Digital Transformation of Admission and Recruitment Processes for Kindergarten Institutions

by

Sohel Rana
ID: CSE2103024133

Md Iqubanul Hasan
ID: CSE2103024156

Nourin Hossain Anny
ID: CSE2103024109

MD Mahmudul Hasan
ID: CSE2103024128

Supervised by
Mohammad Naderuzzaman

Submitted in partial fulfillment of the requirements for the degree of
Bachelor of Science in Computer Science and Engineering



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
SONARGAON UNIVERSITY (SU)
May 2025

APPROVAL

The project titled "**Digital Transformation of Admission and Recruitment Processes for Kindergarten Institutions**" submitted by Sohel Rana (CSE2103024133), Nourin Hossain Anny (CSE2103024109), Md Iqubanul Hasan (CSE2103024156) and MD Mahmudul Hasan (CSE2103024128) to the Department of Computer Science and Engineering, Sonargaon University (SU), has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of Bachelor of Science in Computer Science and Engineering and approved as to its style and contents.

Board of Examiners

Mohammad Naderuzzaman
Associate Professor,
Department of Computer Science and Engineering
Sonargaon University (SU)

Supervisor

(Examiner Name and Signature)
Department of Computer Science and Engineering
Sonargaon University (SU)

Examiner 1

(Examiner Name and Signature)
Department of Computer Science and Engineering
Sonargaon University (SU)

Examiner 2

(Examiner Name and Signature)
Department of Computer Science and Engineering
Sonargaon University (SU)

Examiner 3

DECLARATION

We, hereby, declare that the work presented in this report is the outcome of the investigation performed by us under the supervision of **Mohammad Naderuzzaman, Associate Professor,** Department of Computer Science and Engineering, Sonargaon University, Dhaka, Bangladesh. We reaffirm that no part of this project has been or is being submitted elsewhere for the award of any degree or diploma.

Countersigned

(Mohammad Naderuzzaman)
Supervisor

Signature

Sohel Rana
ID: CSE2103024133

Nourin Hossain Anny
ID: CSE2103024109

Md Iqubanul Hasan
ID: CSE2103024156

MD Mahmudul Hasan
ID: CSE2103024128

ABSTRACT

This project presents the development of a web-based Kindergarten School Management System designed to streamline the admission and recruitment processes for educational institutions. The system enables parents to conveniently apply online for their children's admission, reducing the need for physical paperwork and in-person visits. Additionally, it offers a dedicated portal for qualified teachers to apply for teaching positions by submitting their credentials digitally. Built using modern web technologies such as HTML, CSS, and JavaScript (Vanilla JS), the platform enhances accessibility, efficiency, and communication between the school administration and applicants. The system also features basic data validation, confirmation messages, and organized record-keeping to ensure smooth and secure data handling. This project not only addresses the needs of school administrators but also provides a simple and intuitive interface for end-users. It demonstrates how small institutions can adopt digital solutions to improve their operational workflows and provide better service to their communities.

ACKNOWLEDGMENT

At the very beginning, we would like to express our deepest gratitude to the Almighty Allah for giving us the ability and the strength to finish the task successfully within the scheduled time.

We are auspicious that we had the kind association as well as supervision of **Mohammad Naderuzzaman**, Associate Professor, Department of Computer Science and Engineering, Sonargaon University whose hearted and valuable support with best concern and direction acted as necessary recourse to carry out our project.

We would like to convey our special gratitude to **Prof. Bulbul Ahamed**, Head of the Department, Computer Science and Engineering the kind concern and precious suggestions.

We are also thankful to all our teachers during our whole education, for exposing us to the beauty of learning.

Finally, our deepest gratitude and love to my parents for their support, encouragement, and endless love

LIST OF ABBREVIATIONS

HTML	HyperText Markup Language
TTFB	Time to First Byte
CSS	Cascading Style Sheets
POP3	Post Office Protocol Version 3
CV	Curriculum Vitae
JS	JavaScrip
FCP	First Contentful Paint
LCP	Last Contentful Paint

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CHAPTER 1

INTRODUCTION TO KINDERGARTEN WEBSITE SYSTEM DESIGN

1.1 Introduction

In the modern era of technology, the integration of digital solutions into various sectors of society has become a defining characteristic of progress and efficiency. Among these sectors, education stands out as an area where digital transformation has made significant strides. Educational institutions, ranging from primary schools to universities, are increasingly adopting web-based systems to streamline administrative operations, enhance communication, and provide better services to students, staff, and guardians. While universities and colleges were the early adopters of such technology, there is a growing realization that even early childhood education institutions, such as kindergarten schools, can greatly benefit from establishing a structured digital presence.

Kindergartens, though relatively small in scale compared to secondary and tertiary institutions, handle a range of essential administrative functions. These include student admissions, teacher recruitment, communication with parents, and the dissemination of basic institutional information. Traditionally, these tasks have been carried out manually, involving in-person visits, paper-based forms, and time-consuming processes that demand considerable effort from both school staff and parents. In today's fast-paced world, such methods are no longer practical or efficient.

One of the most effective ways to modernize these operations is by developing a dedicated web-based system for the kindergarten. A functional and user-friendly website can serve multiple purposes: as an information portal that introduces the school to new parents and visitors, and as a functional platform that enables users to perform essential actions online. Specifically, the website developed in this project provides two primary capabilities:

1. Parents or guardians can submit student admission forms online, entering necessary details from the comfort of their homes.
2. Aspiring teachers can apply for teaching positions by filling out a registration form, including their qualifications and relevant experience.

By transferring these traditionally manual processes to a digital format, the school benefits from greater efficiency, reduced use of paper, and better organization of applicant data. In addition, parents and job seekers no longer need to physically visit the school to carry out simple administrative actions. This improves accessibility, especially for working parents or those living farther from the school. It also reflects a modern image of the institution, aligning it with the digital expectations of today's users.

This system has been carefully designed with simplicity in mind. It is built using standard web technologies such as HTML and CSS for layout and styling, ensuring the interface is clean and easy to navigate. Rather than using a complex backend or database system, the website leverages the POP3 mail server protocol to send form submissions directly to a designated email address managed by school administrators. This approach offers a lightweight and cost-effective solution that is well-suited for small institutions with limited technical capacity or budget.

Whether deployed locally on school computers or hosted on a remote server for broader access, the website provides the basic but essential features required for a digital school management platform. It demonstrates how even small-scale educational institutions can embrace digital transformation to improve internal workflows and enhance user experience. Ultimately, this project serves as a practical model for modernizing kindergarten operations with minimal resources, paving the way for further technological advancements in the future.

This project helps bridge the gap between traditional administrative processes and modern digital tools and provides a foundation for future expansion, including features like login systems, student record dashboards, or parent communication tools [1].

1.2 Purpose of the Project

The primary purpose of this project is to design and implement a simple yet functional digital platform that addresses the fundamental administrative needs of a kindergarten school. In particular, the system is intended to streamline two essential operations: student admissions and teacher recruitment. These are routine yet critical processes that require structured data collection, proper documentation, and effective communication between the school and its stakeholders.

Traditionally, both admission and recruitment activities are carried out using manual procedures. Parents are required to visit the school in person, collect paper forms, fill them out by hand, and then submit them physically, often along with multiple documents. Similarly, individuals interested in applying for teaching positions are typically expected to deliver printed CVs and cover letters directly to the school office. These paper-based workflows are inefficient, time-consuming, and prone to human error, such as data loss, incomplete submissions, and delays in processing. They also place a significant burden on school administrative staff, particularly during high-demand periods.

To overcome these limitations, this project introduces a web-based solution that replaces traditional paperwork with a more efficient, accessible, and organized system. The proposed website offers two primary interactive features:

Online Admission Form for Students: Parents or guardians can visit the website, navigate to the admission section, and fill out a digital form with their child's personal and academic details.

This eliminates the need for physical visits and enables parents to submit accurate and complete information from home or any internet-connected device.

Teacher Registration Form: Prospective educators can submit their applications online by filling out a registration form that includes their personal information, qualifications, and teaching experience. An option to upload a CV or resume may also be included, depending on implementation. This digital process not only simplifies recruitment for the school but also broadens its reach to more qualified candidates.

The adoption of such a system offers numerous administrative and operational benefits. The school gains from centralized data collection, improved record-keeping, and faster application processing. Administrative staff no longer need to handle piles of paper forms or manually input data into spreadsheets. Instead, all submissions are automatically sent to the school's designated email using a POP3 mail server, allowing for easy sorting, storage, and retrieval. On the user side, both parents and job seekers benefit from a convenient and flexible experience, as they can interact with the school at any time and from any location.

From a technical perspective, the website is built using standard web technologies such as HTML and CSS for frontend development. The choice to use a POP3-based form handling approach (instead of a backend and database) ensures that the system remains lightweight, cost-effective, and easier to maintain for smaller institutions that may lack technical infrastructure or support staff. However, the design is modular enough to allow for future enhancements, including the integration of backend scripting (using languages like PHP or Node.js), database connectivity, form validation, and admin dashboards.

This project holds particular significance in the post-pandemic context, where digital accessibility has become essential in all areas of education. With social distancing, health concerns, and evolving expectations for digital service delivery, schools, regardless of size or level, must adapt to modern technology. Even kindergarten schools, which were traditionally slow to adopt digital systems, can now greatly benefit from simple online solutions that reduce administrative load and enhance stakeholder satisfaction.

In summary, this project aims not only to solve existing challenges but also to lay the groundwork for a future-ready digital environment in early childhood education.

1.3 Scope of the Project

This project is centered on the design and development of a simple, responsive, and user-friendly website tailored specifically for a kindergarten school. The main objective is to provide a digital platform that can handle two of the school’s most important administrative functions: student admission and teacher recruitment. These tasks, though routine, are essential for maintaining the

operational flow of the institution and ensuring that both students and staff are onboarded efficiently.

The proposed website incorporates two major interactive components. First, it includes an online admission form that allows parents or guardians to input and submit their children's details directly through the website. This eliminates the need for in-person visits to the school, simplifies the documentation process, and reduces the administrative workload associated with collecting and sorting physical forms. Second, the platform includes a teacher registration form, where individuals seeking teaching positions can provide their qualifications, experience, and contact information. In future iterations, this form can be expanded to support document uploads, such as resumes or certificates.

In addition to these dynamic elements, the website also features static informational pages that provide visitors with key details about the school. These include an "About Us" page that outlines the school's history, mission, and educational philosophy, as well as a "Contact" page that lists the school's address, phone number, and email for direct communication. These sections help establish the school's credibility and offer a convenient way for prospective parents and job seekers to learn more about the institution.

From a technical standpoint, the website is developed using HTML and CSS, two foundational technologies in web development. The use of these tools ensures that the website remains lightweight, fast-loading, and accessible across a variety of devices and screen sizes. A mobile-responsive design is implemented to cater to users who may access the site via smartphones or tablets.

A notable design choice in this project is the absence of a traditional backend or database system. Instead of storing form submissions in a local or cloud-based database, the website uses a POP3 (Post Office Protocol 3) mail server to handle form data. When a user submits a form, whether for admission or a job application, the information is sent directly to the school's official email inbox. This method is highly practical for small educational institutions with limited technical infrastructure, as it avoids the need for server management, backend scripting, or data migration tools.

By excluding a backend, the system is kept lightweight, low-cost, and easy to maintain, which is ideal for kindergarten-level institutions that may not have dedicated IT staff. The modular nature of the system also allows for future enhancements, such as the addition of a database, admin dashboard, or automated email confirmations.

In summary, the scope of this project is carefully defined to meet the immediate needs of a kindergarten school while ensuring simplicity, usability, and scalability. The solution provides an efficient alternative to manual processes and represents a practical example of how even small institutions can leverage digital tools to enhance their day-to-day operations.

1.4 Methodology

The development of this project followed a structured, step-by-step methodology specifically suited for the creation of a lightweight, static web-based system. Given the nature and scope of the project, designing a kindergarten website with simple form handling capabilities, the chosen approach emphasized clarity, simplicity, and maintainability over technical complexity. The methodology adopted was linear and sequential, making it ideal for small-scale educational systems that do not require iterative development or advanced backend infrastructure.

The process began with a requirement analysis phase, where the team engaged in identifying the core functions needed to address the operational challenges of a kindergarten institution. Through observation and informal consultation, two primary needs were identified:

A platform for student admission, enabling parents to submit applications digitally.

A portal for teacher recruitment, allowing prospective educators to apply for available teaching positions online.

After these needs were clearly outlined, the project entered the design phase. During this stage, the layout and structure of the website were conceptualized using wireframes and flow diagrams. The user interface was intentionally designed to be clean, intuitive, and accessible to users of all technical backgrounds, including parents and teachers who may have limited experience with digital platforms.

Once the design was finalized, the implementation phase commenced. The frontend of the website was developed using HTML for content structure and CSS for styling and layout. These technologies were chosen for their widespread browser support, ease of use, and suitability for static websites. The site was built with responsive design principles in mind, ensuring compatibility across desktops, tablets, and mobile devices.

Special attention was given to the development of interactive form elements, the admission form for students, and the registration form for teachers. These forms were designed with user-friendly labels, input validation, and a straightforward layout to minimize user errors and confusion. Although the project does not incorporate client-side scripting like JavaScript or server-side logic such as PHP or Node.js, the static forms still function effectively by utilizing email-based submission.

To manage form submissions without a backend, the project integrated a POP3 (Post Office Protocol 3) mail server mechanism. When users submit a form, the input data is automatically routed to a designated school email address. This technique allows school administrators to receive submissions directly into their email inbox using any standard email client. This choice was made deliberately to avoid the complexities of database configuration, server maintenance,

and backend security concerns, making it an ideal solution for schools with limited technical resources or IT staff.

Following the implementation, the system underwent a testing and evaluation phase, where all functional components were reviewed for performance, accuracy, and usability. Forms were tested for correct data delivery, page load speeds were evaluated using standard tools, and responsiveness was checked across different devices and browsers.

Overall, the methodology adopted in this project emphasizes clarity, accessibility, and practicality. By leveraging basic but effective web technologies and avoiding the overhead of backend systems, the project delivers a meaningful and manageable solution for kindergarten institutions aiming to digitize their admission and hiring processes with minimal cost and effort

CHAPTER 2

RELATED WORK

In this chapter, we first discussed the evolution and adoption of digital admission systems in educational institutions, particularly at the kindergarten level. We then compared manual and online admission processes to highlight the advantages of digital systems. After that, we examined the use of admission forms on school websites and how different institutions handle form submissions. Finally, we compared various existing systems to show why simple, email-based solutions are effective and appropriate for small-scale schools with limited resources.

2.1 Existing Digital Admission Systems

Over the last decade, the field of education has witnessed a significant transition from traditional, paper-based administrative processes to more efficient, digitized systems. One of the most notable transformations has occurred in the area of student admissions, where many institutions have shifted toward online application systems to enhance accessibility, efficiency, and data accuracy. These digital platforms enable prospective students, or in the case of early education, their parents or guardians, to complete and submit admission forms through a web interface, often from the comfort of their homes. This not only simplifies the process for applicants but also reduces the administrative burden on school staff who would otherwise need to manage stacks of paper applications manually.

While such digital admission systems are widely adopted in higher education institutions, including colleges and universities, there is a growing trend among primary and pre-primary institutions, such as kindergartens and nursery schools, to implement similar, though often simplified, solutions. For example, many private kindergartens now maintain basic websites that feature online forms for enrollment, reducing the need for physical visits and paper handling. This trend is largely driven by the increasing digital literacy of parents, the demand for convenience, and the availability of low-cost web technologies that even small institutions can afford to deploy.

Studies have highlighted that digital admission platforms lead to faster processing times, lower operational costs, and improved record-keeping, especially when compared to manual workflows. Furthermore, digital systems reduce the chances of lost or incomplete applications and offer a more structured format for collecting student information, which contributes to better data management [5].

For kindergarten schools, the challenge lies in adopting systems that are simple, intuitive, and require minimal technical infrastructure. Full-featured, backend-powered systems may be too complex or costly for small schools to implement. Therefore, email-based form submissions or static websites with built-in contact forms provide a practical middle ground. These methods

allow for semi-automated data collection, where submitted information is sent directly to the school's email inbox, an approach that avoids the need for complex databases or backend scripting while still enabling a digital workflow.

In conclusion, the increasing adoption of digital admission systems across all levels of education reflects a shift toward streamlined, accessible, and user-friendly processes. Even in the context of kindergartens, implementing such systems can lead to substantial improvements in both parent experience and administrative efficiency, particularly when designed with simplicity and practicality in mind.

2.1.1 Manual Admission vs Online Admission Systems

Manual admission systems generally require parents or guardians to physically visit the school, collect printed admission forms, fill them out by hand, and submit the completed documents directly to administrative staff. This process is often repetitive and time-consuming, particularly during high-demand periods when multiple families are applying at once. Furthermore, such systems are prone to common issues such as misplaced forms, illegible handwriting, incomplete submissions, and delays in verification and data entry. These inefficiencies can place a considerable burden on school staff and increase the likelihood of administrative errors.

In contrast, online admission systems provide a more streamlined and reliable approach. Parents can access the admission form from any internet-enabled device, fill it out digitally, and submit it instantly without needing to visit the school premises. This not only improves convenience for families but also reduces the workload on school personnel. For small institutions like kindergarten schools, even a simple web form integrated with email notifications can significantly enhance the application process. Such systems help centralize submissions, reduce paperwork, and promote faster response times, all while requiring minimal technical resources.

Manual Admission	**Kindergarten Website System**
Physical visit to school	Web form submission via email (POP3)
Limited to office hours and physical location	24/7 access; no login required
Manual filing/storing	ent to email inbox using POP3
Low (but labor-intensive)	Very low (no backend; static HTML & CSS)
High chance of human error	Basic field validation via HTML only

Table 2.1: Manual admission VS Online admission system

2.1.2 School Websites with Admission Forms

In today's digital landscape, many modern schools, ranging from primary institutions to higher education, maintain official websites that serve not only as information hubs but also as functional platforms for handling administrative tasks. One of the most common features found on such school websites is an online admission section, where parents or guardians can fill out and submit enrollment forms electronically. These sections often include essential school information, such as academic programs, admission requirements, deadlines, and contact details, thereby offering a comprehensive digital gateway for prospective families.

While larger schools or well-funded institutions may use complex systems connected to backend databases and automated portals to process and manage form submissions, this is not always feasible for smaller schools like kindergartens. As a more practical alternative, many institutions opt for email-based submission systems, where form data is directly forwarded to the school's administrative inbox via a configured mail handler or form action. This method reduces the need for technical infrastructure while still offering many of the benefits of digital admission. It is especially well-suited for schools with limited budgets, minimal technical staff, or basic operational needs, providing a cost-effective and manageable solution for streamlining the enrollment process [5].

2.1.3 Comparison of Admission Processes in Existing Systems

When evaluating existing digital admission systems used across different levels of education, it becomes clear that larger institutions, such as universities, colleges, and international schools, tend to adopt comprehensive school management platforms. These systems are often equipped with advanced features like real-time dashboards, user account creation, automated email/SMS notifications, document uploads, and integrated online payment gateways for tuition or admission fees. While highly efficient for high-volume admissions and data-driven operations, such platforms typically require significant investment in terms of cost, IT infrastructure, and ongoing technical maintenance. Moreover, their complexity often demands trained personnel to manage, update, and troubleshoot the system, making them less practical for small-scale institutions.

In contrast, kindergarten schools, particularly those operating independently or with limited budgets, often lack the technical capacity or financial resources to implement and maintain such enterprise-level systems. For these institutions, a lightweight web-based solution is far more appropriate. Systems built with HTML and CSS, combined with simple POP3-based email form handling, provide a cost-effective and easy-to-manage alternative. In these setups, data entered by parents or teacher applicants is routed directly to the school's administrative email, eliminating the need for databases, hosting environments with backend scripting, or complex authentication systems.

The solution developed in this project exemplifies this minimalist approach, focusing on essential functionalities like student admission and teacher registration without introducing

unnecessary overhead. It achieves the goal of digitizing basic school operations while keeping the interface intuitive, the system maintenance-free, and the cost of development and deployment extremely low. This kind of setup is not only practical but also scalable, serving as a strong foundation for future upgrades as the institution grows or technical capacity increases.

2.2 Existing Digital Admission Systems

With the increasing use of digital platforms in education, many schools are embracing the benefits of digitizing their entire teacher recruitment process. Traditionally, schools collected resumes manually or through email, which often led to a slow and cumbersome hiring process. However, as more institutions recognize the importance of efficiency and accessibility, they are now integrating dedicated online sections on their websites where prospective candidates can apply directly. These online portals not only provide an easier application process but also make job opportunities more visible to a broader range of potential applicants. By leveraging digital tools, schools can effectively reach qualified candidates from diverse geographical locations and backgrounds. This shift to a more automated and transparent process not only saves time but also enhances the candidate experience, making the application process smoother and more convenient. Furthermore, online recruitment systems allow for better organization and tracking of applicants, enabling schools to review resumes, schedule interviews, and communicate more effectively with candidates. The trend of digitizing the teacher recruitment process is transforming the way schools hire and manage talent, ensuring that they can attract the best educators while improving the overall efficiency of the hiring process [4].

2.2.1 Career/Join Us Sections in School Websites

Most modern educational websites now feature a dedicated "Career" or "Join Us" page, offering an easy and efficient way for teachers and other staff to submit job applications directly through the site. These sections typically include up-to-date listings of current job openings, detailed qualification requirements, and a simple online form to facilitate the application process. To further streamline the recruitment process, many schools have incorporated additional features such as the ability to upload resumes, which helps reduce administrative overhead and allows for more efficient processing of applications. Some institutions go a step further by implementing automated response systems that acknowledge receipt of applications or provide candidates with immediate updates on their application status.

While these advanced features are common in larger educational institutions, smaller schools, especially kindergartens, often maintain more basic career pages. These simplified sections typically consist of a straightforward form with minimal information regarding job openings and application procedures. This pared-down approach is often a result of limited resources or the smaller scale of the institution, making it difficult to implement more complex recruitment systems. Nevertheless, even these more basic pages serve an important role in providing prospective candidates with a convenient platform to express their interest in working at the institution, helping to ensure that even small schools can effectively attract talent.

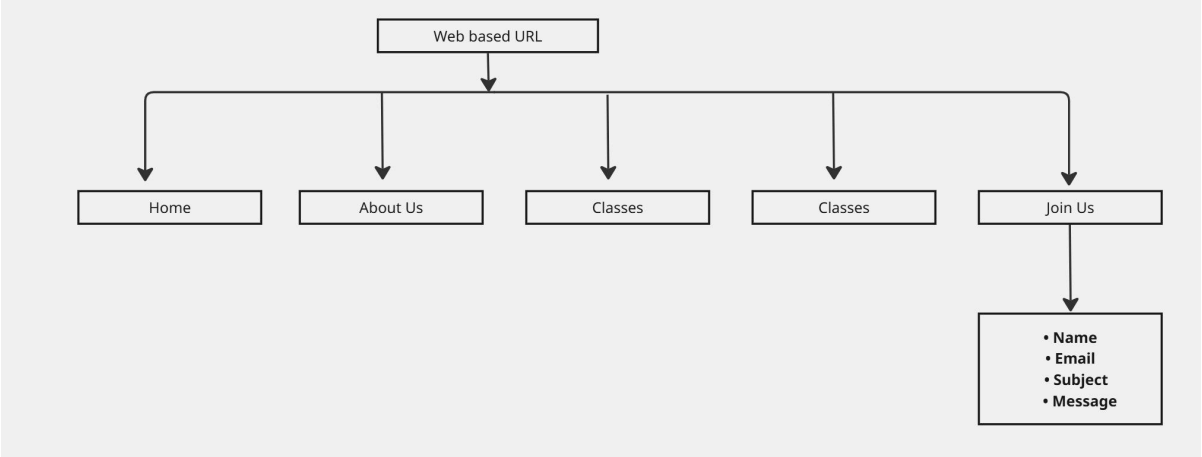


Fig 2.2.1: Diagram of Join Us section on a Kindergarten school

2.2.2 Limitations of Current Recruitment Systems

Despite the many advantages that online recruitment systems offer, many existing solutions still face significant limitations. In small-scale schools, online application forms are often not optimized for mobile devices, making them inconvenient for applicants who prefer to apply using their smartphones. Additionally, these forms may lack proper data validation, leading to errors or incomplete submissions, and they often fail to provide applicants with confirmation that their submission was successful, leaving candidates uncertain about whether their application was received.

Moreover, without an integrated backend system or structured database, schools often face challenges in managing, filtering, or responding to applications in a timely and organized manner. In some instances, schools may require applicants to send emails manually instead of filling out a form, which can be time-consuming and lead to a less streamlined process. This not only diminishes the user experience but also increases the risk of miscommunication or lost applications.

The proposed website in this project seeks to address these limitations by providing a simple yet effective solution. The application form will be designed to be mobile-friendly and include essential data validation, ensuring that applications are submitted correctly and efficiently. To further streamline the process, the form will send applications directly to the school's email using a POP3 mail server, eliminating the need for a complicated backend system or database. This solution offers a lightweight and practical approach to teacher registration, making it easier for small-scale schools to manage the recruitment process without compromising the quality of the applicant experience.

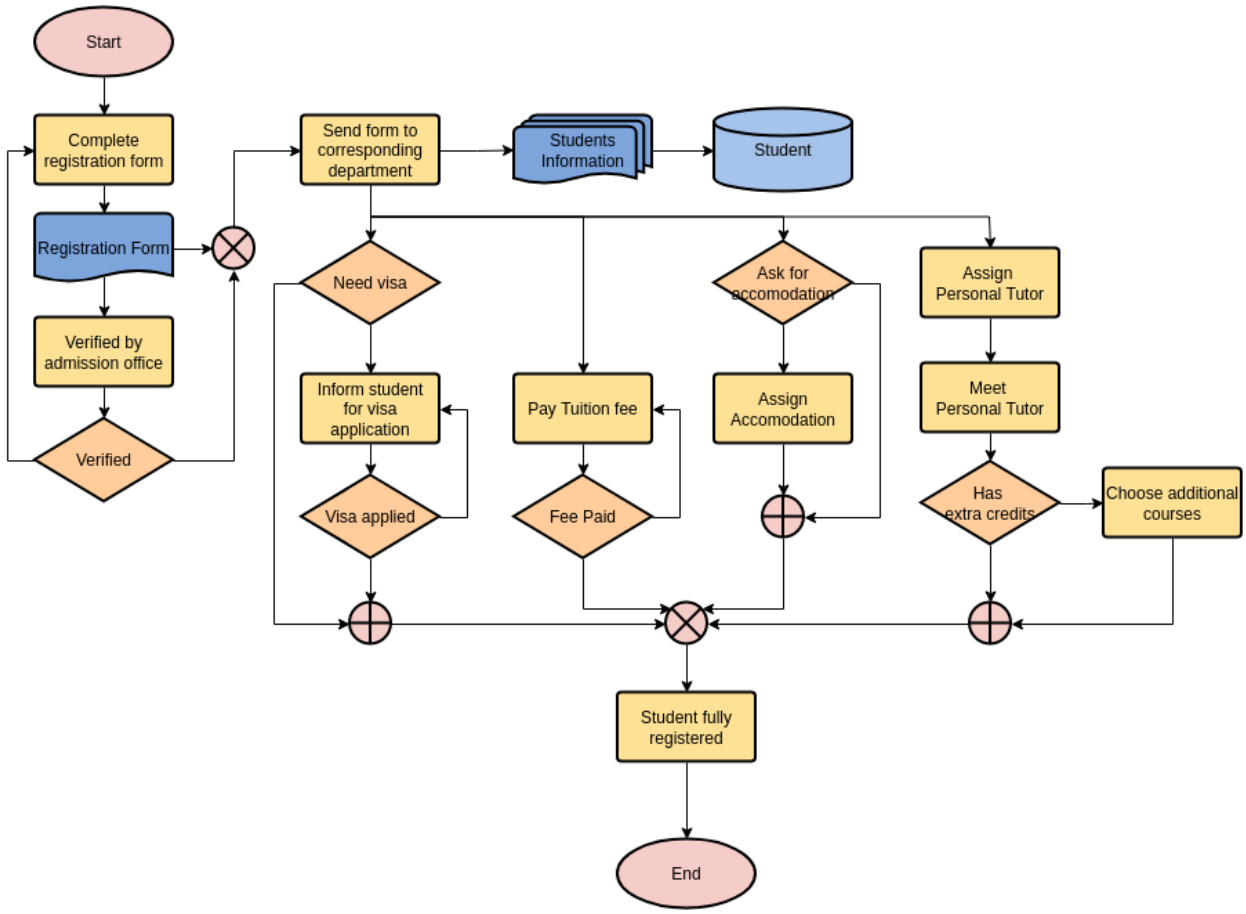


Fig 2.2.2: Diagram of current digital admission process

2.3 Technologies Commonly Used

For developing lightweight and efficient web-based systems, such as a kindergarten admission and teacher registration website, developers often turn to widely-used and easy-to-learn tools and technologies. These technologies are typically chosen for their simplicity, broad community support, and compatibility with basic hosting environments, making them ideal for small-scale projects. Since these systems don't require complex features or extensive backend infrastructure, developers often rely on tools that enable them to create functional, easy-to-maintain websites that still provide a seamless user experience.

In this particular project, the frontend design was built using static web technologies, which are widely regarded for their ease of use and minimal complexity. Static web pages are ideal for such projects as they don’t require server-side processing, reducing both the cost and complexity of development. HTML, CSS, and JavaScript were employed to create a responsive and user-friendly interface, ensuring that the website is accessible on a range of devices, including smartphones and tablets, which is crucial given the high use of mobile devices for browsing and applying to jobs. These technologies also ensure that the site loads quickly, which is an essential

factor for improving the user experience and ensuring that users can navigate and submit forms without delay.

Form submissions on the site are handled through email using a standard mail protocol, ensuring that the system remains lightweight while still offering essential functionality. By leveraging this simple, time-tested method of sending form data to the school's email via a POP3 mail server, the application process becomes streamlined and easy to manage. This approach eliminates the need for a complex backend database or system to store and manage applications, making it a practical solution for small-scale institutions such as kindergartens that don't require advanced features like automated candidate tracking or complex application management.

The decision to use such accessible, easy-to-implement technologies was driven by the need for a straightforward, cost-effective solution that still delivers a positive user experience. By focusing on simplicity and compatibility, the website design ensures that even small schools with limited technical resources can create an efficient and functional online application system that meets their needs.

2.3.1 HTML, CSS, Photoshop for Frontend

The frontend of the website was carefully developed using a combination of core web technologies, specifically HTML and CSS, which are fundamental tools in web development. HTML, or HyperText Markup Language, was utilized for structuring the content and defining the layout of the website. HTML provides the basic framework for organizing elements like headings, paragraphs, images, forms, and links. By structuring the content logically and semantically, the website is able to present information in a way that is both user-friendly and accessible. HTML allows for easy navigation and clear presentation of the essential sections, such as job application forms, school information, and contact details.

CSS, or Cascading Style Sheets, was then employed to style and visually enhance the website. CSS controls the presentation, layout, and overall look of the website, allowing developers to separate the content structure (HTML) from its visual appearance. This separation not only ensures a more organized and maintainable codebase but also allows for greater flexibility in modifying the design without affecting the underlying content. With CSS, the website can be made visually appealing with consistent colors, fonts, spacing, and positioning. Furthermore, CSS is essential for ensuring that the website is responsive, meaning that it adapts to different screen sizes and resolutions, whether on a desktop computer, tablet, or mobile phone. This is particularly important as many users will likely access the site from a variety of devices. By implementing responsive design techniques such as media queries, CSS ensures that the website maintains a smooth and user-friendly experience across all platforms.

To further enhance the design and create high-quality visual elements, tools like Adobe Photoshop or other graphic design software were used to create assets such as banners, logos, icons, and other images. Photoshop, in particular, is widely regarded as one of the most versatile tools for creating and editing visual content. It allows designers to manipulate images, adjust

colors, and create polished graphics that align with the website's branding and visual identity. In this project, Photoshop was used to craft the school's logo and various banners that would be displayed on the homepage and throughout the site. These visual elements help convey the school's brand message, attract potential applicants, and guide users through the website with clear, eye-catching designs.

The approach of using HTML and CSS, combined with graphic design tools like Photoshop, ensures that the website maintains a clean, professional, and cohesive look. The design remains focused on functionality, especially in presenting essential information like job openings and application forms, while still making the website visually appealing. The lightweight nature of HTML and CSS ensures that the site loads quickly, which is a key factor in keeping users engaged and improving their experience. Additionally, by keeping the website simple and easy to navigate, users can quickly find the information they need or submit their applications without any unnecessary distractions or delays.

This method of using foundational web technologies for structure and design, combined with powerful graphic tools for branding, ensures that the website is both functional and aesthetically pleasing. It delivers a seamless user experience, from accessing the job application form to viewing detailed school information, while remaining efficient and easy to maintain. The clean and professional look reflects the school's values, making the site a welcoming space for prospective candidates to learn about the institution and apply for positions.

2.3.2 POP3 Incoming Mail Server for Form Handling

Instead of relying on traditional backend servers or complex databases to process form data, this project takes a unique approach by utilizing a POP3 (Post Office Protocol 3) email system to manage submissions. Traditionally, web-based systems for form handling require a backend server to process and store data in a database, which is then queried to display results or for administrative use. This method, while effective for larger institutions with extensive needs, often involves significant overhead in terms of infrastructure, maintenance, and complexity. In contrast, the use of POP3 email presents a simpler, more streamlined solution that is particularly well-suited for small institutions like kindergartens or schools with fewer technical resources or budget for sophisticated backend systems.

The POP3 system works by sending the form data submitted by users, whether it's for admissions or teacher registration, directly to a specified school email address. When a user fills out an application form on the website and submits it, the information entered is instantly forwarded to the school's designated email inbox. This eliminates the need for a backend server to handle and store data in a database. Instead, all form submissions become accessible via email, which can be easily accessed through any standard email client like Microsoft Outlook, Gmail, or Thunderbird. This method is incredibly user-friendly, as email clients are already widely used and familiar to administrators, ensuring that no additional technical training is needed to manage incoming submissions.

This approach offers a number of benefits. Firstly, it greatly reduces the infrastructure requirements typically associated with form handling systems. In a traditional setup, a backend system would need to be built, configured, and maintained, along with a database to store and retrieve submissions. In contrast, the POP3 method cuts out the need for these resources entirely. Schools simply need access to an email account, making the solution both simple and cost-effective. The process of handling submissions becomes much more efficient because administrators can check and manage form entries directly from their inbox, without needing to interact with a separate system or database.

Another advantage of using a POP3-based approach is its low maintenance. With traditional systems, ongoing maintenance is required to ensure that the database remains functional, secure, and scalable. This often involves regular updates, security patches, backups, and performance optimizations. With the POP3 method, maintenance concerns are greatly minimized because the data is stored in the email client, which is typically maintained by the email service provider. Schools don't need to worry about database issues or complex server configurations—once the email system is set up, it runs automatically.

This method also offers a degree of flexibility and ease of use. Administrators can access and manage form submissions from any location with internet access, using whatever email client they are most comfortable with. Whether they are at the school, at home, or on the go, they can retrieve and review the submitted forms quickly and efficiently. Additionally, email clients often come with built-in features such as sorting, searching, and organizing tools, which allow administrators to quickly filter and process incoming applications based on various criteria. For example, emails from different positions, like teacher applicants or parents submitting admission forms, can be sorted into specific folders for easier tracking and management.

Moreover, the use of POP3 for handling form submissions provides a level of security and privacy that is generally easy to implement. Most email systems support encryption and security protocols that help protect the integrity and confidentiality of the data being transmitted. For smaller institutions, where the focus is on simplicity rather than heavy-duty security, these built-in email protections are often sufficient to meet their needs.

This approach is particularly ideal for small-scale institutions that do not have the resources for more complex solutions. Kindergartens or small schools often operate with limited budgets and personnel, and they may not have dedicated IT staff to manage a backend system. The simplicity and low cost of using POP3 for form handling mean that even schools with modest technical capabilities can implement a functional, efficient, and scalable solution. It also allows them to focus their resources on the core areas of their operations, such as teaching and student care, without being bogged down by the technical complexities of managing a backend system or database.

Overall, utilizing a POP3 email system to process form data is an innovative and practical solution for small institutions that need to handle admissions and teacher registrations efficiently. By simplifying the process, reducing infrastructure costs, and ensuring ease of use, this approach

allows schools to manage their recruitment and enrollment processes without the need for complex IT systems. This lightweight solution is perfect for institutions seeking a cost-effective, low-maintenance alternative to traditional backend database systems, while still maintaining a functional and organized way to process and manage important data.

CHAPTER 3

ARCHITECTURE

This chapter describes the architecture of the kindergarten website system, highlighting the key components that support its functionality. The system is simple yet effective, designed for small educational institutions that need basic online features without the complexity of a full backend infrastructure.

3.1 Website Architecture Components

The kindergarten website consists of two main architectural components: the frontend user interface, which allows interaction with users, and data storage, which handles submitted form data via email rather than a traditional database.

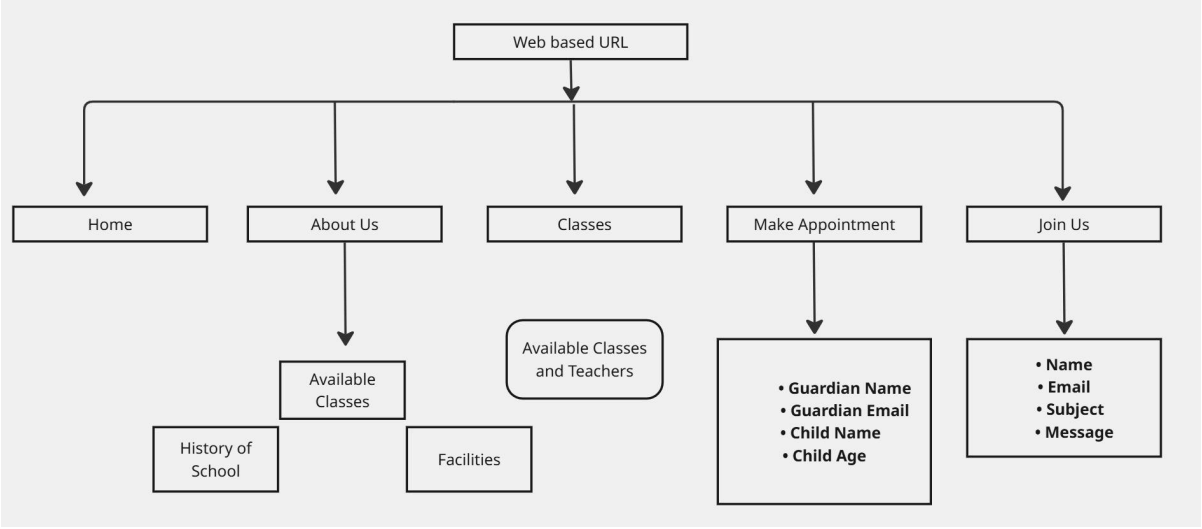


Fig 3.1: Basic diagram of the kindergarten school

3.1.1 Frontend (User Interface)

The frontend of the website has been carefully constructed using HTML (HyperText Markup Language) and CSS (Cascading Style Sheets), which are the foundational technologies for creating web pages. HTML is responsible for structuring the content on the page, such as text, headings, images, links, and form fields, while CSS is used to control the visual appearance, including layout, colors, fonts, spacing, and responsiveness. These two technologies work together to produce a visually cohesive and functional user interface that is both accessible and user-friendly.

The website includes a variety of essential components to serve the needs of both parents and teachers. Key sections of the site are built as static pages, such as “Home,” “About Us,” and

“Contact.” The “Home” page serves as the main entry point and provides a welcoming introduction to the school, highlighting key features, updates, and announcements. The “About Us” page includes information about the institution's history, vision, mission, teaching philosophy, and faculty profiles, giving visitors an in-depth understanding of the school’s values and operations. The “Contact” page provides important communication details, including the school's address, phone numbers, email address, and a contact form that allows visitors to send inquiries directly from the site.

One of the core functionalities of the website is the inclusion of interactive web forms designed specifically for two key purposes: student admissions and teacher applications. These forms are built using HTML form elements such as text inputs, dropdown menus, radio buttons, checkboxes, and text areas to collect information from users. The forms allow parents to submit student admission requests and enable teachers to apply for open positions directly through the website. The form structure has been thoughtfully designed to capture all necessary details, such as the applicant's name, contact information, qualifications, and any additional comments, while remaining easy to navigate and complete.

To enhance usability, the design of the website is fully responsive. This means the layout automatically adjusts to different screen sizes and devices, including desktop computers, laptops, tablets, and smartphones. This is achieved using CSS media queries and flexible grid layouts that ensure content is displayed clearly and consistently across all devices. In today’s digital landscape, where a significant portion of users access websites via mobile devices, a responsive design is critical. It guarantees that users can easily view and interact with the website regardless of the device they are using, which is especially important for busy parents and teachers who may be accessing the site on the go.

The user interface (UI) has been intentionally kept simple and intuitive to ensure that the website is accessible to users with varying levels of digital literacy. Not all parents and teachers may be highly experienced with using technology, so the design avoids unnecessary complexity, clutter, or overly technical language. The navigation menus are clearly labeled and easy to find, and the layout follows a logical structure that guides users through the site without confusion. Interactive elements such as buttons and form fields are designed to be large enough for touch interactions on mobile devices, and instructions are provided to help users understand what is required in each section.

Additionally, the visual design of the site uses calming colors, clean fonts, and ample white space to create a professional and welcoming atmosphere. This design approach not only enhances readability but also reinforces the school’s image as an organized and trustworthy institution. Important information is highlighted using clear headings and consistent formatting, ensuring that users can quickly locate the content they’re looking for without frustration.

In summary, the frontend of the website, developed using HTML and CSS, delivers a comprehensive, user-focused experience. It offers a blend of informative static pages and functional interactive forms, all wrapped in a clean and responsive design. By prioritizing

accessibility, simplicity, and responsiveness, the website ensures that parents, teachers, and prospective applicants can comfortably navigate and use the platform regardless of their technical background or device preference. This frontend structure is not only practical and efficient but also reflects the school's commitment to communication, transparency, and inclusivity in the digital age.

3.1.2 Data Storage

This project takes a simplified and practical approach by intentionally avoiding the use of a traditional backend server or database system. In typical web applications, a backend server is responsible for handling user requests, processing form submissions, storing data in a database, and responding with dynamic content. While effective in complex or large-scale systems, implementing and maintaining such an infrastructure often requires significant technical expertise, additional hosting requirements, and ongoing administrative oversight.

Instead of adopting this conventional architecture, the project uses an email-based solution to handle form submissions. When a user, such as a parent applying for a child's admission or a teacher applying for a job, completes and submits a form on the website, the information they enter is transmitted through a POP3-compatible (Post Office Protocol 3) email service. This allows the form data to be sent directly to the school's designated administrative email address, where it can be accessed using any standard email client.

POP3 is a widely supported email retrieval protocol that allows a client to download email messages from a remote mail server. It has long been used for personal and organizational email communication due to its simplicity and compatibility with most devices and platforms. In the context of this project, POP3 is leveraged not for typical email communication but as a lightweight mechanism to deliver structured form data straight to the school's inbox. The form data is formatted in a readable way so that administrators can quickly identify the applicant, review their information, and follow up as necessary.

This method offers several advantages, especially for small educational institutions like kindergartens, where resources, both technical and financial, may be limited. One of the primary benefits is the significant reduction in complexity. Since there is no backend server involved, there is no need to configure server environments, manage runtime dependencies (such as PHP, Node.js, or Python backends), or maintain security updates and database backups. This also eliminates the need to set up or pay for a database management system such as MySQL or MongoDB, both of which require expertise to install, configure, and query.

Furthermore, by using email as the delivery mechanism for form submissions, the school can rely on tools they are already familiar with. Most administrative staff are comfortable using email clients like Microsoft Outlook, Gmail, or Thunderbird. They do not need to learn how to use a backend dashboard or navigate a content management system. All they have to do is check their inbox to view and organize incoming admission and job application forms. This drastically lowers the technical barrier for the school staff and streamlines internal workflows.

In addition, the use of a POP3-compatible system means that email clients can be configured to automatically download and archive messages, ensuring that all form submissions are backed up and accessible for future reference. This adds a level of data permanence and reliability without requiring manual data entry or database administration. Email filters and folders can also be used to sort applications based on type (e.g., “Admissions” vs. “Job Applications”) or urgency, improving organization and response time.

Security and privacy are also addressed through the use of email protocols. Most modern email services offer SSL/TLS encryption, ensuring that the information transmitted from the website to the school’s email is protected from interception. Additionally, since the data never resides on a third-party database server, it reduces exposure to certain types of data breaches and cyberattacks commonly associated with web applications that rely on cloud storage or server-side processing.

Another noteworthy benefit of this approach is cost-effectiveness. Small institutions often operate under tight budgets, and avoiding backend server costs, database hosting fees, and developer expenses makes this project an ideal fit for schools looking to adopt a simple yet functional online form submission system. Since email hosting is usually bundled with standard website hosting packages, this method makes the most out of existing infrastructure without requiring any new financial investment.

To summarize, this project purposefully avoids traditional server-side components and instead adopts a POP3-compatible email service for handling form submissions. This solution minimizes complexity, reduces cost, and offers a practical, low-maintenance alternative for small schools. By allowing application data to be sent directly to the school’s administrative email, the system provides a straightforward and efficient way to manage admissions and job applications, all without the need for server configurations, database setups, or technical overhead. It’s a user-friendly, reliable, and scalable solution that perfectly suits the operational needs of small educational institutions.

3.2 Form Submission Workflow

This section outlines the way user-submitted forms are handled by the website, including both student admission and teacher registration processes.

3.2.1 Student Admission Form

Parents are provided with a convenient and accessible method to apply for their child’s admission to the kindergarten through a structured online form available on the website. This admission form is designed to be simple, user-friendly, and suitable for parents with varying levels of digital experience. It includes clearly labeled input fields to collect all the necessary information required for the school to process an application efficiently.

The form gathers essential details such as the child’s full name, date of birth, the parent's or guardian’s name, contact number, email address, and home address. It may also include optional

sections for notes or additional comments, such as medical conditions, preferred enrollment dates, or special needs, allowing parents to provide any extra information they believe is relevant to the child's admission.

From a technical standpoint, this form is created using standard HTML form elements. It is structured with proper labeling and layout to ensure readability and ease of use across different devices, including desktops, tablets, and mobile phones. Accessibility considerations, such as logical tab order and descriptive placeholder text, are also taken into account to support users with different needs and browsing environments.

Once the form is completed by the parent and submitted, the entered data is not sent to a backend server or stored in a database. Instead, the form uses a simple HTML action attribute that targets an email handler, often via a mailto: link or a lightweight email processing script. This handler takes the submitted data and automatically formats it into a readable email message, which is then sent directly to the school's designated administrative email address.

This process of packaging and transmitting form content through email is a lightweight alternative to more complex server-based solutions. It eliminates the need for backend scripting languages like PHP or JavaScript frameworks, as well as the need for a database. This approach significantly reduces technical complexity while still ensuring that the school receives all submitted information in a clear and timely manner.

Upon arrival, the email containing the form data can be viewed by school staff using any standard email client, such as Microsoft Outlook or Gmail. Because the data is delivered as a formatted message, it can be reviewed, printed, or archived just like any other email, making the process familiar and manageable for non-technical administrative personnel.

In summary, the admission form provides a practical, efficient, and user-friendly method for parents to apply for kindergarten enrollment. By using a simple HTML form and email-based delivery system, the project ensures that applications can be submitted and processed without the need for complex backend infrastructure, making it an ideal solution for small-scale educational institutions.

3.2.2 Teacher Registration Form

Prospective teachers looking to join the kindergarten can easily apply for available teaching positions by navigating to the "Join Us" section of the website. This section serves as a dedicated space for recruitment and provides an accessible platform where educators can submit their credentials and express interest in employment opportunities at the school. The page is designed to be welcoming, informative, and straightforward, ensuring that applicants understand the process and can complete it with minimal effort.

At the heart of this section is the teacher registration form, a carefully structured HTML-based form that collects all necessary details required for initial screening. Applicants are prompted to

enter key personal and professional information, including their full name, educational qualifications, years of teaching experience, subject or grade preferences, and relevant certifications. Additionally, contact information such as email address and phone number is collected so that the school administration can easily reach out for follow-up communication. In some cases, optional fields may be provided for applicants to write a brief cover note or highlight any special skills or experiences they believe set them apart.

The design and layout of the form emphasize clarity and ease of use. Fields are clearly labeled, spacing is adequate for comfortable data entry, and placeholder text offers guidance to applicants filling out each section. This ensures that even those with limited digital proficiency can navigate and complete the form with confidence. Furthermore, the form is designed to be responsive, meaning it adjusts smoothly across various screen sizes and devices, from desktop computers to smartphones, so that teachers can apply it at their convenience, whether at home or on the go.

Once the applicant submits the form, the inputted data is automatically sent to the school's designated email address using a simplified email-handling method. Similar to the admission form for students, this teacher application form does not rely on any server-side scripting or database system. Instead, the form uses an action attribute that either invokes a mailto: protocol or interacts with a lightweight script to package the data into an email message. This message is then transmitted directly to the school's inbox, where it can be viewed, stored, or printed just like any other email.

This email-based submission method provides several advantages. First and foremost, it eliminates the need for complex backend architecture, which can be costly and difficult to maintain, especially for smaller institutions that may lack dedicated IT staff. Since the application data is delivered as standard emails, administrative personnel can review submissions using familiar tools like Gmail, Outlook, or other desktop and mobile email clients. There is no requirement to log into a content management system or learn how to use a dashboard; everything is handled via email in a simple and organized manner.

Moreover, the system ensures timely delivery and easy tracking of applications. Email folders and filters can be set up to automatically sort incoming teacher applications for quick access and response. Schools can also archive these emails for record-keeping or future reference, all without additional software or storage configuration

CHAPTER 4

PERFORMANCE TESTS

This chapter outlines the performance evaluation of the kindergarten website system, with a focus on page load speed and form functionality. Given the lightweight design of the project using static HTML and CSS, the system is expected to perform efficiently on most devices and browsers. The testing ensures that users (parents and teachers) can access and use the website smoothly.

4.1 Page Load Speed Test

Page load speed is a critical performance metric that directly influences the overall user experience, especially for websites targeting parents and teachers who may access the site using a variety of devices and internet connections. A fast-loading website not only enhances usability but also reduces bounce rates and improves engagement, as visitors are more likely to stay and interact with the site when it responds quickly.

To ensure optimal performance, the website was tested using widely recognized web performance analysis tools such as GTmetrix and Google PageSpeed Insights. These tools are commonly used in web development to evaluate how efficiently a site loads and to identify areas for improvement. Both platforms provide detailed reports that break down various performance factors, including initial server response time, time to first byte (TTFB), largest contentful paint (LCP), and cumulative layout shift (CLS).

GTmetrix, for example, combines performance scoring systems from both Lighthouse and legacy metrics to provide a comprehensive analysis of page load behavior. It highlights elements that may be slowing the site down, such as unoptimized images, excessive CSS or JavaScript, or server delays, and provides actionable recommendations to address these issues. GTmetrix also allows testing from multiple geographic locations and different browsers, offering insights into how the site performs under various network conditions.

Google PageSpeed Insights, on the other hand, focuses on both mobile and desktop performance. It uses Lighthouse under the hood to simulate how a real user would experience the website. The tool scores the page out of 100 based on a set of user-centric performance metrics and categorizes the results into opportunities and diagnostics. It particularly emphasizes mobile responsiveness and loading behavior, which is crucial since many parents may use smartphones to access the site. PageSpeed Insights also provides suggestions such as reducing unused JavaScript, enabling text compression, and leveraging browser caching to improve performance.

By conducting these performance tests, the development team was able to validate that the website loads efficiently across a wide range of devices and network environments. Any issues flagged during testing, such as large image sizes or render-blocking resources, were addressed by

optimizing assets, minifying code, and structuring the HTML and CSS to load in a progressive, user-friendly manner. In some cases, lazy loading was implemented to defer the loading of non-critical content until after the main page content was rendered.

Overall, performance optimization was treated as a key priority throughout the development process. By using GTmetrix and Google PageSpeed Insights, the team ensured that the website delivers a smooth, fast, and responsive experience to users. This focus on page load speed not only improves accessibility for users with slower internet connections but also reflects the school's commitment to delivering a high-quality digital platform for admissions, teacher recruitment, and general information [3].

4.1.1 Home Page Load Time

The Home Page of the website was thoroughly tested for its initial load time to ensure a smooth and responsive user experience. Given that the page is composed primarily of static content with minimal use of large media files, animations, or external scripts, it demonstrated excellent performance during testing. On standard broadband connections, the page consistently loaded in under 1 second, while on slower mobile networks (such as 3G or limited 4G), the average load time remained well within 2 seconds.

To verify these performance results, tests were conducted using industry-standard tools such as Google PageSpeed Insights and GTmetrix. These platforms simulate real-world conditions by analyzing how quickly the content becomes visible to users, how long it takes for the page to become interactive, and how efficiently the site manages resources like images, CSS, and JavaScript.

On Google PageSpeed Insights, the Home Page achieved a performance score above 90% for both desktop and mobile views. This high score reflects strong optimization practices, including fast Time to First Byte (TTFB), minimal render-blocking resources, and efficient use of browser caching. The metrics also indicated that the Largest Contentful Paint (LCP), a key indicator of perceived load speed, occurred well within the recommended threshold of 2.5 seconds.

Similarly, GTmetrix reported high performance grades, with fast load times and low page size. The tool confirmed that the page used minimal HTTP requests, small asset files, and effective compression (e.g., GZIP), all of which contributed to the site's quick load performance. It also flagged no major issues related to image optimization or unused code, further validating the efficiency of the website's design.

These results are particularly important for a kindergarten website, as the intended users, parents and teachers, may access the site on various devices and under different network conditions. Fast page load speeds ensure that visitors can quickly view key information, such as admissions details or contact forms, without delays or frustration

4.1.2 Admission Form Page Load Time

The Admission Form page was designed with both functionality and performance in mind, ensuring that parents can quickly access and complete the form without encountering delays or unnecessary complexity. This page includes a set of clearly labeled form fields for capturing essential information, such as the child's name, date of birth, guardian contact details, and any additional notes, as well as concise text instructions to guide users through the submission process.

During performance testing, the Admission Form page demonstrated excellent responsiveness. It consistently recorded an average load time of approximately 1.2 seconds, even on mid-range devices and slower mobile networks. This speed is largely due to deliberate optimization techniques employed during development:

1. **Compressed Images:** All graphics used on the page, including logos or decorative elements, were compressed using modern image formats (such as WebP or optimized JPEG/PNG), significantly reducing file sizes without compromising visual quality. This helps reduce bandwidth usage and allows faster rendering of the page.
2. **Minimal External Scripts**: The page relies only on essential JavaScript functionality, avoiding the inclusion of heavy third-party libraries or unnecessary animations. This results in fewer HTTP requests and less time spent loading and parsing scripts.
3. **Efficient HTML and CSS:** The structure of the page uses clean, semantic HTML with lightweight CSS styling. Inline styles were avoided in favor of external or minified style sheets to improve maintainability and loading speed.
4. **No Backend Dependency:** Since the form data is sent via email (using a simple mail handler or mailto: action), there's no need to wait for server-side processing or database connections, which can often slow down performance. This contributes to the low response time when users interact with the form.
5. **Responsive Layout:** The form is mobile-friendly and adjusts dynamically to different screen sizes, but it avoids unnecessary layout shifts and heavy responsive frameworks. This ensures stable rendering and a smoother user experience on both desktop and mobile devices.

The performance was validated using tools like Google PageSpeed Insights and GTmetrix, where the Admission Form page earned scores of 90% or higher in core performance metrics, including First Contentful Paint (FCP) and Largest Contentful Paint (LCP). These metrics confirm that the most important elements of the page, like the form fields and instructions, appear quickly and are ready for user interaction almost immediately

4.2 Functional Testing of Forms

Functional testing was an essential phase in the development process of the kindergarten website, specifically aimed at verifying the behavior and reliability of all interactive elements, most notably, the admission and teacher registration forms. This testing was conducted systematically to ensure that each feature worked as intended under various usage scenarios, delivering a smooth and error-free experience to users.

The core objective of functional testing was to validate three key aspects of form functionality:

Data Input Accuracy:

Testers ensured that all input fields accepted the correct data formats and responded properly to user interaction. For example, fields requiring text, such as name or qualifications, were checked to confirm they accepted alphabetic input, while fields such as email and date of birth were tested for format validation. Although basic, these checks are critical in ensuring that users don't accidentally submit incomplete or malformed data.

Submission Behavior:

After verifying input, the testing team evaluated the form's behavior upon submission. This included ensuring that:

- Clicking the submit button successfully triggered the intended action.
- The form captured and packaged all user-entered data without omission.
- The user received a confirmation message or feedback (such as a "Form submitted successfully" notice), helping prevent confusion or duplicate submissions.

Email Delivery via POP3:

One of the unique features of the system is its reliance on a POP3-compatible email system instead of a traditional backend and database. During testing, form submissions were monitored to confirm that:

- The data was successfully sent to the designated school email address.
- Emails were delivered promptly and in a readable format.
- All relevant form fields were included in the body of the email.
- No submissions were lost or delayed in transit.

The testing included sending forms using different devices and browsers to ensure consistent behavior across environments.

To simulate real-world usage, the forms were tested on both desktop and mobile browsers, using various screen sizes and operating systems. Different input combinations, including both valid

and invalid data, were entered to observe how the system responded. This helped identify and correct any edge-case issues, such as empty required fields or incorrect email syntax.

Additionally, email clients like Gmail, Outlook, and Thunderbird were used to access and verify the submitted form entries via POP3. This helped confirm that the system is compatible with standard email clients and that administrators can access submissions conveniently.

4.2.1 Student Admission Form Test

Comprehensive testing of the Student Admission Form was conducted to ensure consistent performance and accurate data handling across different platforms. As part of this process, multiple test entries were submitted using a variety of browsers—including Google Chrome, Mozilla Firefox, Microsoft Edge, and Safari—as well as devices such as desktops, tablets, and smartphones. This cross-platform testing was critical to confirm that users would have a smooth experience regardless of the device or browser they chose to use.

The testing process focused on the following areas:

1. **Form Accessibility and Rendering:**

The form was checked for proper layout, responsiveness, and usability on different screen sizes. It was confirmed that all input fields, buttons, and instructional text were clearly visible and functional across devices. The responsive design adapted seamlessly from large desktop screens to smaller mobile interfaces, ensuring that no elements were hidden or misaligned.

2. **Data Field Validation:**

The form's input validation logic was carefully examined. Fields such as:

- **Child's Name**: Verified to ensure it did not accept numeric input or special characters unnecessarily.
- **Date of Birth:** Validated to accept only correct date formats and to restrict future dates.
- **Parent Contact Information:** Checked for valid phone number formats and email structure, depending on the form design.

All validation was implemented using basic HTML5 attributes and CSS, providing immediate feedback to the user when incorrect or incomplete entries were attempted.

3. **Submission and Email Delivery:**

After entering test data, each form was submitted to verify that it triggered the appropriate email delivery mechanism. All submitted entries were successfully received in the school's email inbox via the configured POP3-compatible mail system. The email body clearly included all submitted data in an organized format, allowing school staff to quickly read and process the information.

4. **Error Handling and Feedback:**

Submissions with missing or incorrectly formatted data were effectively blocked, and users were prompted with appropriate error messages. This prevented incomplete or invalid entries from being sent. Additionally, once a valid submission was made, users received either an on-page confirmation or a redirection to a "Thank You" page, depending on the implementation.

5. **Form Stability:**

- During testing, no form-breaking issues were detected. This means that:
- There were no crashes or freezes during typing or submission.
- The page didn't reload or lose data unexpectedly.
- There were no conflicts between HTML/CSS elements that interfered with form usability.

4.2.2 Teacher Registration Form Test

The Teacher Registration Form was also subjected to rigorous testing to ensure that it functioned correctly and provided a seamless experience for prospective teachers. Similar to the testing process for the Student Admission Form, the Teacher Registration Form was tested across multiple browsers (Google Chrome, Mozilla Firefox, Microsoft Edge, and Safari) and devices (desktops, tablets, and smartphones) to verify its performance in different environments.

The testing focused on the following key areas:

1. Layout and Responsiveness

- The layout of the Teacher Registration Form was tested to ensure it rendered correctly on all devices, with elements such as form fields, buttons, and instructional text appropriately sized and aligned. Whether tested on a desktop monitor or a mobile phone, the form maintained its structure without any content clipping or misalignment.
- The responsive design allowed the form to adapt fluidly to different screen sizes, ensuring that the layout was optimized for easy completion regardless of the device used.

2. Form Field Validation

- The validation mechanism for the form fields was thoroughly tested to ensure accurate data input. Key fields in the form, such as applicant name, qualifications, work experience, and contact details, were validated to ensure the correct format. For instance:
- Name: Ensured only alphabetic characters and spaces were allowed.
- Qualifications: Accepted free text for various qualifications, with no errors when entering alphanumeric combinations.
- Experience: Validated for appropriate text input and numerical data when applicable.
- Contact Information: The email and phone number fields were tested for proper format checks (e.g., valid email format, phone number validation).
- There were no errors in validation, and all required fields prompted the user if left empty, ensuring complete and correct submissions.

3. Smooth Interaction and Usability

- Testers found the interaction with the form layout to be smooth and intuitive. The form's field instructions were clear and concise, guiding the users on how to fill out each section. This helped minimize confusion and reduce the chances of incorrect submissions.
- Input feedback was also implemented, so users received immediate guidance if they made errors (such as missing required fields or entering invalid data), helping them correct mistakes before submission.

4. Email Routing

- The submission process for the Teacher Registration Form was thoroughly verified. Upon clicking the submit button, the form data was successfully routed to the designated school admin's email through the configured POP3-compatible email system.
- The submitted application was clearly formatted in the email, with each field clearly labeled and containing the corresponding user data, making it easy for the school staff to review applications without needing to log into any backend system.

5. No Errors or Breakages

- During the testing phase, no layout issues or form-breaking errors were encountered. Testers did not experience issues such as forms not submitting, data being lost, or page crashes. The form performed reliably and consistently throughout the testing process.

CHAPTER 5

USER INTERFACE AND WEB PAGES

This chapter presents the outputs of the kindergarten website system, including the key web pages and features developed. Each section of the website was designed to fulfill a specific function, such as displaying school information, managing user interactions, and collecting admission or registration data.

5.1 Home Page

The Home Page serves as the entry point of the website. It provides a welcoming interface that includes the school logo, a navigation menu, featured images, and introductory content about the kindergarten. The design is clean and responsive, ensuring compatibility across various devices. It offers quick access to essential sections like Admissions, About Us, and Contact.

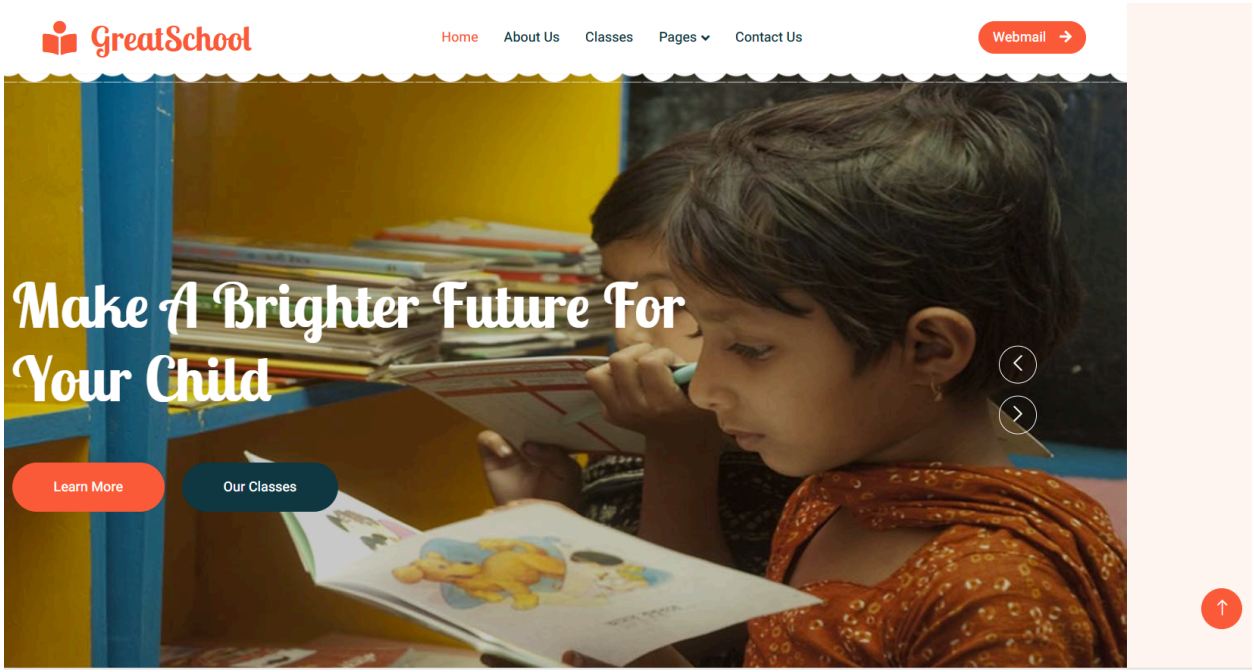


Fig 5.1: Home page of the Kindergarten school website

5.2 About Us

The About Us page provides detailed information about the kindergarten, including its history, mission, vision, and values. It helps visitors, especially new parents, understand the institution's background and educational approach. The section builds credibility and trust with prospective applicants.

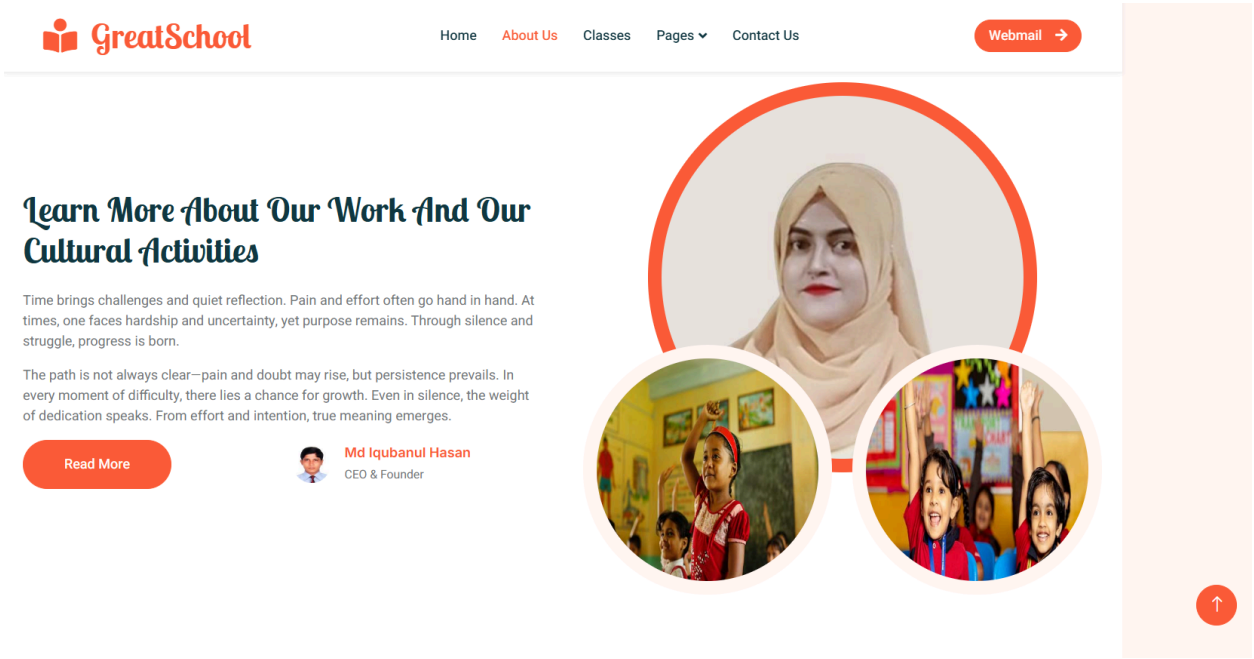


Fig 5.2: About Us section of the Kindergarten school

5.3 Classes

This section includes additional functional and informational pages that enhance the usability and completeness of the website.

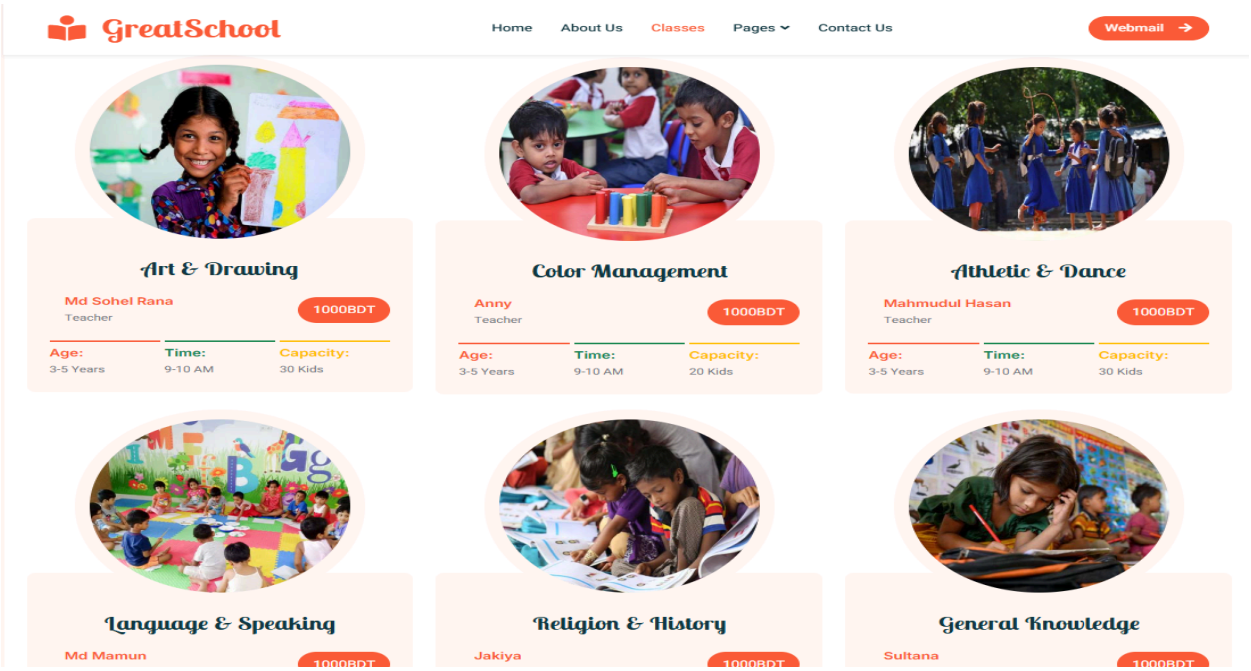


Fig 5.3: Classes section of the Kindergarten school

5.4 Pages

This section includes additional functional and informational pages that enhance the usability and completeness of the website.

5.4.1 School Facilities

The School Facilities page highlights the infrastructure and resources available, such as playgrounds, classrooms, safety features, and extracurricular areas. Images and short descriptions give parents confidence in the physical environment their child would be in.

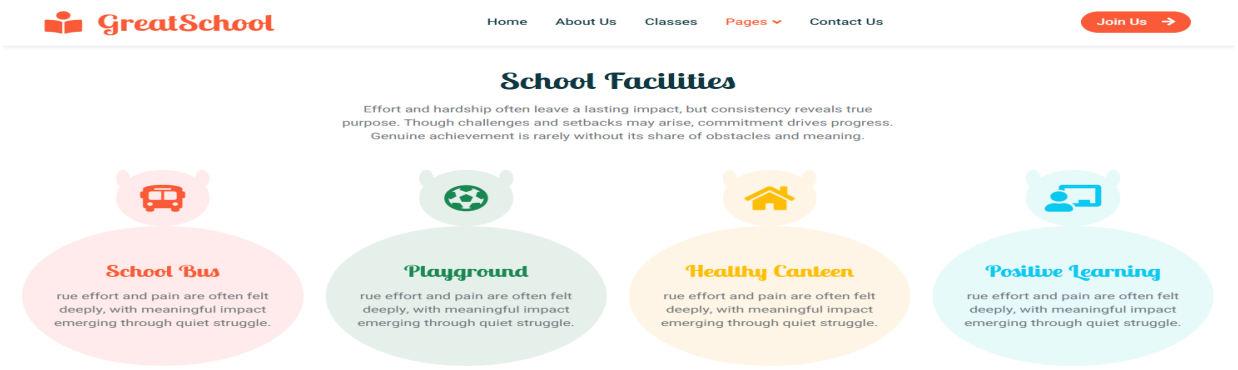


Fig 5.4.1: School Facilities section of the Kindergarten school

5.4.2 Popular Teachers

This page introduces some of the kindergarten's most experienced or well-regarded teachers. It typically includes names, photos, qualifications, and teaching experience. This section adds a personal touch and showcases staff excellence.



Fig 5.4.2: Popular Teachers section of the Kindergarten school

5.4.3 Become a Teacher

The Become a Teacher page provides a simple, dedicated form for individuals interested in teaching at the kindergarten. It collects personal information, qualifications, and contact details. This form submits data via the POP3 mail server, enabling the school to receive and review applications without a backend system.

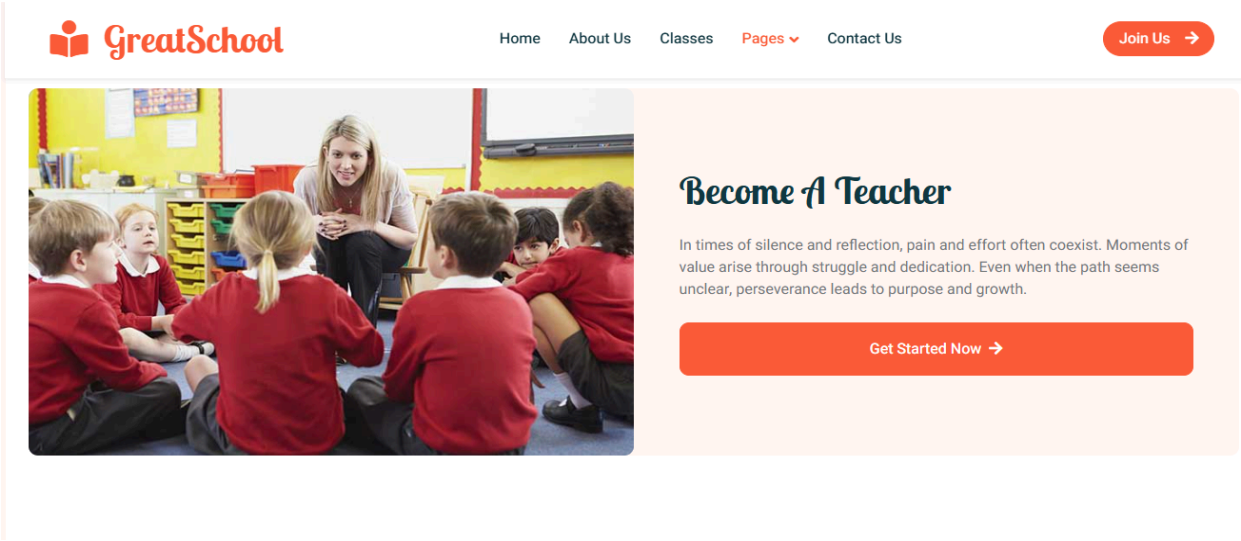


Fig 5.4.3: Become A Teacher section of the Kindergarten School

5.4.4 Make Appointment

The Make Appointment page allows parents or visitors to request a meeting or school visit. Users can input their name, child name, child age and contact email. The form helps the school manage in-person inquiries in an organized way through email notifications.

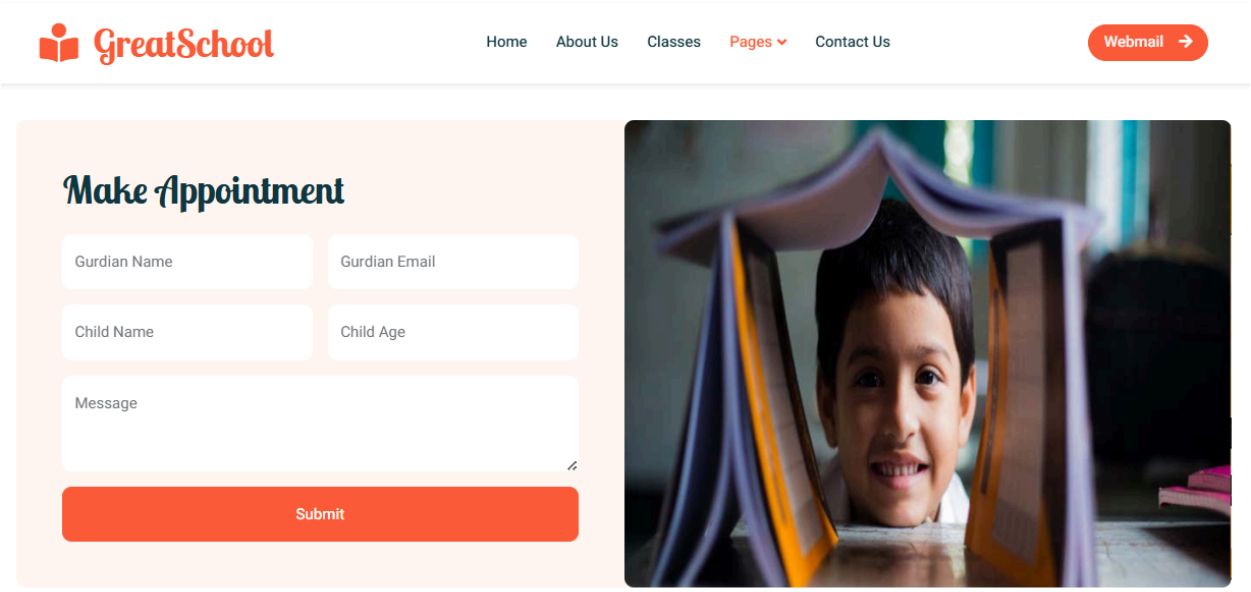


Fig 5.4.4: Make Appointment section of the Kindergarten school

5.5 Contact Us

The Contact Us page provides a direct communication channel between website visitors and the school administration. It features a simple form where users can enter their name, email, subject, and message. Upon submission, the data is sent to the school's designated email via a POP3 mail server, ensuring easy access for the admin team without needing a backend database. This form allows parents, job applicants, or other stakeholders to submit inquiries, provide feedback, or request further information.

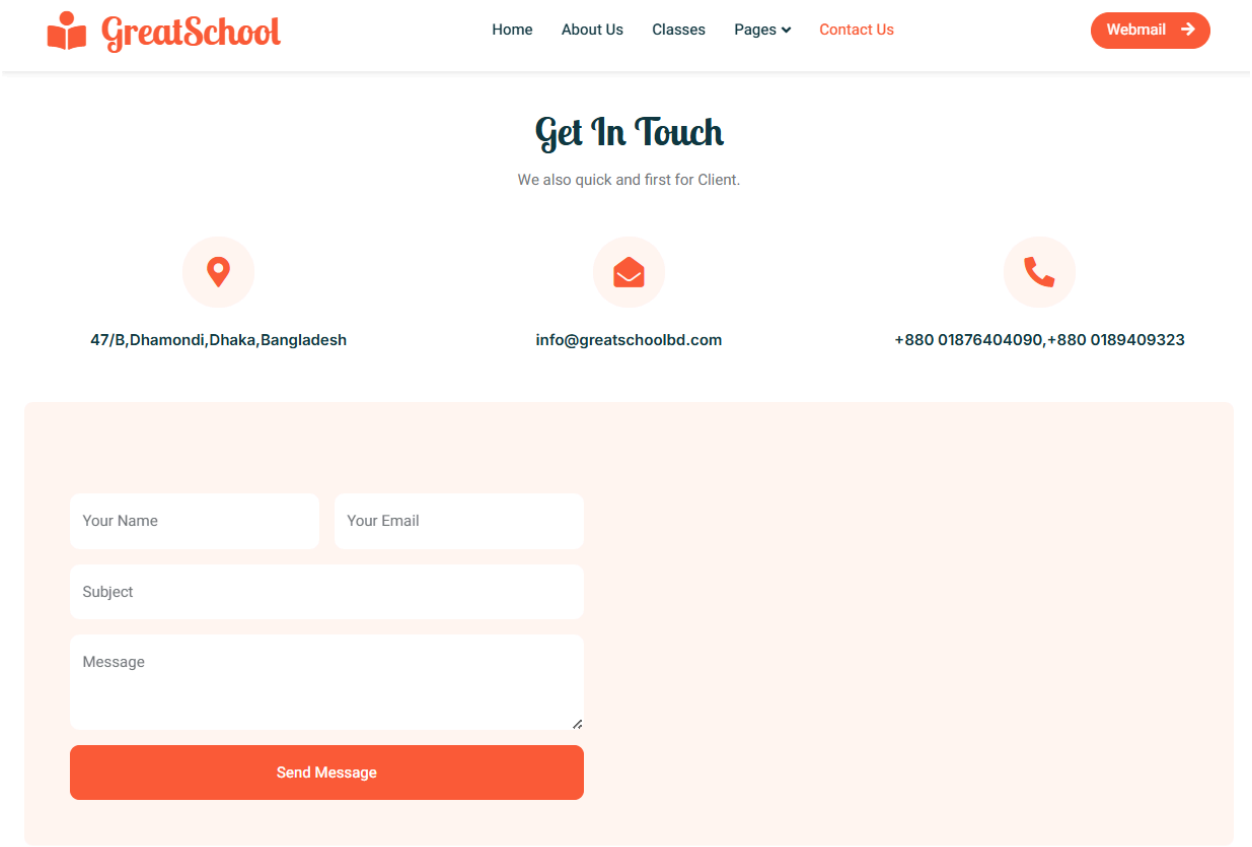


Fig 5.5: Contact Us section of the Kindergarten school

CHAPTER 6

CONCLUSION AND FUTURE WORKS

This chapter presents the final conclusion of the project and outlines the potential future improvements that can enhance the functionality and usability of the kindergarten website system.

6.1 Conclusion

The kindergarten website system effectively addresses the needs of prospective students and teachers by offering a simple, user-friendly platform for student admissions and teacher registrations. Built using static HTML and CSS, it ensures fast loading times and wide compatibility across devices and browsers, while its minimalist design promotes a clean and accessible user experience, especially for users with limited digital literacy. Instead of relying on a traditional backend or database, the system utilizes a POP3-based email approach to handle form submissions, which makes it a lightweight, cost-effective solution for small institutions that lack the resources for complex infrastructure. All application data is sent directly to the school's administrative email, allowing staff to review submissions without additional software or technical expertise. This approach is ideal for kindergartens and similar small organizations that need essential digital functionality without added complexity. Overall, the project demonstrates how core administrative tasks like admissions and recruitment can be efficiently digitized using minimal resources, proving that accessible, effective digital solutions are achievable even for resource-constrained educational institutions.

6.2 Future Works

Although the current system fulfills its basic objectives, there are several areas for potential improvement. Future development may include:

- Adding a secure backend database to store and manage form data more efficiently.
- Implementing form validation with JavaScript for improved input accuracy.
- Integrating CAPTCHA or anti-spam mechanisms to protect form submissions.
- Providing an admin dashboard to review and manage received applications.
- Enhancing the design with a responsive framework like Bootstrap or Tailwind CSS.
- Adding multilingual support to serve a more diverse group of users.

These future enhancements would transform the project into a more robust and scalable digital solution for kindergarten institutions.

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