DEVELOPED UTTAR NAKSHI HIGH SCHOOL DYNAMIC WEBSITE

BY

Ahnaf Shariar Hemal

ID: 201-15-14216

This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering

Supervised By

MD. Zabirul Islam
Lecturer
Department of CSE
Daffodil International University

Co-Supervised By

Ms. Fabliha Haque
Lecturer
Department of CSE
Daffodil International University

DAFFODIL INTERNATIONAL UNIVERSITY

DHAKA, BANGLADESH

JANUARY 2024

@Daffodil International University

APPROVAL

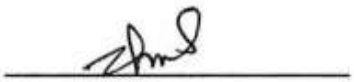
This Project titled "**Developed Uttar Nakshi High School Dynamic Website**", submitted by **Ahnaf Shariar Hemal** to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on Thursday, January 25, 2024

BOARD OF EXAMINERS

Dr. Md. Taimur Ahad (MTA) — **Chairman**
Associate Professor & Associate Head
Department of CSE
Faculty of Science & Information Technology
Daffodil International University

Nazmun Nessa Moon (NNM) — **Internal Examiner**
Associate Professor
Department of CSE
Faculty of Science & Information Technology
Daffodil International University

Raja Tariqul Hasan Tusher(THT) — **Internal Examiner**
Assistant Professor
Department of CSE
Faculty of Science & Information Technology
Daffodil International University



Dr. Md. Zulfiker Mahmud (ZM) — **External Examiner**
Associate Professor
Department of CSE
Jagannath University

DECLARATION

We hereby declare that this project has been done by us under the supervision of **MD. Zabirul Islam, Lecturer, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

Supervised by:

FOR

Mr. Md. Zabirul Islam
Lecturer
Department of CSE
Daffodil International University

Co-Supervised by:

FOR.

Ms. Fabliha Haque
Lecturer
Department of CSE
Daffodil International University

Submitted by:

Ahnaf Shariar Hemal
ID: 201-15-14216
Department of CSE
Daffodil International University

ACKNOWLEDGEMENT

Firstly, we would want to thank Almighty God from the bottom of our hearts for His glorious grace, which has enabled us to successfully finish the final year project.

I sincerely thank **Md. Zabirul Islam, Lecturer,** Department of CSE, Daffodil International University, Dhaka, and extend our sincere gratitude. To complete this job, our supervisor must have extensive knowledge of and a strong interest in the subject of "website development." It has been made possible to finish this project by his unending patience, intellectual direction, continual encouragement, frequent and vigorous supervision, constructive criticism, insightful suggestions, and reading several subpar versions and fixing them at every level.

I would like to extend our sincere appreciation to the CSE department staff and other academic members of Daffodil International University, as well as to Professor Dr. Sheak Rashed Haider Noori, Head of the Department, for his kind assistance in completing our research.

I want to express my gratitude to every Daffodil International University student who participated in this conversation while completing the assigned task.

Lastly, I must respectfully thank our parents for their unwavering patience and support.

ABSTRACT

The Uttar Nakshi High School Website is a complete and innovative platform designed to transform the teaching and administrative procedures of Uttar Nakshi High School. As a final year project, this web-based system was developed to address many problems that educational institutions face: uploading results, managing teacher information, updating notice boards, processing student enrollment, and managing tests and courses.

To produce a responsive and user-friendly experience, HTML, CSS, Bootstrap, Java, and Django are used in both the frontend and backend development of the project. The report provides a detailed overview of the project, including its objectives, management, finances, and expected outcomes. The background section uses a comparative analysis and related works to highlight the unique features and effectiveness of the School Management Website. The problem's scope outlines the challenges that educational administration is now experiencing and sets project goals to deal with these challenges. The requirement definition section goes into great length on use case modeling, business process modeling, and requirement collection and analysis. Design requirements are given top priority to provide a platform that is both visually attractive and simple to use. The paper then discusses user experience, front-end back-end design, interaction design, and implementation requirements in the design specification.

TABLE OF CONTENTS

CONTENTS	PAGE
Approval	ii
Declaration	iii
Acknowledgements	iv
Abstract	v
List of Figures	viii
List of Table	ix
CHAPTER 1: INTRODUCTION	**1-3**
1.1 Introduction	1
1.2 Motivation	1
1.3 Objectives	1-2
1.4 Expected Outcomes	2
1.5 Project Management and Finance	2
1.6 Report Layout	3
CHAPTER 2: BACKGROUND	**4-6**
2.1 Preliminaries	4
2.2 Related Works	4
2.3 Comparative Studies	4-5
2.4 Scope of the Problem	5
2.5 Challenges	5-6
CHAPTER 3: REQUIREMENT SPECIFICATION	**7-11**
3.1 Business Process Modeling	7
3.2 Requirement Collection and Analysis	8

3.3 Use Case Modeling and Description 8-11

3.4 Design Requirement 11

CHAPTER 4: DESIGN SPECIFICATION 12

4.1 Front-end Design 12

4.2 Back-end Design 12

4.3 Interaction Design and User Experience (UX) 12

4.4 Implementation Requirements 12

CHAPTER 5: IMPLEMENTATION AND TESTING 13-25

5.1 Implementation of Database 13

5.2 Implementation of Front-end Design 13-21

5.3 Testing Implementation 22-26

5.4 Test Results and Reports 26

CHAPTER 6: IMPACT ON SOCIETY, ENVIRONMENT AND SUSTAINABILITY 27-28

6.1 Impact on Society 27

6.2 Impact on Environment 27

6.3 Ethical Aspects 27-28

6.4 Sustainability Plan 28

Chapter 7: CONCLUSION AND FUTURE SCOPE 29

7.1 Discussion and Conclusion 29

7.2 Scope for Further Developments 29

REFERENCE 30

PLAGIRISM REPORT 31

LIST OF FIGURES

FIGURES	PAGE
Figure 3.1: Business process modelling	7
Figure 3.2: Web development life cycle	8
Figure 3.3: Flow chart	9
Figure 3.4: Use case for Student	10
Figure 3.5: Use case for Admin	10
Figure 3.6: Data flow diagram for system	11
Figure 5.1: Home page	14
Figure 5.2: Login page	15
Figure 5.3: About page	16
Figure: 5.4 Admission page	17
Figure 5.5: Routine page	18
Figure 5.6: Teacher page	18
Figure: 5.7 Result page	19
Figure 5.8: Show mark sheet	19
Figure 5.9: Attendance page	20
Figure 5.10: Admin panel page	20
Figure 5.11: Contact page	21

LIST OF TABLES

TABLES **PAGE**

Table 5.1: Test Case Design 22-23

CHAPTER 1
INTRODUCTION

1.1 Introduction

We are delighted to welcome you to our High School Management Website, an innovative tool intended to transform the way our school community connects, communicates, and collaborates. This digital hub acts as a centralized resource, bringing administrators, instructors, and students together to expedite administrative operations and improve the overall educational experience. Through this web site, everyone can see the school notice board, know the information of the teachers, see the results, and see the class routine and exam routine. Learn about the history of the school. And new students can get admission. And there will be one admin in full control of this web site. The website will have one or more teachers to update the results, routines, and notices. And they have to login as users. After that, they can work on the work website after giving admin access.

1.2 Motivation

The motivation behind the development and implementation of the High School Management Website systems from our commitment to providing a cutting-edge, efficient, and user-friendly platform that addresses the evolving needs of our educational environment. With the increasing importance of digital tools in education, we recognized the opportunity to leverage technology to streamline administrative tasks, improve communication channels, and ultimately elevate the overall educational experience for students, teachers, and parents.

1.3 Objectives

The primary objectives of the School Management Website include:

Admission Form Submission: Allow new students to submit admission documents online, which simplifies the registration process.

Teacher Information Administration: Using an interface, administrators may maintain and update teacher information.

Notice Board Administration: Allow administrators to easily update and administer the notice board, ensuring that important information is communicated on time.

Result Upload: Allow administrators to quickly upload results to speed up the result posting process.

Exam and Class Routine: Make it easy to submit and manage exam schedules and class procedures to increase organization.

1.4 Expected Outcomes:

We anticipate the following outcomes from the implementation of the High School Management Website:

Increased Efficiency: Streamlined administrative processes will lead to time savings for teachers and administrators, allowing them to focus more on teaching and strategic planning.

Improved communication: A more robust communication platform will encourage stronger collaboration between teachers, parents and students, leading to better-informed and engaged users. New students will be interested in admission.

Enhanced Educational Experience: Easy access to educational resources and real-time academic tracking will contribute to an enriched learning experience for students.

1.5 Project Management and Finance:

High school management development and advancement followed a spatial project management approach. The project is funded to ensure a dedicated and sustainable investment in the development of this initiative. The development of this company will continue. My dream is that this website will be like our BLC and student portal. I will continue my work on this.

1.6 Report Layout:

I tried to provide my complete overview, relevant works, and technology in this paper. Carefully, I shall go over my initiatives in further detail throughout the chapters. I attempt to define requirement specifications. I am currently working on a solution to the question, "What features should be developed to make it more appealing?" I will also discuss the issues and difficulties that I encounter. My aim is to address many subjects in separate parts of the report, such as difficulties and challenges, solutions, website features and structure, and future plans.

CHAPTER 2
BACKGROUND

2.1 Preliminaries/Terminologies

The School Management Website, created as the end of my final year project, is a web-based system aimed to improve Uttar Nakshi High School's administrative and academic management operations. To allow operations ranging from student admissions to result uploads and notice board modifications, the project employs HTML, CSS, Bootstrap, Java on the frontend and Django on the backend. This idea originated from the rising need for a centralized and automated system inside educational institutions. The School Management Website was created to save manual work, improve communication, and provide a user-friendly interface.

2.2 Related Works:

Several school official tasks can be found on the internet. There are other similar systems available in the sector of education technology, covering both intellectual and open-source platforms. However, as each system has its own set of unique characteristics and limitations, a customized solution was created to meet the particular requirements of Uttar Nakshi High School.

2.3 Comparative Analysis:

I. The Function Set

The School Management Website separates itself by offering a feature-rich environment for new student admissions, instructor information administration, notice board updates, result uploads, and exam and class routine management. This feature set aims to provide a complete answer for academic management.

II. Usage

The responsive and user-friendly interface is built using HTML, CSS, and Bootstrap. The use of Java for dynamic content improves the website's usability and responsiveness, resulting in a better user experience.

III. Effectiveness of the Backend

The backend framework used, Django, enables strong database administration, user authentication, and simple data processing. The use of Django improves the overall efficiency and flexibility of the system.

2.4 Scope of the Problem:

I. Current Challenges

Administrative tasks at educational institutions are often difficult and time-consuming, leading in inefficiencies and the possibility of errors. Communication gaps among users, particularly in giving timely information, compound the problems that schools face.

II. Project Goals

The School Management Website aims to address these challenges by providing a centralized platform for fast student registration, simplified teacher information management, and real-time alerts, results, assessments, and class routines.

2.5 Challenges:

I. Difficulties with Technology

Several technologies, including HTML, CSS, Bootstrap, Java, and Django, created technical challenges throughout development. The focus was on assuring smooth compatibility and peak performance.

II. Acceptance by Users

The implementation of a new system demands a modification of existing processes and user behaviors. It is critical to overcome resistance to change and secure broad support among administrators, teachers, and students.

III. Data Security

It is necessary to protect and safeguard sensitive academic and personal information. The installation of strong data security processes to fight against potential attacks was a coming challenge.

CHAPTER 3

REQUIREMENT SPECIFICATION

The phrase requirement specification relates to a system's or system application's properties and behavior. The whole project is built around the needed standards. Developers and engineers construct projects that are customized according to the demands of their clients.

3.1 Business Process Modeling:

Figure 3.1.1 below shows my project's business processing model.

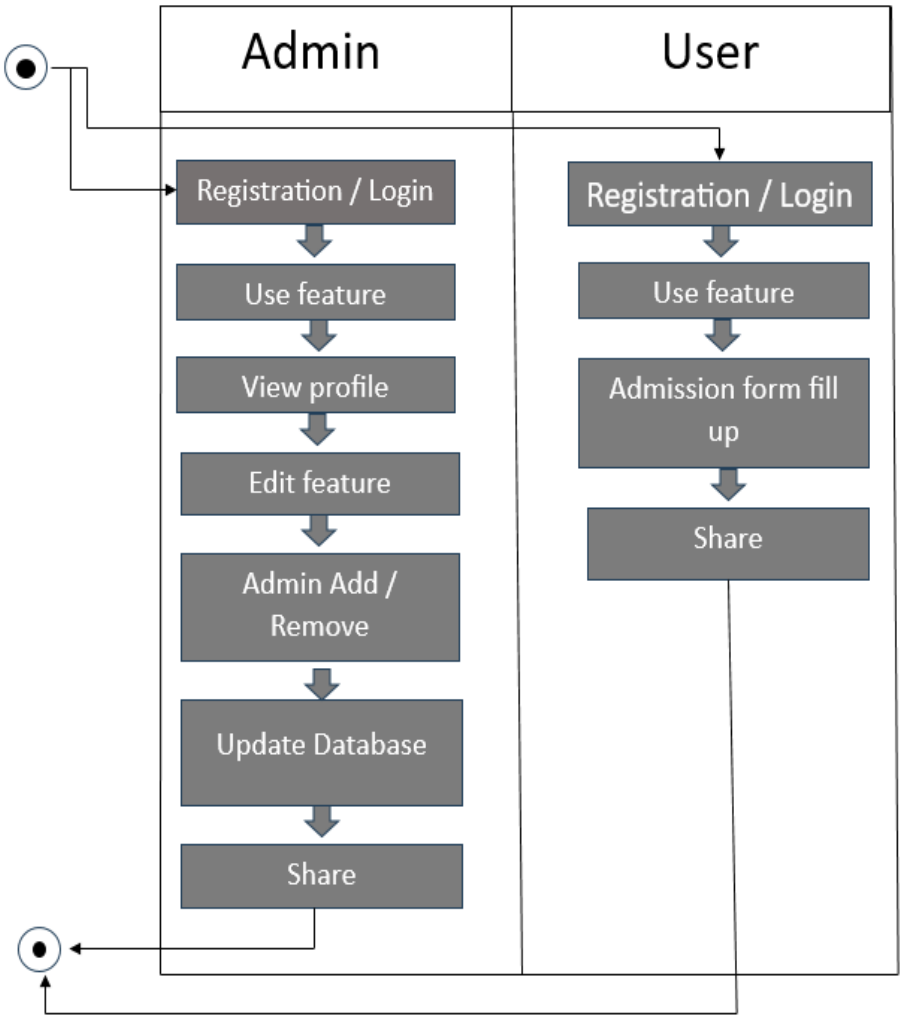


Figure 3.1: Business process modelling

3.2 Requirement Collection and Analysis:

Requirement collections are critical for building any kind of project. It is necessary for project management systems in addition to building projects. In the project management system, this is the most important phase. Essentially, the necessary requirements are collected depending on the needs of the customer. A project is threatened when it fails to fulfill all the requirements. At that point, the project's result cannot satisfy users. Consequently, gathering requirements is crucial to the project management system. Therefore, I gather all requests based on requests from customers, and I'll keep collecting knowledge for future project development.

3.3 Use Case Modeling and Description

Web Development Life Cycle

It is the base of every project development. It encompasses the whole project development process, from planning to execution [2]. Agile project development is the most effective approach out of all of them. Because the agile methodology suggests progressive and progressive approaches for creating software [3].

Figure 3.2: Web development life cycle

Flow Chart

Figure 3.3 depicts my project's whole flow chart.

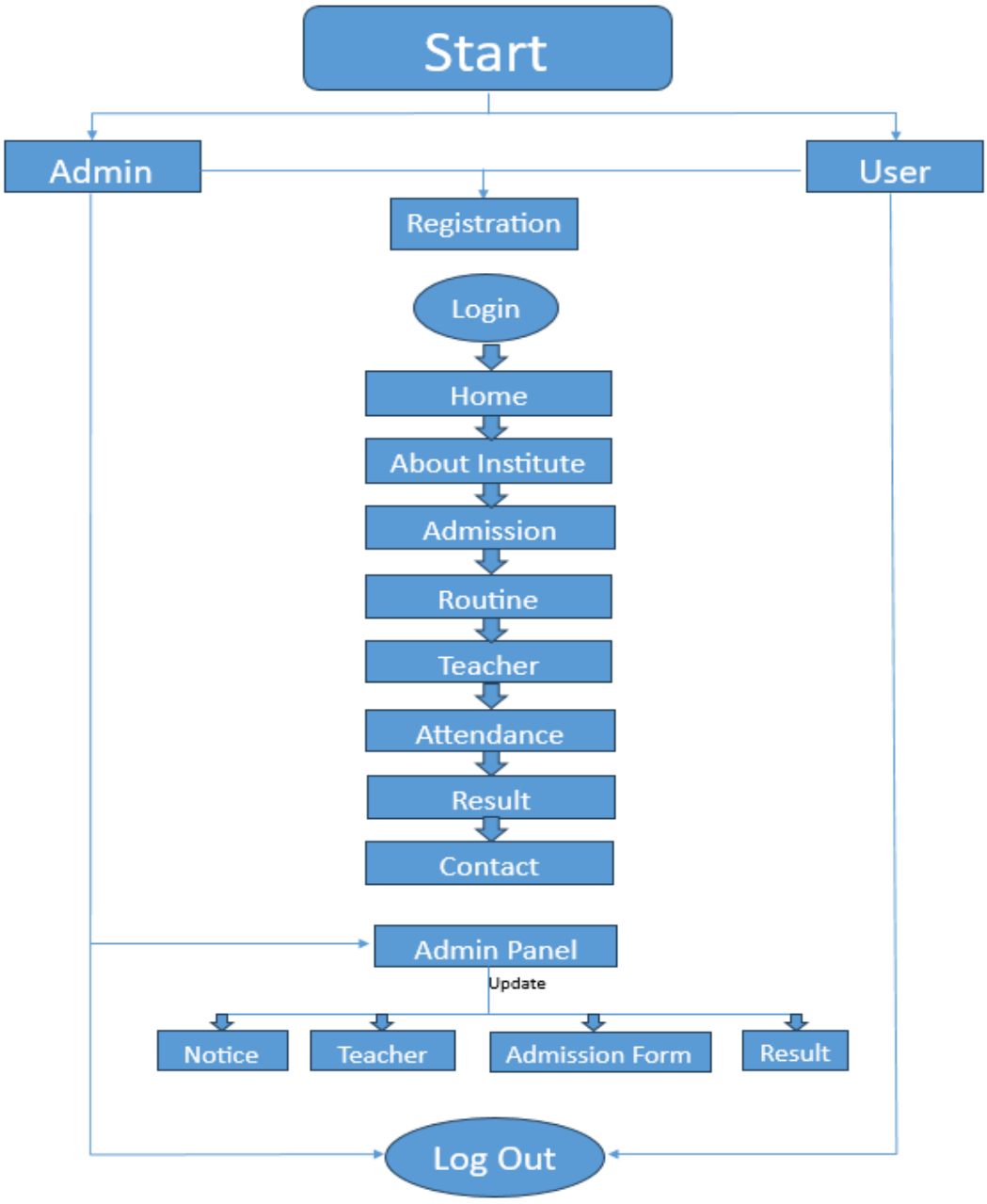


Figure 3.3: Flow chart

Use Case Modeling

Figure 3.4 & 3.5 depicts my project's whole flow chart.

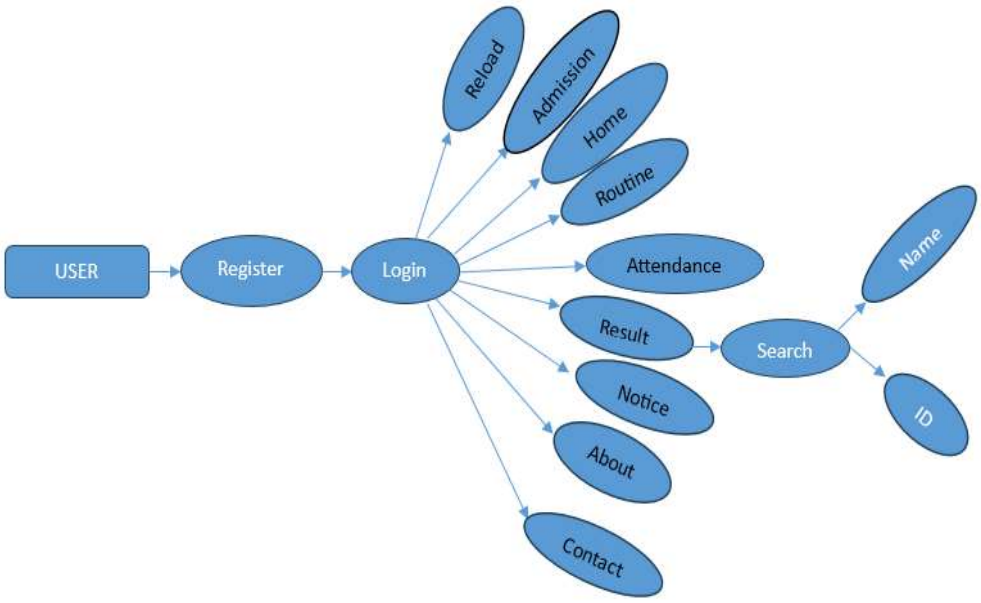


Figure 3.4: Use case for Student

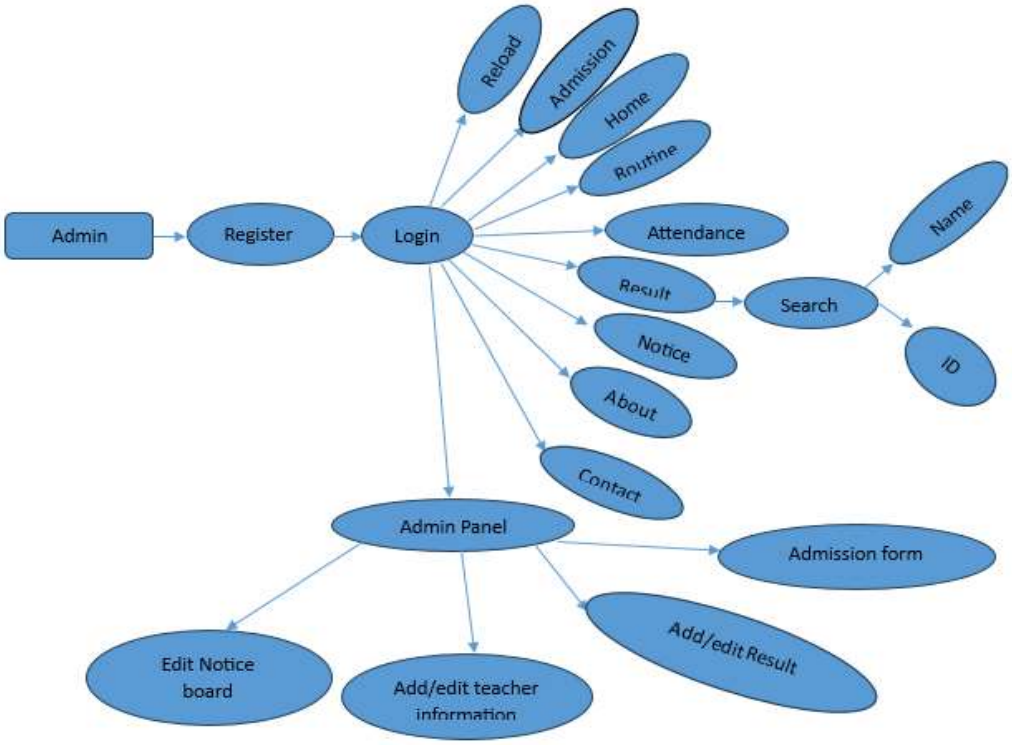


Figure 3.5: Use case for Admin

Dataflow Diagram

A data flow diagram illustrates how a system or process moves [4]. It is essentially the first stage in creating a detailed project overview. It's applied to data visualization as well. Display the DFD for my project in figure 3.6. On my project, the DFD procedure is used in every step.

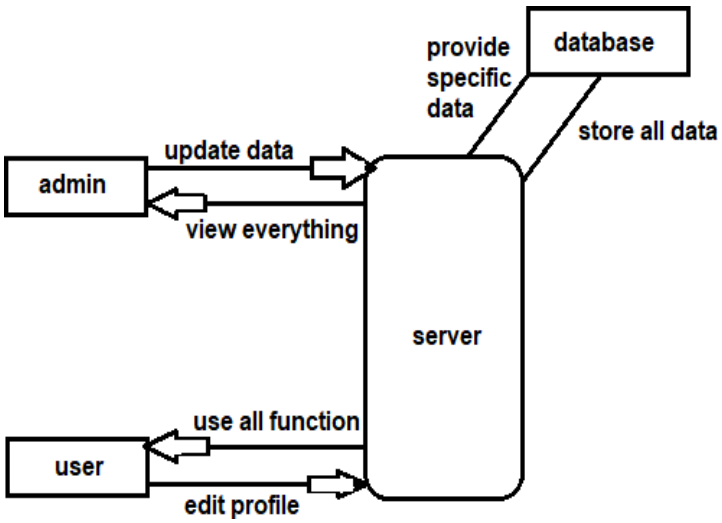


Figure 3.6: Data flow diagram for system

3.4 Design Requirement

Design requirements are also required for project management. Because if a developer creates a website that is not user-friendly, the application will not be marketable. It will not be used by the user. I'll look for a duplicate solution for that. The design demands include the architectural design, multidimensional data language, flow chart, and use case diagram. I employ sophisticated and up-to-date technologies in my project. As a result, make my project user-friendly. Even now, I'm still thinking about ways to make it more appealing. In the future, I will be aware of it and will update my website as needed.

CHAPTER 4

DESIGN SPECIFICATION

4.1 Front-end Design

The website's front end was created using Java, HTML, CSS, Bootstrap, and other design elements, producing a user interface that is both visually attractive and responsive.

4.2 Back-end Design and Code

Back end, the powerful Django framework was used, which provides a solid and scalable basis for database management, user authentication, and data processing.

4.3 Interaction Design and User Experience

Designing projects with usability in mind is my top priority. Google was utilized in the interface's development. An individual's concept is not exactly duplicated by me. To create an aesthetically pleasing website design, I collaborated with a number of them.

4.4 Requirements

I make an effort to keep to every particular requirement that is appropriate for my school project. For my project, I need current student information. As a result, I try to modify the data periodically.

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Implementation of Database

The School Management Website is built on a strong database architecture. Using the Django framework's powerful Object-Relational Mapping capabilities, the database architecture was carefully built to ensure efficiency, scalability, and data accuracy. The ERD served as the foundation of the database structure. It includes connections between important aspects including students, instructors, exams, courses, and alerts. This visual model guided the creation of tables and links, resulting in a well-organized and normalized database.

5.2 Implementation of Front-end Design

The front end of the School Management Website is designed using HTML, CSS, Bootstrap, and Java. This technology base was chosen to deliver a responsive, visually attractive, and intuitive user experience that responds to the various needs of administrators, teachers, students, and parents. My website's user interface includes login, homepage, admin panel, search activity, new student admission, instructor information, notice board updates, result upload interface, exam and class routine administration, and so on, as shown below:

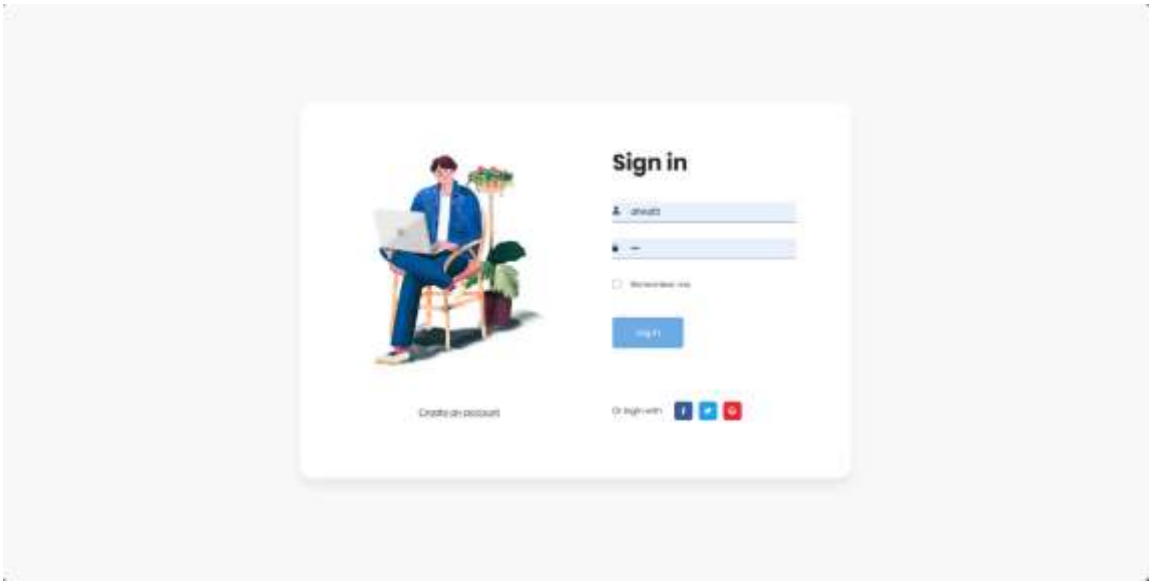
Homepage

When open the website, the first interface of my website is "home page". It is the principal page of my project. There is a admission features, about institute, routine, teacher, notice board, login button etc. Everyone can access the website; there is no need to login. You can visit the website directly without logging in. For example, you can see the result, you can see the teacher's information, you can see the routine, and you can see the notice. An admin login is required to update website information.

Figure 5.1: Home page

Login

On that page, admins and student's login, sign into the website, and update the information etc. 5.2. presents the information-



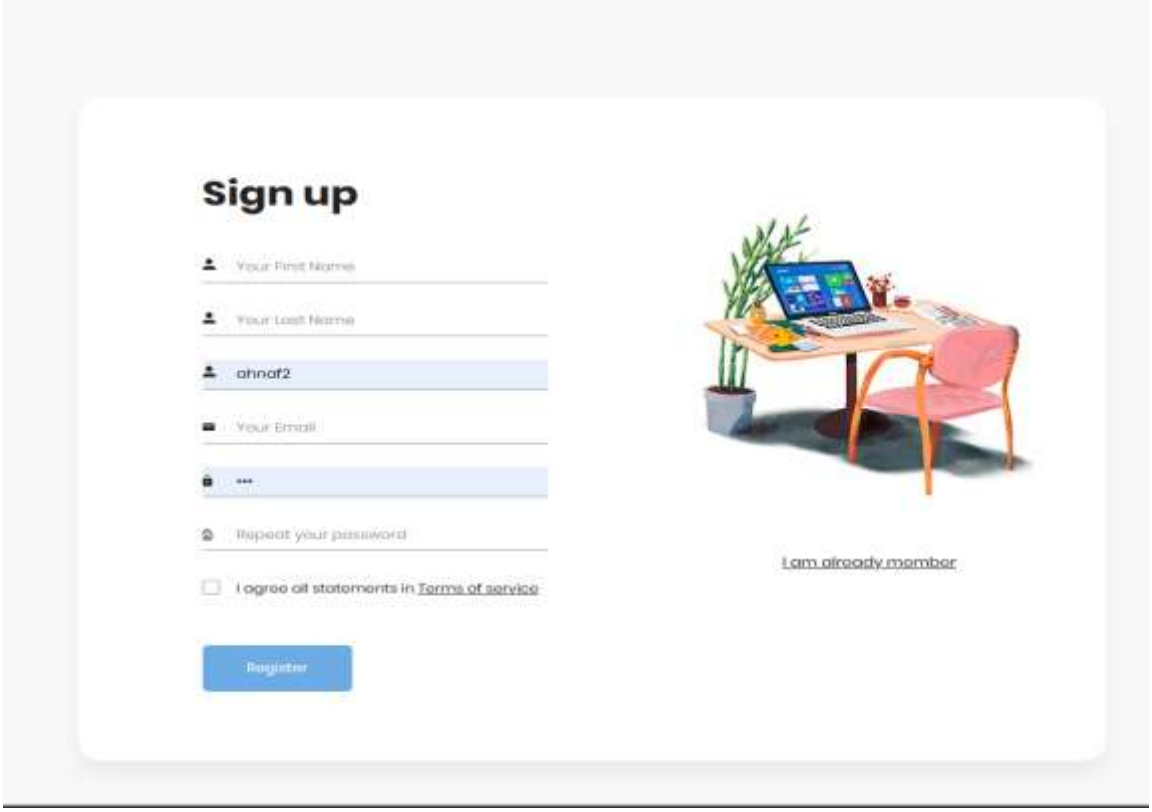


Figure 5.2: Login page

About Institute

In that page, everyone see the school overview and basic information. 5.3 presents the information-

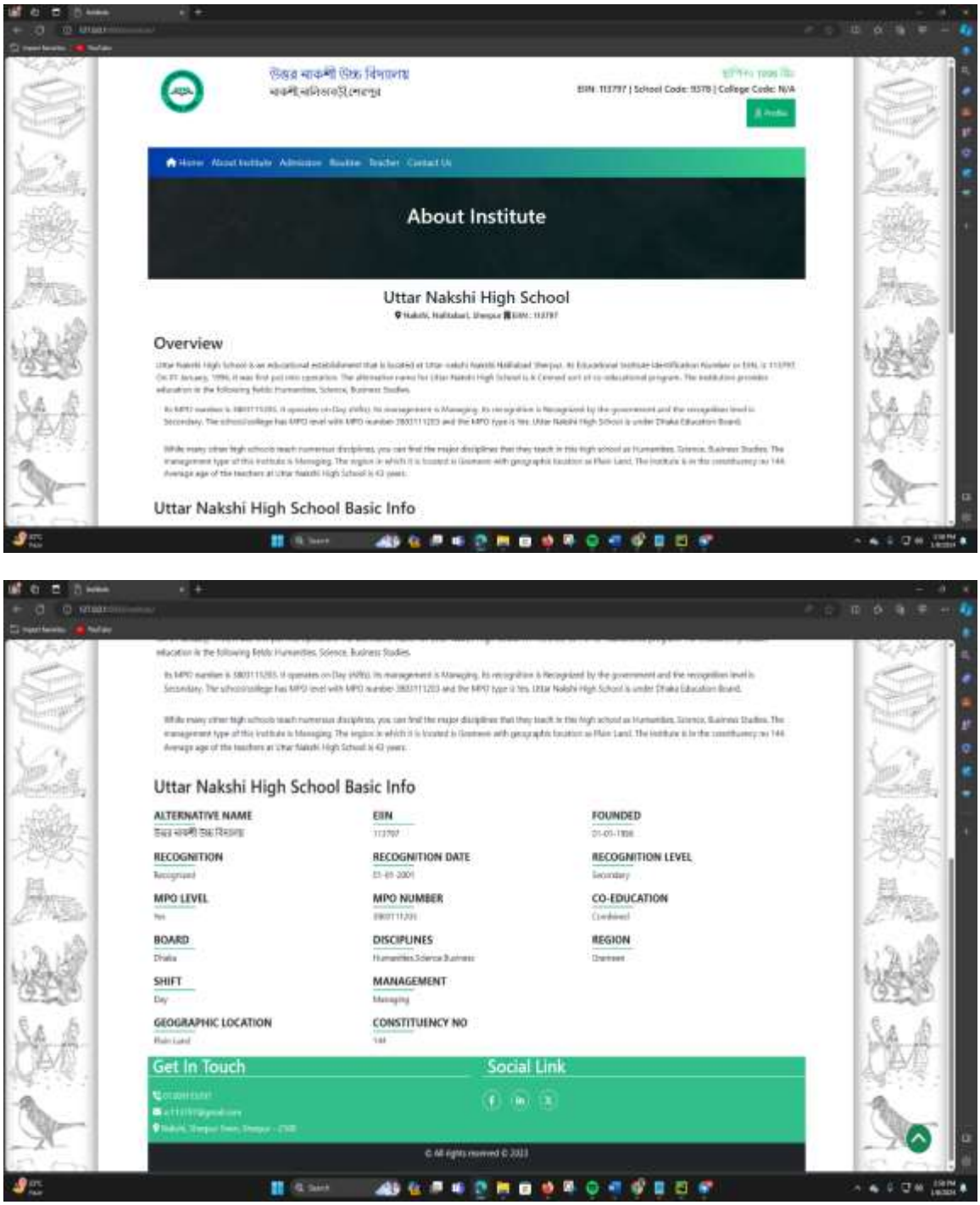


Figure 5.3: About page

Admission

On that page, explain how the online admission form was implemented. Stress how easy it is for students to fill out the form and how this ensures a quick and easy admissions process. 5.4 presents the information-

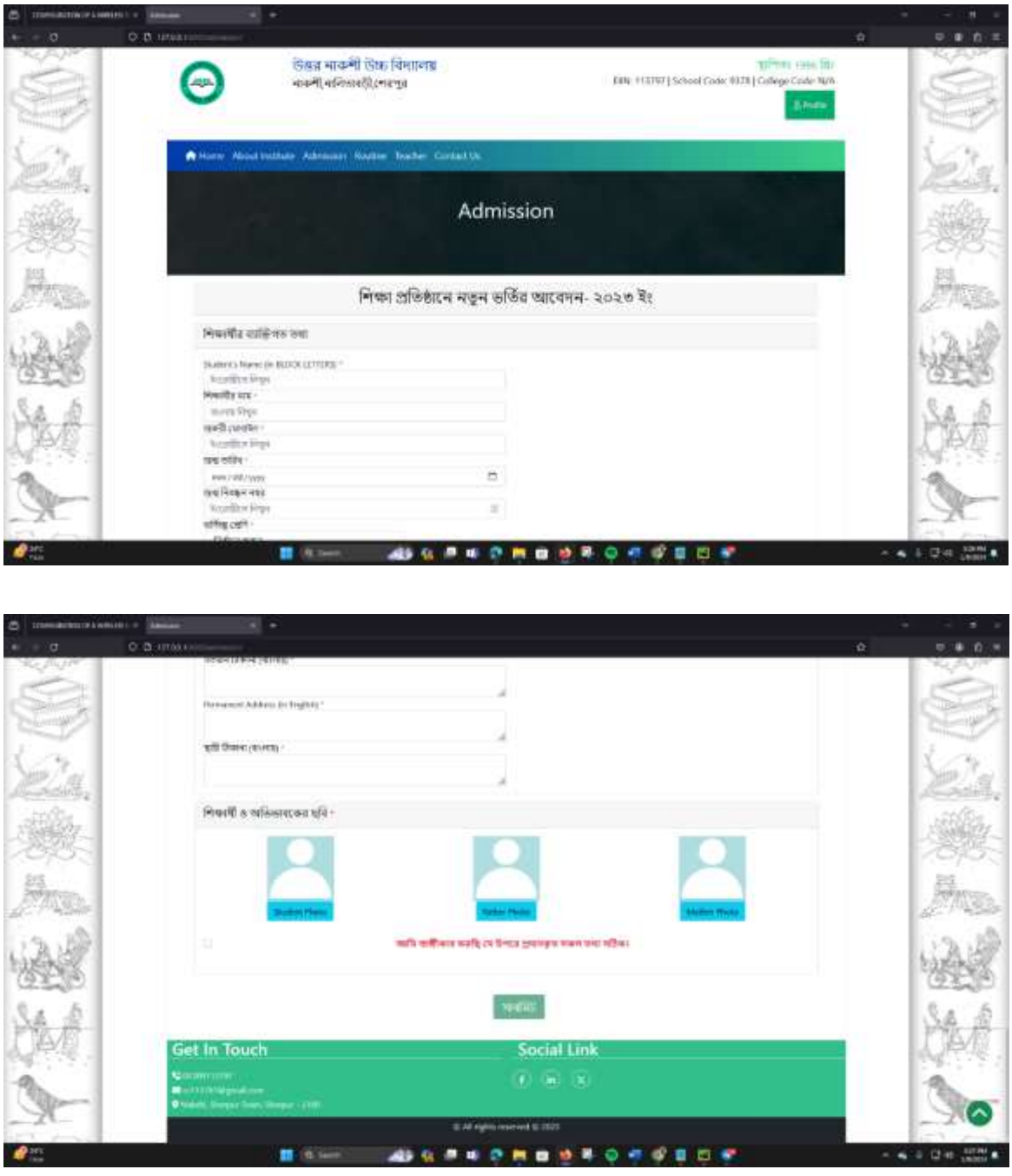


Figure: 5.4: Admission page

Routine

On that page student and teacher see the routine. 5.2.5 presents the information-

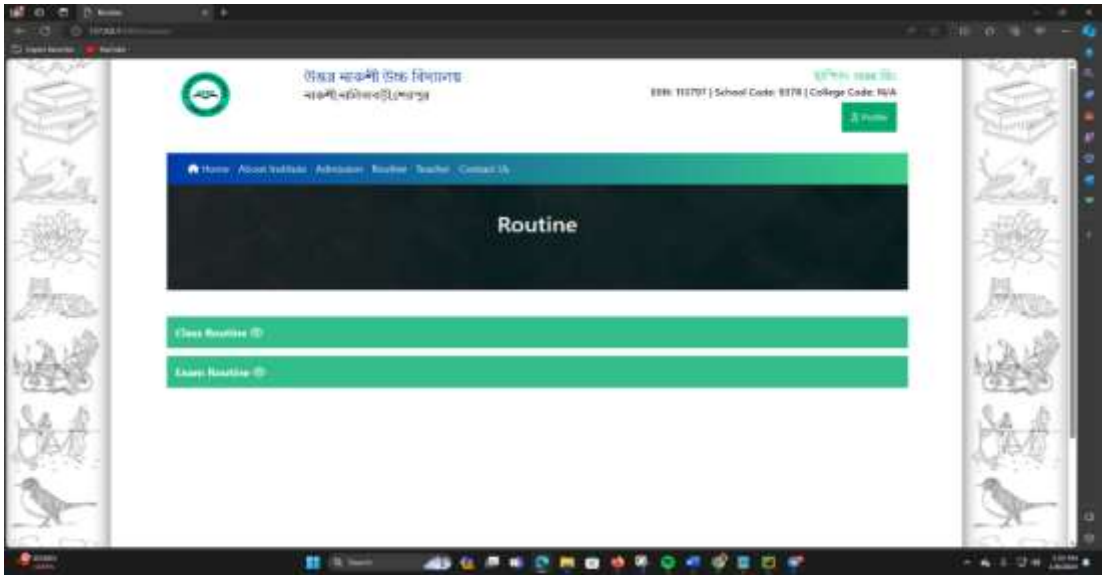


Figure 5.5: Routine page

Teacher

In that page, everyone see teachers information. 5.6 presents the information-

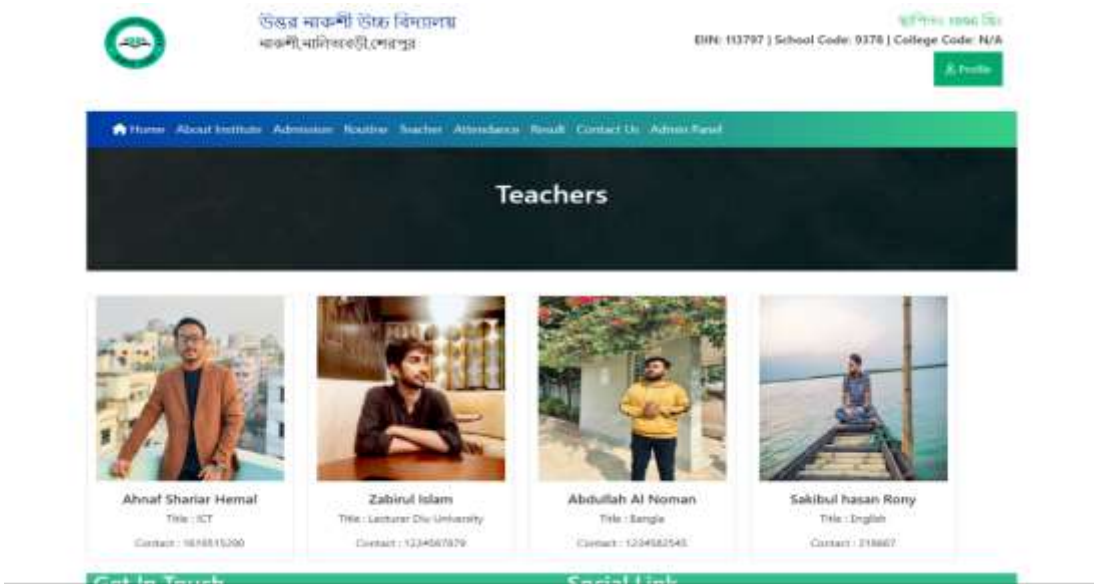


Figure 5.6: Teacher page

Result

In that page, visible student result. 5.7 presents the information-

Figure: 5.7: Result page

Click see result button and watch student result. 5.8 presents the information-

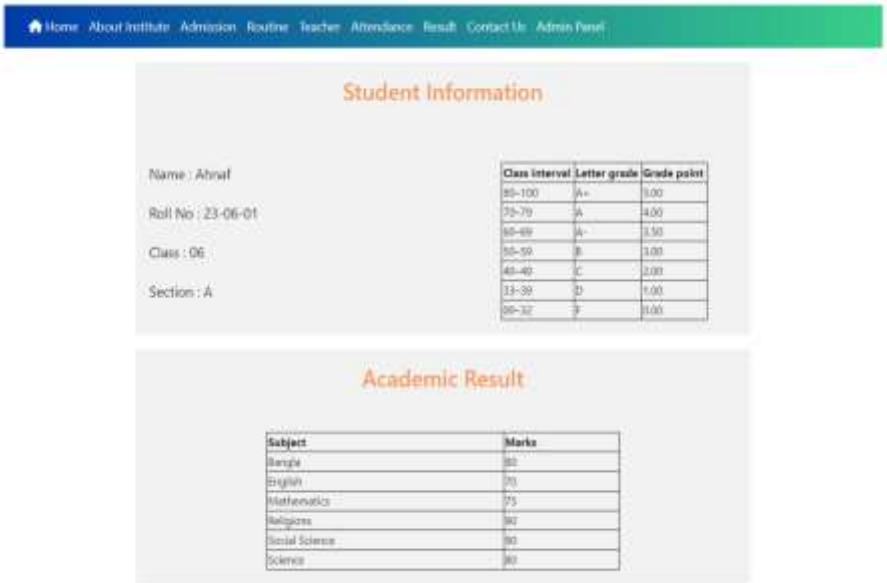


Figure 5.8: Show marksheet

Attendance

In that page, everyone sees student attendance information. 5.9 presents the information-

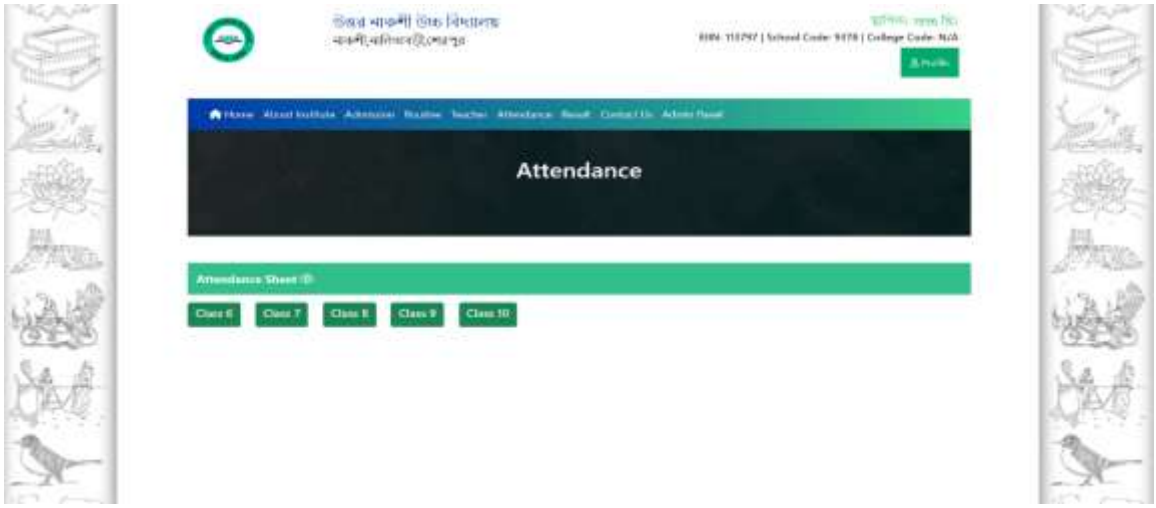


Figure 5.9: Attendance page

Admin Panel:

In that page, visible admin panel. 5.10 presents the information-

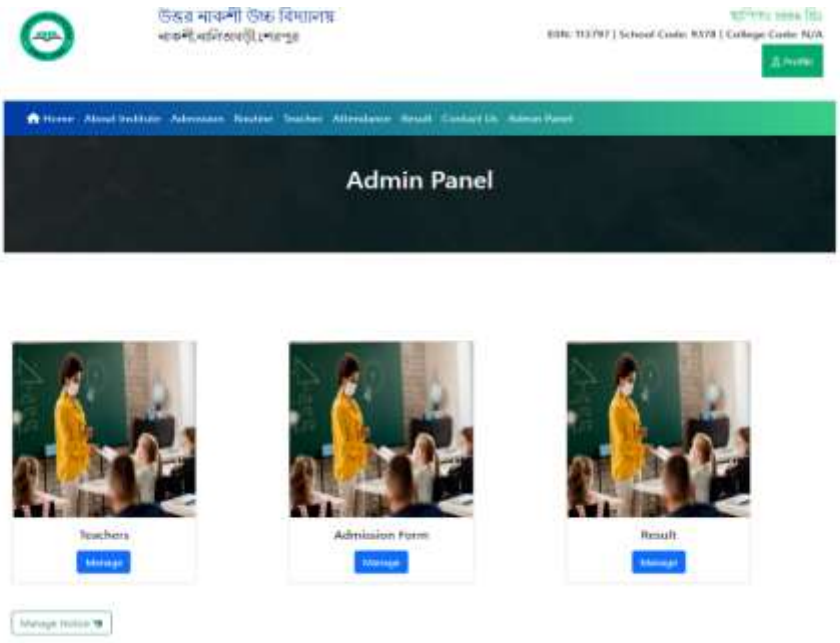


Figure 5.10: Admin panel page

Contact

In that page, visible School location, email, phone number etc. 5.11 presents the information-

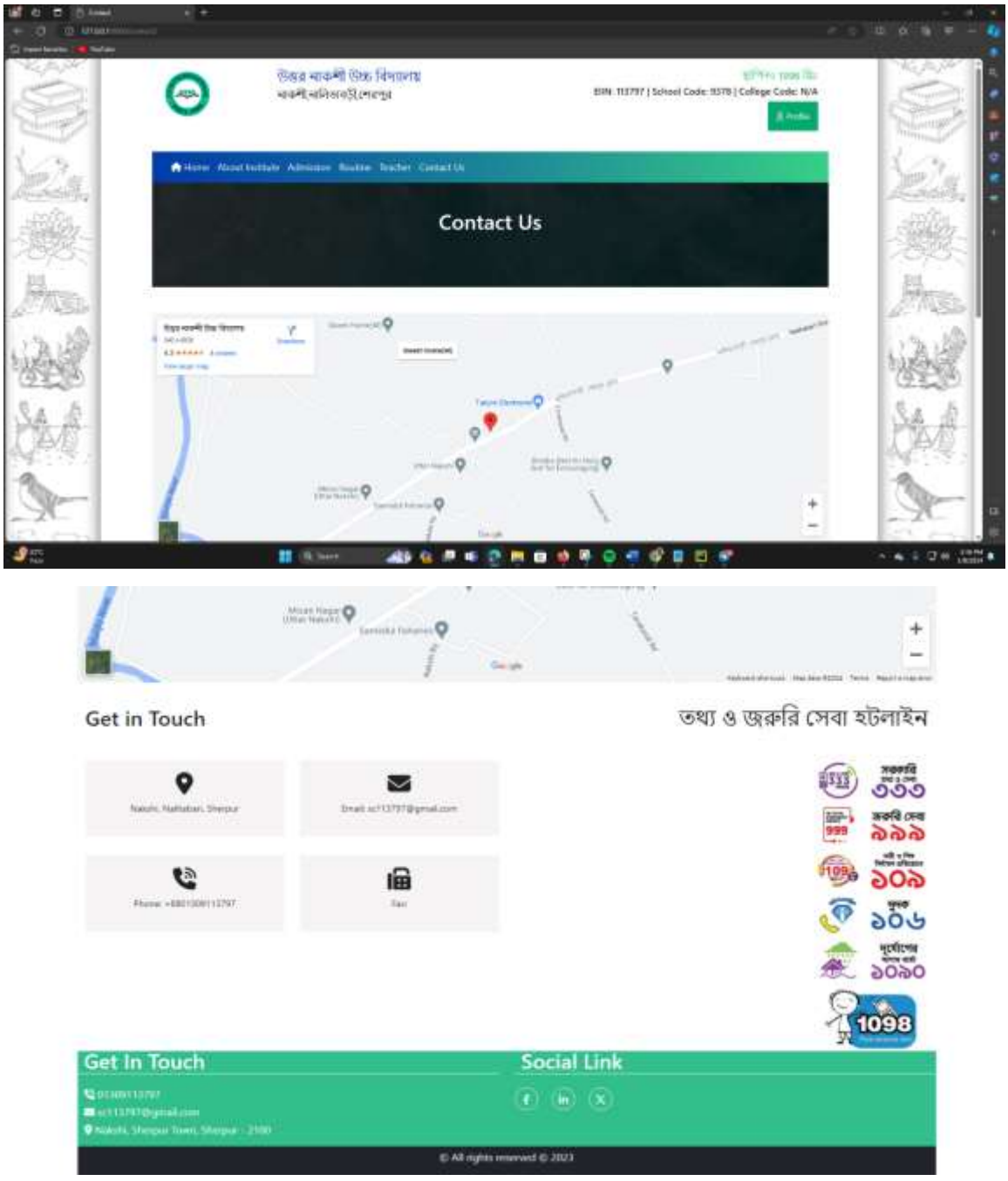


Figure 5.11: Contact page

5.3 Testing Implementation

Testing is the practice of comparing actual results to predicted results. It is the last stage of any project, add several test results to the provided table 5.1-

Table 5.1: Test Case Design

Test Case	Input	Expected Outcome	Produced Outcome	Passing or failing
1. Admin login	Password and email	Successfully login	Successfully login	Passing
2. User login	Incorrect password and email	Successfully login	Successfully login	Passing
3. View Profile	Click on profile menu	View profile information	View profile information	Passing
4. Admin Update Profile	Provide all required information	Update successful	Update successful	Passing
5. Student Form Submission	Give all required information	Update successful	Update successful	Passing
6. Admin Panel	Add teacher information	Update successful	Update successful	Passing
7. Search	Search Specific information	search successful	search successful	Passing

8. Admin Panel	Add routine	Update successful	Update successful	Passing
9. Admin panel	Add notice	Update successful	Update successful	Passing
10. Result	Add student result	Update successful	Update successful	Passing
11. Admin Panel	Add Attendance	Update successful	Update successful	Passing
12. Log Out	Click on “log out”	Logged out	Logged out	Passing

Test case 1.1

Requirements: Internet access is required for the device.

Assumption: On opening, the user is on the login page.

Input: Press “Login button”.

Result: Login Successful.

Test case 1.2

Requirements: Internet access is required for the device.

Concept: User is logged into website and will see first “necessary” page.

Input: Login to the website.

Result: The application's initial page is shown to the user.

Test case 1.3

Requirements: Internet access is required for the device.

Concept: User pressed “Admission” button.

Input: Student submit their own information.

Result: Student information saved successfully.

Test case 1.3

Requirements: Internet access is required for the device.

Concept: Admin pressed “Manage Teacher” button from admin panel.

Input: Upload teacher information.

Result: Teacher information save successfully.

Test case 1.4

Requirements: Internet access is required for the device.

Concept: User pressed “Teacher” button from menu bar.

Result: User can view teacher list with their information.

Test case 1.5

Requirements: Internet access is required for the device.

Concept: Admin pressed “Manage Admission” button from admin panel.

Result: Admin can view the admission form and can manage it.

Test case 1.6

Requirements: Internet access is required for the device.

Concept: Admin pressed “Routine” button from menu bar.

Input: Upload routine.

Result: Routine upload successfully.

Test case 1.7

Requirements: Internet access is required for the device.

Concept: On opening, the admin is on the login page.

Input: Press “Login button”.

Result: Login Successful.

Test case 1.8

Requirements: Internet access is required for the device.

Concept: Admin pressed “Manage Teacher” button from admin panel.

Input: Search Teacher.

Result: Admin can view teacher information.

Test case 1.9

Requirements: Internet access is required for the device.

Concept: Admin pressed “Notice” button from admin panel page.

Input: Admin upload notice.

Test case 1.10

Requirements: Internet access is required for the device.

Concept: Admin pressed “Result” button from admin panel page.

Input: Admin upload student result.

Result: List is updated.

Test case 1.10

Requirements: Internet access is required for the device.

Concept: Admin pressed “Attendance” button from menu bar.

Input: Admin take attendance in excel.

Result: everyone can see student attendance.

Test case 1.12

Requirements: Internet access is required for the device.

Concept: Admin and user are in complete their work.

Input: Press “Log out”.

Result: Logout successful.

5.4 Test Reports and Results

I passed the test. I'll continue to work on it. In the process before, I displayed the test results.

CHAPTER 6

IMAOCT ON SOCIETY, ENVIRONMENT AND SUSTAINABILITY

6.1 Impact on Society

The School Management Website contributes a lot to the transformation of education by simplifying administrative activities. The online admission form simplifies the enrollment process for new students, ensuring that education is available to a greater audience. The website promotes improved communication and collaboration among teachers, students, and parents. Real-time notice board modifications, exam schedules, and results provide users with timely information, boosting relationships within the school community. Administrators, teachers, students, and parents all benefit from a more visible and efficient educational environment. The website gives these stakeholders greater influence by making information more accessible and administrative tasks simpler to do, which enhances the educational experience.

6.2 Impact on Environment

The transition to digital administrative operations, such as online admission applications and result uploads, helps to reduce use of paper. This environmentally friendly method complements conservation efforts and facilitates sustainable practices inside the educational institution. The School Management Website encourages a paperless environment, reducing dependency on time-consuming, old techniques. This change reduces the environmental footprint of paper manufacturing, printing, and conveyance.

6.3 Ethical Aspects

The School Management Website was designed with moral concerns in mind. In submitting with ethical principles and regulations concerning the processing of personal and academic information, strong defensive measures have been put in place to ensure the privacy and security of sensitive data. The website was designed with accessibility in mind, allowing all users, regardless of ability or handicap, to access and benefit from its features.

Making the platform accessible and user-friendly for everyone in the school community is a moral issue.

6.4 Sustainability Plan

A long-term sustainable development plan is essential for the School Management Website's operation. Regular updates, feature additions, and user input channels are offered to ensure that the platform develops in response to evolving educational needs and technological developments. To ensure the project's long-term survival, an efficient training and support framework has been established. Administrators, educators, and other users attend frequent training sessions to better understand the platform and promote its use. The architecture of the School Management Website was designed with the scalability in mind. As the school grows and expands, the website is capable of handling increased user volumes, expanded features, and more capabilities without compromising performance or user experience.

CHAPTER 7

CONCLUSION AND FUTURE SCOPE

7.1 Discussion and Conclusion

The School Management Website is an example of how technology has been integrated into the educational scene. This initiative tackles present difficulties at the school while also establishing the groundwork for future innovation and success.

7.2 Scope for Further Developments

School Management Website lays the foundation for future improvements. Future enhancements might include:

Integration of Mobile Applications: Increase accessibility by establishing a mobile application.

Advanced Analytics: To get insights into academic performance trends, use sophisticated analytics.

User Feedback system: Include a feedback system to continuously improve the user experience.

REFERENCE

[1] MozDevNet, "HTML5 - MDN Web Docs Glossary: Definitions of Web-related terms: MDN," MDN Web Docs Glossary: Definitions of Web-related terms | MDN. [Online]. Available: https://developer.mozilla.org/en-US/docs/Glossary/HTML5. Accessed on: Jul. 24, 2023.

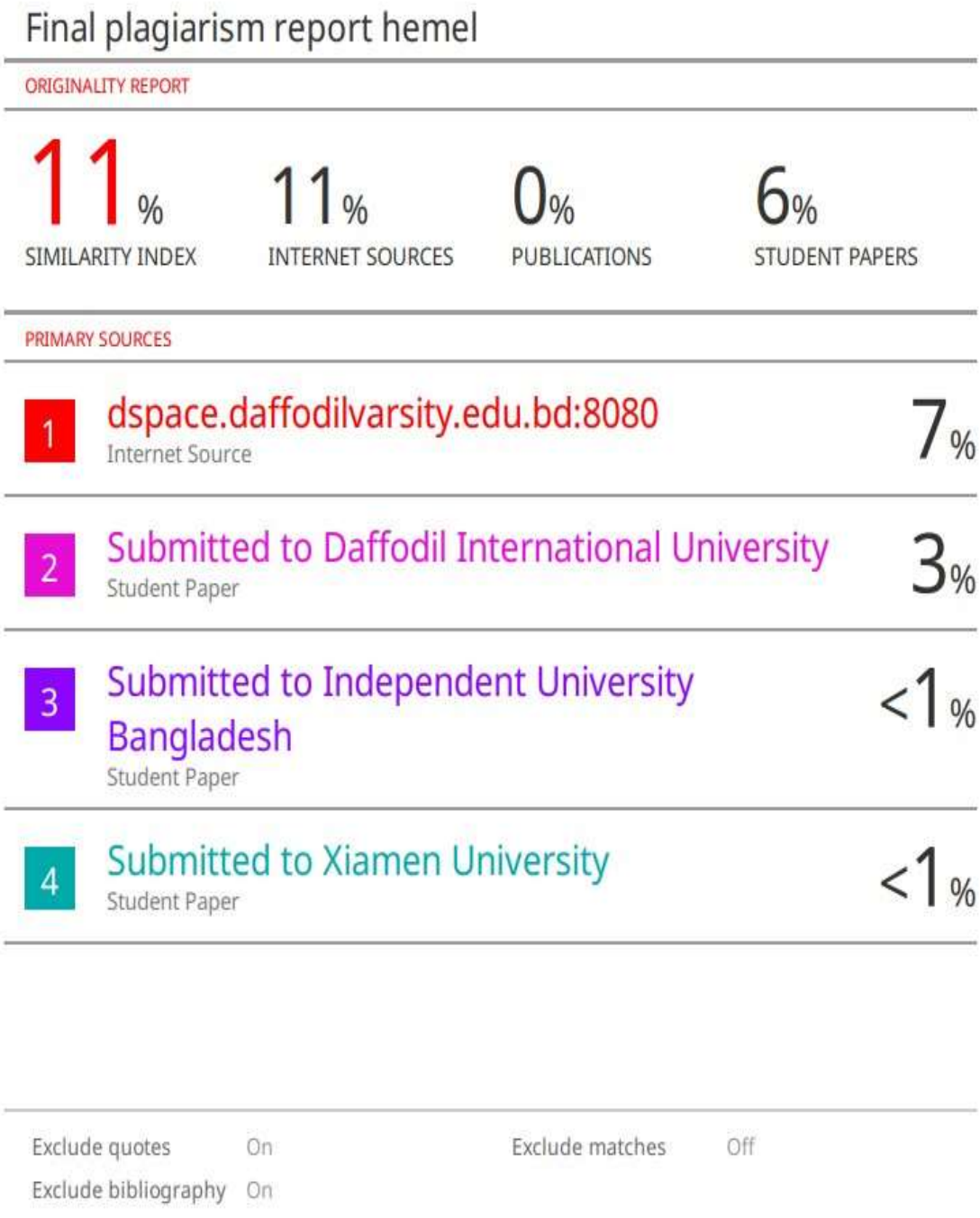
[2] "Difference between CSS and CSS3," GeeksforGeeks. [Online]. Available: https://www.geeksforgeeks.org/difference-between-css-and-css3/. Accessed on: Jul. 24, 2023. “Javascript ES6,” JavaScript ES6, https://www.w3schools.com/js/js_es6.asp

[3] DIU Student Portal, "Daffodil International University Student Portal," Daffodil International University. [Online]. Available: http://studentportal.diu.edu.bd/.

[4] Daffodil International University eLearn, "Daffodil International University eLearn Platform," Daffodil International University. [Online]. Available: https://elearn.daffodilvarsity.edu.bd/.

[5] Bangladesh Virtual Science College, "Official Website of Bangladesh Virtual Science College," Bangladesh Virtual Science College. [Online]. Available: https://www.vnsc.edu.bd/.

PLAGIRISM REPORT



Final plagiarism report hemel

ORIGINALITY REPORT

11%	11%	0%	6%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	dspace.daffodilvarsity.edu.bd:8080 Internet Source	7%
2	Submitted to Daffodil International University Student Paper	3%
3	Submitted to Independent University Bangladesh Student Paper	<1%
4	Submitted to Xiamen University Student Paper	<1%

Exclude quotes	On	Exclude matches	Off
Exclude bibliography	On		