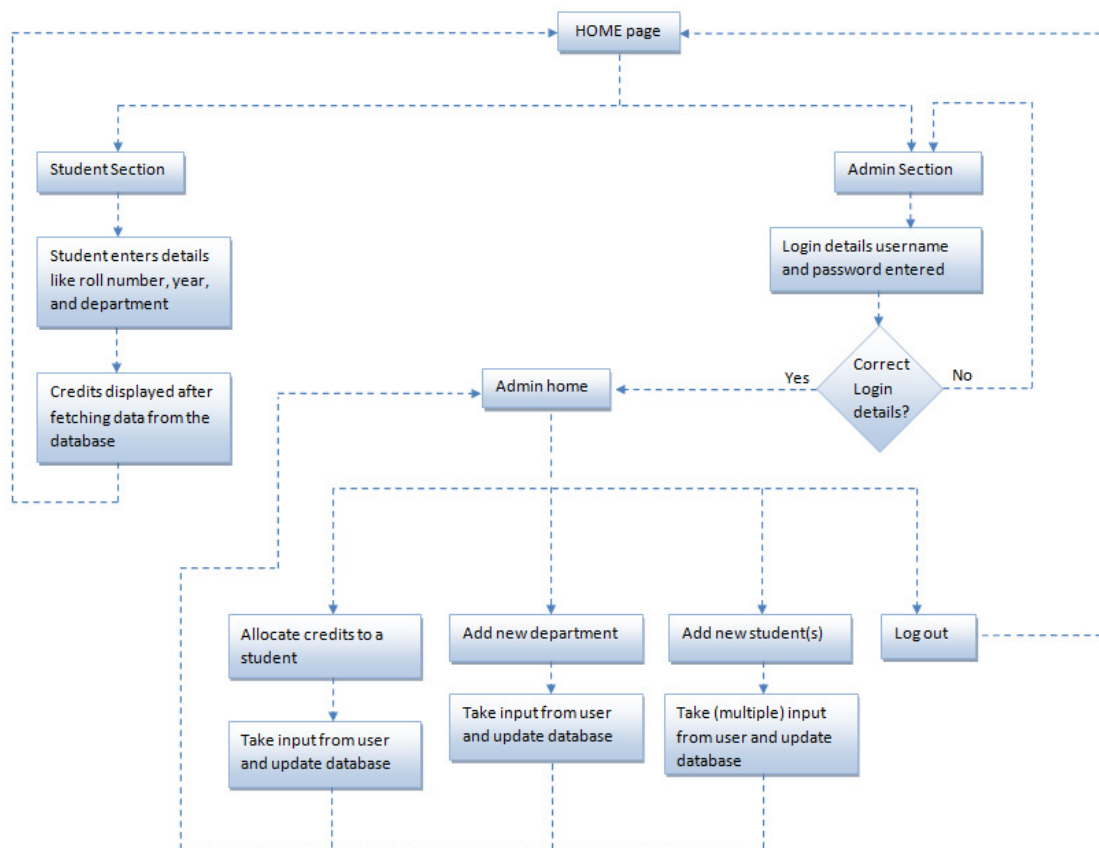| Team Members	Roll no.	Email	Phone
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FIGURES AND DIAGRAMS

Fig I: Basic flow of control in the system as of phase I (minor functionalities are not shown)