School Management System For Rural Educative Modernization

Presented By :

Mahamudul Hasan
ID : CSE1801013033

Masfir Ahmed Shezan
ID : CSE1803015065

Imran Ahmed Sagor
ID : CSE1803015018

Abdur Rahman Asik
ID : CSE1803015028

Supervised By:

Ahmed Shafkat,
Lecturer and Assistant Co-ordinator

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)

September 2022

APPROVAL

The Project Titled “School Management System for Rural Educative Modernization” submitted by Mahmudul Hasan (CSE1801013033), Masfir Ahmed Shezan (CSE1803015065), Imran Ahmed Sagor (CSE1803015018) and Abdur Rahman Asik(CSE1803015028) 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 Examiner

Ahmed Shafkat **Supervisor**
Lecturer & Assistant Co-ordinator
Department of Computer Science and Engineering.
Sonargaon University(SU)

(Examiner Name & Signature) **Examiner 1**
Department of Computer Science and Engineering
Sonargaon University (SU)

(Examiner Name & Signature) **Examiner 2**
Department of Computer Science and Engineering
Sonargaon University (SU)

(Examiner Name & Signature) **Examiner 3**
Department of Computer Science and Engineering
Sonargaon University (SU)

(Examiner Name & Signature) **Examiner 4**
Department of Computer Science and Engineering
Sonargaon University (SU)

DECLARATION

We, hereby, declare that the work presented in this report in the outcome of the investigation performed by us under the supervisor of Ahmed Shafkat, Lecturer & Assistant Coordinator Department of Computer Science and Engineering, Sonargaon University, Dhaka, Bangladesh. We reaffirm that no part of this project and thereof has been or is being submitted elsewhere for the award of any degree of diploma or B.Sc.

Countersigned

(Ahmed Shafkat)
Supervisor

Signature

Mahamudul Hasan
ID : CSE1801013033

Masfir Ahmed Shezan
ID : CSE1803015065

Imran Ahmed Sagor
ID : CSE1803015018

Abdur Rahman Asik
ID : CSE1803015028

DEDICATION

I dedicate this endeavor to Almighty Allah, my creator, my strong pillar, wisdom, knowledge and understanding, as well as to my parents and the CSE department's courteous professors.

ABSTRACT

School Management System is a large database system which can be used for managing your school's day to day business. School Management System allows users to store almost all of their school's information electronically, including information on students, properties, teaching meteorites etc. Most importantly, this information can be easily shared with authorized users, records can be easily searched, and reports can be easily generated. The school management system is a website that helps the entire managing system of a school. Obviously, this is a demo project and fully not covered yet. This website helps a student to view his information and for teacher It will be a helpful hand as they can cover their topic and attendance. In the current system all the activities are done manually. It is very time consuming and costly.

We had only the main features at this project. As this concept is divided into three part. And those are: (1) Admin panel. (2) Teacher panel. (3) Student panel.

All the control will be there to the admin as he can see, edit and control all the data of students and teachers. Teachers will be able to maintain their information and attendance, where student also can see notices, their attendance and their profile. Later on this project, if any buyer interested we will add the result, routine and payment system in this project, and It will be added a library management system if in need. Here we have used SQLITE3 for this project, which can contain something like 2TB data. Students can take admission through this page, which is a very good feature we have added. This simple management system will ease the work of full school managing system.

At the end, we can say this project will reduce all the unnecessary workshop of any school. Teacher will be more relax and accurate to give more effort on their teaching and student will be able to maintain their information accordingly.

ACKNOWLEDGEMENT

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

We are auspicious that we had kind associations as well as supervision of **Ahmed Shafkat**, Assistant Co-Ordinator & Lecturer, Department of Computer Science and Engineering, Sonargaon University whose hearted and valuable support with best concern and direction acted as necessary resource to carry out our project.

We would like to convey our special gratitude to Associate Professor & Department Head **Bulbul Ahmed** faculty of Science & Engineering for this kind concern and precious suggestions.

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

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

LIST OF ABBREVIATIONS

CSS	-- Cascading Style Sheets
HTML	-- Hyper Text Markup Language
IDE	-- Integrated Development Environment
RAM	-- Random Access memory
SSD	-- Solid State Drive

TABLE OF CONTENTS

Title **Page No.**

DECLARATION----------III

DEDICATION---------- IV

ABSTRACT----------V

ACKNOWLEDGEMENT---------- VI

LIST OF ABBREVIATION---------- VII

Chapter 1. Introduction and Project Approach---------- 1 - 6

1.1 Introduction---------- **1**
1.2 Overview---------- **2**
1.3 Problem analysis---------- **3**
1.4 About The Platform---------- **4**
1.5 Objective---------- **6**

Chapter 2. Background Study---------- 7 - 13

2.1 Discussion with client---------- **7**

2.2 Discussion with supervisor---------- **8**

2.3 Web search----------**9**

Chapter 3. System Design----------14-19

3.1 Requirement Specification----------**14**

3.2 System flowchart----------**16**

3.3 Use Case Modeling and Description ----------**18**

Chapter 4. System Implementation----------20-38

4.1 Tools used for Development----------**20**

4.2 Software---------- **21**

4.3 Hardware---------- **22**

4.4 Database Services---------- **23**

4.5 Implementation---------- **24**

Chapter 5. Conclusion and Future Scope----------**39-41**

5.1 Discussion ---------- **39**

5.2 Scope for Further Developments----------**40**

5.3 Conclusion---------- **40**

References---------- **42**

LIST OF TABLES

Table No.	Title	Page No.
Table 4.1	Software used for development of the application----------	21
Table 4.2	Hardware used for development of the website----------	22

LIST OF FIGURES

Figure No.	Title	Page No.
Fig 2.1:	Basic photo of CSS3----------	9
Fig 2.2:	Web Page of Nababpur Govt High School----------	10
Fig 3.1:	VS code live server----------	12
Fig 3.2:	Python logo----------	12
Fig 3.3:	Django (Python framework)----------	13
Fig 3.4:	manage.py----------	14
Fig 3.5:	Zero Level DFD----------	16
Fig 3.6:	Activity Diagram of School Management System----------	17
Fig 3.7:	Use Case Diagram of School Management System----------	18
Fig 4.1:	Home Page (Upper Side) of School Management System-----	26
Fig 4.2:	Home Page (Lower Side) of School Management System-----	27
Fig 4.3:	About Us Page----------	28
Fig 4.4:	Contact Us Page----------	29
Fig 4.5:	Admin Entrance----------	30
Fig 4.6:	Admin Signup Form----------	31
Fig 4.7:	Admin Login Page----------	32
Fig 4.8:	Teacher Entrance----------	33
Fig 4.9:	Teacher Signup Form----------	34
Fig 4.10:	Teacher Login page----------	35
Fig 4.11:	Student Entrance----------	36
Fig 4.12:	Student Admission----------	37
Fig 4.13:	Admin Dashboard----------	38

CHAPTER-1

INTRODUCTION AND PROJECT APPROACH

1.1 Introduction

This chapter provides an introductory on the work firstly. Section 1.2 provides the discussion on basic concepts about school management system. At 1.3 It is discussed the problems which had been explored. Finally, the objectives to address these problems are depicted in section 1.5.

Following, a surge that in school there need so many document paper which consume so many space of school. Another problem is that teachers have to take different notes for different classes. Now they will be able to keep things in appropriation. Students or the guardians will not have any complain or problem to keep the information of their roll id and fees.

An efficient Student Management Solution that enables in maintaining and give the promotions and remarks for the student in the School management system. There are many school management projects are on the market. But Those are very costly. This project is built with simple concept and more will add to here but that will count less cost than any other project on the market. It's the main benefit. In our proposed system we have the provision for adding the details of the students by themselves. So the overhead of the school authorities and the teachers is become less. Another advantage of the system is that it is very easy to edit the details of the student and delete a student when it found unnecessary.

There is a section in this site for Admin who will control the whole app. This role can be a teacher or clerk of the school. He will be able to control over a teacher and student. If any addition or deletion need there in school, he only will be able to do it. Management system will rely on him as he should maintain his Id properly.

The main goal of this project is to group all the problematic solution at a place and properly continue the process or work of the school. Our main goal is to spread this like website to all over the Bangladesh.

1.2 Overview

Schools of all levels and sizes face numerous challenges in organizing communications between administrators, teachers, students, and parents. Student information, payments, and other administrative tasks can be overwhelming, especially at medium and large educational institutions. School management systems can automate these tasks and reduce administrative and personnel requirements.

We can demonstrate our need of the school management website as like the points given below;

a. Building a Database for Your School

School management software can host modules that allow users to maintain academic histories and student records. All information about the students can be accessed via the school administration system. School management systems contain a lot of information about students like their exam grades, parent information, medical history, school fees details, etc. And this helps teachers to obtain information about students faster, and easier, and to reduce their workload.

b. Facilitating the Educational Process Management

School management systems facilitate the different educational processes such as student registration, class documents, grades, analytical grades for students, and other assessment elements. In addition, school management systems can be used to plan students' curriculum, record their attendance and manage student-related needs within the school.

Moreover, school management systems vary in size, scope, and ability to be packaged and implemented by small organizations that cover student data and enterprise solutions that aim to cover most aspects of the operation of large organizations and their online schools with significant local responsibilities.

School management systems reduce administrators, teachers, employees, and others' activities by providing them with a platform to monitor activities, create reports, and upload documents, and more.

c. Maintaining School Resources

The traditional means of resource management leads to wasteful budget allocation, over-burdens the operation of school facilities, and fewer responsibilities are mitigated by school management systems because they connect students to school facilities, and vice versa.

Moreover, school management software provides a platform that allows parents to make fee payments. That's a convenient way for parents to avoid late fee problems, as the software can send SMS updates when not paid fees.

d. Building Powerful and Central Communication

Teachers, staff, and other external actors can work together on a central platform. When the administration wants to send urgent messages to parents, or when parents need to make complaints about communication between students and teachers, a school administration system is an internal communication platform that connects one party to another.

Also, implementing a school management system helps parents to be active participants in the educational cycle of pupils. It informs parents about their children's intellectual development and academic performance; this is an essential reinforcement to motivate students to perform.

Also, School documents and scheduling are handled via cloud access. Admins or Headmaster have access to a specific timetable and daily reports from all teachers.

1.3 Problem Analysis

The school management system helps schools to keep information about different departments of the school in one place. It allows authorized users to search for information about students and school materials. And this helps to manage data relating to employees in educational institutions, whether it is a school or university.

Effective school management software not only helps to obtain information about students but also provides information about the activities of teachers in the school. The reach of a school management dashboard can range from narrow and easy for users and

administrators to broad and encompass all aspects of student and teacher data management, including health exams and screening.

It is easy to view a specific teacher timetable and create reports. Teachers can use their database to store details of lesson times, learning progress, and class activities in one place. In the classroom, teachers can be present, do classwork, write grades, and communicate with students' families.

1.4 About the Platform

School management has always been and still is an extensive undertaking on the part of educational institutions around the world. It requires painstakingly monitoring the academic progress (or otherwise) of all parties involved, towards constant learning. Careful examination of resulting data will ensure optimal operations for any educational organization. Efficient and just management is of paramount importance towards satisfied students, parents or guardians and staff, altogether. School Management Software is here to help, to that end. But all this begs the question: "What is School Management Software?"

Besides the obvious of it being a complex piece of computer software, School Management Software is an administration tool for educational institutions. This classification comes from the fact that this type (or category) of software aims to help educational organizations in their daily routine, by automating administrative tasks. "School management software" is also known as a "School management system" or a "Student information system". These systems provide functionality from applications and class enrollment to detailed performance monitoring and financials.

In the Corona virus pandemic students, teachers and staff have been affected and force to realize to the importance of e-education system, such as school management system, learning system which are automated.

Administration management typically includes both faculty and students. Some systems include a feature set to help manage daily operations, such as building maintenance, supplies and inventories. The need for this feature set is largely dependent on the size of an educational institution.

The need for ERP solutions in the education sector is driving the demand for the market. Through ERP solutions the institutions can increase their operational efficiency. The traditional school management techniques are replaced by ERP solutions. There is a wide range of benefits to any education institution due to the use of a school management system. The security, storage, control adaption is higher for this technology. There are real-time access benefits for the administrators. Quick and effective decision making is possible with the school management system. The operational complexity is high in the educational sector. It increases the workload for the staff. However, with its implementation of a school management system, the workload is reducing in the education sector. Synchronizing the tasks is possible it this technology.

Few things of notes given below:

The Market Restraints: Technology is now an inevitable part of the education system. The usage of this technology is successful with the help of faculty and staff. The school management system includes course design, evaluation, tests, assignments, online content delivery and assignment. It is a completely new way of teaching for many faculties. Most of the faculty members are used to the traditional method of lectures. Technological adoption and usage are difficult for many faculties. Also, many are not comfortable with the use of new technology and software in education. It is a crucial restraint for the market. It can lead to slower adoption of school management systems in the forecast.

The Market Challenges: The school management system is prevalent in many education institutions. The adoption rate of the technology is increasing year by year. It leads to more demand for the school management system. Also, the demand for such alternatives is higher. Today, there are many markets offering systems for administrative management. The less complex and cost-efficient alternatives of the school management system pose a challenge to the market. The development of this alternative can lead to a decline in demand. Also, the expansion rate of the market can reduce due to these factors.

1.5 Objective

Today's school systems need a lot more than just computer-based software and that's where Internet Marketing comes in. The Internet is today's universal platform for global businesses to interact with each other and the end users are able to access relevant information from anywhere in the world through the Internet. Since more schools have computers and are using the Internet for all aspects of their operations every school should make use of the online marketing services as a means of spreading their knowledge and motivating students to do well in their academics and other subjects. Now, as this huge industry continues to grow and expand in terms of both scope and influence, it's important that the schools and education providers are aware of the trends and development in the market. Trends in the market usually grow in four different directions: the technology market, Personal Touch products market, the e-market and finally the lifestyle market. There are many possible ways to analyze the trends and develop specific School Management Software applications for the specific needs of a school.

The main Objective of the school management system is to manage the details of Schools, students, Classes, Teachers, Registrations, Schools. The project is totally built at administrative end and thus only the administrator is guaranteed the access. The purpose of the project is to build an application program to reduce the manual work for managing the Schools, Students, Courses, Classes. It tracks all the details about the Classes, Teachers, Students. The development process involves the identification of the specific needs of a school and the search for relevant resources and product categories.

So we can say now we just need the system more user friendly and easy to manage. Otherwise its purpose is no longer obeyed.

Here the admin must be dynamic enough to control over the site.

Our proposed system has several advantages

1. User friendly interface
2. Fast access to database
3. Less error
4. More storage capacity

CHAPTER-2

BACKGROUND STUDY

2.1 Discussion with Client

Before making this project we had to discuss with some teachers that what is their requirement? Why they need this site, what are the feature they only want? Good client communication often involves actively listening to your customers to interpret their emotions and better cater to their needs. Being transparent with a client helps facilitate trust. Customers may appreciate learning more about the production process so they can shop consciously. We did this thing only because there are so many Website at the market for sell but those are may have more feature that for the school of suburb area and those will cost them much more where they don't want to invest. Client communication is important because it establishes and maintains trust between the client and the business. When customers trust a brand, they may be more likely to remain loyal. Open client communication can also help limit misunderstandings, lead to greater customer satisfaction and make clients more likely to recommend a business to others. So this was crucial for us to take this project though this had been created before so many time. Having adaptable solutions for communicating can strengthen the relationship between the client and us. When a change occurs, flexibility helps both parties continue to communicate.

The clients are eager to implement this system at their schools if it costs in a budget range like 20 to 30 thousands BDT. Also they want this thing in a very simple way that they can use. So This step of work were fruitful for this project.

2.2 Discussion with Supervisor

Effective communication with supervisor is a key element of your eventual success in the workplace. Therefore, it is important that you feel comfortable and prepared to approach your supervisor in a timely manner to discuss concerns, request assistance, or report work progress. As we have got an amazing supervisor to our group we had discuss with him about our simple concept. He is good at communication. He is clear to his speech, and never did underestimate us. He offered us by brief discussion. By that way we were able to take our decision. Through some discussion we were able to keep this as our final proposal. We didn't choose any thesis like project because,

1. We never created a complete project before.
2. We had some lack of study at before.
3. We had our semester courses during this period.

With all of the obstacle our supervisor Mr. Ahmed Shafkat, the co-ordinate and lecturer of Sonargaon University helped us to do the at least job which is in front of us now. He is really an amazing man as he never scolded us rather he did inspire all of us to do at least basic of the job as this is our first project.

2.3 Web Search

Searching through website is very important now a day. In the web there is almost everything. Every project build with three or more Technology. There need more than one language and a server need to connect there. So, as we mentioned earlier that we had the lack of knowledge to build a complete website. So we had to see some website and inspected here code from browser. After this we had to see some tutorials from youtube how they do the job for a project and read some content

Fig 2.1: Photo of CSS3

from some site. This way helped us a lot to learn and build this simple project as this is our first ever complete project. Now we are able to build some of this like project and to extract the feature of this project. It will further help us some research like thing. We, firstly search for the technology which will help us to build our project. As we were sure the front end with HTML and CSS we had to look for backend options. We firstly looked for javascript and then saw some PHP workshop we were not satisfied with those languages. Then we observed and compared those with Django, which is a framework of python. This was comparatively easy for us.

Here is a project demo we saw before we start our project:

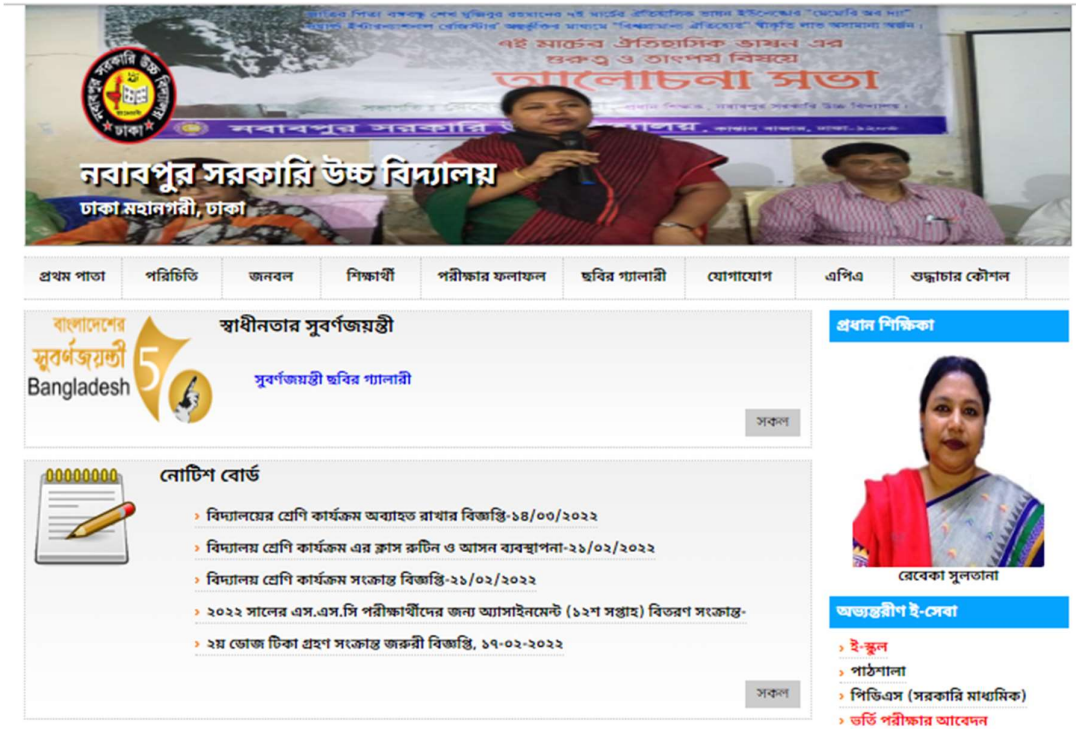

Fig 2.2: Web Page of Nababpur Govt High School

This is a school management web-site. Here in this web-site we can see the Home Page is starting the school's picture and here it’s changes multiple picture and school’s name and school’s logo.

1. The title name in this site is Nobabpur sorkari Uccho Biddaloy with the school logo.

2.Then we see 9 page’s link. They are: “prothompata”, “Porichiti”, “Jonobol”, “Shik-kharthi”, “Poritkkhar Folafol”, “Chobir Gallery”, “Jogajog”, “A.P.A”, “Sroddhachar Kowshol”. Each of the page is into some multiple pages.

3. Here we see the Head-Mistress picture and below some page of others document. Here we can see a Notice Board below this notice board, there are some document page link, where different information included.

CHAPTER-3

SYSTEM DESIGN

3.1 Requirement Specification

To run this project:

There need to install Python (3.9.13) (Don't Forget to Tick Add to Path while installing Python)

Move to project folder in Terminal. Then run following Command:

- **python -m pip install -r requirements.txt**

After installing the modules which are in the requirement file we need to run these line to run this project:

- **py manage.py makemigrations**
- **py manage.py migrate**
- **py manage.py runserver**

Now there need to enter following URL in a Browser Installed in the Pc:

http://127.0.0.1:8000/

We have built this project where we used:

1. Visual Studio

2. HTML

3. CSS

4. Django

5. Asgrief

5. Bootstrap.

We know that, VS Code is an open-source, cross-platform source code editor that's become famous, particularly in the web development community. It's fast, extensible, customizable, and has tons of features [4]. There are so many feature at this code editor

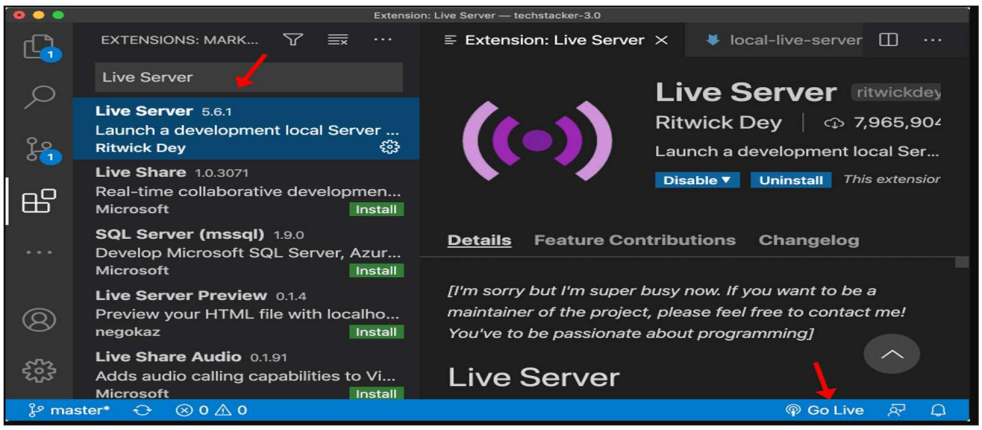

Fig 3.1: VS code live server

that it does make easy for a developer of a project. In this IDE we also can do the Python programming, as we have used Django we don't need another IDE for using this vs code. Also It has some amazing feature like live share, spell checking, Ammet abbreviation, etc.

Fig 3.2: Python logo [11]

Python is one of the most popular Language in the world. It has so many modules by that we can do web, app both development. Though It is best for Data Science, Machine learning, Artificial Intelligence it has also some feature like flask, Django for developing the website as per we can use these as backend development.

Fig 3.3: Django (Python framework). [10]

Django is a high-level Python web framework that enables rapid development of secure and maintainable websites. Built by experienced developers, Django takes care of much of the hassle of web development, so you can focus on writing your app without needing to reinvent the wheel. It is free and open source, has a thriving and active community, great documentation, and many options for free and paid-for support. Django is now a thriving, collaborative open source project, with many thousands of users and contributors. While it does still have some features that reflect its origin, Django has evolved into a versatile framework that is capable of developing any type of website [5].

[6] We have used asgrief in our project. ASGI is a standard for Python asynchronous web apps and servers to communicate with each other, and positioned as an asynchronous successor to WSGI. These allow you to wrap or decorate async or sync functions to call them from the other style. The “asgiref.sync” module provides two wrappers that let you go between asynchronous and synchronous code at will, while taking care of the rough edges for you. Unfortunately, the rough edges are numerous, and the code has to work especially hard to keep things in the same thread as much as possible. Notably, the restrictions we are working with are:

All synchronous code called through Sync To Async and marked with thread_sensitive should run in the same thread as each other (and if the outer layer of the program is synchronous, the main thread)

If a thread already has a running async loop, Async To Sync can't run things on that loop if it's blocked on synchronous code that is above you in the call stack.

The first compromise you get to might be that thread_sensitive code should just run in the same thread and not spawn in a sub-thread, fulfilling the first restriction, but that immediately runs you into the second restriction.

The only real solution is to essentially have a variant of ThreadPoolExecutor that executes any thread_sensitive code on the outermost synchronous thread - either the main thread, or a single spawned sub thread.

This means you now have two basic states:

1. If the outermost layer of your program is synchronous, then all async code run through AsyncToSync will run in a per-call event loop in arbitrary sub-threads, while all thread_sensitive code will run in the main thread.

2. If the outermost layer of your program is asynchronous, then all async code runs on the main thread's event loop, and all thread_sensitive synchronous code will run in a single shared sub-thread.

Crucially, this means that in both cases there is a thread which is a shared resource that all thread_sensitive code must run on, and there is a chance that this thread is currently blocked on its own AsyncToSync call. Thus, AsyncToSync needs to act as an executor for thread code while it's blocking.

The CurrentThreadExecutor class provides this functionality; rather than simply waiting on a Future, you can call its run_until_future method and it will run submitted code until that Future is done. This means that code inside the call can then run code on your thread.

We have to start our project by writing something at command line. As like we have to start our project by writing : “py manage.py runserver”. So, For this we had to use manage.py file at our project.

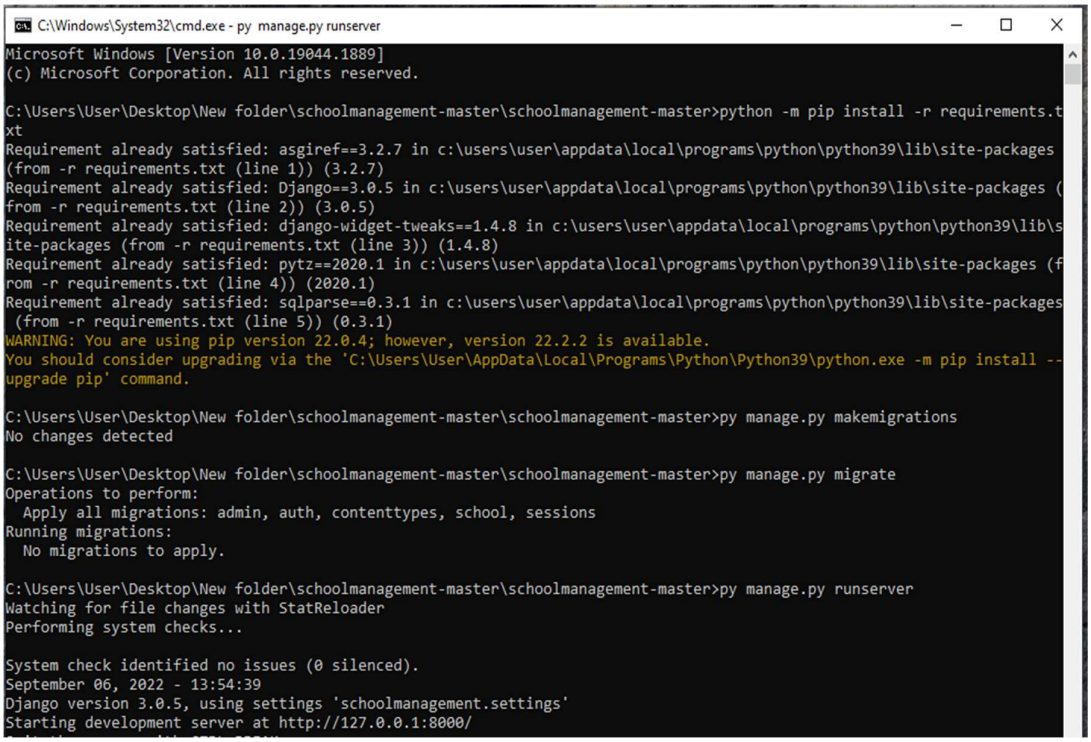

Fig 3.4: manag.py

A command-line utility that lets you interact with this Django project in various ways. [8] manage.py does the same thing as django-admin but takes care of a few things for us:

1. It puts our project’s package on sys.path.

2. It sets the DJANGO_SETTINGS_MODULE environment variable so that it points to our project’s settings.py file.

A “.gitignore” file is a text file placed in your git repository that tells git not to track certain files and folders that you don’t want being uploaded to your master repository. It has a lot of uses, and you will almost always need to configure it if you’re setting up a new repo [9]. We create this file to hide our those works which we don’t want to show to the world.

3.2 System flowchart

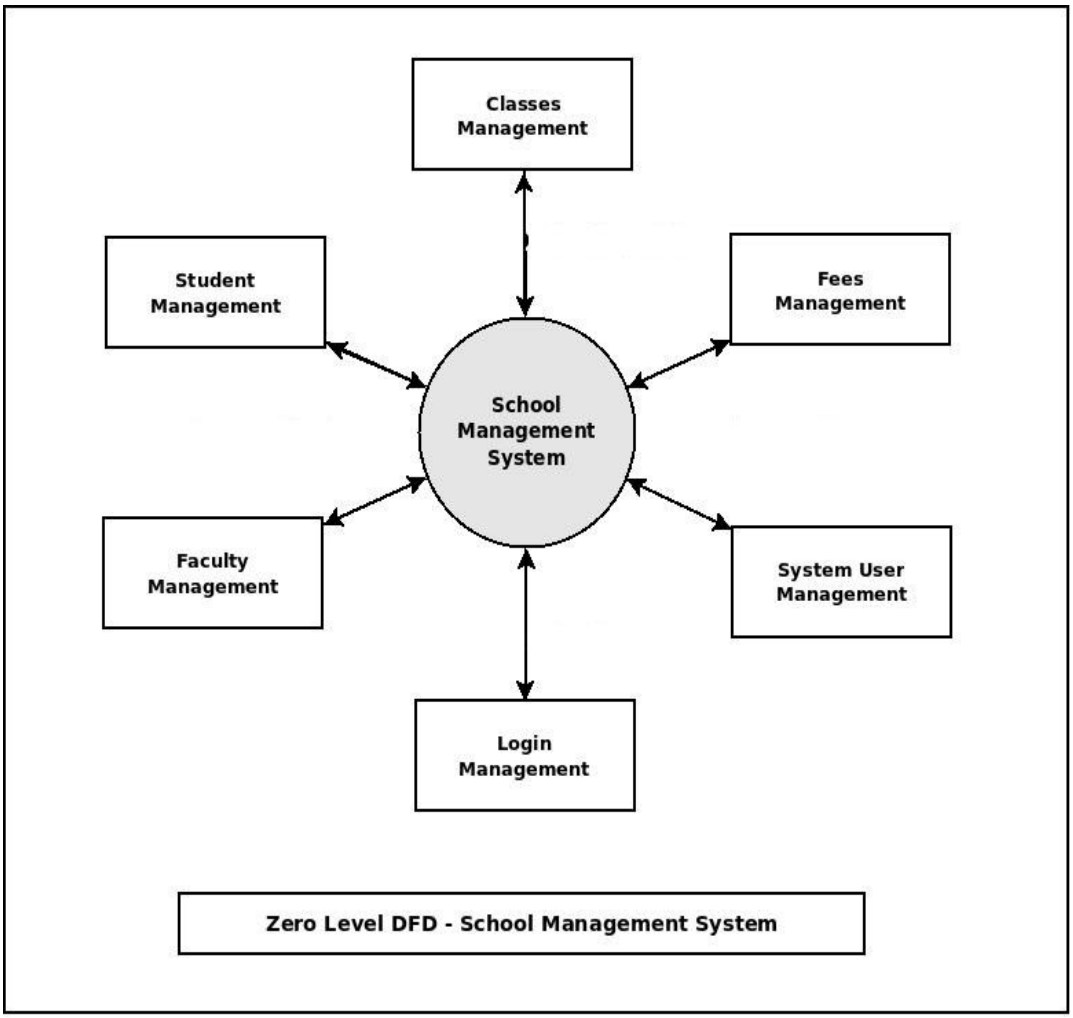

Fig 3.5: Zero Level DFD – School management System

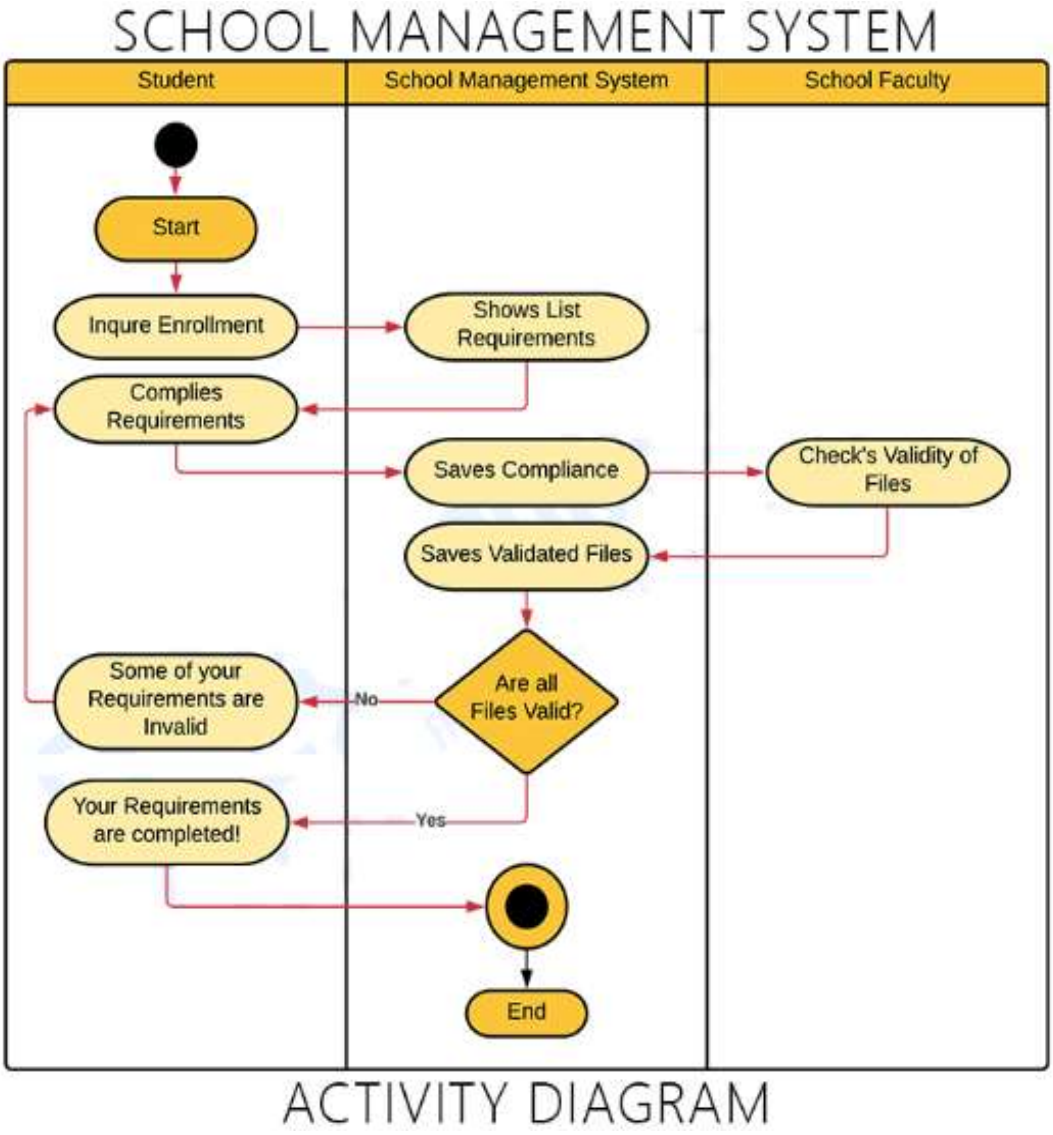

Fig 3.6: Activity Diagram of school management system [12]

3.3 Use case Modeling and Description

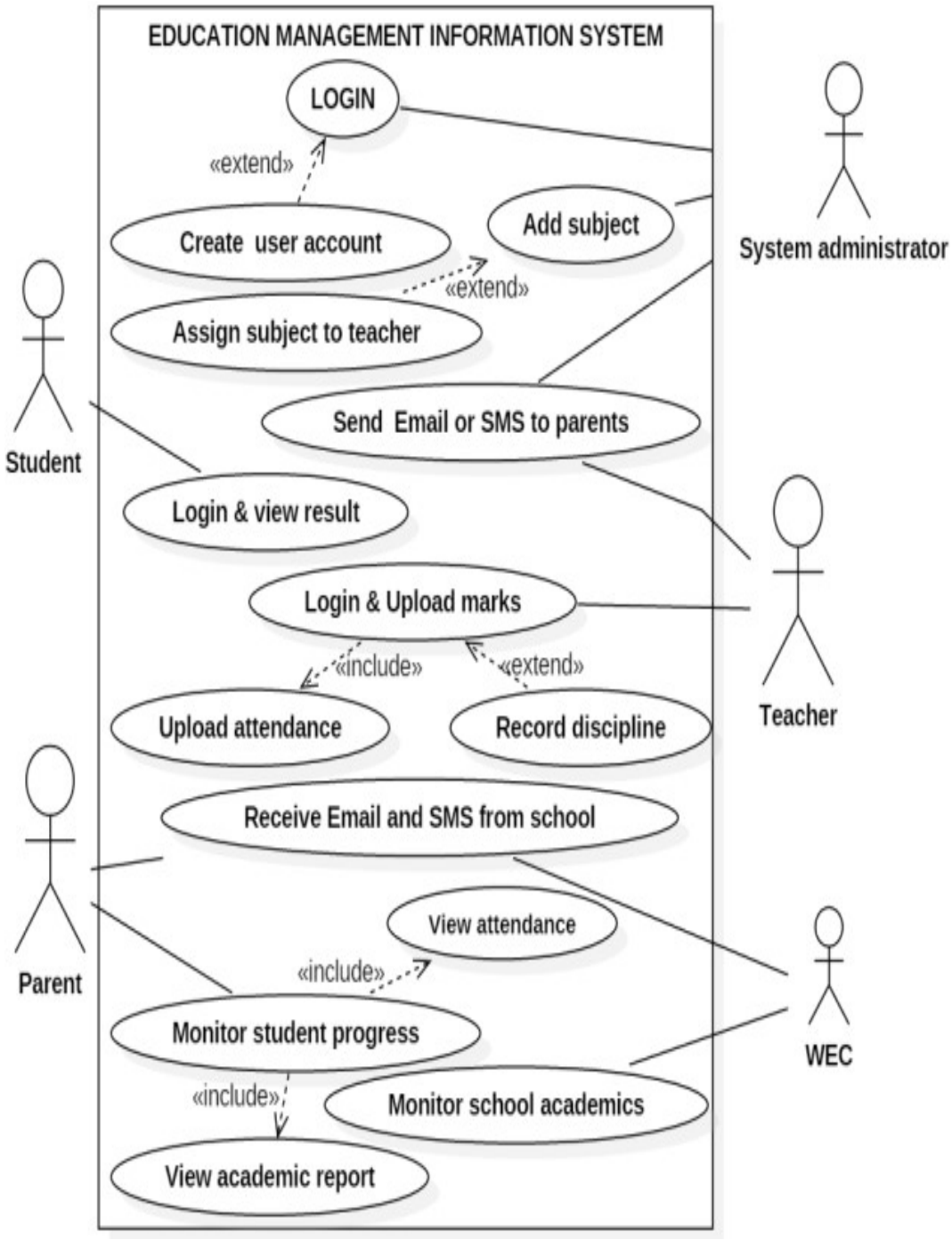

Fig 3.7: Use Case Diagram of School Management System

In this project we created three card for Admin, Student or guardian and teacher. Where admin will take full control of the website, as he can login and add teacher or student, can adjust the salary of teacher or can declare or change student's fees.

Where teacher and student will have their dashboard and can see the attendance of their profile. Later in this project Subjects, result, online quiz, routine will be provide as the feature. Also there will be feature like Teacher's schedule, Time monitoring will include.

At Teacher section:

First the teacher will apply for job, if he/she gets selected there accounts will be made and approved by the admin, after approval only teacher can access their dashboard. After account approval by admin, teacher can take attendance of any class and view their attendance later. Teacher can also publish/announce notice to student like submission of assignments.

At Student section:

First student will take admission/signup. When their account is approved by admin, only then the student can access their dashboard. After account approval by admin the student can view their details like attendance. Student can't view attendance of other student. Student can't announce, they can only view.

At Admin section:

First admin will sign up for an account. After login they can see how many student/teacher wants to get job/admission in their school. They can approve or delete/cancel the request. They can update any student/teacher details. Admin can announce notice also.

CHAPTER-4

SYSTEM IMPLEMENTATION

4.1 Tools used for Development

A project management tool gives you the ability to quickly set a hierarchy of tasks for efficient and effective completion. It also allows you to indicate which actions are sequential and which tasks are dependent on one another. In turn, this makes it easier for the team to do their task. This chapter provides an elaborate discussion on the tools and technology used in this project. This includes different types of software used to build the website. This is very important to take the write tools for any types of development. A single tool or language cannot develop a fully complete project. There needs a multiple technology for building these projects and a proper connection in between this tools. The essential importance for project management tools are:

1. Smooth Collaboration.
2. Easy Planning.
3. Easy resource allocation and management.
4. Easy data sharing.

There are different types of module also needed to install in those software. So it is very important to take the correct options for development.

4.2 Software

The operating system used for the development of this application is Microsoft Windows 10 professional. The IDE that is used for coding is Visual Studio code (community version). The programming language used for the development of this application is Python (Django). For the structure of this project there used HTML and Internal CSS.

Software	Used for	Version
Microsoft Windows 10 pro	Operating System	21H2
Visual Studio code	IDE (Integrated Development Environment)	1.7
Python(Django)	Backend	3.0.5
HTML, CSS	Structure and design	3
Google chrome	Browser	105.0.5195.52

Table 4.1: Software used for development of the application

4.3 Hardware

The hardware used for the development of this application is shown in the table below. Processor used for this development is Intel Core i3 4th generation. Total 4GB of memory is used to run the necessary software for the development of this application. Other hardware components that have been used are shown in the table below:

Hardware	Description
Processor	Intel Core i3 4th Gen Processor
Memory	HP 4GB DDR3 1333 MHz RAM
Motherboard	Intel(4) H81 Express Chipset
Storage	Western Digital 128GB SSD
Display	Dell 15.5 inch inspiron15 laptop display

Table 4.2: Hardware used for development of the website

4.4 Database Services

We have used SQLite as our data server. SQLite is a server less software library, whereas the other systems are client-server based. With MySQL, PostgreSQL, SQL-Server, and others, the application sends a message containing some SQL over to a separate server thread or process. That separate thread or process performs the requested I/O, then send the results back to the application. But there is no separate thread or process with SQLite. SQLite runs in the same address space as the application, using the same program counter and heap storage. SQLite does no inter process communication (IPC). When an application sends an SQL statement into SQLite (by invoking the appropriate SQLite library subroutine), SQLite interprets the SQL in the same thread as the caller. When an SQLite API routine returns, it does not leave behind any background tasks that run separately from the application.

An SQLite database is a single ordinary file on disk (with a well-defined file format). With other systems, a "database" is usually a large number of separate files hidden away in obscure directories of the file system, or even spread across multiple machines. But with SQLite, a complete database is just an ordinary disk file.

We also needed a module to download which is "**sqlparse**". We implemented a simple SQL parser using pyparsing. Combined with Python code that implement the relational operations against our data store, this was fairly simple.

4.5 Implementation

The biggest part of any software deal is the implementation. There are many aspects that need to be addressed in this phase and a similar number of things can go wrong if enough care is not taken. Identifying an ideal school management system is considered to be a great task and takes up a lot of time and effort on the part of the educational institutions. There are many schools that take months in order to choose ideal software for their needs and rightfully so. The importance of school ERP software cannot be overstated and finding a tailor-made solution adds to the overall success of the school. Before the implementation process actually starts, you will need to set viable goals. Things such as what the school management software aims to enhance with regards to the existing system and how it can be implemented in the stipulated time period are some of the goals that need to be defined.

One of the major things that make an education ERP implementation easier is the availability of data. Schools have a lot of data pertaining to the students, staff, events and other strategic decisions. All of these need to be collected beforehand so that it can be uploaded online without any delays.

Most of the ERP software is generalized for schools. However, the requirements of each school management can be different when it comes to such a tool. This is another important aspect of the business plan that needs to be addressed in the beginning. Make sure that the plan that you choose is budget-friendly has a tight upper limit so that the chances of going overboard can be prevented.

So, we have implemented the project look like this:

Teacher

First the teacher will apply for job, if he/she gets selected there accounts will be made and approved by the admin, after approval only teacher can access their dashboard. After account approval by admin, teacher can take attendance of any class and view their attendance later. Teacher can also publish/announce notice to student like submission of assignments.

Student

First student will take admission/signup. When their account is approved by admin, only then the student can access their dashboard. After account approval by admin the student can view their details like attendance. Student can't view attendance of other student. Student can't announce, they can only view.

Admin

First admin will sign up for an account. After login they can see how many student/teacher wants to get job/admission in their school. They can approve or delete/cancel the request. They can update any student/teacher details. Admin can announce notice also.

This was our basic implementation of our website. This Implementation is worked with Django framework and the process is done by creating:

1. “admin.py” where we registered all the admin’s model to work the features of admin

2. “forms.py” here All the forms backend workshop did for admin, teacher, student.

3. “models.py” here we code for teacher’s features as per particular classes.

4. “views.py” for checking whether it is student teacher or admin, showing sign up buttons and for all the options what we see at our project this file is created.

5. “settings.py” for checking all the validation of the project.

Some screenshots are given below to see the project view that will help to understand the features of this project:

Home Page1:

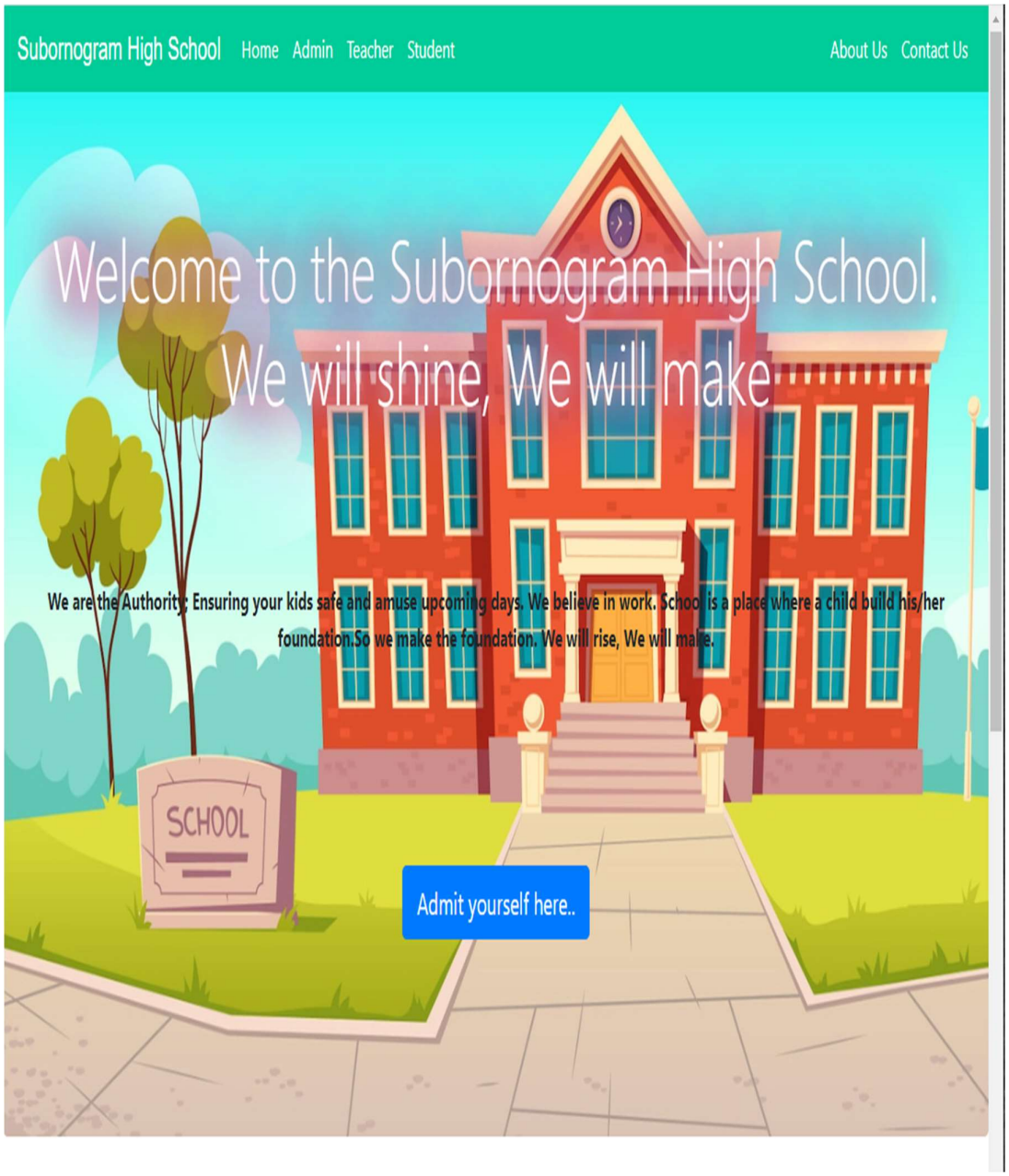

Fig 4.1: Home page (Upper side) of School Management System

Home Page 2:

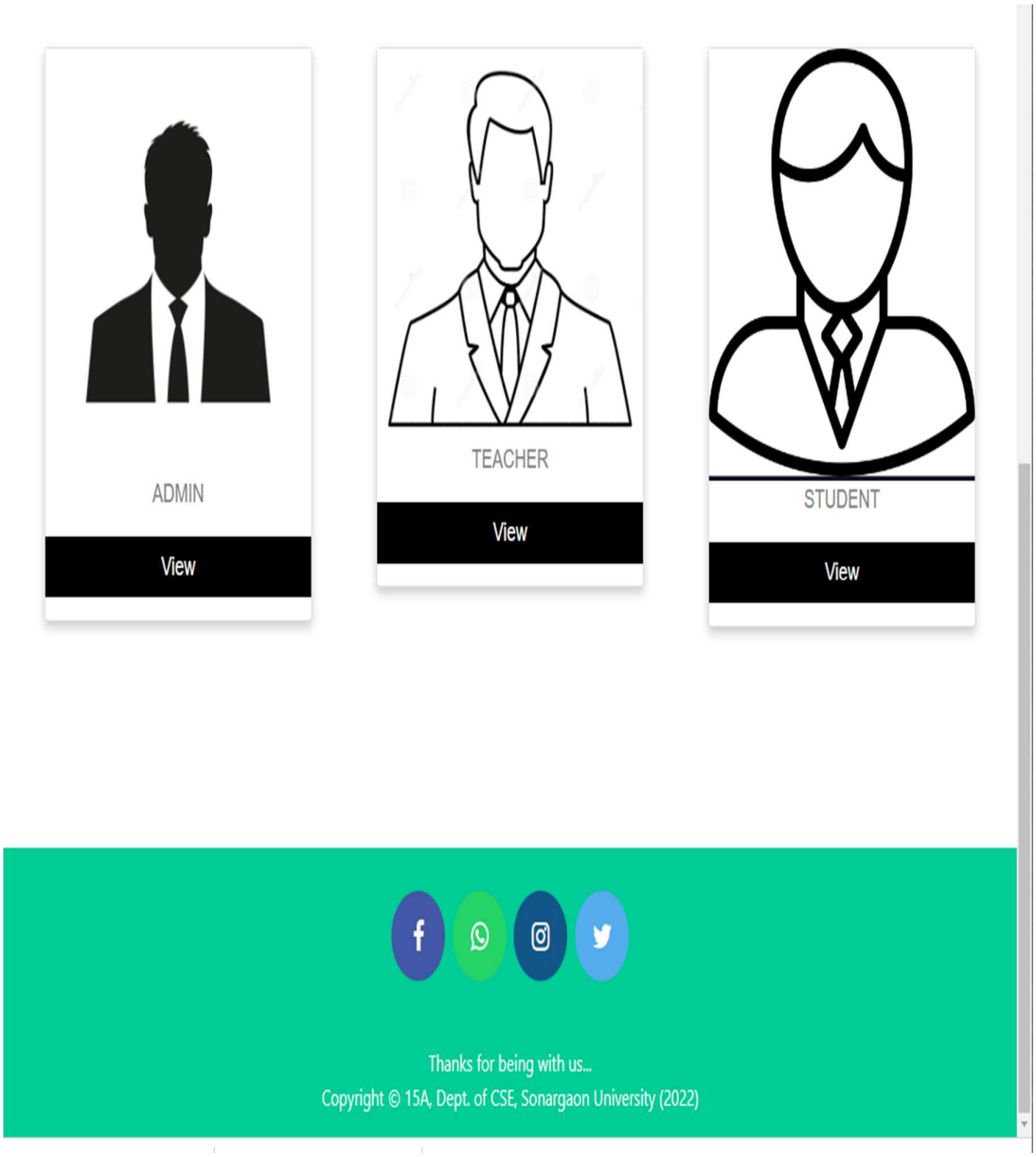

Fig 4.2: Home page (Lower side) of School Management System

About Us Page:

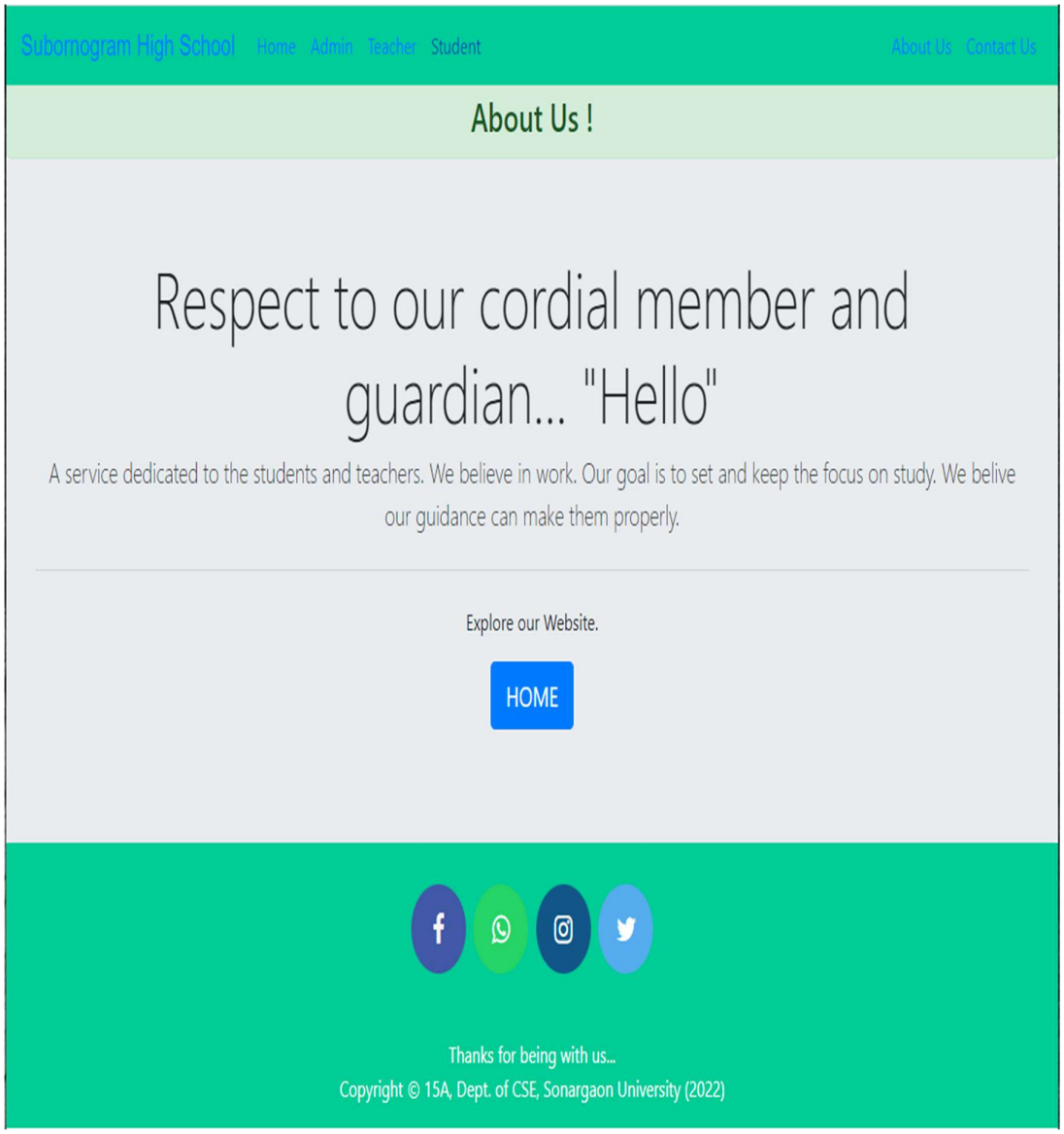

Fig 4.3: About Us Page of System

Contact Us Page:

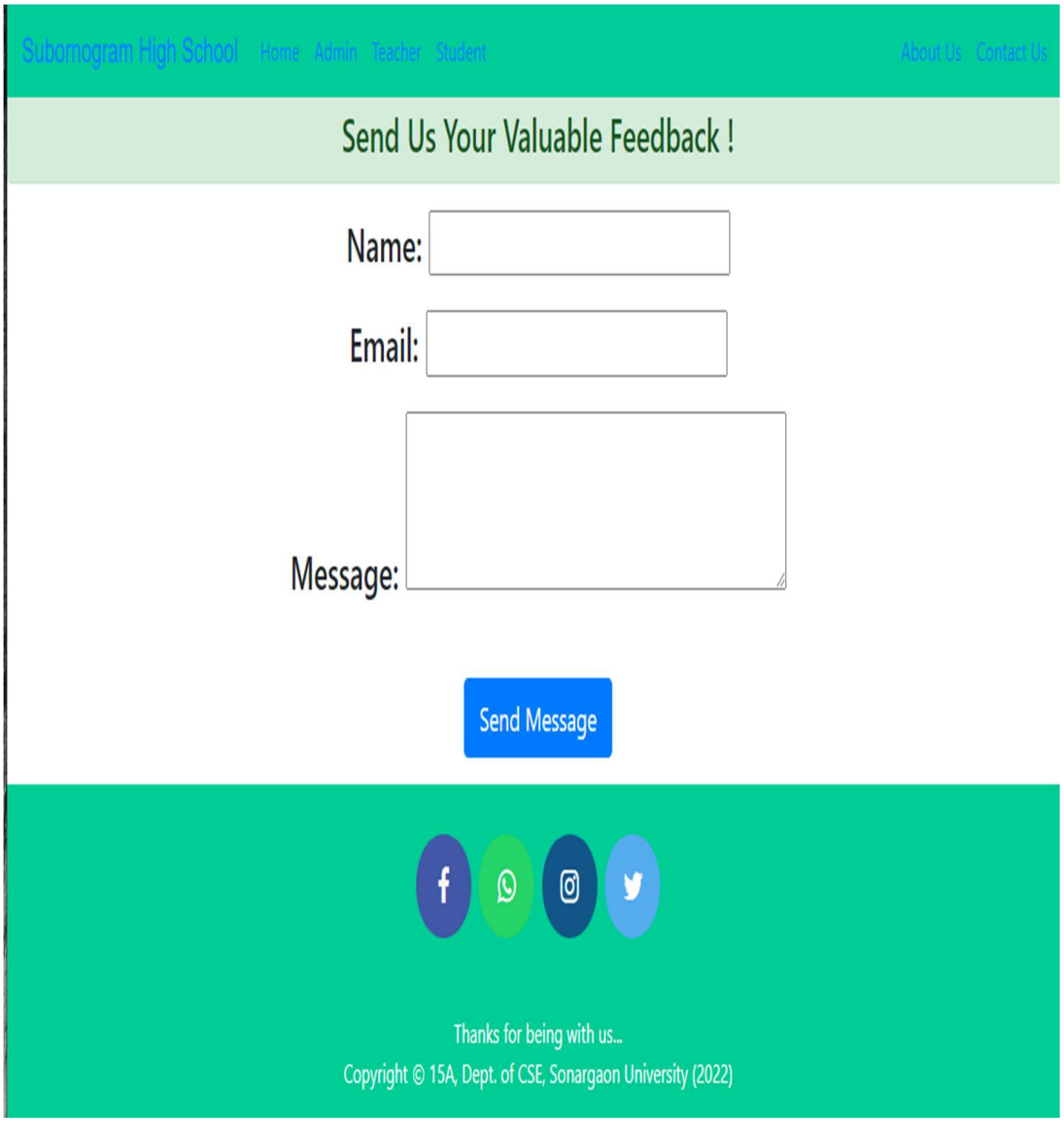

Fig 4.4: Contact Us Page

Admin Entrance:

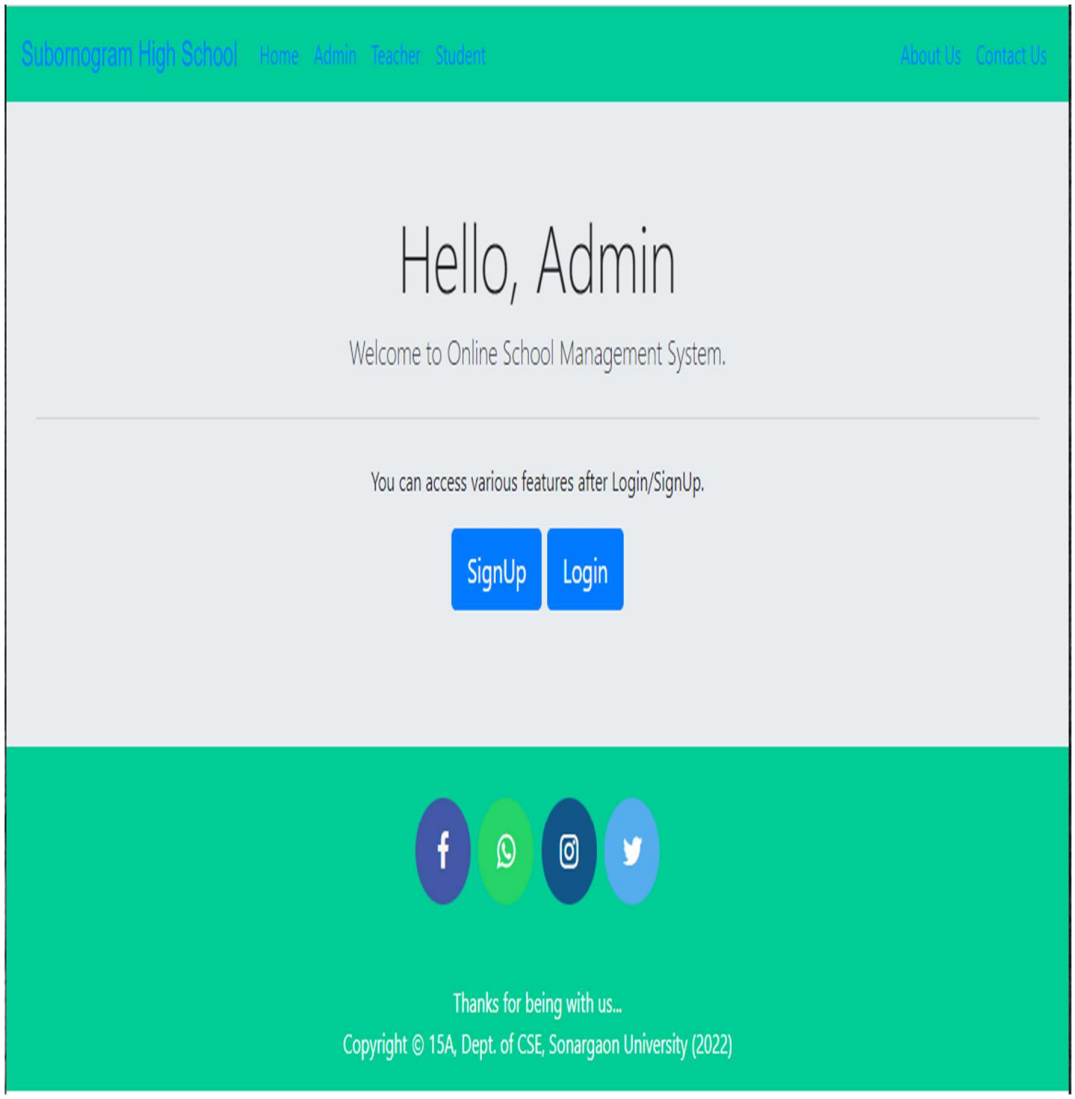

Fig 4.5: Admin Entrance

Admin Signup Form:

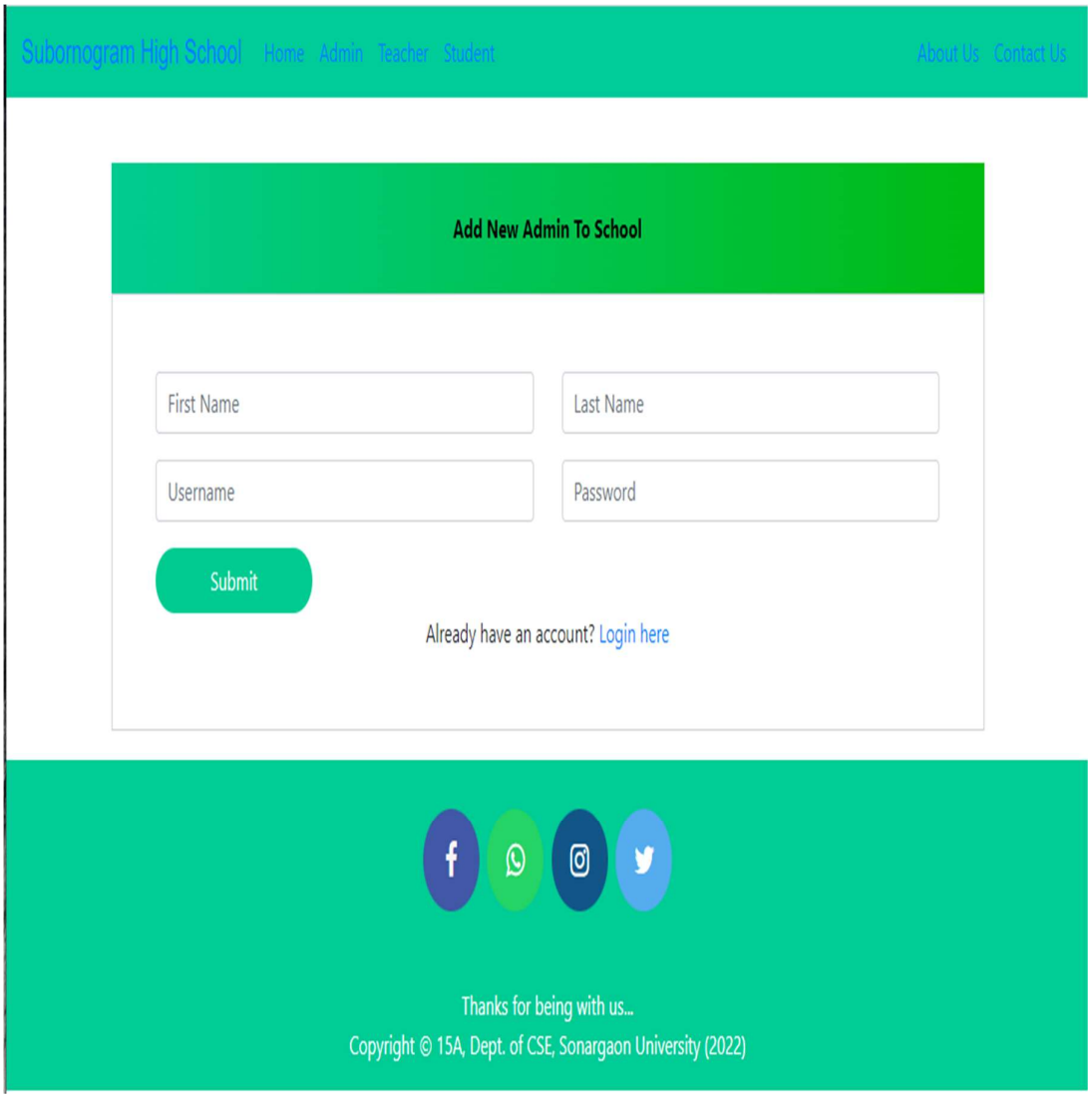

Fig 4.6: Admin Signup Form

Admin Login Page:

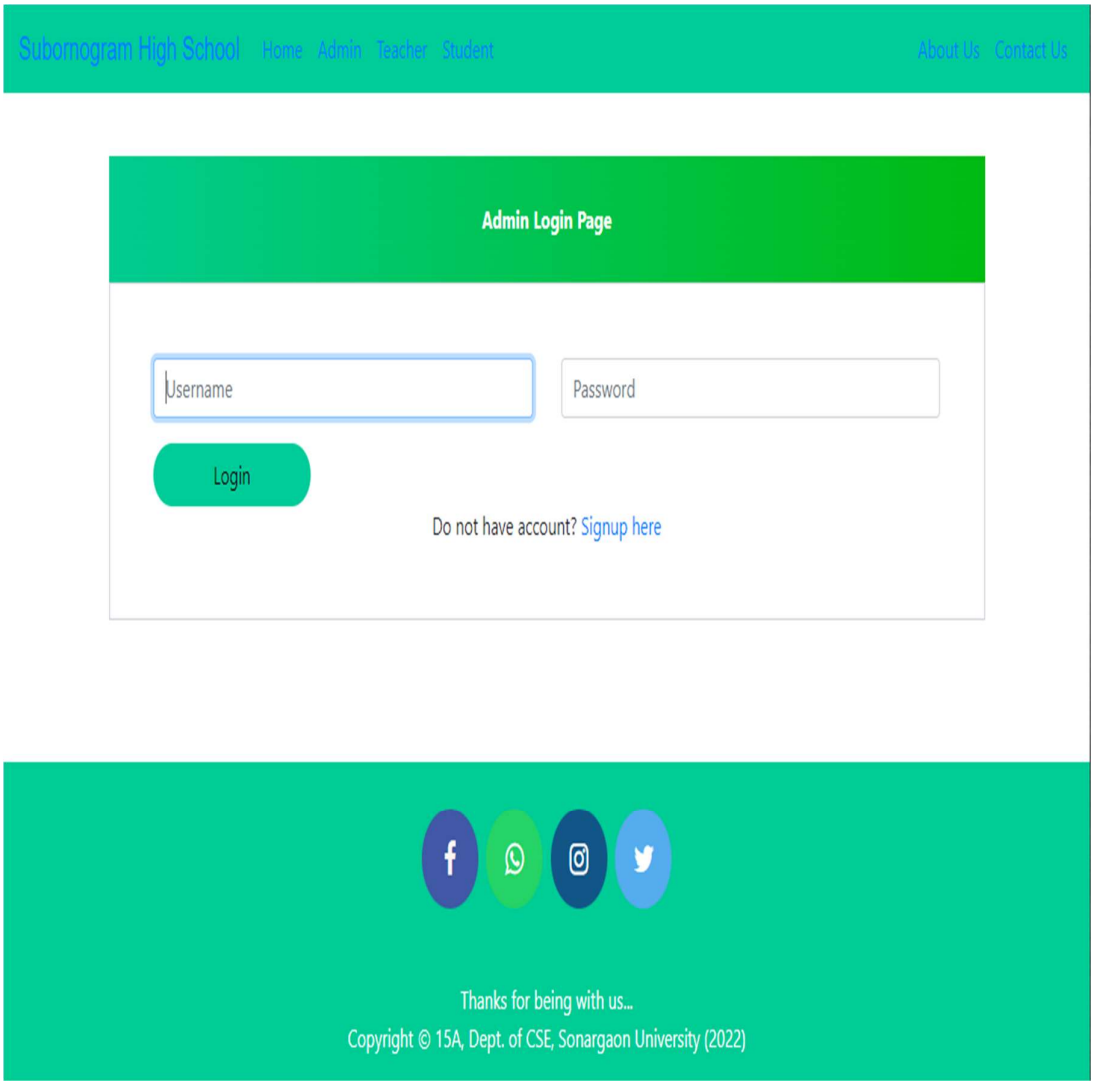

Fig 4.7: Admin Login Page

Teacher Entrance:

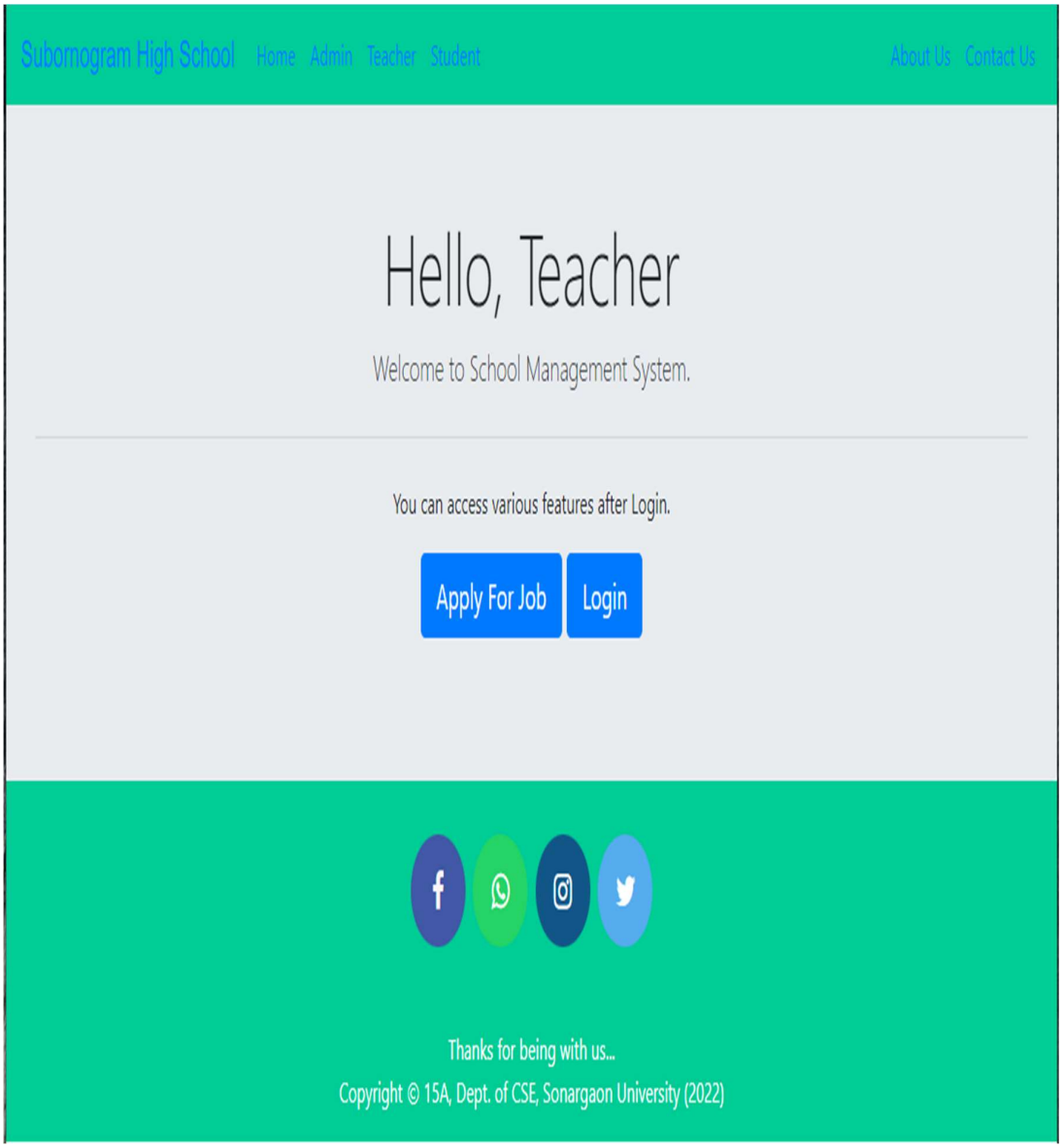

Fig 4.8: Teacher Entrance

Teacher Signup Form:

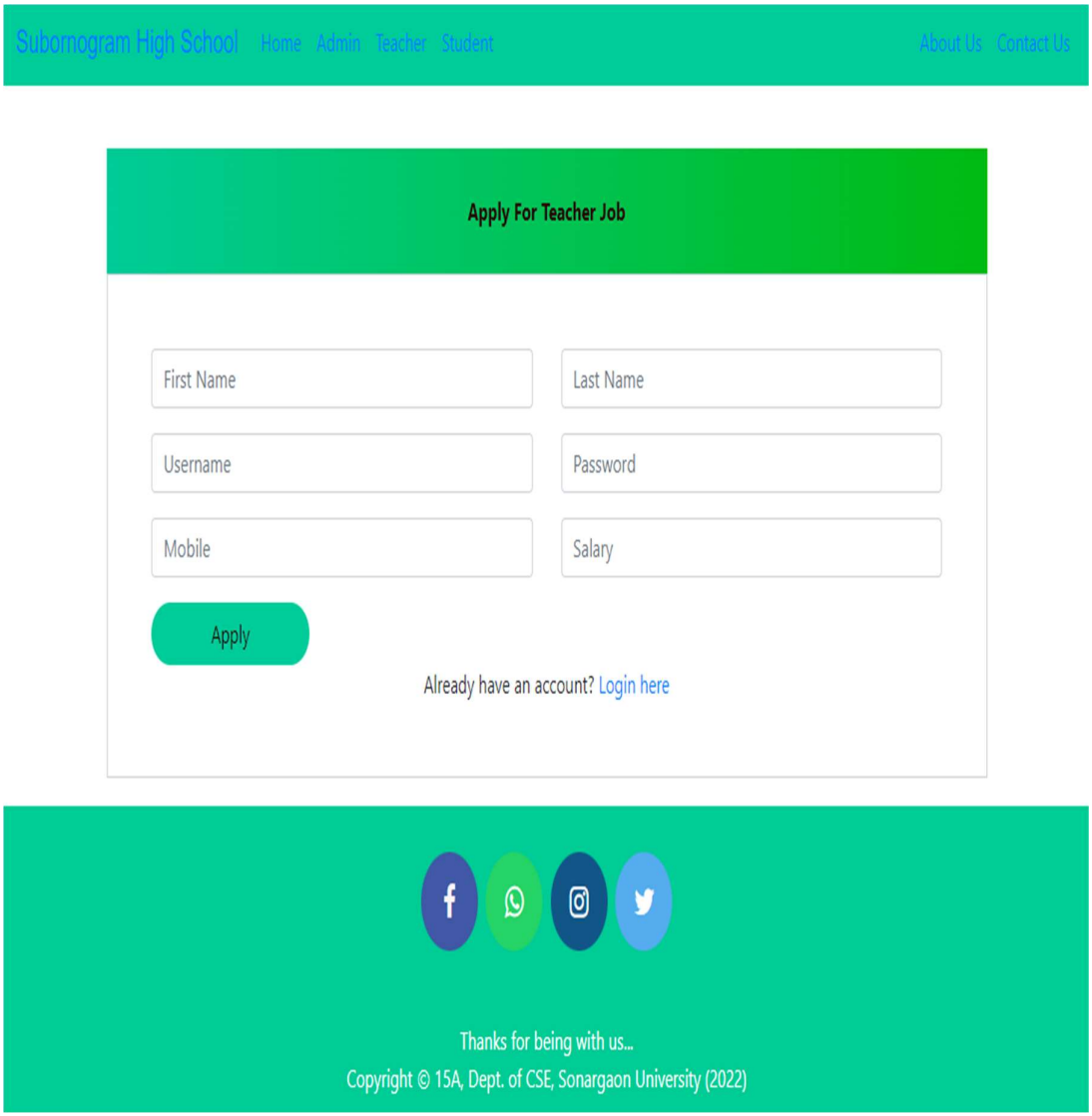

Fig 4.9: Teacher SignUp Form

Teacher Login Page:

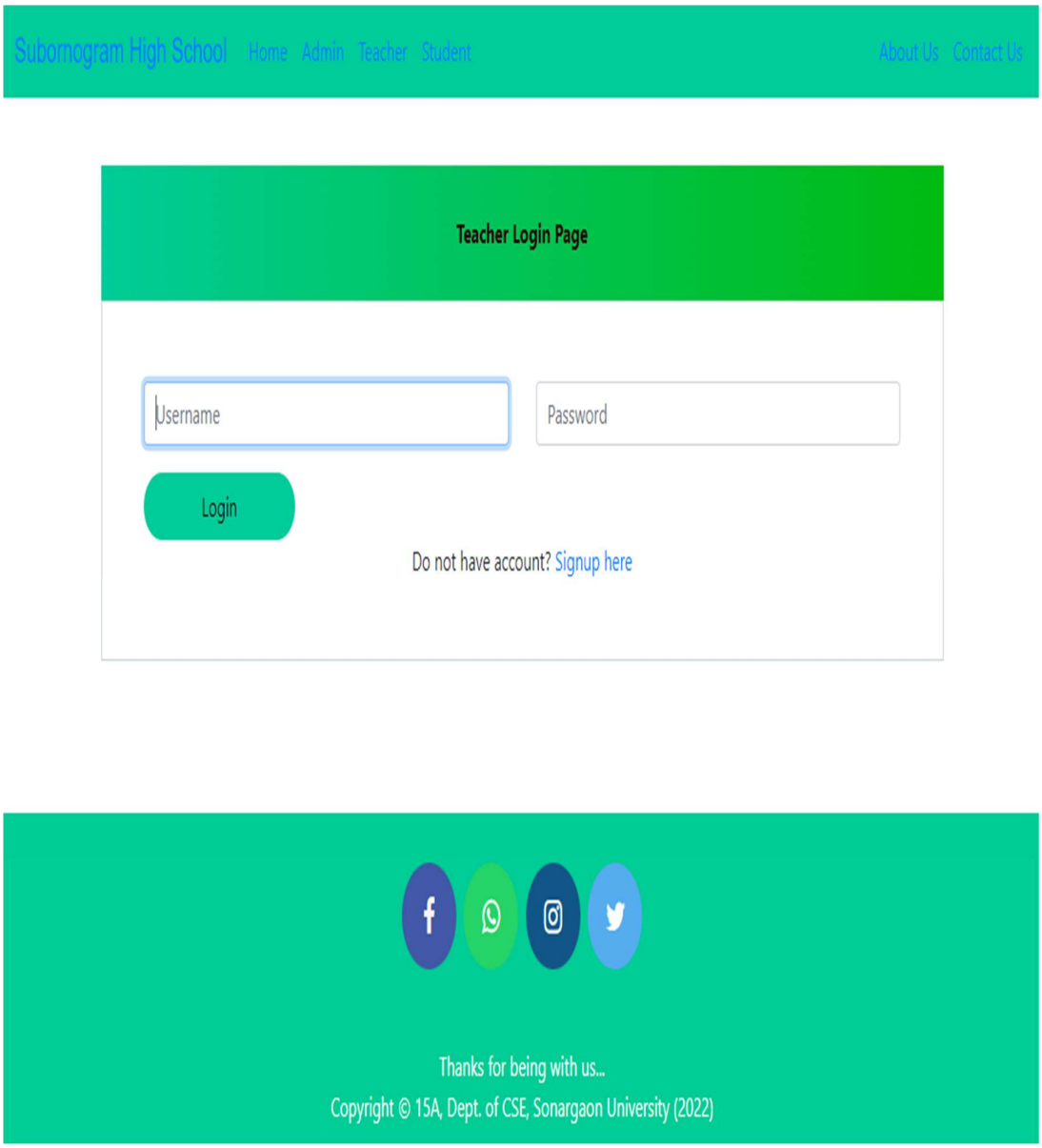

Fig 4.10: Teacher Login Page

Student Entrance:

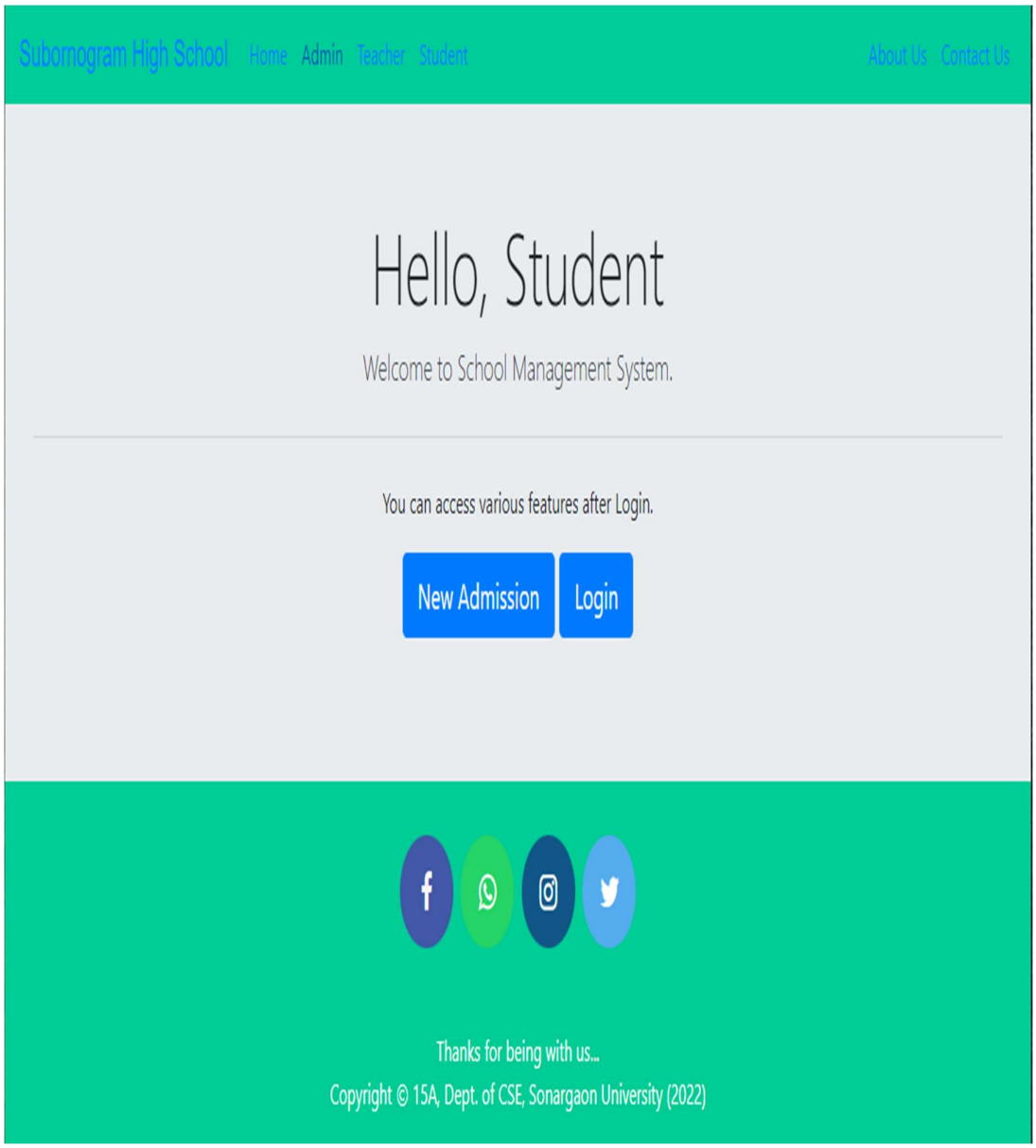

Fig 4.11: Student Entrance

Student Admission:

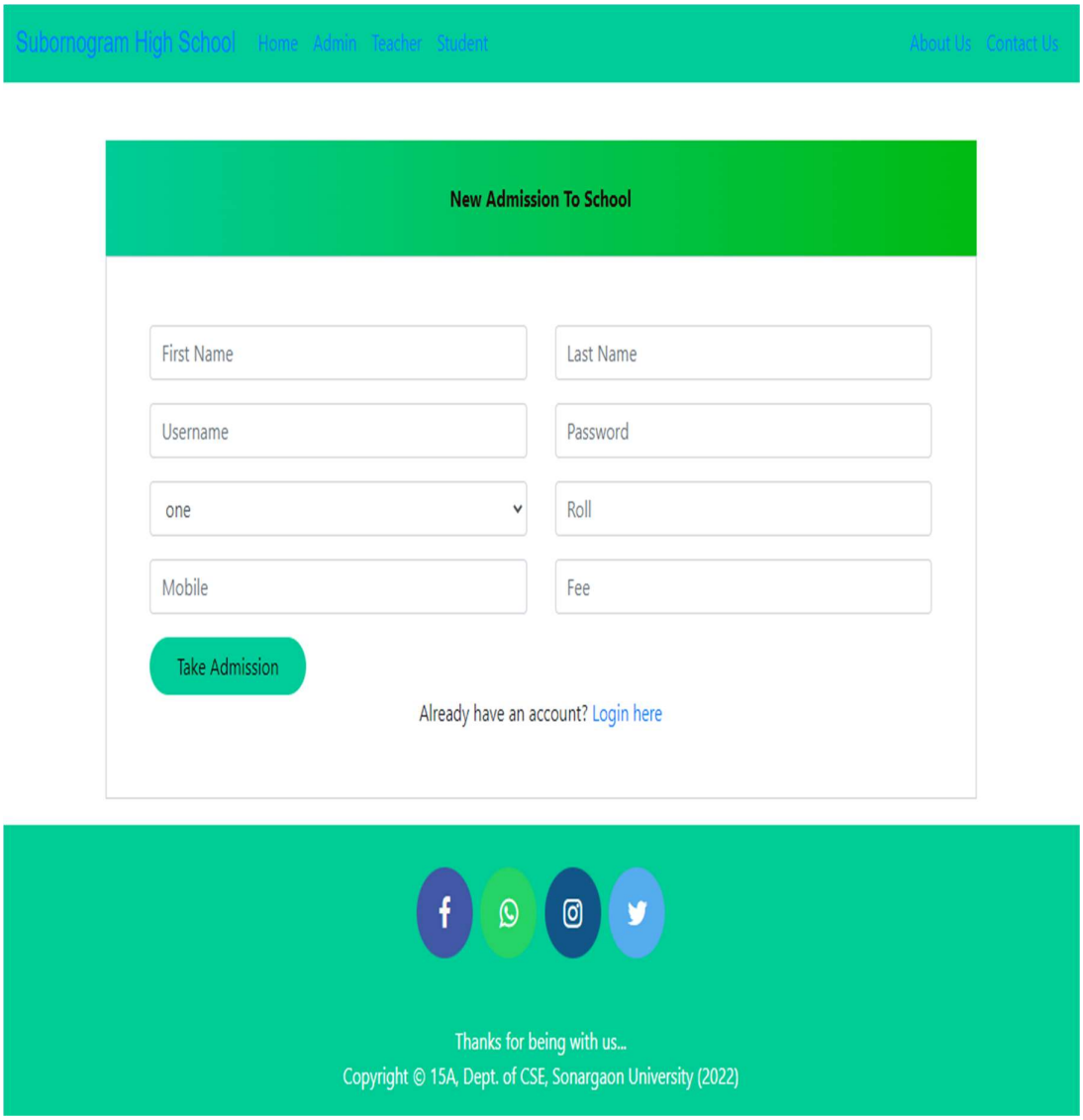

Fig 4.12: Student Admission

Admin Dashboard:

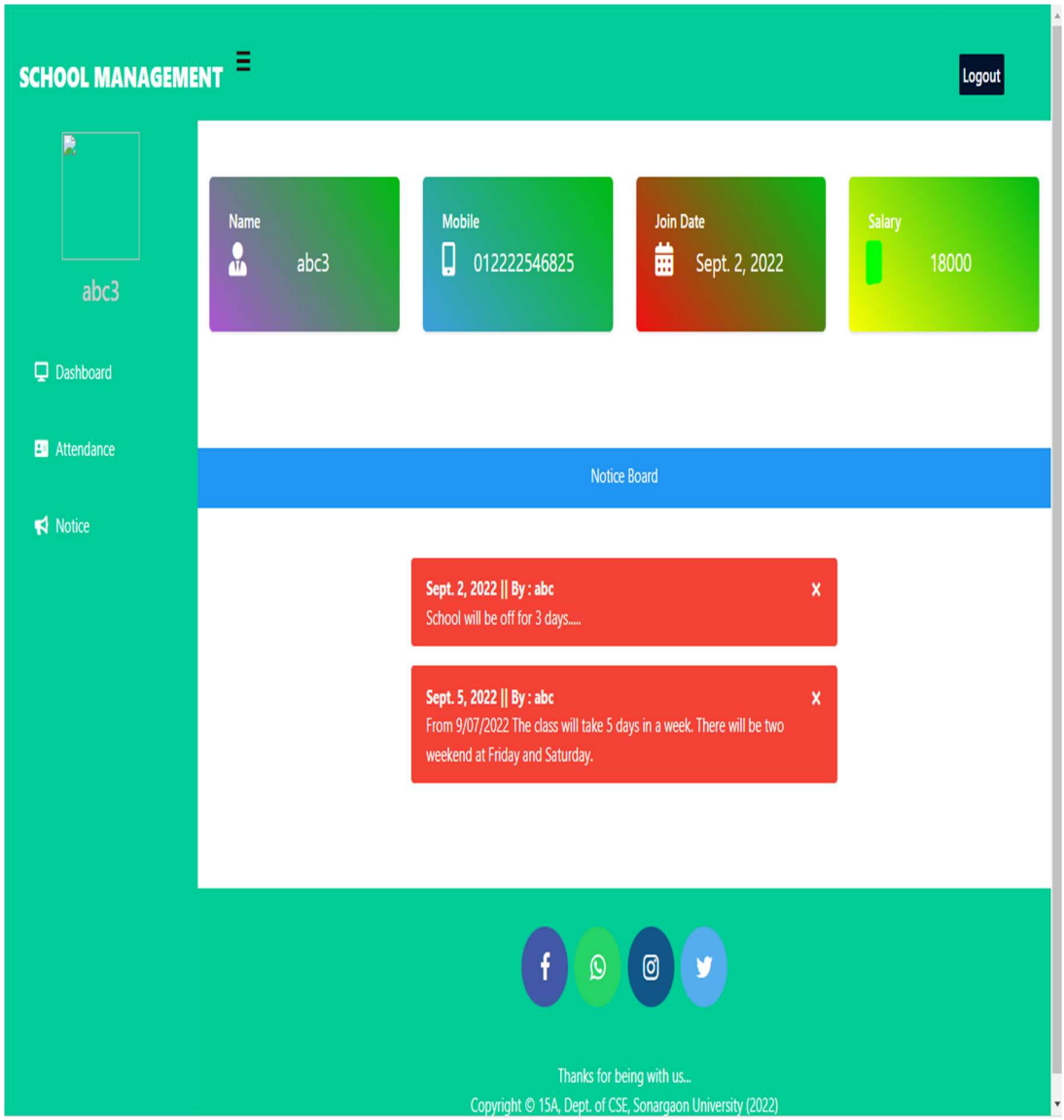

Fig 4.13: Admin Dashboard

CHAPTER-5

CONCLUSION AND FUTURE SCOPE

5.1 Discussion

This is an era of technology. At everywhere at every place there will be the use of internet. So website is important for every step of society. That's why it need to be rethink that website or app need to be user friendly, not too large nor useless in scale. Our goal is to serve internet service to every door to door. Facebook page is not enough for maintaining an institute like schools. New innovations and developments like technologies in cloud, big data, analytics, mobility, social media and internet of things have become the latest buzzword and the need of the day. As now a day at first world country they are using software for a coaching center even. So we need to care in this sector. The school management software market is likely to provide immense opportunities for the growth of the school management software market owing to the rising need for optimization of the operations at school. The school management software plays a crucial role in managing day-to-day administration and operations under a centralized platform. The burgeoning need for systematic scheduling, communication, management, and other school-related procedures is likely to propel the growth of the school management software market during few years.

The school management software market can be segmented into premise and cloud-based on the type. Furthermore, based on the application the market can be divided into private K-12, District, special, and below higher education schools. The cloud-based system is expected to gain substantial traction owing to the rising need for cloud-based modules as it is user-friendly and user-friendly Andres. The adoption of private K-12 modules across the globe may augment this segment's growth and ultimately contribute to the growth of the school management software market. That's why we need this type of simple and strong security base project.

5.2 Scope for Further Developments

This project is just for a demo purpose only. In this concept there will be many more feature will be added, like:

- Registration
- Exam and Class routine
- Payment system
- Time table
- Payment System
- Account history
- Admit card
- E-Application system
- Result
- Library management system
- Authority panel, etc.

5.3 Conclusion

The benefits of IT industry cannot be limited to software development alone, the technologies can be applied to areas like hospitals, banks, schools, libraries, airports, shops and many other places with the help of database management systems or through custom made software as per the requirement.

A school management system has become an essential need for every school to operate. No doubt. It holds so many crucial functions to ensure that the school management runs smoothly. The teachers, staff, and other external parties can collaborate easily through a centralized platform. It doesn't stop there. In recent years, Bangladesh is recognized as one of the emerging IT outsourcing and software exporting countries in southeast Asia. One of the most prominent factors that brought us the global remark is the booming IT industry besides RMG revenue during the last few decades.

The contributions being made by the IT industry towards the country's GDP has led to a steady growth of the Bangladeshi economy. While comparing with our neighbor country

& one of the strongest competitors in southeast Asia, Indian IT industry is regarded as a hub of innovators providing world class technology solutions across the globe when we are still thriving to get our names out in the light provided our good works around the globe. New innovations and developments like technologies in cloud, big data, analytics, mobility, social media and internet of things have become the latest buzzword and the need of the day.

Integrated school management software also bridges communication between the school, students, and parents. The features such as transparent communication between parents and school and customized curriculums as per the education patterns may create robust growth opportunities for the school management software market. Further, the learning and teaching experience gets insightful and resourceful for students as well as teachers. All these aspects may boost the growth of the school management software market.

This project is not ready to run on real life yet. But If this project can satisfy the further development thus It will be a very good option to choose every budget friendly hand.

References

[1] HTML tutorial, 7:30 PM, August 2, 2022, Available: https://www.w3schools .com/html

[2] CSS tutorial, 7:30 PM, August 9, 2022, Available: https://www.w3schools .com/css

[3] Django tutorial, 7:30 PM, August 23, 2022, Available: https://www.w3schools .com/django

[4] Depak gupta, VS code, 7:30 PM, September 2, 2022, Available: https://betterprogramming.pub/vs-code-extension-for-web-dev-productivityfa541

[5] MDN web docs, Django introduction, 8:00 PM, September 2, 2022 Available: https://developer.mozilla.org/en-US/docs/Learn/Server-side/Django/Introduction

[6] PYPI, ASGI, 7:00 PM, September 3, 2022 Available: https://pypi.org/project

[7] Django, Documentation, 7:00 PM, September 4, 2022 https://docs.djangoproject .com/en/1.8/intro/Tutorial101

[8] Django, Documentation, 7:00 PM, September 4, 2022 https://docs.djangoproject .com/en/1.8/ref

[9] GIT, freecodecamp, 7:00 PM, September 5, 2022, Available: https://frecodecamp. org/news/gitignor

[10] Django image, 8:00 PM, September 5, 2022, Available: https://www.google.com/ Search?q=Django&tbm=isch&ved=2ahUKEwip9eqv0P_5AhX8idgFHdEiCg0Q2

[11] Python image, 8:10 PM, September 5, 2022, Available: https://futurelearning.irob okid.com/s/store/courses

[12] Activity diagram, itsourcecode.com, 8:00 PM, September 5, 2022, Available: https://itsourcecode.com/wp-content/uploads/2022/01/Activity-Diagram-for-School-Management-System.png