

Web Application for College Automation

Rashmi Nandagudi Badrinath, B N Shankar Gowda

M.Tech Student, Associate Professor,
Computer Science and Engineering,
Computer Science and Engineering, Bengaluru, India.

Abstract: Data is the most important aspect of modern world. College management system is one of the trending project. This project focus on customize development of college management system for BIT. Where the faculty can set the question paper, mark attendance, add contents related to lecture. Students can view the results, give feedback and admin can add and modify students and faculties. The n-gram technique is used to correct the answer scripts of the students of BIT.

IndexTerms - Selection, Blooms Taxonomy and Web application, n-gram.

I INTRODUCTION

College management system is a modern technology which allows to keep track of all students and faculties of a particular organization. There are mainly four users of this project: Students, Faculties, Administrator and Parents. Students can view their marks, give feedback for all the lecturers who handles subjects for that particular academic, they can also download the contents related to a particular subjects and view their attendance status related to a particular subject, students have no priority for changing the documents and students can also view time table of particular year.

Faculties can add or delete classes on their timetable, mark attendance of students, view their feedbacks, set question papers and check the standard of the paper, evaluate the answer sheet, upload the contents related to a particular lecture, upload marks of subjects, view and provide feedbacks for the students.

Administrator can add new students who are enrolled for the organization, add new faculties who are employed for the organization, modify the faculty information if there are any changes, modify the database of students according to the changes like if the students pass out from the organization then those students should be added to the alumni list.

Parents can track their wards attendance status and view messages related marks of their wards. Parents have no privilege for changing any documents related to organization.

The college automation project mainly aims in customizing the college management system to Bangalore Institute of Technology. This project mainly aims in setting the question papers, classifying the question papers based on blooms level and difficulty, adding and deleting the classes of a particular faculty.

The data will be stored in the database, the user has to be authenticated user to avail the privileges provided in this project. Faculty module can add or delete the classes from their timetable, upload the contents of particular lecture, mark attendance.

II Related works

The related work is mainly classified into three categories:

- Web application for college management, attendance management, Selection of questions and evaluation where the question papers will be selected only based on one input.
- The existing systems are generic and is expensive. The proposed system is customized and cost effective the generalization helps in providing more security to the system.
- The existing systems mainly focus on college management system or attendance management or selection based on keywords the combination helps to save lot of time money and other resources like storage hardware etc.

III Literature Survey

Breeze is an Android Application which provides a common, easy to use platform for college students to develop a better interaction with fellow students, faculty and administration. This work has unique and helpful feature of raising queries, where students can put up their queries and anyone can answer their queries. ^[1]

The College activity management system is used to maintain college activities like fest, farewell and annual day celebrations, workshops etc. it provides information on placements, maintains student attendance, provides information on faculty, it also provides college information, and it maintains, branch details, sports details, also provides college achievements. [2]

The first part collects the respondent's demographic information. Remaining parts of questionnaire have a statement about the school management information system. The data was analysed in SPSS, for the frequency, percentage, mean and standard deviation. [3]

Multi-Platform College Management Framework (MP-CMF) facilitates the users with an online paper checking module, an attendance module and a digital notice board. Along with this, it further succours in maintaining and updating student's data with minimal human efforts. [4]

A design is proposed on Cloud-P2P platform which is fusion and multi-threaded model. NET framework is used to access control method for key management. College student's Ideology and physical management is developed based on TCP/IP model and C/S mode. [5]

IV Architecture

The architecture of college management system is depicted in Figure: 1. Architecture depicts different users in the college management and the privileges for every users in college management system. Administrator will have highest privileges and parents will have lowest privilege in this project. The below figure has four major services for all the users of the system. Privileges will be provided based on the login details. The data feeder, administrator and Super users are considered as admin in this system. The performance module accepts the question papers, select the questions from accepted question papers, evaluate the answers.

The interactive model design has helped in many different way while developing web automation for college management system as each and every phases are interlinked and every modules are abstract to each other so that changes made in one module is not effecting the other module. If there were any new requirements that arrived during the development then those changes were made without affecting other piece of codes.

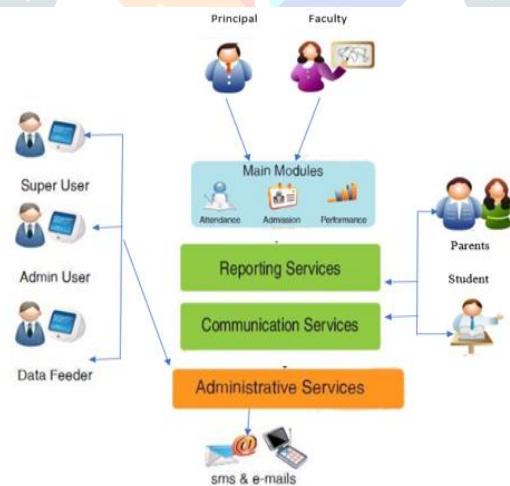


Figure 1: Web automation for college management system architecture.

V Methodology

5.1 Login Module:

This module will prompt any users with either pass or fail results. Pass results means the user has successfully logged in into the system. Failed prompt means either the credentials are incorrect or user is invalid for the web automation for college management system.

The users who are successful in login can use the system according to the privilege they have received during their registration with admin of web automation for college management system.

Only students and faculties of Bangalore Institute of technology can register themselves and login to web automation for college management system. The failed login users has to contact the admin of web automation for college management to either check their profile or register themselves for the web automation for college management.

5.2 Administration Module:

The admin is highest privileged user of web automation for college management of Bangalore Institute of Technology. Admin is the one who will register other users of the system like faculties and students of Bangalore Institute of Technology. Admin can also add new classes to the timetable or admin is the one who creates the timetable for all the faculties of Bangalore Institute of Technology. Admin can also add new courses which are needed for improving the standards Bangalore Institute of Technology.

Admin is the one who will be storing all the documents related college management into data store. Admin can modify data that are being stored in data store like profiles of faculties and students of Bangalore Institute of Technology.

Admin is the one who is responsible for data of web automation for college management of Bangalore Institute of Technology.

Admin can deny the privileges for any users of web automation college management system. Admin can be college principal of Bangalore Institute of Technology or other specified user who maintains only web automation for college management.

5.3 Student Module:

Lowest privileged users of web automation for college management of Bangalore Institute of Technology. Read only privilege is given to students of Bangalore institute of technology in web automation for college management system. The current students of Bangalore institute of technology has to register to the web automation of college management to admin of the system.

New students who have entered the college should also register to admin of web automation for college management system of Bangalore Institute of technology. Every students are differentiated by their respective USN numbers provided by VTU for every students.

5.4 Faculty Module:

The faculties of Bangalore Institute of Technology can set the question paper using paper generation of web automation for college management. The faculties has to register to web automation for college management system's admin to enjoy all the privileges provided to them. Faculties can mark attendance status of the students of a particular classes on daily bases.

The faculties can add or delete number of classes in their respective timetable using web automation for college management of Bangalore institute of technology. The faculties can evaluate the answer sheets of the students using web automation for college management.

Faculties can add internal marks to the students who have enrolled to that particular subject. They can add three internal marks and average will be calculated by web automation for college management system.

5.5 Examination/ Performance Module:

Internals question papers can be set for Bangalore institute of technology using web automation for college management. Only the faculties of Bangalore Institute of Technology who have registered by admin can set the question paper. Three faculties can set the question paper at a time and no more than three users can set the question paper. The question papers will be stored in the form of text or .txt extension

File handling technique and N gram technique is used to generate new question paper for internals and for correcting answer papers. Only common or repeated questions among all the three question papers that are set is used to generate new question paper. Only faculties have the privilege of setting questions in Bangalore Institute of Technology.

Answer paper can also be evaluated using this application. Python shell helps in integrating both web automation for college management system and paper generation system as well as answer sheet evaluation.

VI Result

Table 1: Predefined classes

broad classes	specific classes
time	time-scope time- enumeration
person	organization person- enumeration
object	material machinery
description	meaning method reason definition

Suppose the answers are all about some reality, related work normally divides the answers into 6 broad classes and which is shown in the table 1.

Table 2. Comparative analysis of classification techniques performed on attainment data

Classifier	Processing Time (sec)	Correctly classified instances (%)	Incorrectly classified instances (%)	Kaplan statistic	Mean absolute error	Root mean square error
J48	0.02	90	10	0.7692	0.146	0.3018
Naive Bayes	0.01	85	15	0.625	0.1896	0.3497
OneR	0	70	30	0	0.3	0.5477
ZeroR	0	70	30	0	0.4238	0.4594
IBk	0	68.33	31.6677	0.233	0.3312	0.5566

Table 2. Compares various classification techniques on the basis of attained information. Among all the classifiers J48 provides the best accuracy of 90%.

VII Conclusion

This research proposes an automatic question paper generation tool incorporating different cognitive levels of revised blooms taxonomy. Different cognitive levels are selected based on the keywords which are extracted from the entered questions. The selected levels then form the basis for the selection of CO-PO mapping. Classification algorithms are applied on the CO-PO attainment data to perform outcome based predictive analysis.

College Management System application provides an autonomous solution of the paper based work. This is controlled and monitored by admin. The man power is reduced by using this application. It provides accurate information all the time as faculty member or student needed. The college management can make useful decision using the data that are stored in the university database server.

VIII Future Enhancements

- The system that can be developed on cloud storage.
- Sending messages to parents

- Automating attendance system
- Making the system more secure and using machine learning techniques.

IX Acknowledgment

We would like to thank the teaching and non-teaching faculties of Bangalore Institute of Technology and those who helped for completion of this project in given time directly or indirectly.

X REFERENCES

- [1] "A New Android Application (Breeze) for College Management System", Dr. Jaswanti, Ritika Dhiman; Ayush Basral, IEEE 2019.
- [2] "College Activity Management System", M. Ashok Kumar, Mohan Srinivas, K. Vishnu Vardhan Reddy, K. Vishnu Vardhan Reddy, IEEE 2018.
- [3] "Education Management Information Systems in the Primary Schools of Sindh a case study of Hyderabad Division", Muhammad Ali Khan Nagar, Liaquat Ali Rahoo , Hafiz Abdur Rehman, Sadia Arshad, IEEE 2018.
- [4] "The Development and application of management information system for college student's Ideology and Political Education", Qiao Hui, Tan Lin, IEEE, 2018.
- [5] "Class Schedule: a Web-based Application for School Class Scheduling with Real-time Lazy Loading", Nuengwong Tuaycharoen, Veerawat Prodpran, Boonsong Srithong, IEEE, 2018.
- [6] "Information System Development on Web-Based in Integrated Management System through Improving Knowledge Management to Increase Organization Performance of Construction Company", Ringgy Masuin, Yusuf Latief, T.Yuri Zagloel, IEEE, 2018.
- [7] "Faculty Apprentice as a Mentorship Model for Engineering Graduate Students interested in Teaching", Rohit Kandakatla, Juan D. Ortega-Alvarez, Dr. Ruth A. Streveler, Dr. Karl Smith, IEEE, 2018.
- [8] "Android Based Exam Paper Generator", Prof. Mrunal Fatangare, Rushikesh Pangare, Shreyas Dorle, Uday Biradar, Kaustubh Kale, IEEE, 2018.
- [9] "Decision Tree Usage for Student Graduation Classification: A Comparative Case Study in Faculty of Computer Science Brawijaya University", Ahmad Afif Supianto, Alfi Julisar Dwitama, Muhammad Hafis, IEEE, 2018.
- [10] "Audio based Faculty Monitoring and Evaluation System", Sharath N, Mr. Naushad Basha, IEEE, 2017.
- [11] "WLAN Attendance Management System", Vishal Naidu, Kumaresan Mudliar and Kailas Devadkar, IEEE, 2017.
- [12] "MySRT", Kanyanat Rakfukfon, Siripong Siraphaibool, Sittiporn Rattanadechaphitak, Pawitra Chiravirakul, IEEE, 2017.
- [13] "Outcome Based Predictive Analysis of Automatic Question Paper using Data mining", Simranjeet Kour Bindra, Akshay Girdhar, Inderjeet Singh Bamrah, IEEE, 2017.
- [14] "Multi-Platform College Management Framework", Dastgir Pojee, Farooq Shaikh, Vishal Kuvar, Fahim Rarh, Mohd. Abbas Meghani, IEEE, 2017.
- [15] "Question Paper Generator and Answer Verifier", Prateek Pisat, Shrimangal Rewagad, Devansh Modi, Ganesh Sawant, Prof. Deepshikha Chaturvedi, IEEE, 2017.
- [16] "Design of the Automatic Generative System of Examination Papers Based on ARM", Liancheng Guan, IEEE 2017.
- [17] "Question Systemization using Templates", Komal Pawar, Urmila Shrawankar, IEEE, 2016.
- [18] "PGM-WV: a context-aware hybrid model for heuristic and semantic question classification in question-answering system", Hengxun Li, Ning Wang, Guangjun Hu, Weiqing Yang, IEEE, 2017.
- [19] "Attendance Management System using a Mobile Device and a Web Application", Jun Iio, IEEE 2016.
- [20] "Android based Attendance Management System", Siti Aisah Mohd Noor, Norliza Zaini, Mohd Fuad Abdul Latip, Nabilah Hamzah, IEEE, December 2015.