

COLLEGE MANAGEMENT SYSTEM

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ABSTRACT

College management system is the project developed by us, which will help in automating college activities. In today's world by automating a system, we can increase efficiency and can control all the functionalities from a single application. This web application is available 24*7, so a user can get the information or raise his/her point anytime from anywhere. In brief, application offers different functionalities to users (students/employees) of a college such as a user can view the college information, student information, placement information, view interview tips added by alumni, mentors or students and various different type of events organised in his/her college. College Management System (CMS) provides a simple interface for maintenance of student information and keeps their records secure at a central place.

Keywords: Spring Boot, Spring Security for backend and ReactJs for frontend and MySQL database.

1 INTRODUCTION

1.1 Problem Statement

The design and implementation of a comprehensive Online College Management System and user interface is to replace the current existing system, which is very slow to access the records. The existing college online system works on old technology. Legacy system can offer high time complexity and can be less responsive

Therefore, to resolve above difficulties faced while working with legacy system we have proposed a solution with web services and React native. In this application, users (college staff, students or other stakeholders) are able to directly access all aspects of a student's academic progress, inventory, interview tips etc. through a secure, online interface embedded in the college's website. The system utilizes user authentication, and based on the role assigned to him/her route to web app dynamically, where he/she can view functionalities based on the role assigned. This project has developed using JAVA as core programming language. The main goal of this project is to develop an online website which covers all the details of college i.e.; Event details, Photo gallery, etc. A user with role as Admin will get super user privileges. Data generated will stored in MySQL Database. As we have seen that after using proposed software the cumbersome paperwork, manual labour as well as communication cost will reduce.

1.2 Aim and Objectives

This college management system works on new technologies to make the accessing more easily and faster.

The following objectives of the Research:

- i) Providing the online interface for students, faculty.
- ii) Increasing the efficiency of college record management.
- iii) Decrease time required to access and deliver student records.
- iv) Inventory related problems of the college is controlled.
- v) Seat management system is introduced in this project by which there will be a manageable record of seats availability for employees.

1.3 Scope of Research

The requirement of the user is to:

- Access/ Search information.
- Log in to the system through the first page of the application
- Change the password after logging the system
- View/change details.
- Can get help through the help option to view different property of the system.
- Students can give feedback for college/staff/any other student.

2 METHODS AND MATERIAL

Research Methodology adopted for research is as shown in flow chart fig 2.1

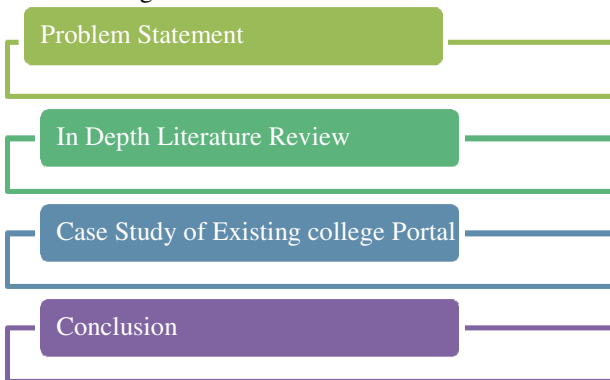


Figure 2.1 Research Methodology

2.1 Literature Review

2.1.1 Web Based Student Information Management System[Provided Reference No 1]

Student Information Management System (SIMS) provides a simple interface for maintenance of student information. Educational institutes or colleges to maintain the records of students easily can use it. This paper assists in automating the existing manual system.

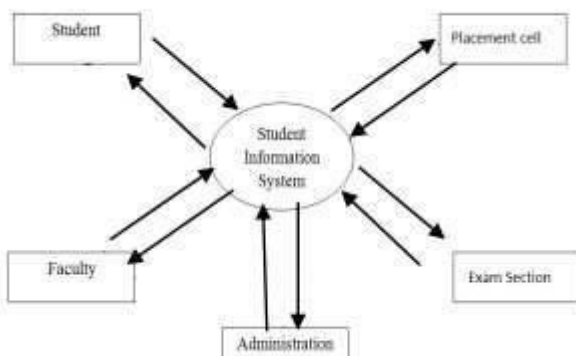


Fig. 2.2 Data Flow diagram

2.1.2 A research paper on student information and score management system(SISMS) [Provided Reference No 4]

Student Information and Score Management System (SISMS) provides a simple interface for maintenance of student information. Educational institutions or colleges to maintain the records of students easily can use it.

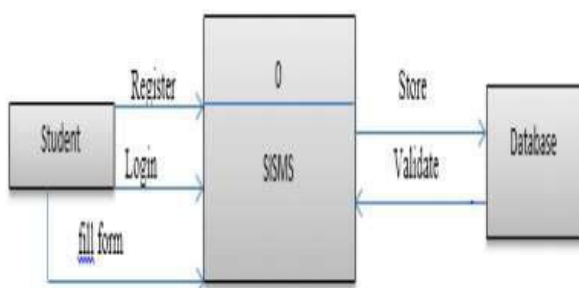


Fig 2.3 Data flow diagram L0

2.1.3. Online College Management System (OCMS)

[Provided Reference No 5]

It provides a simple interface for maintenance of student information. Educational institutes or colleges to maintain the records of students easily can use it. It will also have faculty details, batch execution details, students' details in all aspects, the various academic notifications to the staff and students updated by the college administration.

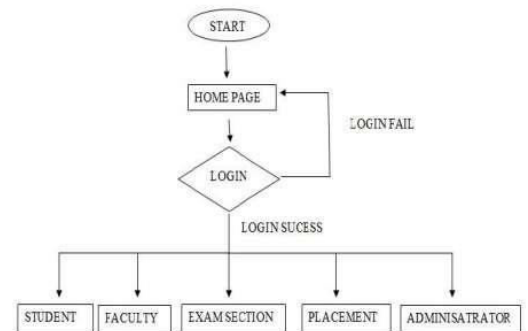


Fig 2.4 Data flow diagram

2.1.4 College Department Management System

[Provided Reference No 7]

It is essential for an institution, to a college, or to a university, which utilizes computer, also which reduces work force. System should support multi-user environment. System should be fully automated. System should provide concrete security features like creating users and assigning privileges to users of the system.

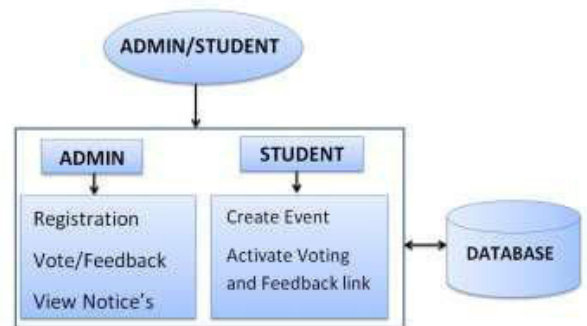


Fig 2.5. Proposed Architecture for CDMS System working flow diagram

2.1.5 Android College Management System[Provided Reference No 6]

Android College Management system is an android application, which is helpful for students as well as the colleges. In the existing system all, the activities are done manually. It is very costly and time consuming. In our proposed system, students can view results using Android phones. The data will be stored in the college server.

3. PROPOSED WORK

This College Management System project developed using JAVA programming language. The main aim of this project is to develop an online website which covers all the details of college i.e; Student attendance details, Event details, Students fees transaction details, Marks details, Photo gallery, etc. Admin is the Super user of this project. All the record stores in MySQL Database. The proposed software will also reduce the cumbersome paperwork, manual labour as well as communication cost.

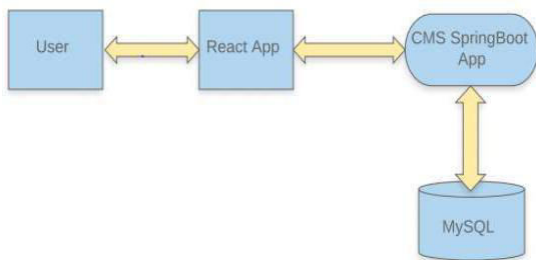


Fig. 3.1.High Level Diagram

3.1.1 Main Modules of the System

3.1.1.1 STUDENT MODULE This module used to store student records. It contains the following information i.e. Students Profile details, Contact information, Educational details, etc. The Users can search the students from the database according to different criteria such as name, Course.

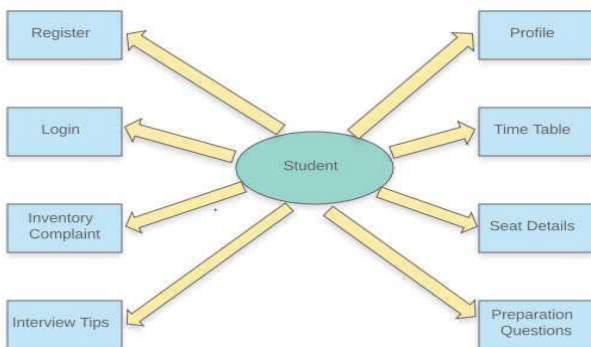


Fig. 3.2 Data Flow diagram

3.1.1.2 EMPLOYEE MODULE This module contains details about employees i.e. Employee Profile details, Contact information, Seat information etc.

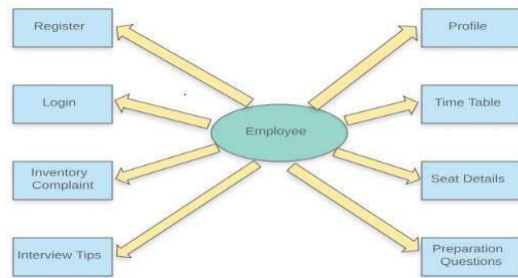


Fig. 3.3 Data Flow diagram

3.1.1.3 ADMIN MODULE This module is used to manage the controls of the system. The admin has rights to activate or deactivate a registered user. Admin can create rooms and allocate seats to the employee. Time Table management will be handled by admin.

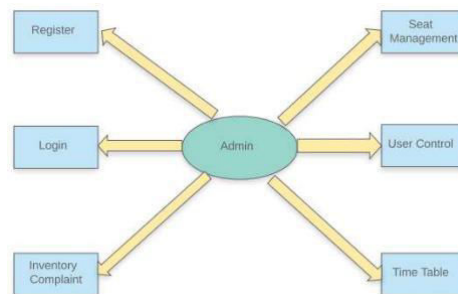


Fig. 3.4 Data Flow diagram

3.1.1.4 PLACEMENT MODULES: This module includes details regarding the placement of students in which company they are placed and when they were placed.

3.1.1.5 NOTICES: It includes information about various events which is currently going on and which will occur in the near course of time. Notices helps in quick capturing of any occurring event.

3.1.1.6 REGISTRATION MODULES.-Report generation is also provided to view summarized detail regarding hostel fees and mess bill. It includes Hostel fees, Mess reports. Students can check hostel fees and mess bill by entering their Unique Hostel ID.

3.1.1.7 SEAT MANAGEMENT: This module describe about the availability of seats of different department in the each blocks and how to manage the seats block wise. Logged in user can view the details of occupied seats in a selected room.

3.1.1.8 INVENTORY CONTROL: - This module keeps tracks of various

objects in the room for example number of fans, lights, etc.

3.1.1.9 PREPARATION MODULE:- This module keep tracks of branch-wise important questions. In this any logged in user have permissions to add questions and answers to previously added questions. The module will play very crucial role to the student at the time of preparation for interviews.

3.1.1.10 INTERVIEW TIPS MODULE:- This module contains interview tips which will be valuable for the student at the time of interview. Any anonymous user who wishes to provide some tips for the interview from their side to assist the student in interviews can add the tips in the module and give their support to the student from their valuable time.



Fig 3.5 Login page

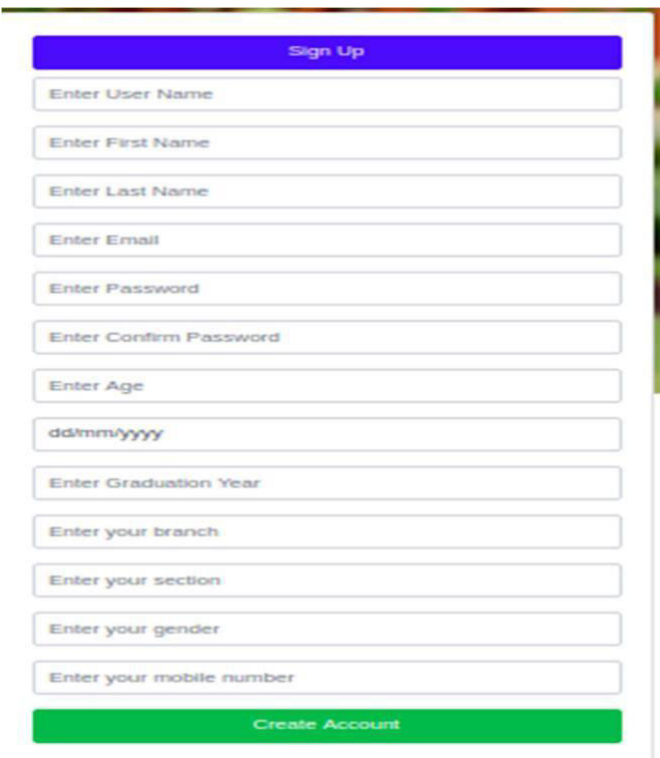


Fig 3.6 Registration Page

3.2 Technologies

3.2.1.1 Java: CMS requires Java JRE 1.5 or higher. Since it is written in Java, it can run on any platform that supports the Java environment 1.5 or higher. The compiled files are contained in Java Archives (JAR's) and have to be defined in the path environment variable.

3.2.1.2 React JS:-React is a JavaScript library for building user interface. Facebook and a community of individual developers and companies. Because of react JS the surfing speed of browser become fast because it is a single page application and the load will be less maintain it.

3.2.1.3 Spring Boot: - Spring Boot is an open source Java-based framework used to create a micro Service. It is developed by Pivotal Team and is used to build stand-alone and production ready spring applications. With it help rest API's will be called and it did not create any session and no cookies will be generated in the browser.

3.2.1.4 Spring Security: - Oauth2 authorization and authentication process is used to provide the security of accessing the URI is based on the roles of the user. Spring security is used for securing the restful API's on the browser.

3.3 Application

Graphical User Interface:

Surfing is fast because of single page application. Security of data is increased due to the use of Oauth2 security provided by spring security.

With it help rest API's will be called and it did not create any session and no cookies will be generated in the browser.

Because of ReactJs, the surfing speed of browser become fast because it is a single page application and the load will be less.

4.CONCLUSION

Introduction

This paper assists in modifying the existing slow system to fast site based system. The accessing of URI's is controlled using Oauth2 authentication and authorization provided by the spring security. It can be monitored and controlled remotely. It reduces the work force required. It provides accurate information always. Malpractice can be reduced. All gathered and extra information can be saved and can be accessed at any time. The data, which is stored in the project, helps in taking intelligent and quick decisions by the

management. Therefore, it is better to have a Web-Based Information Management system. All the users, and employees can get the desired records immediately.

Objective Achievement

The research is undertaken based objective;

1. To study exemplar successful College Management System Research work
2. To study the role of various group to form data flow diagram
3. The browsing speed will become very fast and save time, by the use of ReactJs on frontend side.
4. The query services will become more efficient due to the use of Jpa queries provided by spring boot.
5. Oauth2 manages authentication and authorization in spring security.

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