WEB-BASED SCHOOL MANAGEMENT & E-LEARNING SYSTEM

PROPOSAL

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Abstract

This paper will propose a method for school administration system designed to be applicable in every educational institution starting from primary schools to college and universities. It is user interface for controlling all the function that happens in the school. This application is aimed to develop school administration application software which can streamline the administration of the school. It is often felt that the school management is chaotic in nature. It can be used by educational institutes to maintain the records of students and faculties easily. The management gets accurate and up-to-date information regarding a student academic career. It is important in the schools and school administration system that deals with all kind of school details such as academic related reports, student details, faculty details and other resource related details too.

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1. Introduction

Education system forms the backbone of every nation. And hence it is important to provide a strong educational foundation to the young generation to ensure the development of open-minded global citizens securing the future for everyone. Advanced technology available today can play a crucial role in streamlining education-related processes to promote solidarity among students, teachers, parents and the school staff. One of the modern day technologies that can be used to make the management systems of school more efficient, effective, accurate and relevant is the worldwide web. This paper will propose the design and implementation of a web based school management system, that will handle every process and formality of the management system like registration, news and events, student attendance, examination schedules, class schedules, student assessment results, quizzes for students and more. Thus eliminating the problem of paper overload.

A web-based school management system is a type of school management software that runs in a native browser, used to browse the worldwide web. This type of school management software requires a working and active internet connection to work since all the actions are done over this internet connection. This School Management System is designed for better interaction between students, teachers, parents & management. This management software very gracefully handles all the requirements for easy school management. The school management system being web based can be accessed from anywhere in the world, which enables the students, teachers, parents & the management be in touch with each other at all times.

Schools and users do not need expensive hardware and software, they just need an internet connection, desktops and/or mobile phones. The system works as a centralized database and application that schools can easily access the system from anywhere based on the login credentials.

2. Background

Education is central to development. It is one of the most powerful instruments for reducing poverty and inequality and lays a foundation for sustained economic growth. With this aim currently our government has given special emphasis to the educational sector and school improvement activities. One of the major tools, which would play a crucial role in these improvement activities is to have automated school management system.

School Management System (SMS) consists of tasks such as registering students, attendance record keeping to control absentees, quiz examining (practice, assignment and exam quizzes), calculating total, grade, point, comment(pass or fail) and cumulative grade point (CGP), producing report cards, producing official transcript, preparing timetable and producing different reports for teachers, parents, and officials.

Automation is the utilization of technology to replace human with a machine that can perform more quickly and more continuously. By automating SMS documents that took up many large storage rooms can be stored on few disks. Transcript images can be annotated. It reduces the time to retrieve old transcripts from hours to seconds. However, the school system in the government schools of Addis Ababa is not automated and the record officers generate transcripts and reports manually and the school administrators use their experienced knowledge of miss and hit approaches to prepare timetables.

3. Problem Statement

The education system being one of the fastest growing sectors in our country, needs a flexibility that would enable it to handle management features more efficiently and come up with an effective solutions for problems that may arise in the process.

Due to the fast growing demand of education in most part of our country, it is only a matter of time for the existing manual information management system in use by our educational institutes, prove inefficient. Thus arising the need for an automated information management system that would deliver the flexibility and efficiency needed to make an accurate and time effective decisions. As

the number of students increase, the amount of data that schools handle daily increases proportionally, creating overloads of papers in the manual management system.

As our access to the internet is increasing rapidly, this paperless web based school management system proves to be the best solution to the stated problem.

To help promote students achievement and success, schools must have access to complete, accurate, and timely information about students. One of the benefits of the web based management system is that the student record system will simplify retrieval of required information, which is one of the problems the current management system faces and is a great instrument for school improvement by taking measures from the information acquired. Most of the educational institutes in Ethiopia are using paper based documentation system for performing various tasks, which wastes manpower and much time unnecessarily.

Transcripts of students are prepared manually by the record officer and teachers. Report cards are produced by the home-room teachers. Attendance of students is recorded by the home-room teachers. In order to control absentees and know the number of days that a student has been absent from the school during the school days. The attendance officer has to collect the attendance slips from the corresponding homeroom teachers and compile it which is also a time taking process. In addition to that retrieving records of students who have graduated couple of years ago has been a difficult task.

Teachers may want to associate a student with his parent or emergency persons for disciplinary measures which need searching of the students record in the record office. In many situations, it has proven difficult to search a record from thousands of such records and retrieve the necessary information, therefore students can take any person claiming that he/she is their parent or emergency person which creates problem in managing and making decisions about disciplines of students.

Due to the inefficiency of the current manual system, the need arises to automate SMS in order to efficiently handle students' attendance, to produce transcript, report cards and the various reports satisfying users and customers and to produce timetable which can schedule courses for teachers and classes of students.

4. Objectives

The main objective of the web based School Management System is to manage the details of educational institutes, Students, Classes, Teachers, Registrations all in one digital platform without the need for a paper work. Thus delivering the effective, efficient, time saving, safe and accurate management system the education institutes require. It manages all the information flow of the institution and handles all the processes of school formalities without personnel having to show up to offices.

Some of the main objectives to be achieved by this management system are:

- Providing the online interface for students, faculty etc.
- Increasing the efficiency of record management of educational institutes.
- Substantially reduce the amount of time required to access and deliver student records.
- Make the system more secure.
- Decrease time spent on non-value added tasks
- Build a responsive website to manage the different school activities.
- Enable parents to access and track the scores and grades of their children.
- Grant students with online access to different learning materials, such as reference and academic books, video tutorials and more.
- To facilitate distribution process of courses and classes for teachers.
- To facilitate grades entry process for students by teachers.
- To make a virtual community between the members of educational process.
- Build a web site that support mobile working to manage the different school activities
- To facilitate attendance record keeping,
- To facilitate various report generation,
- To allow teachers, parents, school community and Education bureau officials to view reports on students.
- To produce a timetable
- To provide online interface for students, faculty and management.
- To realize the statistical analysis function of student information.

- To manage student file to enhance, management level and confidentiality of the student records.
- Track student schedules.
- Enrolling new students.
- Add and Drop courses
- Calculate students Total, Grade, Assessment, Point, Average, and comment (pass or fail)
- PDF generator for course registration and score management

5. Significance

In today's world, it is the rare person who has not had some exposure to the Internet and the World-Wide Web. Many of us have not only used the Internet but have also created web content in some form or other.

One of the different sectors in the country, which would benefit from the increasing access to the internet is educational institutions. Educational institutions in Ethiopia are focusing on technologies to ensure a more effective work flow for a better result more than ever. Establishing a Web based system and a platform that would easily create a communication with students, teachers and administrators without having to show up to offices and/or classes are among the ways.

My plan is to create a website that would enable administrators, teachers and students to easily communicate with each other and stay up to date. Each members of the school (administrators, teachers and students) would have different levels of access to the website based on their respective credentials assigned according to their responsibilities.

Having a web based information management system in an educational institution, which would enable students, teachers and administrators to easily access recent information regarding news, events, class and exam schedules would increase the safety, accuracy and efficiency of the way the institution handles the flow of information.

Administrative staff, teacher & students with the proper authorizations can use this application via web protocol, at anytime from anywhere.

School Management Software is a set of a number of tools that lets the organization to smoothly run the institute. It is a web/cloud based software, which connects the users. The users being the ones connected with the institute like students, teachers, parents. The software includes various features right from maintaining the attendance to sending out progress letters to the parents. School management system lets the organization complete the various tasks which are less time consuming.

The benefits of the web based school management system are as follows:

Increases Productivity: The management system boosts the productivity of the institute. The reason of the increase in productivity is decreased time to maintain the track records and increased accuracy in organizing the data. Less time leads to keep the institute focused on the productivity of the school.

Student-Teacher Collaboration: Using the web based system leads to the student-teacher collaboration beyond classroom. This increases the interaction between the staff and the students. The interaction happens over the application (online) where the teacher is available to answer queries of the students. It also facilitates a friendly atmosphere in the academics.

Saves Natural Resources: Stationary right from the paper is saved in this system. It leads to saving the natural resources and keeps a digital track of the data. Also it does not create a mess of the records to be maintained.

Access from Anywhere: The website can be accessed from anywhere, anytime. A record of everything can be kept due to its easy accessibility. It also facilitates providing immediate information.

Increase in Enrollment: Due to the hectic schedule of the organizations and the tough decision making policies, it becomes troublesome to check in with the enrollment of the students. It is thus required to implement proper system so as to reduce the burden from various activities. Student software lets the organization focus on increasing the students' enrollment.

Transparency with Parents Increases: The website, leads to the interaction with the parents as well. Parents can check on their wards from time to time and keep a track of their advances in the academic fields. This leads to the transparency between the parents and the wards.

Reduction in the cost of communication: All the essential data is available on the software and hence there is a reduction in the cost of communication, which includes calling and sending out messages to let the parents and student know about the various activities within the institution.

Reduces Workload: The workload upon the staff members is reduced as the teachers need to be technology driven. This leads them to work upon the ERP and send out the required data to the students and their parents over the system. It reduces the workload from the teachers and saves time.

The advantages of Student Management System software cannot be explained but could be summarized. The world has seen a tremendous growth in technology in past few decades than in centuries; with necessity in clouding and data management, many organizations have opened their gates to simplify procedures by reducing human effort. With SMS software much of paper work could be circumvented. Mishandling of data is biggest concerns in many organizations hence; to bypass misuses Management System applications are designed under regulate guidelines and directives. Collaborative coordination between faculty and students could be attained and, announcements can be published with a single click in bulk via these simple programs. Few applications give parents access to candidate's academic performances and behaviors. To condense the merits of employing Student Management System software; the following essential aspects can be procured:

- Eco-Friendly: paperwork can be avoided
- Efficient control over student data
- Monitor student performance
- Supervise multiple branches
- Cost-efficient and User-friendly
- Single solution for total school management
- Easy access to forums, attendance, timetable, marks, grades and examination schedule
- Prior intimation about school events and holidays via notification Elimination of people-dependent processes

6. Scope

This system is aimed at total user-friendly as well as efficient management of varied tasks. These tasks may range from registering new students, examination management to all the essential features necessary for making the administrative division of school effective.

The Web application is designed with the flexibility of being able to be adjusted according to the needs of the institution and can be run in any type of operating system.

6.1. Users

Administrator

- Control everything in the application except the management of student scores, which is done by lecturers and/or teachers.

Lecturers

- Controls records of students in his/her own class
- Manage Scores, attendances, quizzes, documentations, video tutorials and more.

Students

- Check results for different assessments.
- Get news and event updates.
- Take online quizzes uploaded by teachers for practice.
- Download and use documentations.
- View video tutorials.

6.2. Main features

6.2.1. Home page

The home page is the main page of the website which is edited by the admin of the website and is accessible by every user for getting an update of current situations like news and events.

Different news updates and events in the school are posted and edited by the admin here.

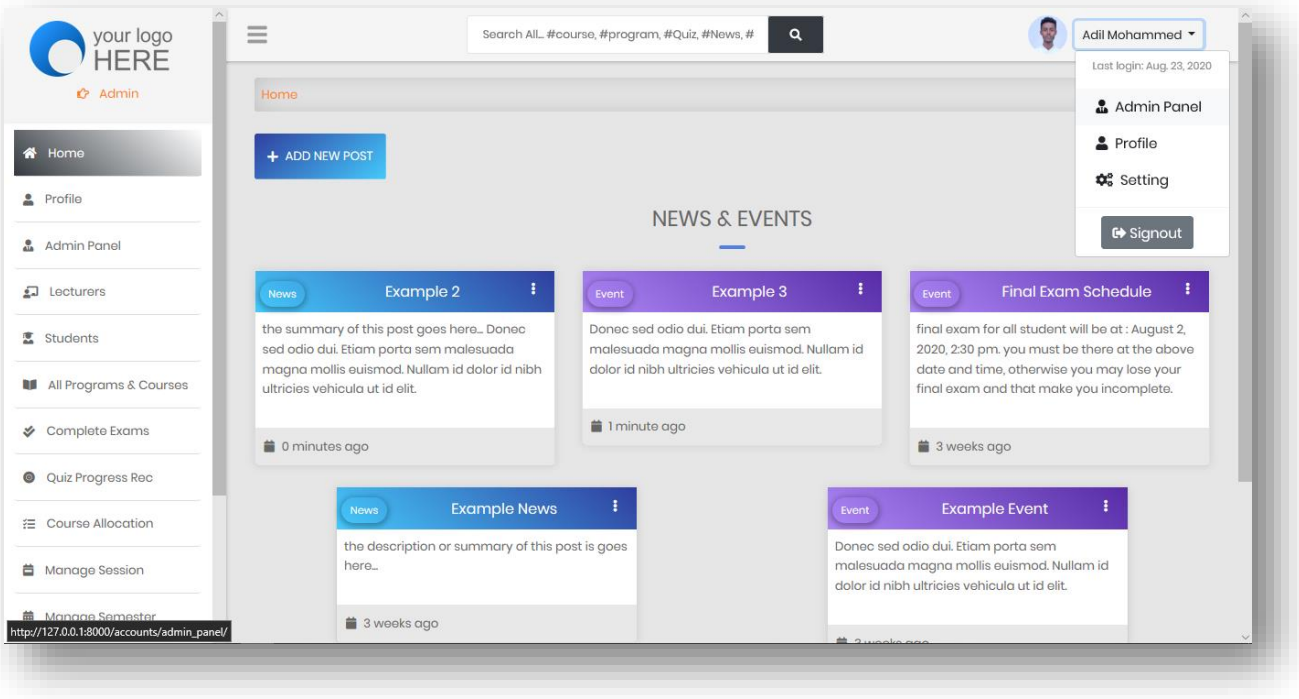

Figure 1.6 Homepage

6.2.2. Admin panel or Control panel

The Administrator application, also known as the Back-end, **Admin Panel** or Control **Panel**, is the interface where administrators and other site officials with appropriate privileges can manipulate the look of the web site. There are many tasks which can be done with the administrator interface.

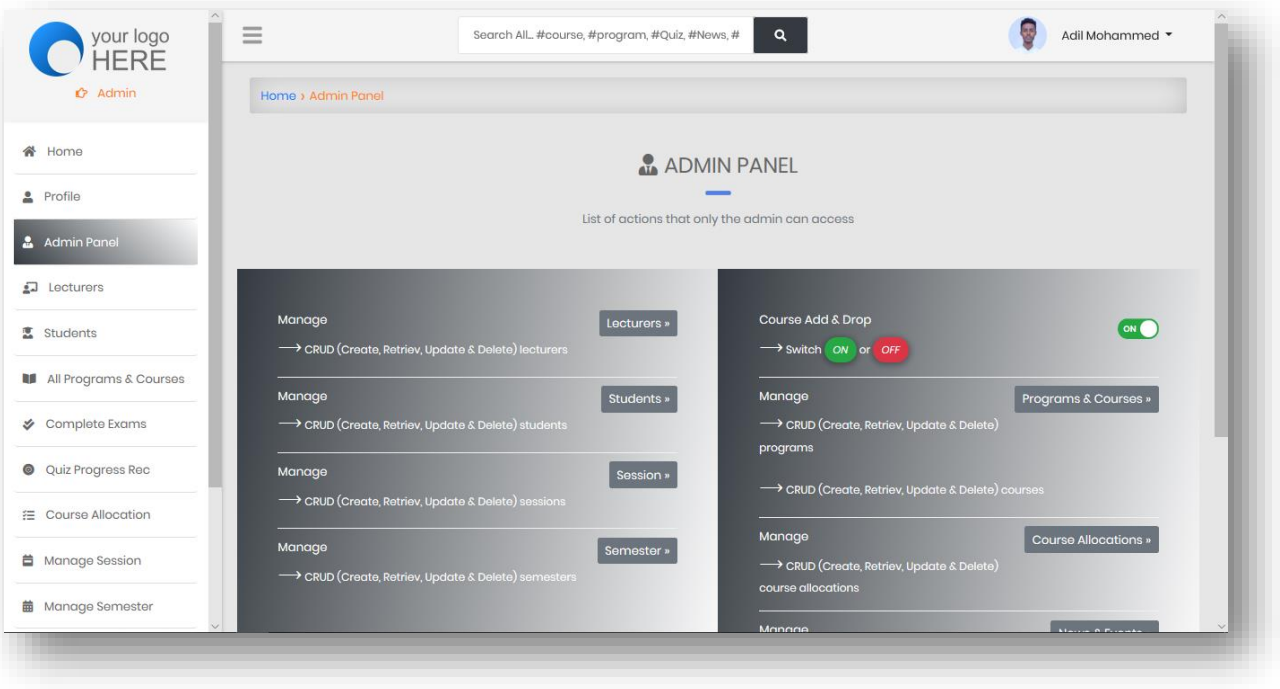

Figure 2.6 Admin panel or Control panel

6.2.3. Admin profile

A user profile is a visual display of personal data associated with a specific user, or a customized desktop environment. A profile refers therefore to the explicit digital representation of a person's identity. A profile can be used to store the description of the characteristics of a person.

Administrators: This Admin Profile (also referred to as Site Administrator) has all administrative permissions by default. The individual who signed up for the account will automatically have this profile, but you can also grant other users with this profile as well.

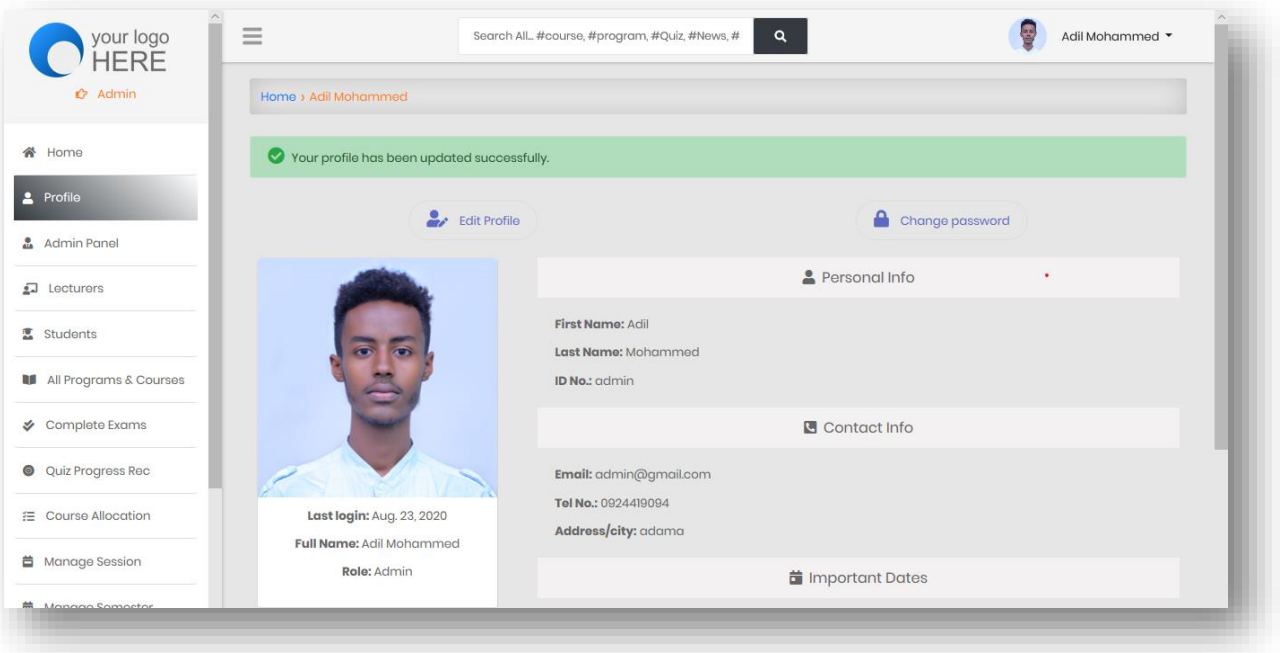

Figure 3.6 Admin profile

6.2.4. Course detail

Students can get a detailed information of each course they will be studying for a given semester.

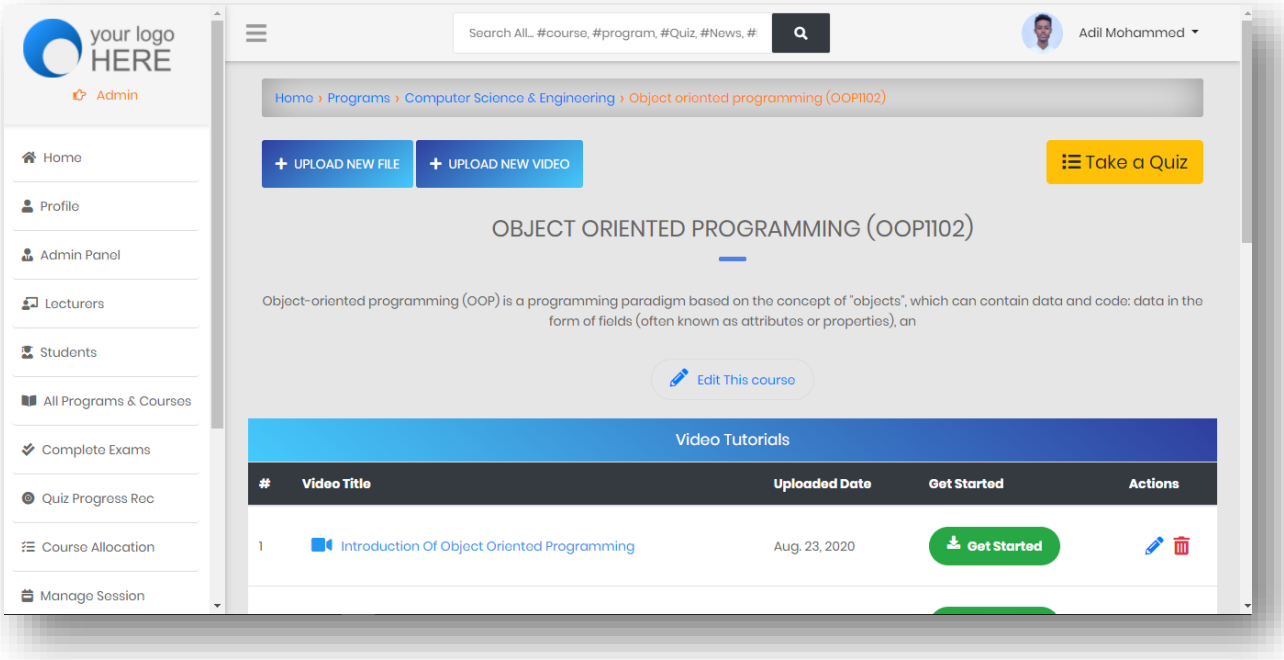

Figure 4.6 Course detail

6.2.5. Video tutorials

One of the main advantages students would benefit from this web based management system is being able to have a video tutorials of their respective fields uploaded by their class instructors. They will be able to access a tutorial video of any lesson from any subject, on any time from any place.

Instructors will upload a video tutorial of a subject matter and students choose and watch and learn more. This feature would enable students to fully understand the class lessons and get answers for what they missed in class.

Available video types or extensions are "mp4, mkv, wmv, 3gp, f4v, avi, mp3"

The video player can also play mp3 audios.

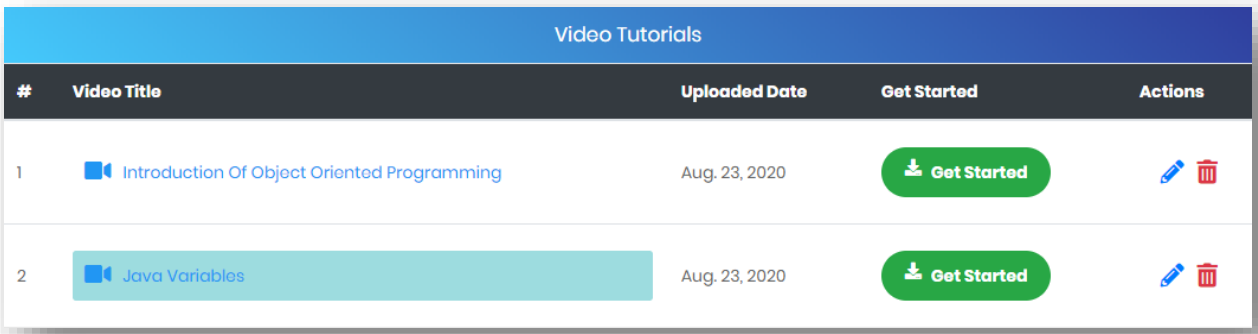

Figure 5.6 Video tutorial listing

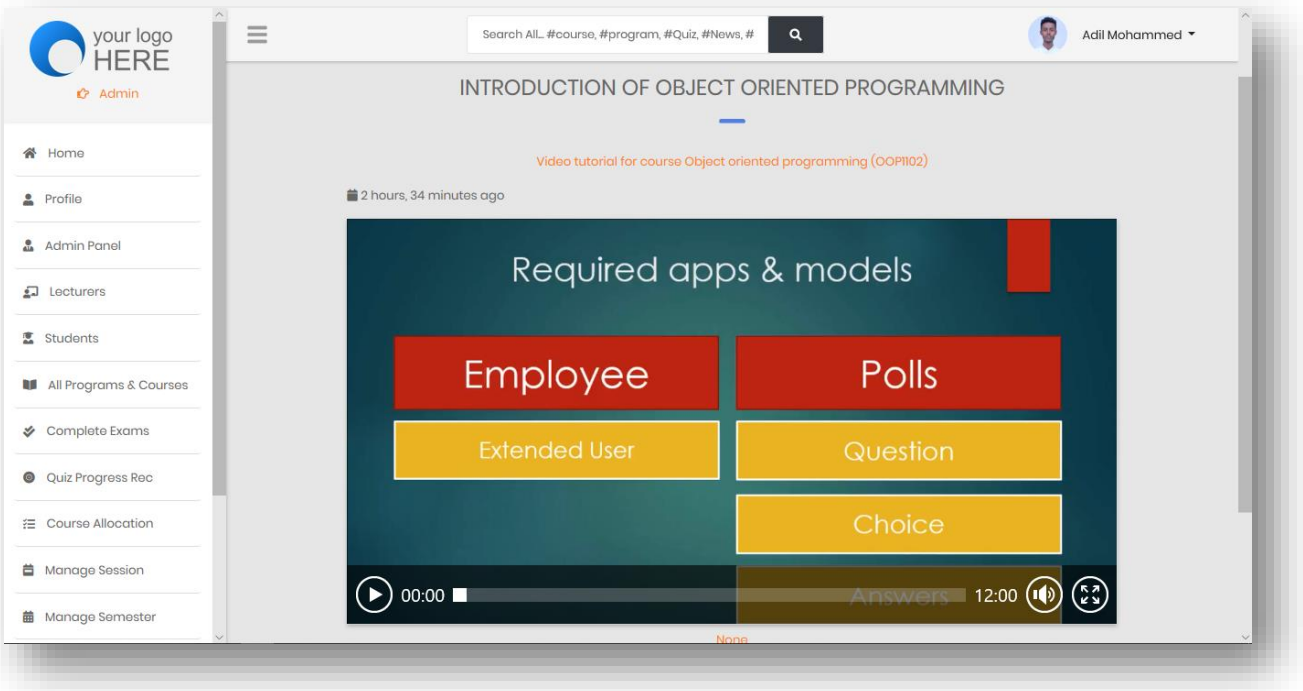

Figure 6.6 Video tutorial player

6.2.6. Documentation

On this feature of the web application, students will be granted the access to download and read different academic and other reference books uploaded by the instructors and administrators.

Available file types or extensions are "pdf, docx, doc, xls, xlsx, ppt, pptx, zip, rar, 7zip"

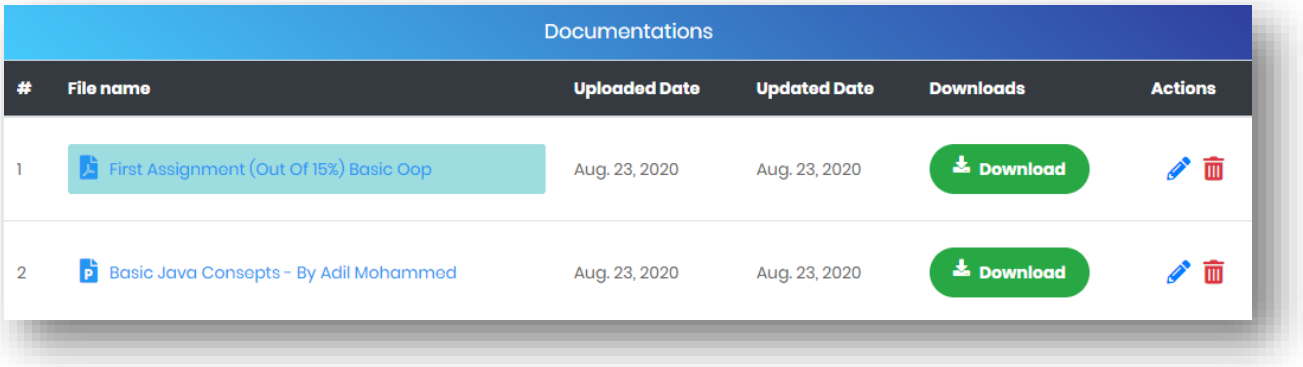

Figure 7.6 Documentation

6.2.7. Course add and drop

One of the formality processes in the current manual management system, which require the travel of students to different offices and filling out of different paper works is the adding and dropping of courses. This system have the feature to do all of that with just few clicks.

"The students can also generate PDF and print the course registration form."

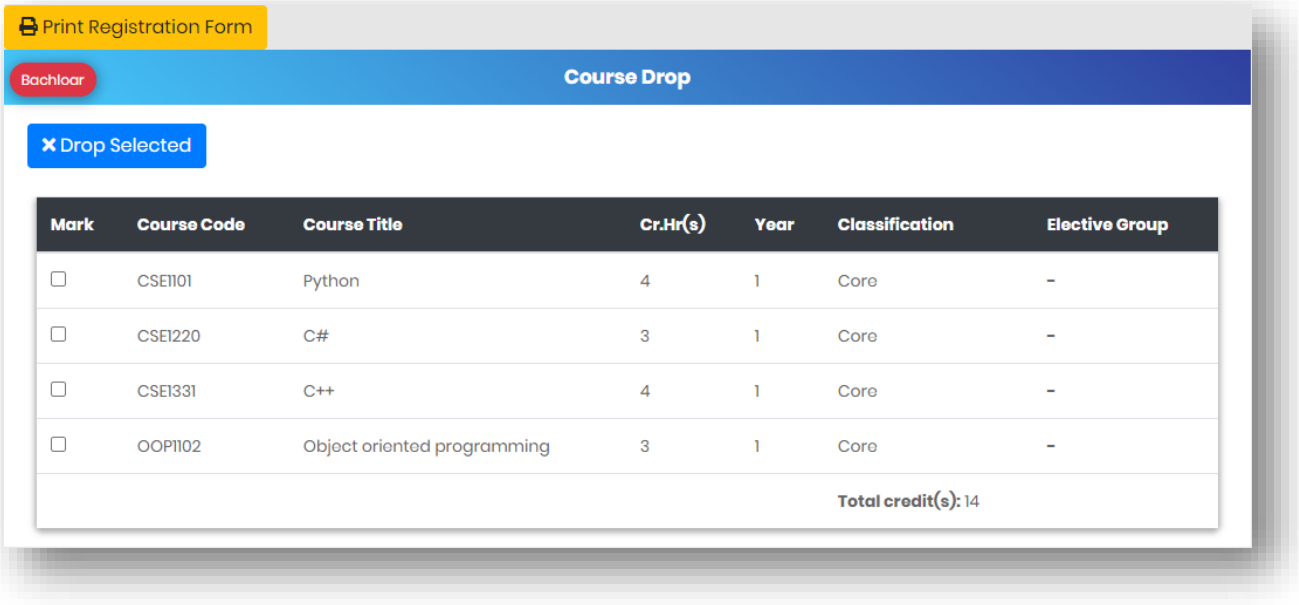

Figure 8.6 Course Add and Drop

6.2.8. Quizzes

The quiz page provides students with access to quizzes prepared by the instructors of their respective courses. This quizzes could be for practice purposes or quizzes prepared as part of their continuous assessment.

Current features:

- Question order randomization
- Storing of quiz results under each user
- Previous quiz scores can be viewed on category page
- Correct answers can be shown after each question or all at once at the end

- Logged in users can return to an incomplete quiz to finish it and non-logged in users can complete a quiz if their session persists
- The quiz can be limited to one attempt per user
- Questions can be given a category
- Success rate for each category can be monitored on a progress page
- Explanation for each question result can be given
- Pass marks can be set
- Multiple choice question type
- True/False question type
- Custom message displayed for those that pass or fail a quiz
- Custom permission (view sittings) added, allowing users with that permission to view quiz results from users
- A marking page which lists completed quizzes, can be filtered by quiz or user, and is used to mark questions

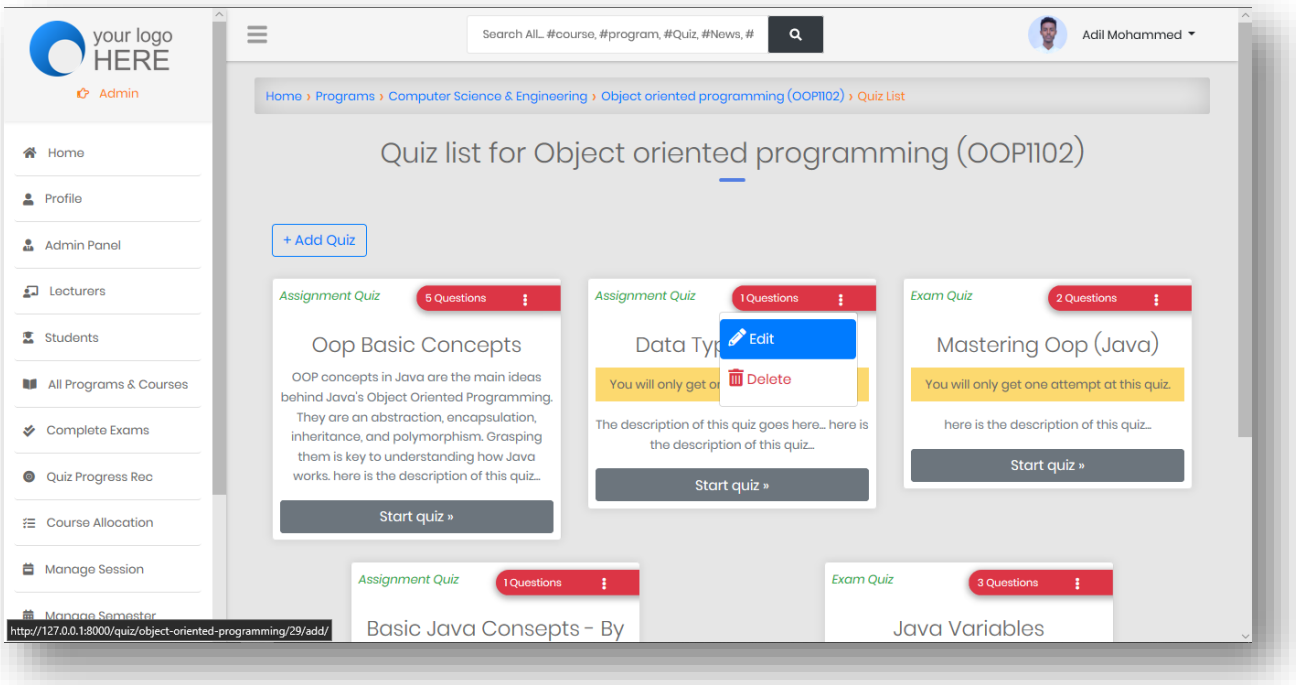

Figure 9.6 Quizzes

6.2.9. Score management

The score management page is where the teachers of a given course of a given class fill out and submit the assessment results of students. This feature is only edited by the class teachers of the course and accessible by the students to check their respective results.

Lecturers fill out the form with the student results of assignment, quizzes, mid and final exams and attendances. The system calculates automatically the results entered by the teachers and assigns a letter grade, total, average, and point according to the calculated result with a pass or fail comment.

"The lecturer can also generate PDF and print the student scores."

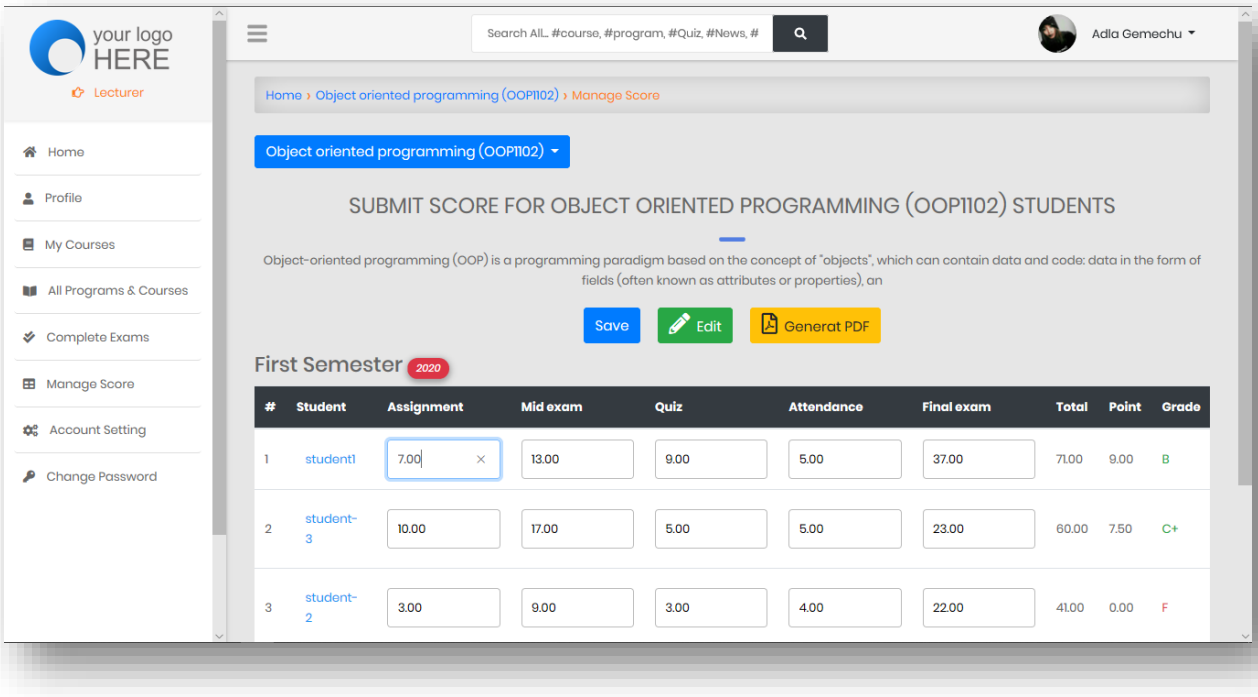

Figure 10.6 Score management

6.2.10. Assessment result page

The assessment result page displays the student's results of assessments like mid and final exams, assignments, quiz and attendance.

Students can check their results of different assessments by logging in by their student accounts and by clicking on the assessment result page from the list of options on the left side bar of the website as depicted on the picture.

#	Course Title	Course Code	Cr.Hr(s)	Assignment	Mid exam	Quiz	Attendance	Final exam	Total
1	Python	CSE1101	4	10.00	13.00	5.00	5.00	23.00	56.00
2	C#	CSE1220	3	10.00	13.00	14.00	5.00	35.00	77.00
4	Object oriented programming	OOP1102	3	7.00	13.00	9.00	5.00	37.00	71.00

Figure 11.6 Assessment results

6.2.11.Grade result

Grade result page is the page where students are able to check their grade results of the different courses according their enrollments. It also contains Point and comment (pass or fail).

#	Course Title	Course Code	Cr.Hr	Grade	Points	Comment
1	Python	CSE1101	4	C	8.00	PASS
2	C#	CSE1220	3	B+	10.50	PASS
4	Object oriented programming	OOP1102	3	B	9.00	PASS
						Total first semester credit: 10
						First Semester GPA: 2.75

Figure 12.6 Grade list

6.2.12.Pdf generator

6.2.12.1. **Course registration form pdf:** PDF generator is an added feature in the course registration form page for enabling students to have a softcopy pdf and printed copy of their course registration assurance paper. This pdf is includes full information

about each course grouped by semester and also contains the student username, full name and the current session.

6.2.12.2. **Score management pdf:** This is on the score management page for instructors to have a printable pdf file of student scores. Contains students username and full name and there Total, Grade, Point and comment (pass or fail) score for the specified course.

The following list is the feature of the system but not displayed in the main feature above.

- Session manager
- Semester manager
- Lecturers manager
- Students manager
- Course allocation manager
- Quiz progress records
- Complete exams manager
- Account settings
- Change password

"All the features in the system also perform the CRUD (create, retrieve, update, and delete) functionalities."

6.3. Technologies used

6.3.1. Django

Django is a Python based free and open-source web framework that follows the model-view-controller (MVC) architectural pattern.

Django's primary goal is to ease the creation of complex, database-driven websites. The framework emphasizes reusability and "pluggability" of components, less code, low coupling, rapid development, and the principle of don't repeat yourself. Python is used throughout, even for settings files and data models. Django also provides an optional administrative create, read, update and delete interface that is generated dynamically through introspection and configured via admin models.

Written in Python: Django is one of the web frameworks which are written in Python programming language. Hence, it becomes easier for programmers to build web applications with clean, readable, and maintainable code by taking advantage of syntax rules of Python. Also, the developers can easily curtail the development time by building custom web applications without writing additional code.

Accelerates custom web application development: Django is one of the most mature web frameworks for Python. Its design rules focus extensively on reducing web application development time. The features provided by Django enable developers to build custom web applications rapidly according to varying business requirements. A large percentage of Python programmers even opt for Django when they have to meet both goals and deadlines.

Designed as a batteries-included web framework: Django is one of the web frameworks that adopt the batteries-included approach. While developing a custom web application, Django provides the resources required by developers out of the box. It provides code for common operations like database manipulation, HTML templating, URL routing, session management, and security. The batteries included approach help developers to curtail web application development time significantly.

Supports MVC programming paradigm: Django, like other modern web frameworks, supports model-view-controller (MVC) design rule. The MVC programming paradigm allows programmers to keep a web application's user interface (UI) and business logic layers separated. The approach further helps programmers to simplify and speed up development of large web applications by separating their user interface and business logic layers. Django further allows programmers to reuse the same business logic across multiple projects.

Compatible with major operating systems and databases: Nowadays, users access web applications on various devices and platforms. Django enhances the accessibility of web applications by supporting major operating systems like Windows, Linux and MacOS. At the same time, the ORM system provided by Django makes it easier for programmers to work with several widely used databases. They can even use the ORM system to perform common database operations and migrate from one database to another without writing additional code.

Provides robust security features: The built-in security features provided by Django help developers to protect the web applications from a variety of targeted security attacks – cross-site scripting, SQL injection and cross-site request forgery. At the same time, the web framework enhances the security of web applications by preventing common security mistakes related to Python coding.

Easy to extend and scale: Django has been evolving consistently to enable programmers to build better and modern web applications. At the same time, the Django developers can easily customize, scale, and extend the web framework by making changes to its decoupled components. They even have option to unplug or replace these decoupled components according to precise requirements of individual projects. Likewise, they can accelerate development of large and complex web applications by wiring up a wide range of components.

Supported by a large and active community: As an open source web framework for Python, Django helps developers to reduce web application development cost significantly. But it is supported by a large and active community of developers. The members of the Django community update new plug-ins and code snippets regularly to simplify web application development. The developers can easily speed up custom web application development by taking advantage of these resources uploaded by members of the Django community. The members of the community even help developers to resolve common web application development issues and problems.

6.3.2. Python

Python is an interpreter, high-level, general-purpose programming language. Python's design philosophy emphasizes code readability with its notable use of significant whitespace. Its language constructs and object-oriented approach aim to help programmers write clear, logical code for small and large-scale projects.

Python is dynamically typed and garbage-collected. It supports multiple programming paradigms, including structured (particularly, procedural), object-oriented, and functional programming. Python is often described as a "batteries included" language due to its comprehensive standard library.

6.3.3. HTML

Hypertext Markup Language (HTML) is the standard markup language for documents designed to be displayed in a web browser. It can be assisted by technologies such as Cascading Style Sheets (CSS) and scripting languages such as JavaScript.

Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.

6.3.4. CSS

Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language like HTML. CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript.

CSS is designed to enable the separation of presentation and content, including layout, colors, and fonts. This separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, enable multiple web pages to share formatting by specifying the relevant CSS in a separate .css file which reduces complexity and repetition in the structural content as well as enabling the .css file to be cached to improve the page load speed between the pages that share the file and its formatting.

6.3.5. Javascript/jQuery

JavaScript is a programming language that conforms to the ECMAScript specification. JavaScript is high-level, often just-in-time compiled, and multi-paradigm. It has curly-bracket syntax, dynamic typing, prototype-based object-orientation, and first-class functions.

Alongside HTML and CSS, JavaScript is one of the core technologies of the World Wide Web. JavaScript enables interactive web pages and is an essential part of web applications. The vast majority of websites use it for client-side page behavior, and all major web browsers have a dedicated JavaScript engine to execute it.

jQuery is a JavaScript library designed to simplify HTML DOM tree traversal and manipulation, as well as event handling, CSS animation, and Ajax. It is free, open-source software using the permissive MIT License. As of May 2019, jQuery is used by 73% of the 10 million most popular

websites. Web analysis indicates that it is the most widely deployed JavaScript library by a large margin, having 3 to 4 times more usage than any other JavaScript library.

6.3.6. PostgreSQL database

PostgreSQL also known as Postgres, is a free and open-source relational database management system (RDBMS) emphasizing extensibility and SQL compliance.

PostgreSQL features transactions with Atomicity, Consistency, Isolation, Durability (ACID) properties, automatically updatable views, materialized views, triggers, foreign keys, and stored procedures. It is designed to handle a range of workloads, from single machines to data warehouses or Web services with many concurrent users. It is the default database for macOS Server, and is also available for Linux, FreeBSD, OpenBSD, and Windows.

"Even though postgreSQL is used in the current design, the wed application is flexible to be integrated with any type of database."

7. Limitations

The drawbacks in Student Management System software can be counted on fingers; with mostly only benefits, these systems have a few countable downsides. Often, applications face minor technical glitches and these systems are no exception but, ratification is immediate. Only, people who are accustomed to regular use of smartphones or computers can operate this software, but learning how to use it is very easy and tutorials can be provided for the end users of the web application. With huge flow in traffic the application is prone to performance issues. Absence of proper internet-network makes it difficult for a user to access information, which is a significant disadvantage. The risk of data mishandling might be bothersome; but all these drawbacks can be evaded by choosing proper, cost-efficient and best software that best benefits an organization.

8. Data Source

8.1. Primary source of data

Most of the data used to achieve the utmost results relevant to the objectives of the system is collected by doing a thorough research and inspection to gather the right amount of data needed either directly from the institutions or students of a given school.

In the process of trying to understand how the current management system works and get a different perspectives we have interviewed a given amount of personnel associated with some educational institutions in the local area and we were able to gather information from the organizations directly in the form of asking question and getting answers.

The Questions asked include: -

- How the teaching and learning process is handled?
- What requirement are needed for improving school management system?
- How, when and why meeting is taken place between parents and teachers?
- How teachers proved information to students?
- Are there any barriers keeping the teaching and learning process to be at its best?

Observation: This is also another data collecting method employed in the process of collecting the necessary information. This method helped us to really observe and understand how the teaching and learning process is carried out.

We have observed

- The current system.
- How the student information are handled.
- Work overload on employees.
- How to handle student's data.
- How to settle and use Schedule.

8.2. Secondary source of data

Secondary data collected from various sources such as books, research papers, web-sites and other sources of data that are related to the study of web based management system.

9. BUDGET PLAN

When planning website development, there are different details which need to be considered in the budget allocations for the project.

There are a lot of considerations when building a website. Besides from the programming and design budgets, there are additional considerations that can have a huge impact on the development process. Considering details such as choosing a domain name or selecting the right maintenance plan can give a more realistic outlook for budgeting.

While each have options and a variety of budgets, some of the main cost centers to the development process are as follows:

9.1. DOMAIN NAME REGISTRATION

Registering a domain name is required to successfully displaying a website on the internet. To register the website, it is needed to purchase a name from a recognized domain registrar. Domain registrars are certified businesses that sell domain names.

Domain names will be purchased according to the need of the specific educational institute considering key points like:

- Organization name.
- Purchasing several years at a time and using “auto-renew” features.
- Keeping a printed copy the user name and password in a secure location for reference later or in succession situations.

9.2. WEBSITE HOSTING

Website hosting is where the website is located. It is a physical location where the website files are stored and where site visitors arrive to view the website. Hosting is typically provided by a separate business or can be resold as a service through a website developer/agency.

The hosting process will be done according to the requirements of a web based management system because hosting a website in the right environment is crucial for the long term success

of the system. Choosing the right host can produce faster page load speeds, improved search engine performance, and even support in critical situations.

A referral or suggestion will be provided for the hosting provider as per the requirement of the institute.

Some other hosting costs include SSL or Security Certificate and Automated Backup and Restoration Services.

9.3. THE ACTUAL WEBSITE DEVELOPMENT

The cost of the entire development process is estimated according to the standards widely considered while developing a web based management application.

Features and functions of the web application are the most common factors in determining the development costs.

The budget of a web application is widely dependent on the amount of time and functional requirements. The budget for the development is allocated according to this features.

9.4. ONGOING MAINTENANCE

This is a budget allocated for the maintenance of the web application. The web application might need to be maintained form time to time in order to ensure the security and safety of the information stored in the system.

Some of the works that might need a budget allocation in the maintenance process include:

- Software and plugin updates.
- Uptime monitoring.
- Traffic reporting.
- Content updates.

The overall budget requirements described above are allocated by the Educational institution implementing the web application for their information management system.

10. Work plan

The web application is built under the consideration of being customizable enough to meet the needs of the interested educational institutes. Therefore the web application would be ready to be used with all its features according to the timetable of the company.

Once an educational institute is interested to install the application to its management system, the web application will be ready to get to work regarding to the needs and schedules of the school.

All the legal requirements will be met according to their respective procedures and criterions.

After the installation process is complete, a brief tutorial will be given to the staff or responsible personnel of the institutes.

Finally, after all the responsibilities of the installing body are met, all the authorization of access to the main control of the website will be handed to the school management authorities.

11. EVALUATION

As the developer of the web application, I have the responsibility to ensure the educational institutes that the web application is fully equipped and capable of performing every features available as efficient as possible.

I have ran an evaluation processes to make sure every feature is working correctly and effectively. And every feature will be tested In the presence of hiring institutes to make sure the web application is dynamic and flexible enough to meet the criterion and expectations of the institution.

Since the system has four users whose opinion about the system is very important, a sample of student, teacher, parent, and school admin will consult to evaluate the system

Usability Evaluation: To evaluate the system based on the users (student, teacher, parent, admin),

Users Evaluation: In this evaluation process, we go to the school and distribute many questionnaires and we get just many school community agree but very few students are disagree by the means of un wanting to visit their grade by our parents, this is only their reasons.

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PROFILE

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