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AIMS: Academic Information and Management System, an automated tool using ICT for two tier academic institutions

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Abstract: The increase in demand for the completely automated system to manage all the academic activities intensifies the need of an efficient information management system. The Academic Information Management System (AIMS) is an attempt to automate the functionalities of a college or university academic systems. In this system, the users are allowed to perform fully flexible operations. Both students and faculties are allowed to register, login, registration, approval of the project, marks entry, attending the quiz online, uploading and downloading of files and scheduling of class slots.

Keywords: academic, information management, scheduling, slots, quiz, flexible, automated

I. INTRODUCTION

Generally the academic information are processed and handled manually. This is very slow and time consuming process, also the efficiency of the work depends on the efficiency of the human working there. As we all know err is human, we are in need of a completely automated system to handle the academic information processes [1,2]. This project aims at provided a complete system to automate these activities and provide ease of use of the system.

Here, we make a complete system where the project registration, approval, review panel set up and marks updating done using a web portal. Also we conduct an online test for students where the students can select the subject and take the test, as soon as the test completes, it is evaluated and the marks are displayed for the user. In another module, we automate the allocation of the different slots to faculties and classes and student registration for FFCS. This system also includes a file uploading and downloading scheme for faculties and students to share resources.

This system aims at increasing the quality of the review by making good review panel thus assessing the project well, allow the students to take quiz examinations online, automating the allocation and slots for various faculties without clashes in timings or classes and automate the student's selection of classes and timings

The system is developed mainly drawing inspiration from our institute and can be applied there well. All the other academic institutions which carry out project, tests or slot based timetable allocation can very well be benefited with the system. It also benefits the faculties and students of the academic institutions by reducing the human overhead. The logic implemented in setting up of project review panel helps in making of a quality review.

II. SYSTEM SETUP

The overall system comprises of three main modules. Such as,

a. Project Module
b. Quiz Module
c. Timetable- Slot allocation Module

The overall system follows repository architecture style as there is a continuous interaction with database in all the activities. The individual modules forms pipes and filter architecture since there occur a linear flow of information.

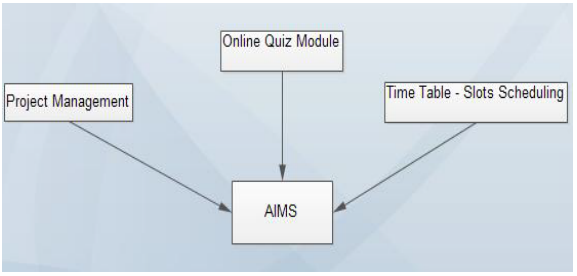

Figure 1: System Overview

The project is implemented using PHP and MySQL.We prefer to use opensource tools [3,4,5] that may reduce the cost of deployment in the institutions[1,2,6].

A. Project Module:

In Project management module, Faculties and students are allowed to register into the system first with a password, and

then allowed to login. The registration forms are thoroughly validated. Student can choose a guide from the list of available faculties and register project. As soon as the project is registered, the faculty gets a request, asking his approval with the details of the project such as member's details and abstract. The faculty can accept or reject the project. If the faculty rejects the project, the student will be notified to register again.

The review panel is set up based on the following logic we apply. The domain of the project is taken into account and the faculties who gave their first domain as that of the project are retrieved and random of three members is selected. It there are no sufficient members with the project's domain as their first domain, we search for the faculties who gave it as second area of specialization. This process is repeated till all the three panelists are found. At the worst case, when there is no faculty with the domain of the project as his specialization, we select them randomly from the available faculties in the department.

Then the panel in charge is selected from the found reviewers with the faculty with most experience. He will be allowed to enter the consolidated marks for the project he is in charge of. Finally timings are allotted for every project. The panel in charge enters the consolidated marks for the project and finally the total mark is calculated and the grade is awarded.

The project module can be depicted as shown in figure below.

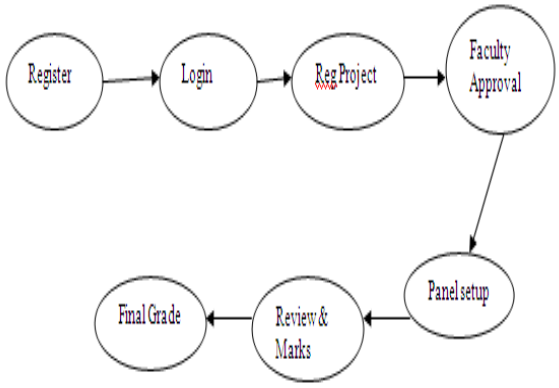

Figure 2: Project Module

B. Quiz Module:

In quiz examination module, for every faculty, when they login into the system, there domain of specializations is found, and they are allowed to enter questions only in their domain of specialization. The faculty must select the domain for the question and enter the question with three possible answers and the correct option. These details get stored in the database with a unique id automatically generated for every question entry. When the student login to the system he can take the test by selecting a subject.

As soon as he starts the test, the countdown runs automatically for the specified time limit. If the time exceeds or the user submits or if the user tries to refresh the page, the test will be submitted automatically and the marks will displayed to the user. The same will be update in the database also. It also includes a simple file uploading and downloading system. In this faculties can upload their file into the system for academic purposes. The same can be downloaded by the user with the special link given in his login.

The activities involved in quiz module are shown in figure below.

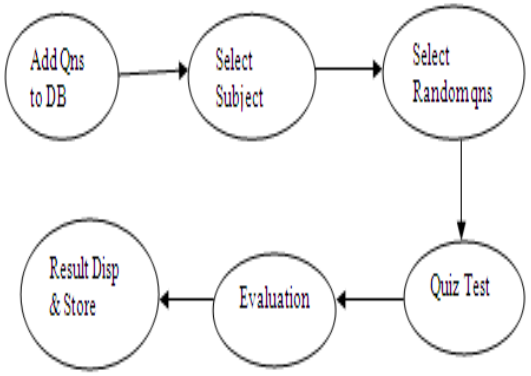

Figure 3: Quiz module

C. Timetable - Slot allotment Module:

Firstly, the clean data of the faculties with the subjects he is handling and the class names are entered in the database. The admin can login into the system and he has to choose the particular branch and year. As he selects the faculty or class view, the slots are allocated and the list is displayed. The admin can view the time table for every faculty or the every class.

The students are then allowed to login into the system and he/she can select faculties and slots for every subjects. As he submits his wish, the corresponding entries are stored in the system and the no of students for the corresponding faculty and slot is incremented. Each slot is fixed a maximum of 60 students, if the no of students in a slot reaches 60, then that particular faculty and slot should not appear in the student choice selection form.

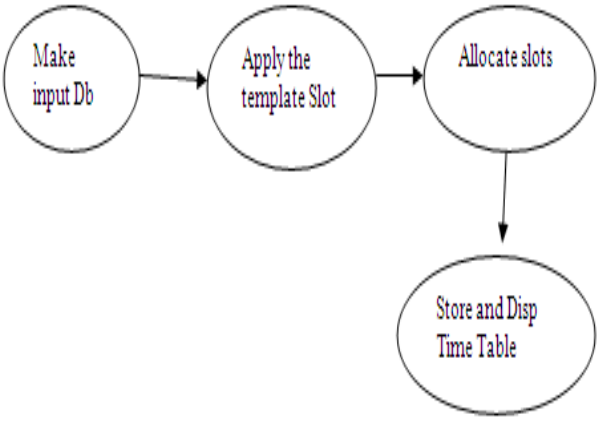

Figure 4: Timetable Slots Module

III. RESULT AND ANALYSIS

The process involved in each module is shown briefly here with corresponding screens.

A. Project Module:

Project Registration form:

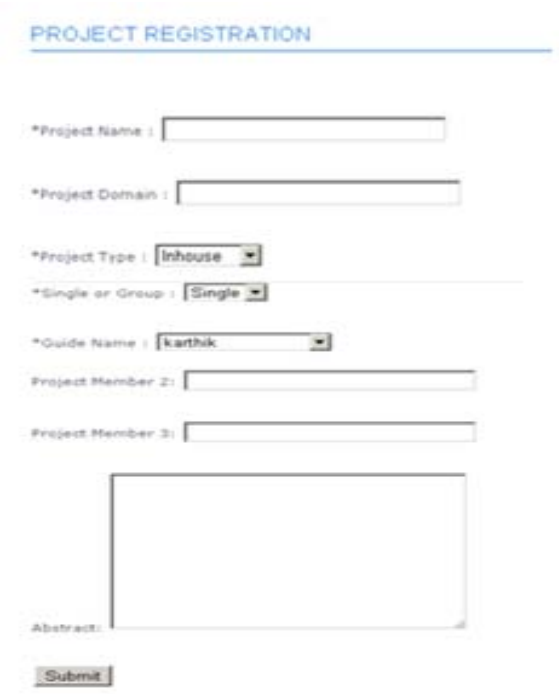

Figure 5: Project Registration form

Project Request in faculty Login:

Figure 6: Project Request to Faculty

Admin's Home Page:

The review panel allocation for every review and allocating time for each project is given in the admin login.

Figure 7 :Admin's Home Page

Sample Review Panel:

A sample of the review panel generated is shown in the figure.

project_id	guide	reviewer2	reviewer3	reviewer4	incharge	marks
1	lakshmi	karthik	Mohan	Aravind	karthik	0
2	lakshmi	karthik	Mohan	Aravind	karthik	0
8	karthik	Balayya	Hari	Sushmi	Hari	0
9	Manupriya	MuthuSwamy	Balayya	Sushmi	MuthuSwamy	0
10	lakshmi	MuthuSwamy	Mohan	Priya	MuthuSwamy	0
11	Balayya	Hari	Devi	Aravind	Devi	0
12	karthik	Hari	Mohan	Facultytwotwotwo	Hari	0
13	karthik	Mohan	Aravind	Devi	Devi	0
14	karthik	Balaji	Hari	Aravind	Hari	0
22	Ramesh	Balaji	MuthuSwamy	Balayya	MuthuSwamy	0
26	Likitha	karthik	Manupriya	Hari	Hari	0

Figure 8: Sample Review Panel

B. Quiz Module:

Provision for adding question to the database is given in faculty login.

The add question form is:

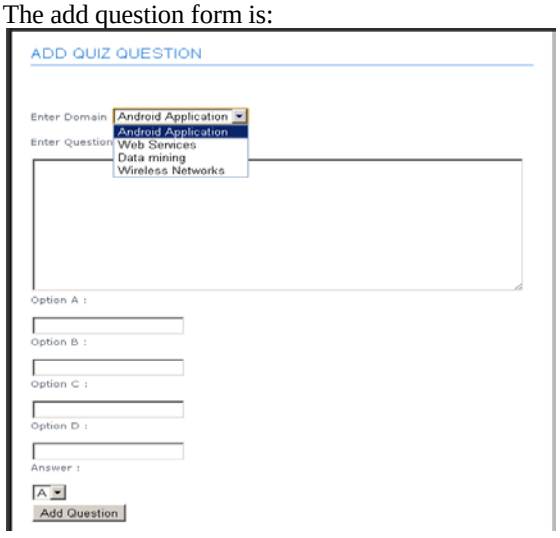

Figure 9 :Add Question form

Then the student login, he can choose a subject and take the test.

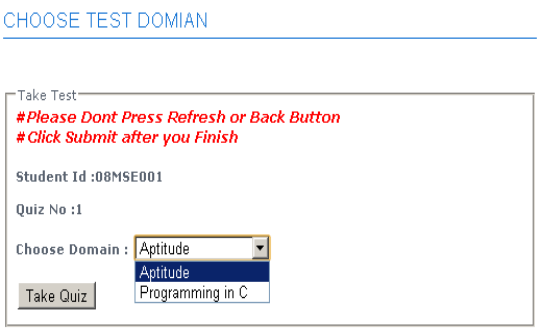

Figure 10: Choosing Exam Domain

The quiz examination runs for the specified time and gets auto submitted as then expires.

Figure 11: Quiz Exam

C. Timetable – slot Allocation Module:

A sample of clean data for a section in a branch which is given as input is shown here.

faculty_id	faculty_name	subject	no_of_students_morning	no_of_students_evening
1	FacultyOne	Programming in C	24	10
2	FacultyTwo	Programming in C	0	0
3	FacultyThree	Programming in C	0	0
4	FacultyFour	Data Structures	33	0
5	FacultyFive	Data Structures	0	1
6	FacultySix	Data Structures	0	0
7	FacultySeven	Object Oriented Programming	24	0
8	FacultyEight	Object Oriented Programming	0	0
9	FacultyNine	Object Oriented Programming	10	0
10	FacultyTen	Graph Theory	33	1
11	FacultyEleven	Graph Theory	0	0
12	FacultyTwelve	Graph Theory	0	0
13	FacultyThirteen	Management in Engg	23	0
14	FacultyFourteen	Management in Engg	10	1
15	FacultyFifteen	Management in Engg	0	0
16	FacultySixteen	English for Engg	23	10
17	FacultySeventeen	English for Engg	0	1
18	FacultyEighteen	English for Engg	0	0

Figure 12: Sample Clean Data

The corresponding timetable generated for a particular faculty is given below.

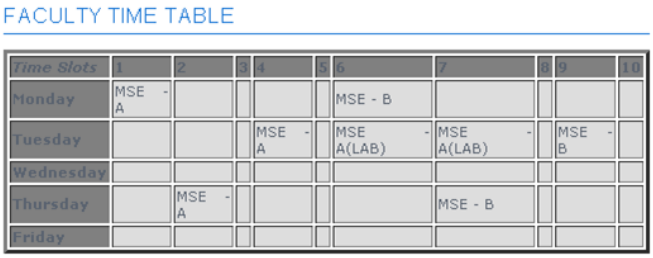

Figure 13: Faculty Timetable Generated

The students are then allowed select the faculty and slot every subject.

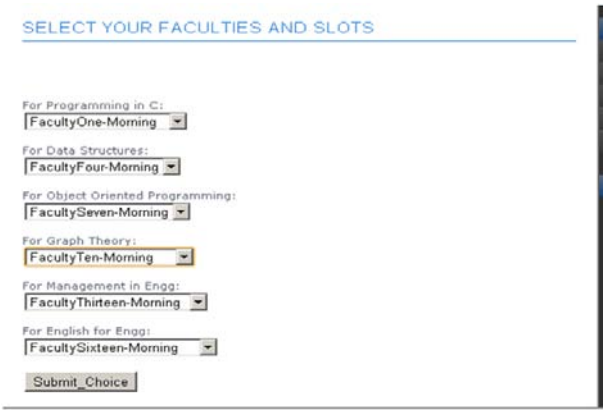

Figure 14: Student's Faculty Selection

Sample of the time table generated of the student is shown as follows.

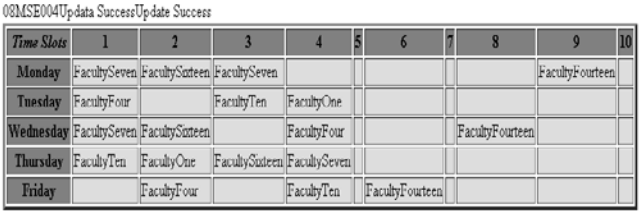

Figure 15: Sample Student Timetable

IV. CONCLUSION

The aim of this project is to develop a complete automated solution to all the academic activities involved in an institution. Even though every institution follows their own method and approach for doing these academic activities, they all aim towards a common objective.

In this project, we mainly included the features or the procedures followed in our school, we tried to make it as a template that can be adapted to any institution by slight modifications.

As these academic processes have very wide range, everyone have their own views in approaching towards a problem. We tried to combine all the best features and provide a quality product. This project mainly aims at providing major functionalities; we took less care on the front end designation of the system, as it is much difficult to make a full featured front end system for all these modules at a short span.

V. FUTURE WORK

A simple and attractive front end design needs to be developed for good looking of the system and make it appealing to the users. Direct link to help section which guides the beginners in getting started with the system and to make quality interactions can be added. A well enhanced and advanced provisions for admin, providing him all the controls like when to enable a link and disable a link.etc.

More no of classes, faculties can be included in the system so that it could allocate slots for almost all courses in the institute and for all semester. Another important module can be included, which helps the faculties in getting their preferred slot based on his experience and other qualities. Also allocating the faculties to invigilate classes during examination with proportionate allocation of hours from asst professor junior grad to senior professor based on their designation can be done.

As our system is developed with code igniter framework, we recommend the use of same code igniter framework in future development for better compatibility with our system.

VI. REFERENCE

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