Bangabandhu Sheikh Mujibur Rahman Science and Technology University

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DESIGN AND DEVELOPMENT OF
SHERPUR INFORMATION SYSTEM

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Statement of Originality

I hereby declare that this report, titled "Sherpur Information System", is the result of my own work. All information, data, and sources used in this report have been appropriately cited and referenced in accordance with academic and ethical standards.

I confirm that the content presented in this report is original and has not been submitted, in part or in full for any other academic or professional qualification. Any contributions from other individuals or source have been duly acknowledged with proper citations.

Student signature
Date:

Supervisor signature
Date:

Abstract

Accurate information about a place or subject is crucial for making informed decisions in today's world. The Sherpur Information system has been developed to provide comprehensive information. About the district, including its history, upazila details, restaurant listings, tourist spots, educational institutions, hospitals and doctors. This information is presented accurately on the website making it easily accessible for users seeking information. This project has been developed so that carry out the processes easily and quickly, which is not possible by manual system, which are overcome by this software. This project is developed using CSS, React Js, Node Js, Express Js and PostgreSQL database.

Acknowledgement

I would like to express my deepest sense of gratitude to my reverend teacher and supervisor Dr. Syful Islam, Assistant Professor, Department of Computer Science & Engineering (CSE), Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Gopalganj, Bangladesh and for his untiring guidance, constant supervision, enthusiastic encouragement, sagacious advice and an effective surveillance throughout the entire period of my project and preparation of the manuscript. I greatly say thank you. Wish to express my heart full thanks to all of my honorable teachers of the department of Computer Science & Engineering (CSE), Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Gopalganj, Bangladesh.

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19CSE038

Table of Contents

List of Figures

CHAPTER 1

Introduction

The 'Sherpur District Information System' has been developed to address the challenges encountered in the manual management of information related to Sherpur district. In response to the challenges posed by traditional manual systems, the 'Sherpur District Information System' has been developed as a comprehensive solution to streamline the management and accessibility of information pertaining to Sherpur district.

In this system it's easy to find everything about Sherpur district online. It's like a one-stop-shop for all things Sherpur. Whether you're looking for history, tourist spots, banks, restaurants, schools, hospitals, or even doctors' information, you'll find it here.

The 'Sherpur District Information System' represents a significant advancement in the digitization of district-related data, offering a user-friendly platform that facilitates efficient navigation and retrieval of information. By leveraging technologies such as React JS, Node JS, Express JS, and PostgreSQL, coupled with the intuitive design principles of CSS Tailwind, the system ensures seamless integration and accessibility across various devices and platforms.

Motivation and Aim

The inspiration behind the development of the "Sherpur District Information Hub" arises from the core principle that access to information should be inclusive and readily available to all members of the community. In regions like Sherpur, where resources may be limited, accessing comprehensive information about the district can be challenging. This project aims to address this challenge by offering a centralized platform where residents and visitors alike can access a wide range of information about Sherpur district free of cost.

Promote Access to Information: Our primary goal is to democratize access to information about Sherpur district. By providing a centralized hub for district-related information, we seek to empower individuals with the knowledge they need to make informed decisions and engage actively in their community.

Facilitate Community Engagement: A well-informed community is a resilient community. Through the "Sherpur District Information Hub," we aim to facilitate greater community engagement by providing easily accessible information about the district's history, landmarks, essential services, and more. By fostering a sense of belonging and shared identity, we hope to strengthen community bonds and promote active participation in local affairs.

Empower Decision-Making: Access to accurate and up-to-date information is essential for effective decision-making. By offering a platform where users can find reliable information about Sherpur district, we aim to empower individuals, organizations, and policymakers to make informed choices that benefit the community as a whole.

Support Lifelong Learning: Learning doesn't stop at a certain age; it's a lifelong journey. The "Sherpur District Information Hub" endeavors to support lifelong learning by providing resources and information for individuals of all ages and interests. Whether it's exploring the district's rich history, discovering new tourist spots, or accessing educational resources, our platform aims to cater to diverse learning needs.

Overall, the "Sherpur District Information Hub" is driven by the belief that access to information is a fundamental right. By providing a user-friendly platform for accessing comprehensive information about Sherpur district, we aspire to empower individuals, foster community resilience, and promote active engagement in local governance and development initiatives.

Objectives

The main objectives for this project (Sherpur informative system) are listed below:

- Improve accessibility to district data.
- Enhance efficiency in data administration.
- Reduce time spent on manual tasks.
- Ensure user-friendly web site.
- Increase productivity in accessing information.
- Expedite access to specific district details.
- Simplify the process of accessing information.
- Optimize resource allocation for management.
- Expand user access beyond specific demographics.

CHAPTER 2

Features of Project

The features of this projects are:
- **Home:** Displays all available information about Sherpur district.
- **Categories**: Allows users to search for specific information by category, such as history, tourist spots, services, etc.
- **My Contributions:** Shows the information contributed by the admin, such as historical facts, tourist spots, etc.
- **Contribute:** Enables users to add new information about Sherpur district, including details like name, description, category, location, etc.
- **Feedback:** Allows users to provide feedback on the platform and suggest improvements.

System Environment

This project is built with the help of some hardware and software tools. They are listed and described blow.

Hardware equipment:

- Operating system: Windows 10
- Processor: core i5, 8 generation
- RAM: 4GB
- Monitor: minimum resolution of 1024 x 768

Software equipment:
- VS Code
- POSTGRESQL
- NODE JS
- Browsers

VS Code:

Visual Studio Code (VS Code) is a lightweight but powerful source code editor developed by Microsoft. It is free and open-source and is available on multiple platforms including Windows, macOS, and Linux.

VS Code supports various programming languages and offers features like syntax highlighting, code completion, debugging support, version control integration (such as Git), and an extensive library of extensions that can be used to enhance its functionality further. It has gained popularity among developers due to its versatility, performance, and customization options.

NodeJS:

Node.js is a powerful runtime environment for executing JavaScript code on the server-side. It's built on Chrome's V8 JavaScript engine and is widely used for building scalable and high-performance web applications.

Key features of Node.js include its event-driven architecture, which enables non-blocking I/O operations, allowing applications to handle multiple requests concurrently without getting blocked. This makes Node.js particularly well-suited for building real-time applications and RESTful APIs.

Node.js comes with npm (Node Package Manager), which is the largest ecosystem of open-source libraries in the world. This vast repository of packages allows developers to easily install, manage, and share reusable code modules.

POSTGRESQL:

PostgreSQL is a highly acclaimed open-source relational database management system known for its robust performance, reliability, and user-friendly interface. It has emerged as a preferred database solution for a wide range of web-based applications, offering unparalleled versatility and scalability.

With its proven track record in performance, PostgreSQL has garnered widespread adoption among leading web properties, including renowned platforms such as Facebook, Twitter, YouTube, Yahoo!, and many others. Its flexibility and feature-rich architecture make it an ideal choice for powering mission-critical applications in various industries.

PostgreSQL's continuous innovation is driven by the vibrant open-source community and supported by contributions from organizations like Oracle. These collaborations result in the development of cutting-edge capabilities that empower the next generation of web, cloud, mobile, and embedded applications.

With PostgreSQL at the helm, organizations can confidently build and deploy high-performance, scalable, and reliable solutions to meet the evolving demands of modern digital environments."
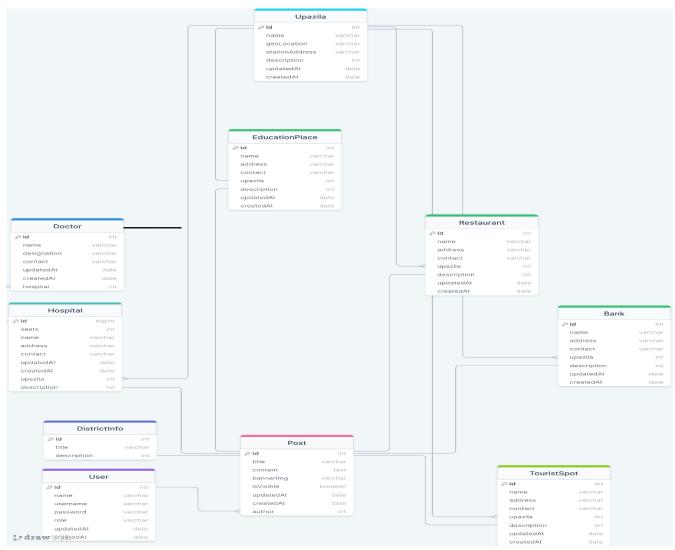

Browsers:

To collect some information, I used some internet browser like Google chrome, Mozilla Firefox, UC browsers and Opera Mini.

CHAPTER 3

Implementation

Introduction

In this chapter I described how to implement this project. The project is developed using CSS Tailwind, React JS, Node Js, Express Js and PostgreSQL database.

Schema Diagram

Modules Description

The project "Sherpur Information System" is designed for maintaining all the management process of information system.

Information Management Module:

- **Add Information:** Administrators can contribute to the system by adding new information about Sherpur, such as Sherpur history, district liberation war, tourist spots, banks, restaurants, educational institutions, hospitals, and doctor information. They enter details like Name, Description, Picture, and Categories. The system checks if the information already exists in the database. If not, it adds the information; otherwise, it notifies the user that the information is already listed.

- **My Information**: Administrators can view the information they have uploaded, including details like Name, Description, and upload time.

- **Delete Information**: Administrators can remove an information listing from the database. This functionality is accessible from the "My Information" section.

- **Information Categories:** Users can browse information by category and view detailed information about each listing.

CHAPTER 4

Experimental review

4.1: Home page

The homepage of the website sherpur-info.web.app. The website appears in Bangla and provides information about Sherpur District in Bangladesh. Here is the information of Sherpur District Introduction Sub-districts, Tourist Places, Hospitals Contact. The website also features a section on the history of Sherpur District and a section on the geography of Sherpur District.
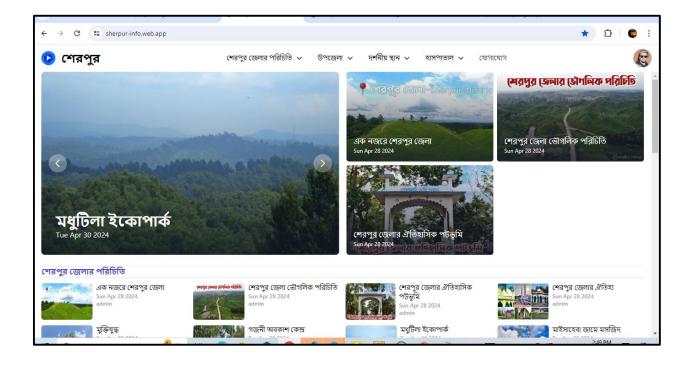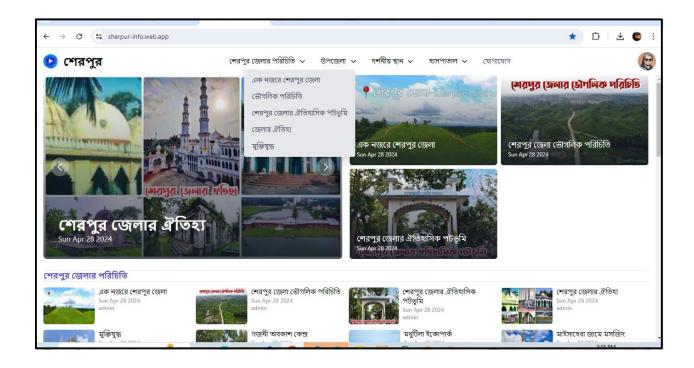

Figure 4.1: User Home Page

4.2: Home Menu

The website provides information about Sherpur District in Bangladesh. Here is the information of Sherpur District Introduction Sub-districts, Tourist Places, Hospitals Contact.

Figure 4.2: User Home Menu

4.3: Banks and Restaurants information

The website lists various banks and restaurants information in Sherpur. The website appears in Bangla. It includes information like phone numbers and addresses of banks and restaurants.
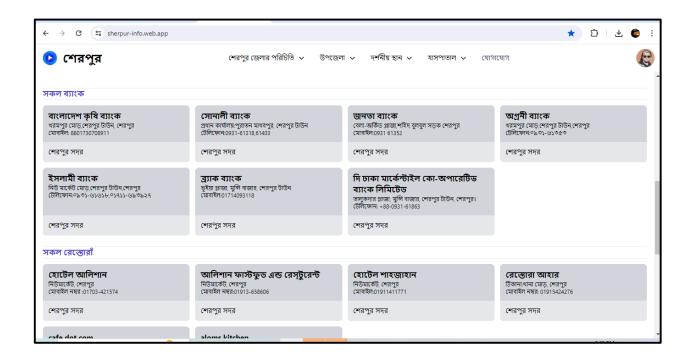

Figure 4.3: Banks and Restaurants information

4.4: Educational Institution Information.

The webpage shows a listing of schools in Sherpur District. The website is in Bangla, and it lists various schools including Ideal Preparatory and High School, Uttara Adarsha High School, and Govt. Govind Kumar (G.K.) Pilot High School. The website also includes phone numbers and addresses for the schools.
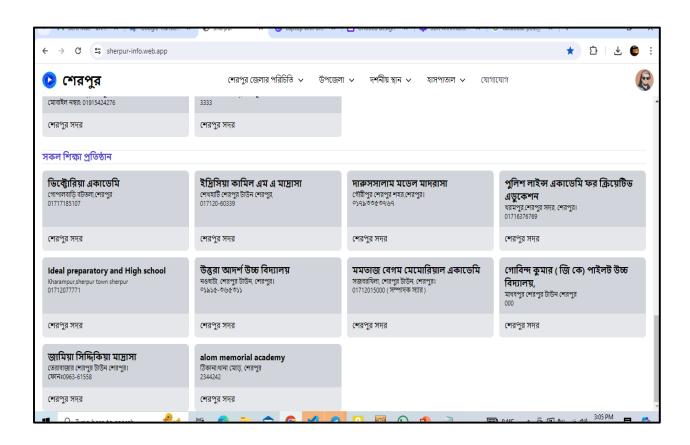

Figure 4.4: Educational Institution Information

4.5: District Tourist Spot Information

The webpage shows the information one of Sherpur popular Sherpur Tourist spot "Gajni obokash kendro". Information about how to visit there, where to stay and others important information for visitors.

Figure 4.5: Tourist Spot Information

4.6: Hospital Information

This webpage shows the information of a hospital named "Sherpur Doctors hospital" which is situated in Sherpur. It includes information like Hospital bed number, Doctor list, address, phone number of hospital.
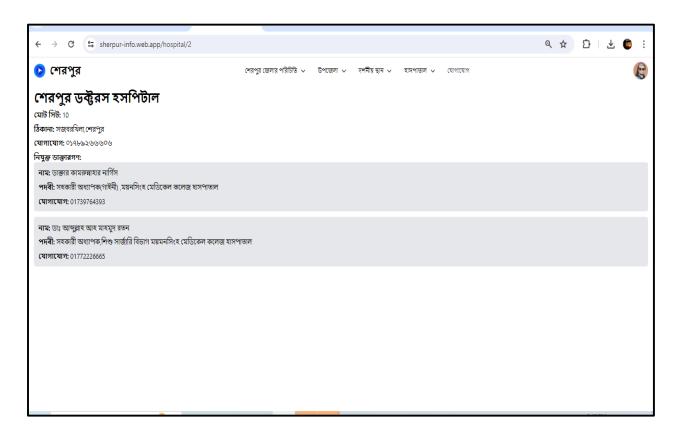

Figure 4.6: Hospital Information

4.7: Feedback Information Option

The webpage shows the Feedback page. Visitors can send feedback to the admin with these information name, email address, subject, message.
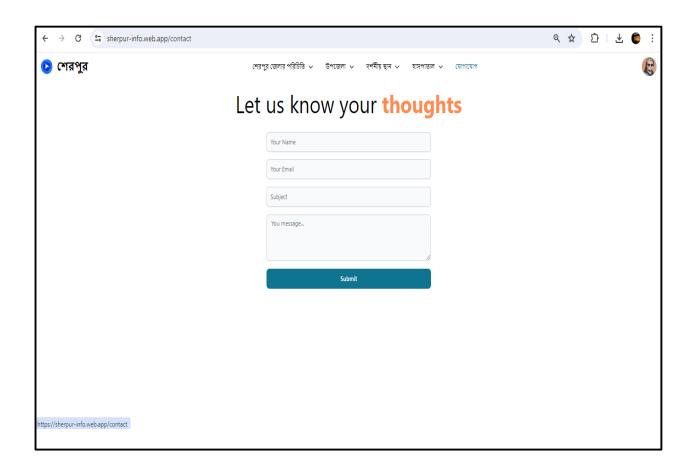

Figure 4.7: Feedback

4.8: Shows Admin Dashboard.

This webpage shows the mail page of dashboard. This page is only for admin. When any visitor sends any feedback, it will show here.
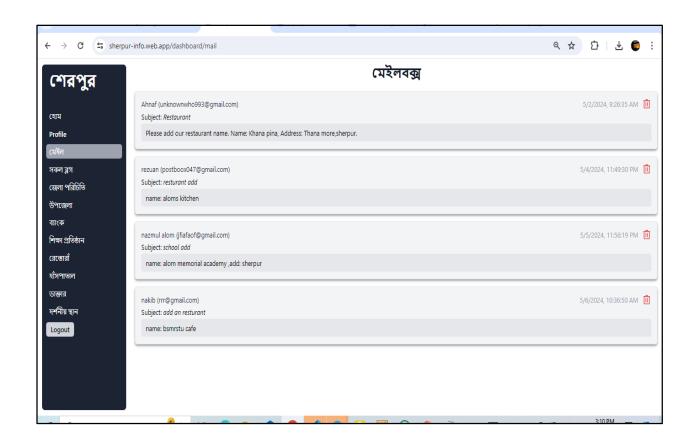

Figure 4.8: Admin Dashboard

4.9: Hospitals information in Dashboard.

This page shows admin dashboard hospitals information. This page and information only controlled by admin. Admin can add, update hospital information details in this page.
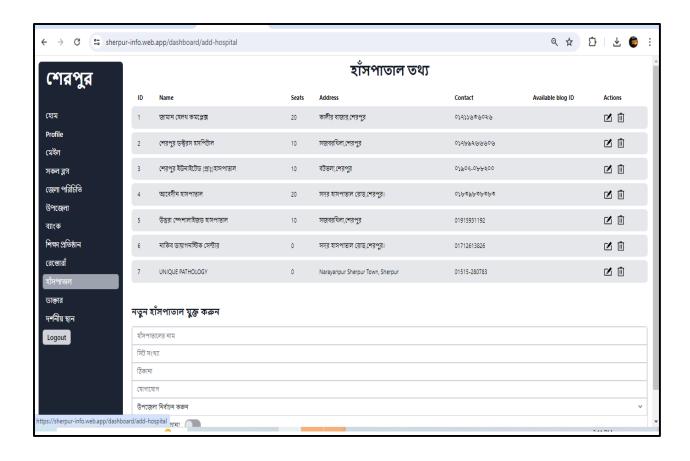

Figure 4.9: Hospital Information

5.0: Tourist Spot Dashboard

This page shows an admin dashboard for Tourist spots information. This page and information are only controlled by admin. Admin can add, update Tourist spot information, details in this page.
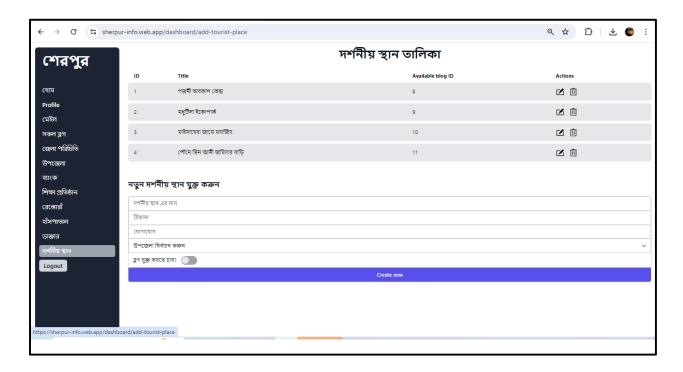

Figure 5.0: Tourist spot Dashboard

5.1: Dashboard for add information

This page shows an admin dashboard for District introduction. This page and information are only controlled by admin. Admin can add and update District information, details in this page.
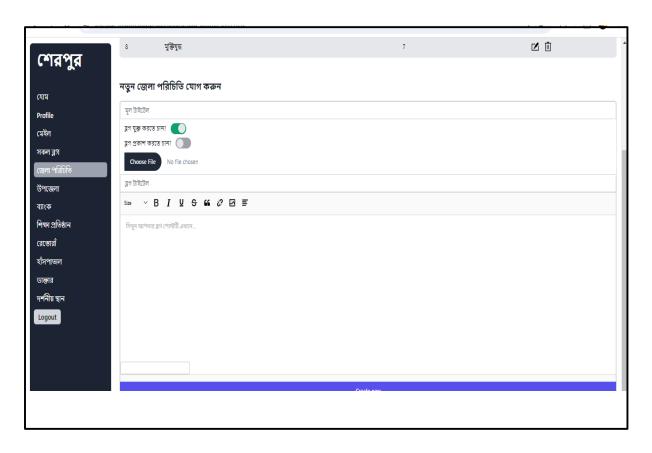

Figure 5.1: Add information

CHAPTER 5

Result and Evaluation

Result of Sherpur Information System

The transition from manual management systems to software-based management systems brings significant advantages in terms of efficiency and reliability. Unlike manual systems where information is recorded in diaries, software-based systems store all data in a secure database, mitigating the risk of data loss due to damage or destruction. This shift reduces human labor time and enhances the efficiency and effectiveness of administration and management tasks.

The Sherpur Information System offers easy access to comprehensive information about Sherpur district, including its history, tourist spots, educational institutions, healthcare facilities, and more. With intuitive search functionality and a user-friendly interface, the system can be easily navigated by anyone, regardless of their level of technical expertise. Its flexibility and convenience make it a valuable tool for maximizing efficiency and reducing time wastage in managing district-related information.

Additionally, the Sherpur Information System has the potential for broader applicability beyond its current scope. It can be adapted for use in various settings, such as office library management, thanks to its efficient and accurate management operations. The system's attractive user interface enhances the user experience, ensuring that users enjoy interacting with the software while accessing information about Sherpur district.

Limitation of the project

Al though I have put my best efforts to make the software flexible, easy to operate but limitations cannot be ruled out even by me. Though the software presents a broad range of options to its users some intricate options could not be covered into it; partly because of logistic and partly due to lack of sophistication. Paucity of time was also major constrain; thus, it was not possible to make the software foolproof and dynamic. Lack of time also compelled me to ignore some part.

List of limitations:

- User Cannot directly add any information.

- Not now, No search option there.

- Only for web user, not any application.

- Lack of an admin panel for system management and oversight.

CHAPTER 6

Conclusion & Future Work

Conclusion

The Sherpur Information System represents a significant advancement in information management for Sherpur district. By leveraging technology to overcome the limitations of manual systems, this software offers an efficient and user-friendly alternative. With its streamlined processes and reduced error rates, the Sherpur Information System enhances productivity and simplifies daily tasks for users. As we transition to this modern solution, we can expect improved access to district-related information and a more effective approach to office work in Sherpur. Overall, the Sherpur Information System marks a crucial step forward in the quest for enhanced efficiency and effectiveness in information management, benefiting both users and administrators alike.

Future Work

The Sherpur Information System marks a significant milestone in advancing information management within the Sherpur district. It will be improved in the future. User logging system, option will be kept so that user can add information to the site, strong admin panel will be made. All information will be edited and updated.

Notification will be sent by adding new information. Website security will be enhanced. Efforts will be made to protect the privacy of user information.

Arrangements will be made to represent Sherpur district digitally. Through ongoing improvement and innovation, we are committed to maximizing the system's utility and value for Sherpur district.

References

1. https://www.geeksforgeeks.org/introduction-to-tailwind-css/ (Access Date: 10.04.24)
2. https://www.w3schools.com/react/default.asp (Access Date: 13.04.24)
3. https://www.w3schools.com/nodejs/default.asp (Access Date: 18.04.24)
4. https://www.w3schools.com/postgresql/index.php (Access Date: 25.04.24)