Student Management System

FACULTY OF INFORMATION & COMMUNICATION TECHNOLOGY

Asia e University

PROJECT PROPOSAL

SEVENTH SEMESTER

Submitted To:

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1 INTRODUCTION

Student Management System (SMS) is web-based application software designed to introduce a conducive and structured information exchange environment for integrating students, parents, teachers and the administration of a school or college with their relevant data.

In the obsolete time, we are solely depending upon written manuals for storing data and others stuff related to colleges. But in this modern era of technological advancement using those traditional methods seems to be nasty, so this system is going to replace those antique methods and assist us to make our work more efficient. This system assists educational institutions to supervise student-related activities such as keeping their records related to semester fees, an appraisal on performance including details of mark score on the respective exam, attendance, and all other institution-related activities. This makes the enrollment process faster and easier.

Some of the systems such as Fedena, Wisenet, Edumaat, InstoCampuz, etc are already used by schools and colleges worldwide to overcome challenge and manage the information of students, schools, teachers, registrations, courses. They have different needs for managing various records, so this system is adapted to manage all those requirements. Therefore, these days various schools and colleges are using this so as make the academic task more effective and faster.Moreover, It also enables them to design and develop computerized enrollment systems to make the process faster and to lessen the workload of the school personnel especially the cashier and the registrar who holds most of the records. This will also provide complete information needed by the college and the students regarding academic and other educational stuffs.

When I analyze all those existing system I came to know about its huge consumption of bandwidth and time consuming for accessing the system features. So from my perspective, its possible solution might be formalizing database query properly, fetching data from Application Programming Interface (API) instead of directly hitting database which will definitely going to consume minimal bandwidth which will increase the efficiency of the system and make service better.

2 OBJECTIVE

This system mainly aims to provide a dependable management of student records. This can also assists the staff to lessen their workload as this will make the process faster and easier in short period of time.

Some of the objectives of this projects are as follows:

1. To help for the college to have a faster and reliable enrollment process with automatic system.
2. To reduce a manual work for managing all the records of students, courses, class and others educational stuffs
3. To manage profile information of teachers, staffs, students, and other extra users based on their role.
4. To assists students/parents to view the complete breakdown of their own grades
5. To enable teachers to easily manage their student's records.
6. To generate reports regarding all the logs by admin.
7. To increase better interaction students, parents, and staffs.
8. To notify students for several events and programmes.
9. To handles various permission based on user role for accessing several features.
10. To include a good security and data backup for the system.
11. To enable admin to analyze all the daily records via dashboard.

3 RELATED WORKS

Research in the field of Student Management has resulted in a number of different frameworks and architectural designs for Student Management Systems. The variation in the designs can be largely attributed to the different design goals and specific problems that the systems were initially designed to address.

3.1 Frameworks

3.1.1 Django

Django is a high-level Python web framework that encourages rapid development and clean, pragmatic design. Built by experienced developers, it takes care of much of the hassle of web development, so you can focus on writing your app without needing to reinvent the wheel which can be readily use for making various components and modules required for this system.

3.1.2 Django rest framework

Django REST framework is a powerful and flexible toolkit for building Web APIs that assists to provide data to other applications. Those applications can then use the data however they want. Sometimes, APIs also offer a way for other applications to make changes to the data. The biggest reason to use Django REST Framework is because it makes serialization so easy and also supports ORM and non-ORM data sources.

3.1.3 React

React is a free and open-source front-end JavaScript library for building user interfaces based on UI components. It is maintained by Meta (formerly Facebook) and a community of individual developers and companies. React can be used as a base in the development of single-page or mobile applications. However, React is only concerned with state management and rendering that state to the DOM, so creating React applications usually requires the use of additional libraries for routing, as well as certain client-side functionality.

3.2 Student Management Software Tools

There are numbers of Student Management software tools that are commonly used for managing the overall information of the schools and colleges.

3.2.1 Fedena

Fedena is a open source repository which is used for multipurpose school management system and aims in automating the school's daily operations hassle-free and provide insightful reports and 360-degree tracking so that the stakeholders can make better and faster decisions to escalate the productivity of their institution.

Fedena was designed to run on Windows/Linux systems, with a MySQL database backend server and Ruby Web application server. The architecture is made up of modules, with specifically defined functionalities, that interact with one another, the database and the interface layers.

3.2.2 OpenEduCat

OpenEduCat is an open-source school management solution provider that focuses on providing users with a seamless experience. The cornerstone of OpenEduCat lays in the fact that it is an all-inclusive school management platform that handles every single aspect of operational functioning. It has the ability to look after student's enrollment and also maintains a complete database of student's academic history that can be viewed by them.

OpenEduCat is a platform-independent system, which means that it can run on Linux, Windows and any higher version of CentOS, with a Postgres database backend server and Python Web application server.

3.2.3 Gibbon

This open-source software is a boon for teachers and school administrators as it simplifies their daily functional tasks and streamlines work processes. It offers a diverse array of features including school administration tools related to accounts, payroll, scheduling, faculty management and invoicing.The project aims to provide all schools, no matter their size or resources they have, with the systems they need to provide effective learning, teaching and school management.

Gibbon is a platform-independent system and is built using PHP, MySQL, jQuery, Git, Atom and other open tools.

4 METHODOLODY

4.1 Case Study:

A few popular existing systems will be studied and analyzed in relevant way so as to provide a set of core principles common to Student Management Systems and also to provide a very clear understanding behind its use case. Moreover, this will also assist to become accustomed with the actual problems that might occur in the future while the development of the system.

4.2 Discuss with the supervisor

Being experienced in the software development or its related fields, supervisor was already acquaint with the core ideas of the system, so it will be crucial discussing with him regarding several project overview of the system such ER diagram, database schema, etc., which might play a substantial role while developing the system. It will assist us for the proper coordination regarding the problems that might occurs while developing the projects. Furthermore, will also share his ideas for the better development of the which he was already familiar with.

4.3 Real time overview with prototype

The first implementation will simply based on the general prototype model that might show the overall view of the system before the actual development of the system and saves ample amount of time. Moreover, it will also helps to improve and implement the further functionalities of the system for the better development of the system.

5 WORK PLAN

5.1 DELIVERABLES

The following deliverables are expected to be produced after successful completion of the project:

1 . Proof of concept:

This will contain a set of principles concerning with the core theory behind the Student Management System.

2. Working software:

College will able to view the full fledge working system with most of the functionalities regarding management of the student readily via this system.

3. Project report

There will also a complete project report regarding the information and requirements of this system that will assists user to become familiar with specific functionalities of the system.

5.2 MILESTONES

Various milestones on chronological ordered list are listed below:

1 . Requirement gathering and System Analysis - (Feb 1,2022 **to** Feb 20 2022)

Some of the tasks concerning with this milestone are :

1. Analyze requirements from existing project - (Feb 1,2022 **to** Feb 10 2022)
2. Alter ideas for new requirements - (Feb 10,2022 **to** Feb 20 2022)

2 . Prototype and Design - (Feb 21,2022 **to** March 20, 2022)

Some of the tasks concerning with this milestone are :

1. Prototype design - (Feb 21,2022 **to** Feb 28 2022)
2. Frontend design - (March 01 ,2022 **to** March 20, 2022)

3 . Implementation - (March 21,2022 **to** June 30 2022)

Some of the tasks concerning with this milestone are :

1 . Create abstract backend method - (March 21,2022 **to** March 30 2022)

2 . Start coding based on that abstract method - (April 01 ,2022 **to** June 30 2022)

4 . System testing - (July 01,2022 **to** July 10 2022)

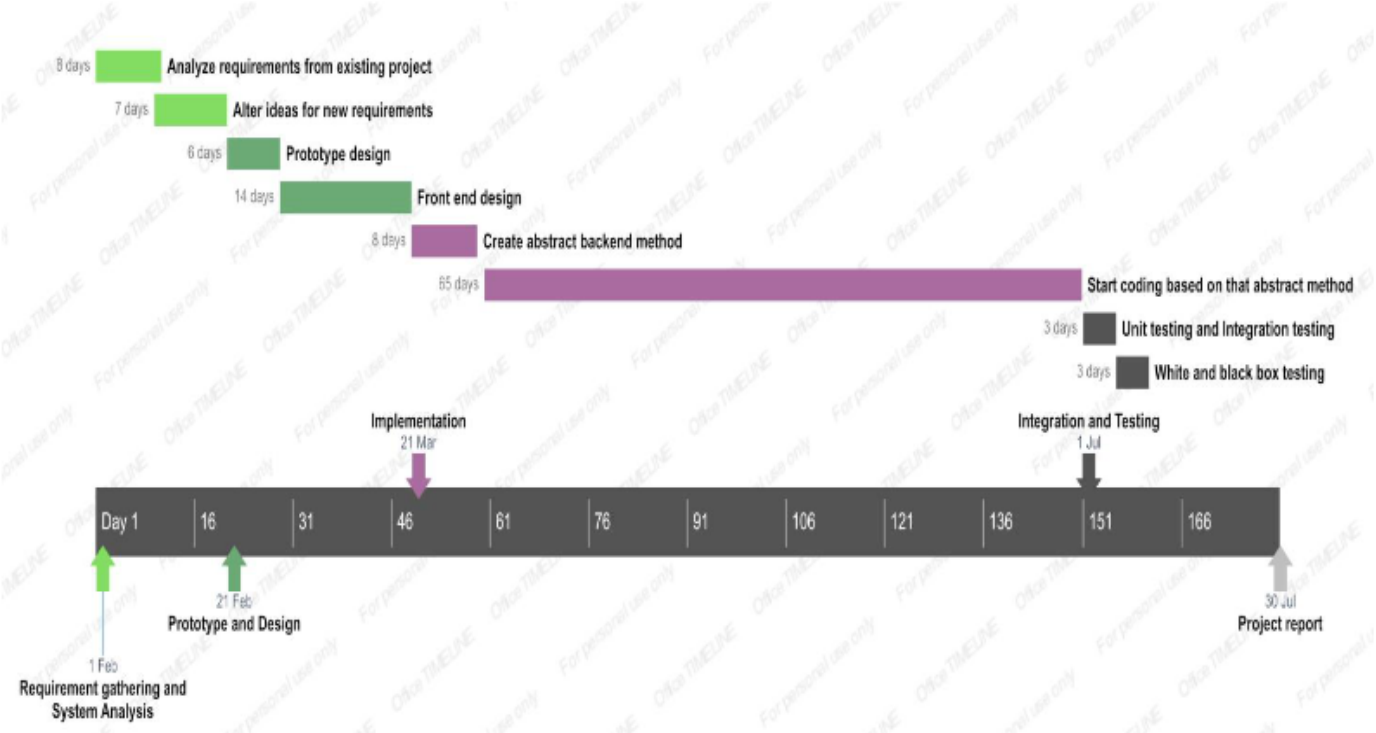
Some of the tasks concerning with this milestone are :

1 . Unit testing and Integration testing - (July 01,2022 **to** July 05 2022)

2. White and black box testing - (July 06,2022 **to** July 10 2022)

5 . Project report - (July 11,2022 **to** July 30 2022)

5.3 TIMELINE



6 ANTICIPATE OUTCOMES

It is anticipated that following the guiding principles of various framework and related works will results in the proper implementation of ideas for Student Management Systems that will be easily adopted by schools or colleges.Moreover, this system enables faster and reliable process that play a crucial role for managing various sorts of schools or colleges data regarding student, parents, subjects, attendance, and others in real time environment.

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