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University Campus Online Automation using Cloud Computing

Venkat Raman¹, Shrikant Gautam², Arunkumar Rajbhar³, Swapnil Polekar⁴, Sudhir Shukla⁵

¹Head of Information Technology Department, M.G.M's C.E.T, Navi-Mumbai, India

^{2, 3, 4, 5}B.E. Student, Information Technology Department, M.G.M's C.E.T, Navi-Mumbai, India

Abstract: *This paper is based on developing College Automation System based on Cloud Computing in order to reduce the manual paperwork. All the Activities of College will be managed at single platform in order to reduce the concurrency. Certain activities such as Placement, student's information, News feed for students regarding the latest news in the university, Result display and Eligibility criteria all will be considered at single platform managed by Administrator, Faculty and Training and Placement officer (TPO). Normally Placement and Training Cell is known as the link which provides the connection between students and companies. Our proposed system acts as the mediator through which companies can directly provide the required qualifications and students can act on it eradicating the human efforts and errors. Along with this student's information will be maintained in the cloud and different tasks such as training sessions, Interview Schedule, Seminar, and Student eligibility can be shown in the News Feed so that students can act according to it. All this will be established with the help of cloud services which will provide ease in work not only for college but also for companies and students.*

Keywords: *Automation, Cloud Computing, Primary key*

I. INTRODUCTION

Ever since the age of Internet and network based computers has awakened, the Automated Systems came into existence and are currently in demand now. Increased use of automated systems widely has led to its use in many fields and it can also be seen now in Educational infrastructures. While many colleges use it still no one has a complete solution for all activities and problems. Our objective with this project is to develop a web based application of university automation so that all the work of college can be done without much of throughput from the faculty or people. Now-a-days every college consists of database where data of each student is managed. Same database can be used in order to reduce the number of errors because this data is entered only after thorough verification. Student data such as name, marks, grade, unique id, contact number, previous grades all are already present in database so we can fetch it at ease in order whenever it is needed. Unique id of student here will naturally act as primary key in database which will differentiate between students so that students can view only their own information and do not hinder with other student's entries and data. This makes the system highly reliable and secure. Only after online authentication user will be provided access and only faculty can update the records of students. In sense of placement after login only TPO can see the student information and companies that has put up their requirement. He can fetch the list of students based on their requirement and student's grades and our proposed system can easily generate the list of students which are eligible for that particular company's job. Students can view their academic details and with provided news feed they can check what all events are currently going on and what preparation they can do based on requirements and even get the list of companies in which they are eligible. On company's side Human Resource (HR) will be responsible for updating the criteria and venue and his login and other credentials will be managed by TPO. Company will be denoted by its name and id provided to it and it will be managing the students which are required from respected departments. In our web application input includes the database entries done by faculty, TPO, or HR of the company and output includes sorted list of students or information about students which student can view under his tab. University automation system helps majorly in gathering all useful information needed to management in few clicks. University automation system consists of modules such as student, faculty, admin, TPO, HR, etc. The interconnectivity among these modules reduces the time to perform different operational task.

II. PROBLEM STATEMENT

In existing system for managing various modules such as student module, administrator module and all other processes are handled manually. All the previous records are referred to simply know the details. This is tedious as well as insufficient and this process even becomes more difficult when there is an increase in number of students. In existent systems the work is done by human intervention which increases the chances for errors and it also causes much more stress to the people which are engrossed in the work. Communication gap also exists between the students and the employer, the whole process is slowing and time consuming and

valuable time is wasted because of this. Normally the records are stored in excel files in which a person has to manually search and sort the students based on the criteria and based on this generate a list which will be forwarded to TPO, faculty and Students. No searching method is involved in this as all work is manual and there maybe even chances of loss of opportunity for a student if the list is not properly verified or properly made. Also the students don't get the notice and study material easily as proper information is not conveyed and there is no single platform which can provide all solutions. Help the faculty with a system that will count the number of papers checked per day and reduce the efforts of entering the details manually. So there should exist a system which gives expected and accurate results without any difficulties and with minimum efforts.

III. PROPOSED SYSTEM

Our proposed system will work as one stop solution for all existing issues. All the tasks that are important and need to be performed efficiently are included in web application. Our system basically not only focuses on providing student eligibility list and calculation of data but also on providing students with all the materials needed for preparation at a single point. Role based access rights are provided to each user and each user has its own login and tab where he/she can manage own personal information and all the work or content provided by the adjourned faculty. To prevent application from any kind of crashing cloud is used and all the data will be stored on cloud so that it can be accessed 24*7 from anywhere. Our system also makes sure that the user interface is user friendly so that neither the students nor the faculty has any problem understanding the concept of web application and has no complaint with navigation. The pages are linked in most suitable manner making it easy to jump from one page to another flawlessly.

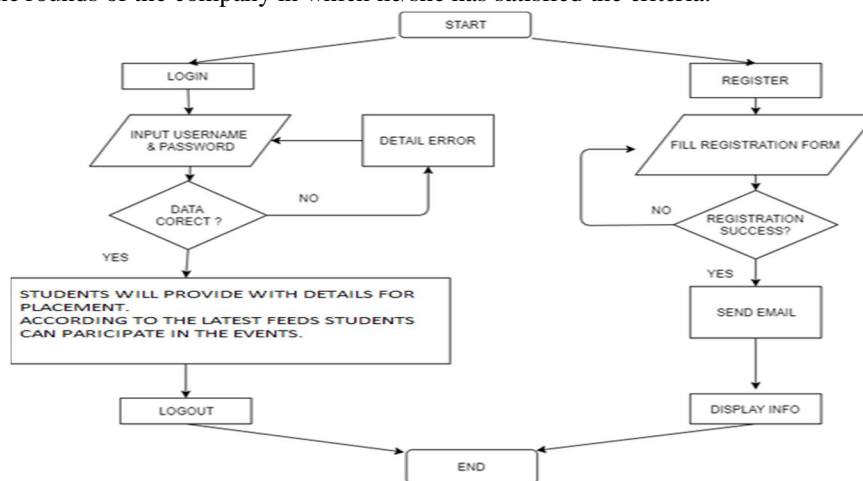
The proposed system is intended to avoid all the drawbacks of the existing system. It will add some more features than the existent system. The proposed system is cost effective way of doing the manual process done in the existing system. This helps the organization to win the war in existing competitive world. The proposed system is college specific web application having access to entire college database which in turn will let TPO, student and HR communicate properly. Student id given to students is used as way to see the details and be updated with all upcoming events in the college. Also help the faculty with a system that will count the number of papers checked per day and reduce the efforts of entering the details manually.

IV. IMPLEMENTATION DETAILS

Implementation consists of all those activities that take place to convert an old system to new system. The new system may be totally replacing the existent manual or automated system or it may be a major modification to an existing system. The method of implementation and time scale to be adopted is found out initially. Next the system is properly tested and at the same time the users are trained in the new procedure. Proper implementation is essential to provide a reliable system to meet organization requirement. Our system helps in managing the four most important modules which is students, faculty, admin and HR of company. The system is role based so every user is having own username and password in short login credentials for accessing the system.

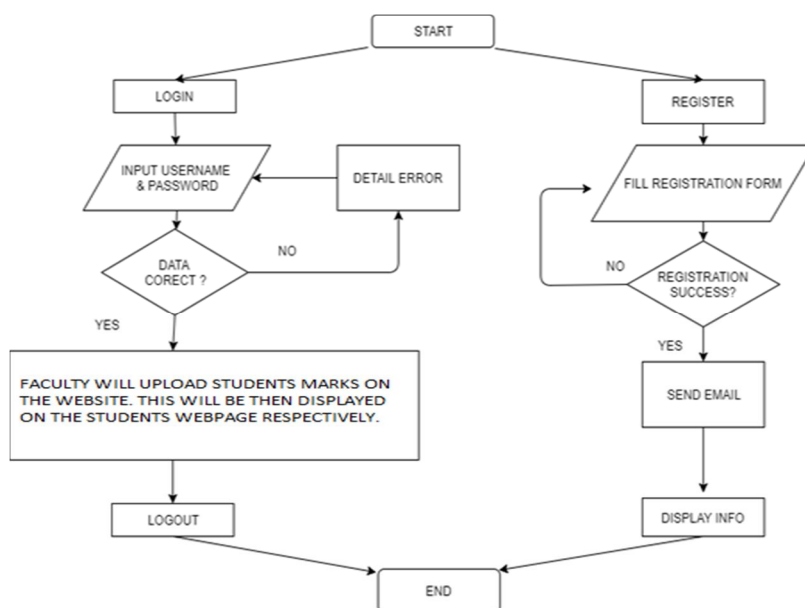
A. Student

Students are admitted by admin only to the system. Login credentials are generated for each student once he is admitted into the college. Student has access to own personal tab, attendance record, class test records, semester grades and marks and time table all managed by admin. A student can check the latest events going on in the university in addition they will also be provided with the study material to crack the rounds of the company in which he/she has satisfied the criteria.



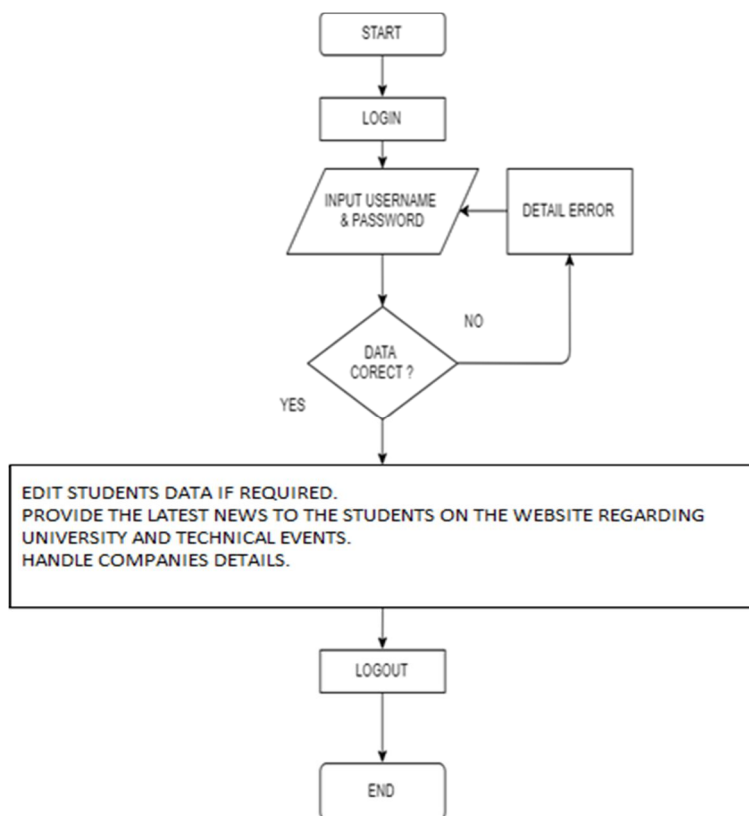
B. Faculty

Faculty has access rights to manage all the data of their subjects of respective classes. They can manage daily attendance of students of their lecture. They can convey certain news and events regarding the college or different content. Also provide the students marks on the website.



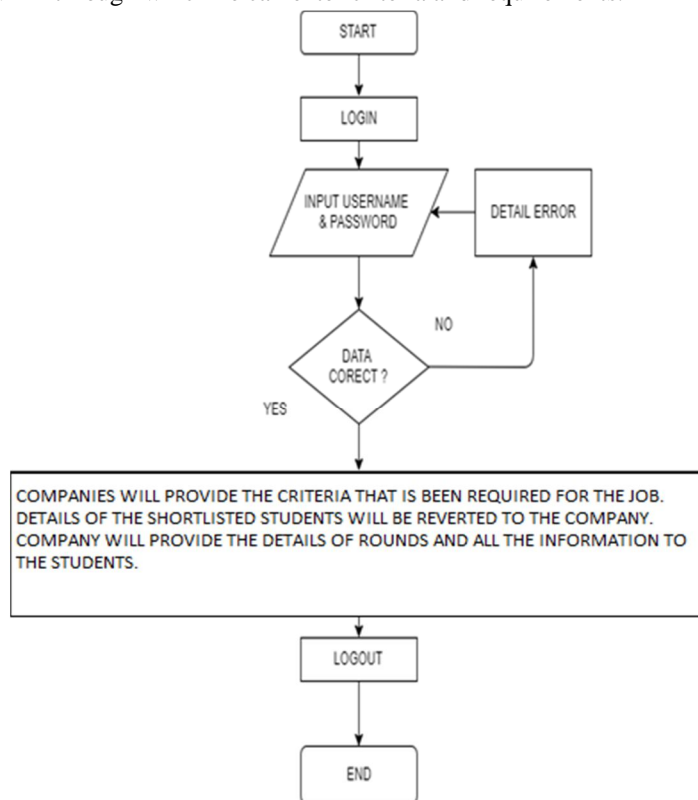
C. Admin

Admin can manage the accounts of all the students and the faculty. All the logs of student information can be viewed and managed by admin itself. Admin can also upload notices regarding different activities and tasks and only admin can edit the data of the students if filled improperly.

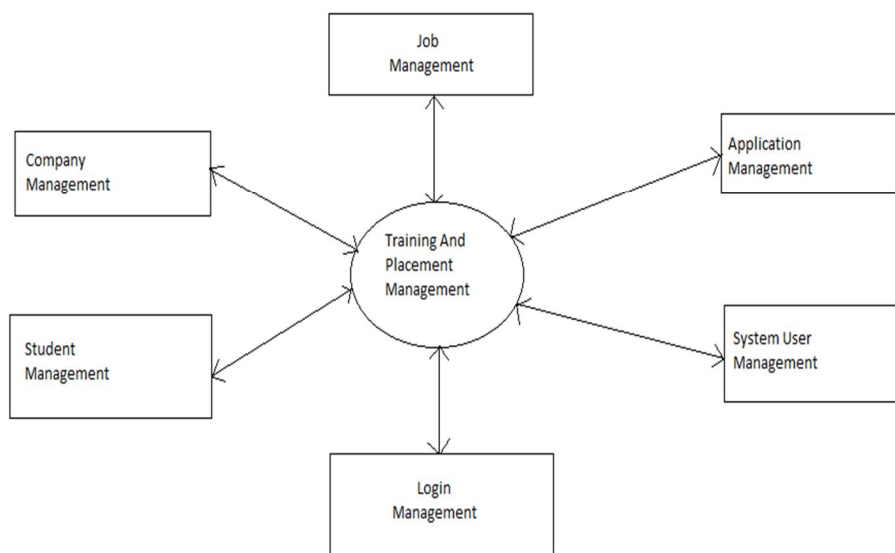


D. HR of Company

HR is responsible for entering the eligibility criteria details and all the qualifications required in order to get selected. He is provided with login id and password by admin through which he can enter criteria and requirements.



Data Flow Diagram for Placement



Zero Level DFD-Training and Placement Management

Figure: Zero level DFD for Training and Placement Management



Figure: Second Level DFD- Training and Placement Management.

V. TECHNOLOGIES AND TOOLS USED

Designing an automated system requires proper planning and combination of different technologies. For front end we are using html, css, JavaScript. For cloud we have used Microsoft azure and it will also help in news feed. We have also used bootstrap which increases the responsiveness of website.

A. Hardware Requirements

- 1) Processor – i5 or above.
- 2) Minimum RAM requirement – 4GB.
- 3) Hard Disk – 100 GB.

B. Software Requirements

- 1) Windows 7, 8 or 10.
- 2) Microsoft Azure.
- 3) Text Editor or IDE for web designing.
- 4) Bootstrap.

VI. RESULT AND CONCLUSION

The existent systems are not fully automated and are much time consuming for students as well as faculties. The proposed automated system is efficient and cost effective and saves a lot of time compared to existing systems.

Our system basically hopes in eradicating the problems which were a part of previous systems and provide a single platform solution for all of the college automation problems. In this system the chances of errors are very less compared to manual system and speed of process has also increased. Students will be able to get their hands on the study material much more easily and can concentrate on academics and improve their results.

VII. FUTURE SCOPE

The system is designed after taking into consideration all the requirements of students and faculty and placement and training department but there can be improvements in some areas and we accept the drawbacks of our system. The system can be extended further to provide a forum in order to discuss the disadvantages of the system and in the way in which it can be solved. The Exam cell of the college can also be linked with our system so that there is no need to keep two separate systems and the database of exam cell can be connected with college database which will help in double verification of marks and other important details. Recommendation can be implemented in the system which will help the student to increase their academic performance and also help them in extra circular activities.



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