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School Information Management System

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Abstract:

School Information Management System (SIMS) provides a simple interface for maintenance of students, staffs, and parent's information. It can be used by graduate school to maintain the records of admin easily. The creation and management of accurate, up-to-date information regarding a students', staffs' academic career is critically important in the schools. School information system deals with all kind of student details, staff details, parent's details, academic related reports, school details, course details, curriculum, batch details and other resource related details too. It tracks all the details of a student from the day one to the end of the course which can be used for all reporting purpose, tracking of attendance, progress in the course, completed years, coming year curriculum details, exam details, project or any other assignment details, final exam result and all these will be available through a secure. It will also have faculty details, faculty promotion details, batch execution details, students' details in all aspects, the various academic notifications to the staff and students updated by the college administration. It also facilitates us explore all the activities happening in the college, Different reports and Queries can be generated based on vast options related to students, batch, course, faculty, exams, certification and even for the entire school.

Key words— **School Information System, Database, HTML5, CSS**

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1. INTRODUCTION

The design and implementation of an all-inclusive school information system and user interface is to replace the current paper records. The system utilizes user authentication, displaying only information necessary for an individual's duties. School Staff are able to directly access all aspects of a student's academic progress through a secure, online interface embedded in the school's website. Additionally, each sub-system has authentication allowing authorized users to create or update information in that sub-system. All data is thoroughly reviewed and validated on the server before actual record alteration occurs. In addition to a staff user interface, the system plans for admin user interface, allowing users to access information and submit requests online thus reducing processing time. All data is stored securely on MSSQL servers managed by the school administrator and ensures highest possible level of security. The system features a complex logging system to track all users' access and ensure conformity to data access guidelines and is expected to increase the efficiency of the college's record management thereby decreasing the work hours needed to access and deliver student records to users. Previously, the school be secure of heavily on paper records for this initiative. While paper records are a traditional way of managing students, staff's data there are several drawbacks to this method. First, to convey information to the students it should be displayed on the notice board and the Student has to visit the notice board to check that information. It takes a very long time to convey the information to the student, staff and parents. Paper

records are difficult to manage and track. The physical exertion required to retrieve, alter, and re-file the paper records are all non-value added activities [1].

This system provides a simple interface for the maintenance of student, staff and parents. It can be used by graduate school to maintain the records of students, staff's academic details easily. Achieving this objective is difficult using a manual system as the information is scattered, can be redundant and collecting relevant information may be very time consuming. All these problems are solved using online school information management system. The paper focuses on presenting information in an easy and intelligible manner which provides facilities like online registration, online assignment submission and profile creation of student's thus reducing paper work and automating the record generation process in an educational institution.

A. Purpose

The purpose is to design a school website which contains up to date information of the school like student's admission, staff's admission and to maintain the academic details. That should improve efficiency of school record management [6].

B. Objectives

- Providing the online interface for students, faculty etc.
- To make the system secure also maintenance of file is efficient and flexible.
- To reduces the manpower work.
- Increasing the efficiency of school record and the records are always updated.
- Accurate and perfect calculations are made.

C. Organization of The Paper

The paper is organized as follows: Section 2 explains survey report. Section 3 provides system design used. Section 4 covers the details of technologies used. Section 5 explains testing results and Section 6 explains conclusion.

2. SERVEY REPORT

Every school to maintain a management for various sections which may include performance analysis, attendance system, academic information, student information, transport facility, fee structure, test wise report, staff information and many more. All these sections are to manage manually on paper becomes very time consuming and complex tasks. In such system there was a high possibility of misplacement of collected data and data redundancy in the form of paper records in order to overcome this drawback there is a need to design and implement School Information System [7].

School Information System is an online web based system which implements a user friendly and attractive interfaces for school. These systems mainly focus to replace the manual system of schools with an automated web based system. This School Information System also manages the data accurately and efficiently which stored over a long period of time. Current mode of working is based on manual system in which the data is first received from respective personnel. A lot of problems are involved in maintaining, updating and retrieving selected information. Since previous system is totally maintained manually, some of the difficulties involved in existing system are as follows: -

- Difficulty in updating the data.
- Delay and not proper in retrieval information.
- Redundancy of data also problem for keeping the data.

3. SYSTEM DESIGN

This deals with data flow diagram, detailed flow graph, requirement analysis, and the designing process of the front end and back end design of the school information management system. It includes the following primary modules/components: student, faculty, staff portal, financial.

A. System Architecture

A System Diagram (SD) in software engineering and systems engineering is a diagram that represents the actors outside a system that could interact with that system.

a. Core Modules

- Admin
- Student
- Staff
- Parent
- Transport

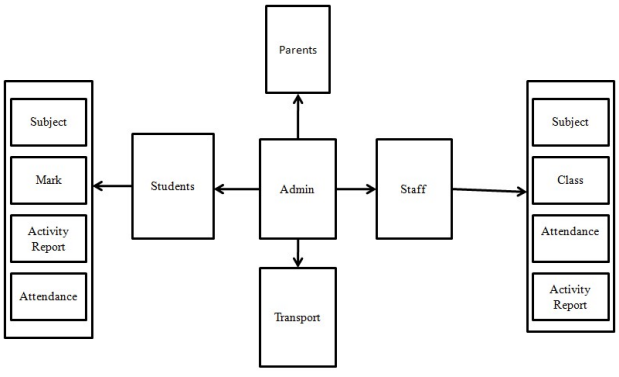

Fig. 3.1 Core Modules

b. Admin Modules

Admin has all the access rights to the system. Admin is able to manage the Staff registration, Student Registration, add subject, Add Exam, SMS gateway, Class routines. Admin adds the staff member of respective class. Then the classes are added and the respective staff member is allocated to the class as a class coordinator. Admin can manage the accounts of all the students' staff and parents also. This all task is managed by admin only. He is responsible to create and send students reports to their respective children only [2].

Workflow:

1. Start
2. Login
3. Add/Delete /Edit Students
4. Add/Delete /Edit Staff
5. Add/Delete /Edit Course
6. Add/Delete /Edit Class & Class Routine
7. Manage transport
8. Manage SMS
9. Manage Exam Status
10. Manage Accounts Details
11. Promote the students
12. Forum
13. Logout
14. Stop

c. Student Module

Students are admitted by an Admin only to the system. When he got admitted the username and password are generated by a admin and can be managed by student afterwards. Students have access to view the personal profile, current attendance details, class tests records and upcoming events. Students also view his respective bus route and bus number through transportation module [3].

Workflow:

1. Start

2. Login
3. View personal information
4. View Subjects
5. View Teachers
6. View Subjects
7. View Class Routines
8. View Activity Report
9. View Transport
10. View Notice Board (latest events)
11. Online Assignment submission
12. Forum
13. Fees details
14. Logout
15. Stop

d. Staff Module

Staff member are registered by admin only. Login details are generated by Admin which can be managed by Staff afterwards. Staffs have access rights to manage all data of their subject and class. Staff can generate the daily, monthly, yearly report of individual students [4].

Workflow:

1. Start
2. Login
3. View Students Information
4. View/Edit Students Marks
5. Manages Daily Attendance of Students
6. Add Subject Notes
7. View Subject Details
8. View Transport Details
9. View Payroll Details
10. Logout
11. Stop

e. Parent Module

Parents are able to track all information and academic records of their respective child. They are not able to view the information relevant to other students. The parents are added by the admin after the admission of their child. Parents can view result sheets, attendance records, notification etc. This module gives parents to keep track of its respective child's education development. Parents are able to communicate with teachers if they wish.

Workflow

1. Start
2. View student Information
3. View student Mark sheet
4. View fees details
5. View Transportation
6. Logout
7. Close

f. Transport Module

Admin has given the access rights to manage the transport information which is accessible to all the users. Users can view all the routes and respective buses of the routes including their pickup points. Timing of respective bus from pickup points is also show in this module.

4. TECHNOLOGIES USED

HTML 5

HTML is a HyperText Markup Language. Every website can't be structured without the knowledge of HTML. This is in reality a backbone of any website. If we make our web pages only with the help of HTML and CSS. And to make our web pages' dynamic we are using Java Script.

HTML describes the structure of web pages using markup. The elements are the building blocks of HTML pages. It represented by tags.

HTML tags pieces of content such as "heading", "paragraph", "table" and so on. Browsers do not display the html tags.

HTML 5 includes detailed processing models to encourage more interoperable implementation; it extends, improves and

rationalizes the markup available for documents, and introduces markup and Application Programming Interface (APIs) foe complex web application. Many new syntactic features are included. To natively include and handle multimedia and graphical content.

CSS

CSS stands for "Cascading Style Sheet." CSS is used to format the layout of Web Pages. They can be used to define the text style, table size, background color etc.

JAVA SCRIPT

Java Script is considered to be a one of the scripting language. The main usage of Java Script to add various Web Functionalities, Web form validations, it almost supported of all web browsers like Firefox, chrome.

We used the browser Opera and Internet Explorer. Java Script is one of the powerful scripting languages in use today. Java Script is a light weight programming language and it is embedded directly into the HTML code. It is often used for the development of client-side web development.

BOOTSTRAP

BOOTSTRAP is a free and open-source front-end web framework for designing websites and web application. It contains HTML and CSS based design templates for typography, forms, buttons, and navigation and other interface components, as well as optional java script extensions.

ANGULARJS

AngularJS is a java script based open-source front-end web application framework mainly maintained by Google and by a community of individuals and corporation to address many of the challenges encountered in developing Single-Page-Applications. It aims to simplify both the development and the testing of such applications by providing a framework for client-side Model-View-Controller (MVC) and Model-View-View Model (MVVM).

The AngularJS framework works by the first reading HTML page, which has embedded into it additional custom tag attributes. Angular interprets those attributes as directives to bind input or output parts of the page to a model that is represented by standard JavaScript variables. The values of those JavaScript variables can be manually set within the code, or retrieved from static or dynamic JSON resources. AngularJS uses the term "scope" in a manner akin to the fundamentals of computer science. Scope in computer science describes when in the program a particular binding is valid. As a part of the "MVC" architecture, the scope forms the "Model", and all variables defined in the scope can be accessed by the "View" as well as the "Controller". The scope behaves as glue and binds the "View" and the "Controller".

JSON

JSON (JavaScript Object Notation) is a lightweight data-interchange format. It is easy for humans to read and write. It is easy for machines to parse and generate. It is based on a subset of the JavaScript Programming Language, Standard ECMA-262 3rd Edition - December 1999. JSON is a text format that is completely language independent but uses conventions that are familiar to programmers of the C-family of languages, including C, C++, C#, Java, JavaScript, Perl,

Python, and many others. These properties make JSON an ideal data-interchange language.

JSON is built on two structures:

- A collection of name/value pairs. In various languages, this is realized as an object, record, struct, dictionary, hash table, keyed list, or associative array.
- An ordered list of values. In most languages, this is realized as an array, vector, list, or sequence.

These are universal data structures. Virtually all modern programming languages support them in one form or another. It makes sense that a data format that is interchangeable with programming languages also be based on these structures.

In JSON, they take on these forms:

An object is an unordered set of name/value pairs. An object begins with {(left brace) and ends with} (right brace). Each name is followed by: (colon) and the name/value pairs are separated by, (comma).

5. TESTING RESULT

a. Login Form

The system starts with login page where the registered user can enter username and password to be able to access the system. Login form also includes registration path also [5].

b. Registration Form

Registration form includes the details of student information during admission. After filling the registration form email will be send to student to verify the E-mail address consist of,

UserName: XXXXXXX
Verification Code:yyyyyy

After entering verification code student completes the registration process then administration section will check student details if found correct then administration section will send the mail to email of student that: your Registration has been successful and you can login using the following details

Username : xxxxx
Password : yyyyy

c. List of student form

Student basic information consists of college serial number, university number, name father name, DOB, class, year and department.

d. Exam section form

This form consists of test time table, final exam time table, room allotments etc. If any changes will with respect to change it will be updated.

6. CONCLUSIONS

The fundamental problem in maintaining and managing the work by the administrator is hence overcome. Prior to this it was a bit cumbersome for maintaining the time table and also keeping track of the daily schedule. But by developing this web-based application the administrator can enjoy the task, doing it ease and also by saving the valuable time. The amount of time consumption is reduced and also the manual calculations are omitted, the reports can be obtained regularly and also whenever on demand by the user. The effective utilization of the work, by proper sharing it and by Provide the accurate results. The storage facility will ease the job of the operator. Thus the system developed will be helpful to the administrator by easing his/her task.

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