American International University- Bangladesh

Software Requirement Specifications

Project Title: Student Management System

Section: C

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Introduction: In today's time every school around the world needs one or other kind of School Management System. Most of the schools have experienced one or other kind of system, however due to limitations of features, product experience or customer support problems they end up looking for better options. School Management System brings the best of technology to provide 360 degree experience to schools which not only improves productivity of administrative staff but improves experience and productivity of all the stakeholders- principal, management, teachers, administration staff, students and parents.

An overview of the systems:

There are four types of user in the system. Admin, Teacher, Student and Parent. Any of them can log into the system by using their academic id number and valid password.

Step-By-Step Description

1.   First the user will enter the website

2.   Then he/she will put his academic id in the id text field

3.   After that he/she will input his valid password for validation purpose

4.   Then the user will click the login button and the system will check his id and password and if the validation is successful the user will be able to access the system and will be able to perform specific task.

Justification:

There thousands of schools situated all over Bangladesh and even though most of the world's transactions now occur through digital means the schools of Bangladesh have somehow fallen very behind on this sector. Even though managing a school's paperwork is a source of major hassle for everyone involved no school has yet been able to completely take their work online. Some schools are try but they all seem to meet a dead end after building a website. Now that everything is going online and almost everyone has a cellular device in their hands, they want to be able to access their important documents with greater ease. Seeing this shift in behavior many of the better schools have already built their own website and at least a very basic automated messaging system. But since these tasks are mainly done by the IT teachers of the schools themselves they turn out to be not very professional or user friendly. The schools that have not yet built a website or a system are now desperately trying to build one as they want to keep up with their competitors and give their students the best experience in their institutions. A management system is a must for schools nowadays as their spaces are getting smaller and their work getting more diversified and larger. Implementing a management system would result in saving money and time and freeing up important resources. These reasons have created the

perfect opportunity for this project to succeed as everyone would want to leave it up to professionals to manage their work in a sector that mostly new to them. Furthermore hiring professional means they do not have to micro manage all the details of the system and that they will get an enterprise grade schools system at very low costs. It will also ensure that they will be able to compete with other institutions with minimum time, effort and compromise.

Stakeholders Analysis:

The stakeholders play an important role in managing schools. They are the partners of the school leaders in making the schools conducive to teaching and learning. They are also responsible for the achievement of the learning outcomes through their active participation in school activities, programs and projects. In the education policy world, stakeholders are our way of lumping together every person affected by the education system into one easy word. It encompasses governors, state board chairs, legislators, superintendents, school board members, principals, teachers, parents, and students.

School management system primary stakeholder:

- Administrators

- Teachers

- Staff members

- Students

- Parents

- Families

- Community members

School management system Secondary stakeholder:

- Parents

- School administrators

- Board members

- Local government officials

- Alumni and socio-civic groups

School management system internal stakeholder:

- Administrators

- Teachers

- Staff members

- Students

- Parents

- Families

- Community members,

- Local business leaders

- Elected officials

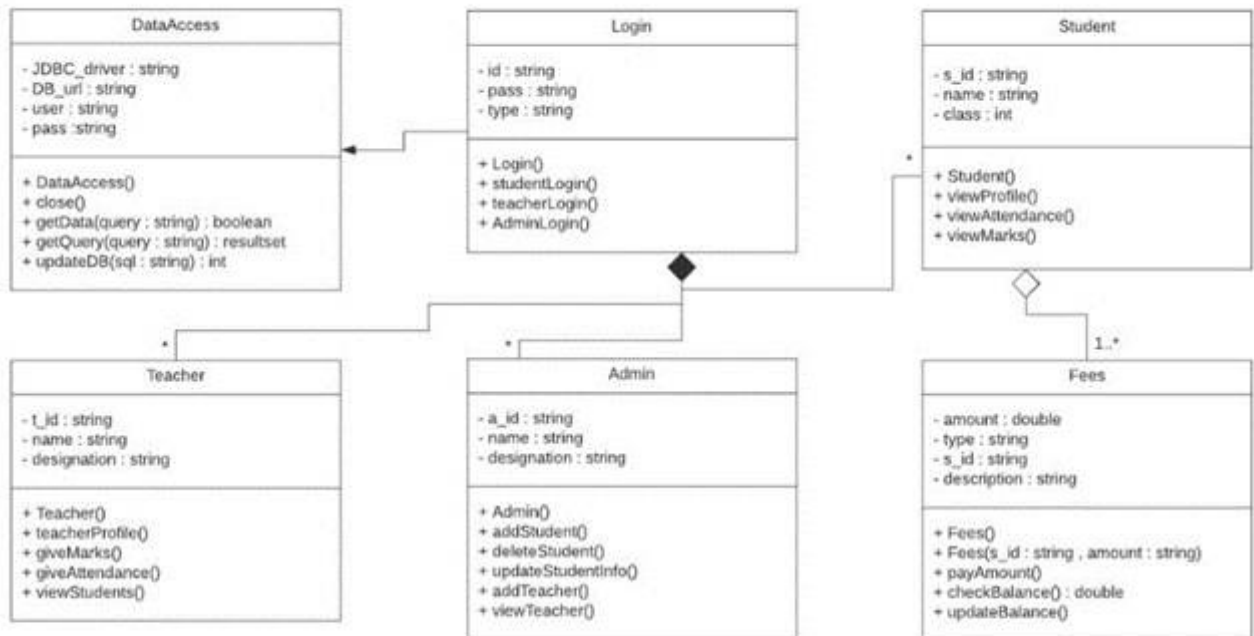School management system external stakeholder:

- Parents

- School authorities

- Local policy makers

- Donors

Product vision and scopes:

School management system is aimed at total user-friendly as well as efficient management of varied tasks. These tasks may range from registering new students, managing fees payment, examination management to all the essential features necessary for making the administrative division of school effective. A school management system vision attempts to define a product's future state. It is the product's essential essence. Ideally, the product vision will act as a guide for stakeholders, reminding them of the broad direction the product should follow and the team's mutual goals. Road mapping is also made much easier with a system vision statement. We can transform a system into an action plan if we start with a well-defined vision. Once we have an action plan in place, we can break it down even further to create a thorough development plan. Without a doubt, any school's revenue generating may have been jeopardized if authorities' time was lost manually adjusting various sectors. However, with the introduction of a school management system in India, the profit generation picture is moving in the right direction. Furthermore, it is fair to conclude that this software contains practical functions that are valuable to school administrators. This school management software covers all aspects of the school, including the library, hostel, transportation, and registration, examinations, and personnel management. As a result, it can be concluded that in today's world, if a school wants to manage
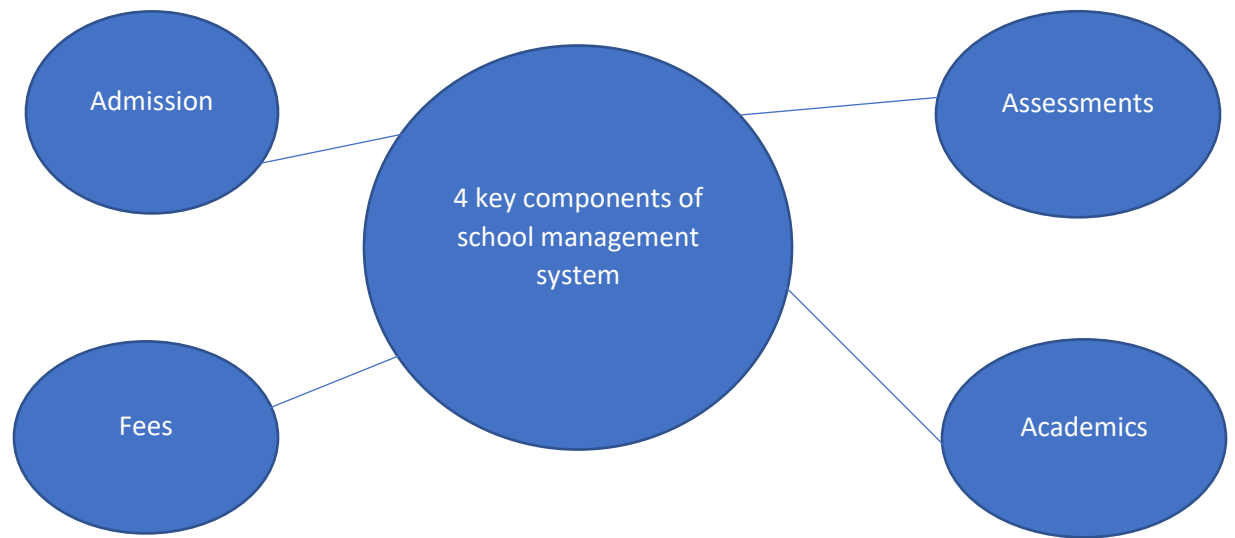
its facilities without difficulty, thereby maintaining a perfect balance among all of its areas of growth, this program is well worth getting.

Class Diagram:

Figure: Class diagram

Component: With technology making rapid advancements with more benefits, components of school management systems have become quite popular. There are many functionalities and tools are important aspects of resource management at school. Every school has a different need when it comes to the average school management system. Evaluation of components of school management systems is different as a result of which it is first very important to understand the main components of the school management model that would be ideal for our school. Here is overview which presents some possible solutions which a school management system should and must have.

Functional Requirement for the system

This section shows the functionality and the task that can be performed by the system by the users (Admin, Teacher and Student).

2.1.1 Login

Brief Description:

There are four types of user in the system. Admin, Teacher, Student and Parent. Any of them can log into the system by using their academic id number and valid password.

Step-By-Step Description

1.   First the user will enter the website

2.   Then he/she will put his academic id in the id text field

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4.   Then the user will click the login button and the system will check his id and password and if the validation is successful the user will be able to access the system and will be able to perform specific task

2.1.2 Admin

Brief Description:

The admin can perform several tasks through the system. Admin can add/delete student/teacher. Allocate the teachers class time their salary, students monthly fees.

Step-By-Step Description

1.First admin will log in

2.After login a new page will come its call the dashboard. Where the admin will be able o choose what he/she wants to do.

3.There will be option like see students, add students, add teachers, delete student delete teacher, see students/teachers' details.

4.After entering the add option there will be several fields to input personal details of the person that will be added

5.At the delete field admin will just select the user he wants to delete and will simply press the remove button

6.And to see the details of any user the admin will just click on the id or name of that user.

7.To update or allocate salary or the fee just click on the update button. Input new salary or fee and click on the "OK" button

8.Admins can change password too by clicking change password

2.1.3 Teacher

Brief Description:

The teacher can perform several tasks. They can login, see class routine, if class teacher can take attendance, upload mark and grade

Step-By-Step Description

1.   Teacher can login

2.   After login he/she will have a dashboard page

3.   At dash board he/she will select what to do. Here are options see routine, see classes, visit profile

4.   Inside class they can see students and by clicking on them they can see their details too

5.   They can update marks and grade and class notes too

6.   By clicking on the visit profile hey can visit own profile

7.   They can change password too by clicking change password

2.1.4 Student

Brief Description:

The student can login and see class routine, teacher for specific course, marks by course and grade. They can visit their profile and can see their own details too.

Step-By-Step Description

1.   Student can log in

2.   After that they also gate a dash board

3.   At dashboard there are options like see course and result, see routine, profile, see financial status.

4.   By selecting course and results they will be able to see their grades and results for all courses they are doing

5.   By clicking routine, they will be able to see the classes and routine

6.   By clicking profile hey will be able to see their profile and personal details

7.   By selecting their financial status, they will be able to see their fees, their dues and added money.

8.   They are also able to change their password

2.1.5 Parent

Brief Description:

Parents can login and see class routine, teacher for specific course, marks by course and accounts. They can send message to course teachers.

Step-By-Step Description

1.   Parents can log in with their ID & password

9.   After that they also gate a dash board

10.   At dashboard there are options like see course and result, see routine, profile, see financial status.

11.   By selecting course and results they will be able to see child's grades and results for all courses they are doing

12.   By clicking routine, they will be able to see the classes and routine

13.   By selecting their financial status, they will be able to see payment history.

14.   They are also able to change their password

Functional Requirements for the Module HR

Req ID	Date	Req Description	Dependencies	Originator	Testing Criteria
HRM1.1	10.12.2021	This requirement is about storing the information about all student work history.	1.form 2. database 3.proper query	Educational Analyst	1. Checking the form is working properly. 2. Checking that all of the information for any student is stored.
HRM1.2	10.12.2021	This requirement is about updating the information about all student work history.	1.form 2. database 3.proper query	Educational Analyst	1. Checking the form is working properly. 2. Checking that all of the information for any student is Updated.

HRM2	15.12.2021	This requirement is about making the system of Payroll to divide the profit among student.	1.Database 2.proper query 3.AM3	HR expert	3. Checking the form is working properly. Checking that all of the information for any student is stored.
HRM3.1	15.12.2021	This requirement is establishing company policy	1. Database 2. Form 3. Proper Query	HR expert	1.Checking the Form is working properly.
HRM3.2	20.12.2021	This requirement is updating education policy	1. Database 2. Form 3. Proper Query	HR expert	1. Checking the Update is working
HRM4	21.12.2021	This requirement is about enrolling new teacher with help of admin	1. Form 2. Admin Approval 3. Database	HR expert	Checking the form is working properly.

HRM5	25.12.2021	This requirement is about taking disciplinary actions and notify all student and teacher	1. Form 2. Database 3. Notification through email	HR expert	1. Checking the form is working properly 2. Checking the notification is sent.

8.None Functional Requirements for the system

Security: The database of our Student Management system is confidential, and because the data is scattered across multiple servers on the public cloud, it is out of the student control. As a result, strong security measures can be incorporated as a service from the cloud service provider at an additional cost, or data can be housed on the private cloud.

Our Student Management system apps are adaptive in order to take into account the non-functional needs outlined above. This application can supply essential resources as well as a data security control mechanism. At the organizational level, internal analysis is required.

Usability: Our Student Management system platform has a user-friendly interface that allows for adaptability and customizing. User interfaces are altered and recommendations are generated for learners to better grasp instructional content based on their preferences.

Learnability: Rather than focusing on material, our Student Management system may focus on the learners. Learners' learning styles can be identified, and the portal can assist students and teachers in selecting appropriate information.

Privacy: Our system is secure in the public cloud, but some data is only accessible by that organization's teacher and students. As a result, the portal and learners' learning styles will be kept secret and saved in the organization's private cloud.

Availability: Because our Student Management system is internet-based, it will be accessible at any time and from any location with adequate connectivity. Access to the portal will be available not only on campus, but also off campus. It would provide a continuous service (24x7) and use redundant systems to prevent network traffic overflow. The deployment of our application will meet these standards.

Scalability: At the infrastructure level, our Student Management system solutions are still lacking in scalability. When the portal's utilization is extremely heavy, numerous resources on the public cloud could be launched and assigned only for a limited time. This system has the ability to add/delete new resources as needed. Scalability in terms of access, for example, will increase during exam time and then be inactive following the exam. This application can save infrastructure expenses by managing scalability on a per-use basis.

9. System's Requirements

Our Student Management System platform system is accessible through a web browser and is compatible with the majority of computing systems. Although we tested them in a regular office setting, we can only guarantee that they will function properly with the following system requirements:

- The following is the bare minimum hardware configuration for a PC:
- IBM PC Compatible is the platform used.
- CPU: Pentium III or comparable processor with a 500 MHz clock speed.
- RAM: 256 megabytes
- As a bare minimum, a sound card should be included with headphones.
- Input devices include a mouse and a keyboard.

Connection/bandwidth:

Our system will be accessible from all over the world by a variety of users in a variety of locales. As a result, we have no way of knowing how much bandwidth they will have accessible. Epic advises that users use the system using a high-speed Internet connection. The video files will most likely be the biggest files on the system, since they will take up the most space. Care will be made to ensure that the size and length of these files are suitable in order to guarantee that they play successfully.

Issues that have been identified include:

We've had some trouble getting the student Management system modules to work with browsers that utilize pop-up blockers, as well as with security software like Norton Security. The module will be disabled while the system is operating due to the fact that it will be launched in a new browser window.

Accessibility:

In order to accommodate those with impairments who desire to follow the modules, transcripts of the courses are provided upon request.

Capability to connect to the internet:

Despite the fact that our Student Management System has been carefully designed to work in low bandwidth contexts, many of the multimedia tools that your teacher will utilize will need high-speed/high-bandwidth Internet connectivity to function properly. Our system requires a minimum of 512 Kbps of bandwidth.

10. Manpower Requirement for implementation

Personnel is required to complete this project's implementation. This project will need a large amount of manpower to do it correctly. Engineers will be required to ensure that the online platform continues to function effectively. There are persons in charge of management and human resources. The marketing and financial aspects of this platform would also need the involvement of experts from this field. Additionally, we may need temporary designers and employees from additional employment categories in addition to those listed above. As a result, the following amount of manpower is required for this project:

1. Developers

2. Designers

3. Management authority

4. Accountants

5. Human resource specialists

6.Marketers and temporary designers are among the other professions.

7. User Interface and User Experience (UI/UX) Experts

11. Budget:

Cost:

Cost calculation is an essential part of every software development project, so that's why we are going to calculate our project cost. We are using basic (COCOMO) model to calculate our cost, and we also chose (semidetached) model from (COCOMO) model because our project have (biometric log-in time saved in VUES database). There have some calculation that our project must need before it constructed.

Software Projects	a	b	c	d
Organic	2.4	1.05	2.5	0.38
Semi Detached	3.0	1.12	2.5	0.35
Embedded	3.6	1.20	2.5	0.32

Suppose that our project was estimated to be 100KLOC,

Effort= a*(KLOC)^b

    =3.0*(100)^1.12

    =521.34 person-month

Development time= c*(Effort)^d

       =2.5*(521.34)^0.35

       =22.33 months

Required number of people= Effort/Development time

        =521.34/22.33

        =22.35 person

The items listed below are the basics that we would need when starting our project:

- The total fee for registering the Business in Bangladesh - 10,000 BDT

- employee (developers, administrator, architecture)-8,50,000 BDT

- server -2,20,000 BDT

- Marketing promotion expenses for the grand opening of digital marketing–1,00,000 BDT

- The cost for hiring Business Consultant –60,000 BDT

- Designer Cost- 1,00,000 BDT (for 6 months)

- Hardware equipment (micro controller, biometric sensor, networking equipment)- 2,00,000 BDT (for 6 months)

- Office rent- 60,000 BDT (for 6 months)

- Office maintenance cost (papers and other utility) 60,000 (for 6 months)

- Office equipment (printer, scanner)-5,00,000 BDT

- The cost for Computer Software (Accounting Software, Payroll Software, CRM Software, Microsoft Office, QuickBooks Pro) – 2,00,000 BDT

- Storage hardware (bins, rack, shelves, desk) – 1,00,000 BDT

- Electricity and other utility bill- 1,00,000 BDT

We would need an estimate of 25, 60,000 BDT to successfully set up our blood bank software in Bangladesh

12. Constraints of this documents

A high degree of self-motivation and time management is required for successful Student Management System. There are certain limits to the Student Management System. As an example,

The organization as well as the teacher are the primary focus. Rather than meeting the requirements of the student, they are more likely to fulfill the needs of the organization as well as the needs of the teacher.

There are limited possibilities for informal learning. A course-based approach makes it difficult to foster community growth. It is probable that the timetable will be disturbed.

There may be a problem with the code's implementation, or there may be some technological issues.

Inadequate network service; excessively expensive fees; insufficient electricity; a lack of direct teaching and learning; inadequate computer literacy and compliance; and a lack of direct teaching and learning.

13. Conclusion:

Student management systems make it easier for faculty to do their jobs because they give them a place to find and organize information, which makes their jobs easier. There is a way for teachers and student managers to keep an eye on how their students are behaving.

Administration and teachers should be able to live in a way that makes their jobs easier. There are many different ways to do things, so try them all until you find the one that works best for you.