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College Management System using a Single Page Web Application

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Abstract: ***The large amount of data produced nowadays in each and every sector has created a lot of issues in maintenance and management. There is a day by day increase in the number of students every year and this has led to a lot of student data being produced every year. This has made it difficult for the educational institutes to perform various functions as simply as they used to be before. Through this paper, we propose a system which will not only help reduce the manual work load from the shoulders of the staff but also reduce the stress from over the students. Automation of various processes like the Admission process, issuing of various certificates, managing and viewing attendance as well as viewing of notices is proposed in this paper. A college management system is designed to be available over the internet which can be accessed by everyone at anytime and anywhere.***
Keywords: College Management System, Single Page Application (SPA)

I. INTRODUCTION

From the beginning of admission to the end of graduation, there are a lot of processes which need to be done by the student as well as the staff in the particular period. Be it the filling up of admission forms or viewing the attendance of a particular time period, the students have to perform all the activities manually i.e. by reaching out to the concerned staff personally. Many a times, these tasks get delayed due to unavailability of the concerned staff or it may also happen due to other factors such as the forms are unavailable or the registers for the particular period are not present. This inconsistency leads to many difficulties which can hinder the daily flow of other activities. Thus, to prevent such situations, we propose a web driven system which will help automate such processes without the need of manual stress. A single page web application is proposed which will help create a portal of communication between the Student, the Staff and the Admin office. Thus, various processes such as filling of Admission forms, checking student details, managing attendance, etc. will be done using the web application which is accessible through the Internet.

The communication between staff and student will be simpler and thus any queries can be resolved without the need for the persons to be present at the particular moment. This project, thus looks forward to solving such issues by creating a single page web application which will have all these features provided to the user with respect to their privileges as per their status (Admin/Staff/Student).

II. LITERATURE SURVEY

A. Reference Paper No. 1

Asha VG, Dr. Rama Mohan Babu, "On-line help desk for college departmental activities", ICICCS 2017.

Overview: Automation of various college tasks such as time table generation, library management, etc. have been briefed about in this paper. Various Genetic Algorithms such as the Genetic Algorithm with Bacteria Foraging, Parallel Genetic Algorithm (PGA), etc. have been discussed.

B. Reference Paper No. 2

Dastgir Pojee, Farooq Shaikh, Vishal Kuvar, Fahim Rarh, Mohd. Abbas Meghani. "Multi-Platform College Management Framework", Proceedings of the 2nd Interanational Conference on Communications and Electronics Systems (ICCES 2017), IEEE.

Overview: This project aims at digitizing and thus alleviating the amount of work that is put in managing all the records by a college or university. [2]

C. Reference Paper No. 3

Liagqiu MENG, "College Student Management System Design using Computer Aided System", 2015 International Conference on Intelligent Transportation, Big Data and Smart City, IEEE 2016.

Overview: Provides us with an ER diagram to explain effective data management. Also explains in details the functional module design for college management system. A hierarchical structure of a three-tiered model is defined.

D. Reference Paper No. 4

FU Yue, "A Study of Student Information Management Software", Proceedings of ICOACS2016, IEEE 2016.

Overview: A relationship between systemization, standardization and automation of student information relationship is obtained. A detailed process of Survey and Analysis and further selection of a proper database system, network structure, and proper code design is defined in this paper.

E. Reference Paper No. 5

Zhibing Liu, Huixia Wang+, Hui Zan, "Design and Implementation of Student Information Management System", 2010 International Symposium on Intelligence Information Processing and Trusted Computing, IEEE 2010.

Overview: This paper emphasizes on the functional modules and the system architecture of a student information management system. Also, we learn the functioning and using of SQL Server as a database for storing and managing the student data.

III. SYSTEM ARCHITECTURE

A System Architecture is a conceptual model that defines the structure and behavior of the system/application.

It provides an overall model of the system is built, giving every specific detail about the functionality each part of the system.

The proposed system is divided into three main modules –

1) *Admin Module* – This module has the most privileges. The Admin user is the main concerned person to look after all the functionalities of the entire system. Some of the privileges of Admin are as follows:
   a) Admission confirmation
   b) Fee Manager
   c) Student Details Manager
   d) Staff Manager
   e) Issue Bonafide Certificate
2) *Staff Module* – This module is concerned with the teaching staff. It provides privileges such as marking and viewing attendance of a student, view notices published by the admin office, etc.
3) *Student Module* – This module provides features such as viewing attendance, viewing notices, communicating with the staff over a chat portal, etc. A student is capable of using these facilities only and only when his/her admission is confirmed by the Admin user.

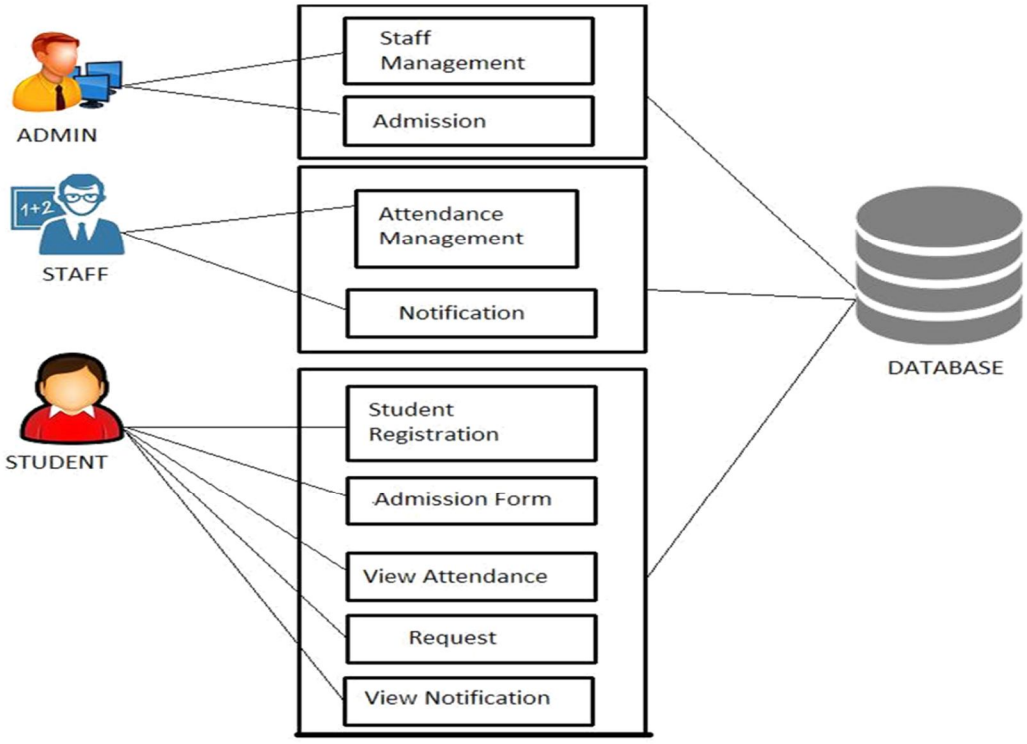

Figure 1 System Architecture

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IV. CONCLUSION

Through this project we have proposed a system which will help automate the tedious processes of an educational system. It looks forward to minimizing the efforts and the load of stress from the heads of the students as well as the staff. It provides an on-the-go system which can be accessed by the members of the educational institute anywhere and at any point of time. The reduction in paper work not only releases the stress of manual input but also helps decrease the stress of maintaining the data in registers and files. No more waiting in line for admissions or issuing certificates. This also means that students will not require to bunk lectures to go to the Administrative office during college hours. Hence, this system not only reduces the manual load but also helps in increasing the efficiency of work in the system.

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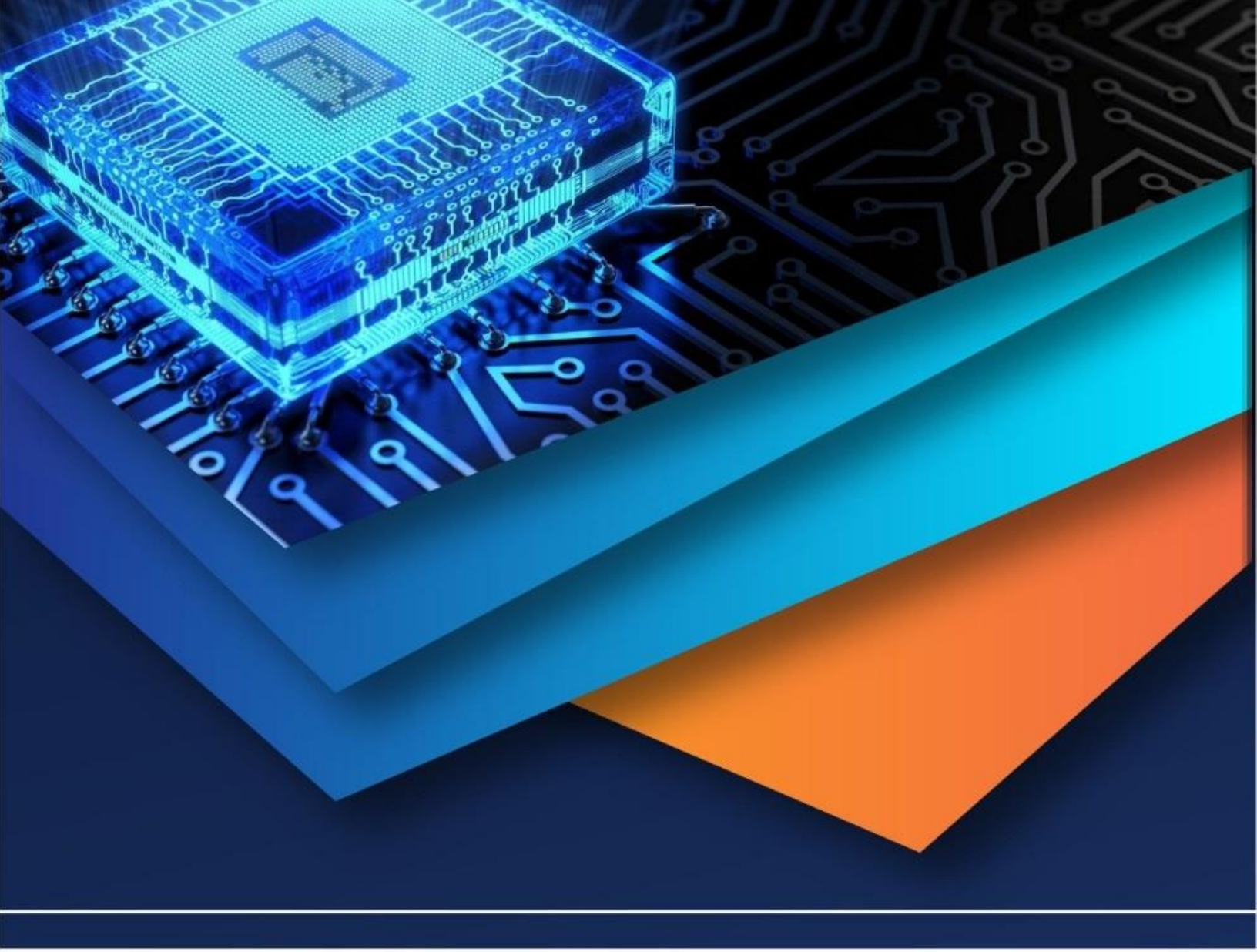

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