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Website For The Office Of Industry Academia Relations SETS,IUB

By

Jaed Bin Alam

Student ID: **1720685**

Summer, 2022

Supervisor:
Mr. Asif Bin Khaled
Lecturer
Department of Computer Science & Engineering
Independent University, Bangladesh

September 14, 2022

Dissertation submitted in partial fulfillment for the degree of Bachelor of Science in Computer Science

Department of Computer Science & Engineering

Independent University, Bangladesh

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Attestation

I hereby attest that I, Jaed Bin Alam - 1720685 an undergraduate affiliate of Independent University Bangladesh, have completed the report and submitted it in partial fulfillment of the requirement for the Degree of Computer Science and Engineering from Independent University, Bangladesh (IUB). I have been guided by my respected faculty Mr. Asif Bin Khaled the sources of information used in this project and report has been duly acknowledged in it.

Jaed — 14/09/2022

Signature — Date

Jaed Bin Alam

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Acknowledgement

First of all, I commend Almighty Allah (SWT), who gave me this opportunity and gave me the opportunity to complete my internship report on time. I would like to express my gratitude to the Faculty of Computer Science and Engineering for keeping my internship credit in the graduate program curriculum and giving me a chance to savor the taste of industry-oriented business and the field of work with my interest. I would like to especially thank my supervisor, Asif Bin Khaled, Lecturer, Department of Computer Science and Engineering, Independent University, Bangladesh, who encouraged and directed me with his continuous guidance, invaluable instructions, stimulating suggestions and thoughtful advice during pursuing this internship and preparation of this report.

I am also thankful to my technical supervisor Dr.Omar Faruk ,Office of Industrial Relations,SETS, from the core of my heart for his kind support, guidance, constructive, supervision, instructions and advice as well as for motivating me to do the internship smoothly at Office of Industrial Relations,SETS.

Moreover, I must mention the wonderful working environment and group commitment of this organization that has enabled me to deal with a lot of things. Last but not the least, I would like to thank my parents and other family members for their eternal support given to me.

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Letter of Transmittal

Mr. Asif Bin Khaled
Lecturer
Department of Computer Science and Engineering
School of Engineering and Computer Science
Independent University, Bangladesh

Subject: **Submission of Internship Report.**

Dear Sir,
This is to inform that with due honor and respect, I, Jaed Bin Alam (ID: 1720685) from CSE 499, Internship Course of Summer 2022 Semester, would like to submit my Internship report. I have completed my internship program under the supervision of Dr. Omar Faruk. This report is based on my internship program and the project I have worked on at the Office of Industrial Relations, SETS, IUB. I tried to make this report as informative as possible with the experience I have gained during my internship period.

I have tried my best to deliver a good report. However, it might lack perfection. I shall be highly obliged if you are kind enough to receive this report and provide your valuable judgment. I hope the following report can achieve your approval and is adequate.

Sincerely,
Jaed Bin Alam
Id: 1720685
Department of Computer Science and Engineering
Independent University, Bangladesh

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Evaluation Committee

Asif

.....

Signature

Md. Asif Bin Khaled 14/09/22

Name

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Supervisor

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Signature

Md.Raihan Bin Rafique

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Name

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Internal Examiner

14.09.22

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Signature

OMAR FARUK

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Name

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External Examiner

.....

Signature

.....

Name

.....

Convener

Dr. Mahady Hasan
Head, Department of CSE
School of Engineering & Computer Science
Independent University, Bangladesh (IUB)

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Executive Summary

Here in this report it is mentioned about an website which is created for the the Office of Industrial Relations, SETS, IUB.This website is basically made for people so that they can visit the website and get knowledge about OIR. In the website they not only get to keep an eye on the upcoming events which will be arranged in the future and join the event but also can get idea about the events already took place and get event details as well. Moreover it is an great opportunity for the students to keep an update about their internship sessions as well as an opportunity of getting internship at OIR.Here in this document contains the Project Management, architectural design, user interface design, testing, and future work of the Office of Industrial Relations, SETS, IUB as well.

Keywords— OIR, Project Management

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Chapter 1

Introduction

1.1 Background of the Work

In our country Bangladesh, there are lots of Industries and Universities.Basically OIR is an office where the University tries to collaborate with different companies and industries so that they can create good opportunities for the student for a better future.

Here We have proposed a solution for this.We are creating a website where students can easily visit, get to know about OIR and look for the companies and opportunities for them according to their educational background.

1.2 Objectives

The creation of a website for OIR is the only thing that this project is focused on. Basically, this website was created so that people may visit it and learn more about OIR. They can keep track of future events that will be planned and sign up for them on the website, but they can also learn about past events that have already happened and acquire event information. Additionally, it is a fantastic chance for students to stay informed about their internship experiences and a chance to obtain an internship with OIR. Students, faculty, and other members can learn more about OIR and its activities on this page.

1.3 Scopes

Scope of the project is a necessity to ensure the accomplishment of a project. As we are making a new system. New means there is no existing system like our proposed system.
We are looking forward to:

1. Establish a website that individuals can access to see what activities they are participating in.

2. Examine the event reports

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3. Consider forthcoming occurrences

4. Fill out an application to join OIR.

5. Give a feedback Look at the reports on the programs

6. Submit a Internship Application

7. Provide feedback

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Chapter 2

Literature Review

2.1 Relationship with Undergraduate Studies

In its dedication to the creation of responsible, educated, and mature people, the university places a priority on teaching, learning, and the learning process. I've used the knowledge and abilities I've acquired through my undergraduate programs to help me create this website for OIR. If these classes hadn't been finished before beginning this assignment, it would have been harder. In addition to that, the group and individual projects I completed for my undergraduate classes were helpful to me with this endeavor.

How to manage and operate complicated arrays, objects, classes, arrays of objects, objects of arrays, nested arrays, nested objects, etc. were the topics of a course called Data Structure. The knowledge obtained from this course makes handling the complicated data structures used by " OIR Website " considerably simpler. The foundation of object-oriented programming is the idea of objects. OOP can be utilized in production and design since it lowers the amount of work required. The real-time system design that was used to create the "OIR Website" was aided by it. As the process of managing a database develops, database management systems are built on certain data handling techniques.My first course that taught me how to conceptualize and organize a project was this one. I learned the fundamentals of common planning and strategy techniques in the database management course, including the system development life cycle, Six Element Analysis, Rich Picture, Requirement Analysis, Entity Relationship Diagram, Business Process Model, and many more. These methods supported the planning and strategy for the "OIR Website" and the creation of this report. I gain knowledge about creating dynamic websites using Django and MySQL and SQL server. database design, software management, front-end and back-end design, as well as hardware selection. study of information systems case cases. These methods supported the planning and strategy for the "OIR Website," as well as the authoring of this report.

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2.2 Related works

We had to pay close attention to the specifics of each topic because there was no earlier version of the website and it was created entirely from scratch for OIR. To see the layout and architecture of several websites, we had to navigate through them.Even we had made a few drawings on the Google site, and we had got down with Dean Sir and our coordinator to establish a suitable design for the website. To put the content on the website, we had to gather a lot of information. Any website that is dedicated to business typically has links to CVs or job applications. Our website has more than just job applications. Instead, students can look up internship sessions and submit an application. And in this case, we not only advertise OIR but also various other businesses or sectors that are willing to work with universities on various projects. Consequently, although being a simple website, ours is unique from other websites.

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Chapter 3

Project Management & Financing

3.1 Work Breakdown Structure

A Work Breakdown Structure (WBS) is a hierarchical outline of the tasks required to complete a project.[1] WBS is a tool used in project management that helps is breaking down a complex project into smaller manageable and achievable activities or processes. E-appointment system have processes like Concept, Design, Development, Maintaining and Closing. Those process are further broken into smaller tasks and sub tasks. Detailed sitemap, Project Timeline,

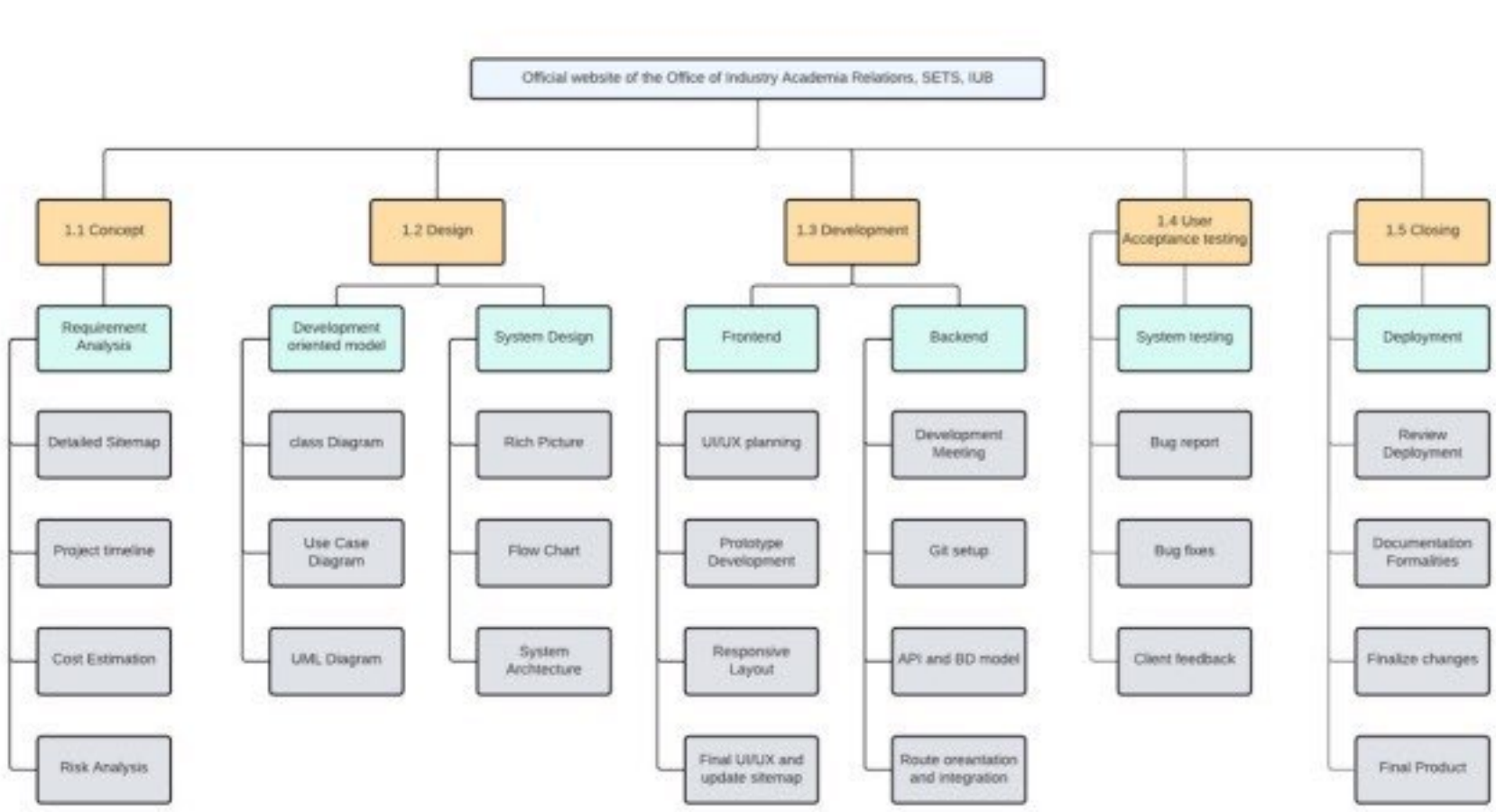


Figure 3.1: WBS of OIR website.

Risk Analysis Cost Estimation are the sub task of Requirement Analysis. Design Process have two sub-task Development Oriented Model and System Design. In development-oriented model we break down our task on class diagram, use case diagram and UML design. For the system design we have task like rick picture, ow chart, and system architecture. Front-end and back-end are the two process of development the project. User Acceptance four tasks System Testing, Bug Reports, Bug Fixes, and client feedback. Review Deployment Deliverable, Documentation

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Formalities, Finalize Changes and Deploy Final Product tasks are under Deployment Process which is the activity of Closing. The goal of this WBS is to make a large project manageable. We have followed this top-down approach as WBS.

3.2 Process wise Time Distribution

Project managers and other professionals frequently use the probabilistic form of the Critical Path Method called the Process Wise Time Distribution (CPM). One way for identifying tasks required for a project's completion is the critical route method. Time management is the main issue that the project manager and developers encounter when properly designing an application. The lengthiest series of tasks that must be completed on schedule for the project to be concluded is known as a critical path in project management. The rest of the project will be delayed if important activities are delayed. Project management benefits significantly from the Critical Path Method. The longest path of planned activities to logical end points or the project's completion is determined by CPM.

Task	Days
Requirement Analysis	6
Design layout	12
Development	35
User Acceptance Testing	8
Deployment	9
Total	70

Figure 3.2: Process wise Time Distribution

Here, we need 6 working days for requirement analysis, 12 days for design layout, and 35 days for development, 8 days for user acceptance and testing and 9 days for deployment. A Total 70 days for developing the official website for the Office of Industry Academia Relations SETS, IUB.

In this chart above process percentage wise time distribution are shown.

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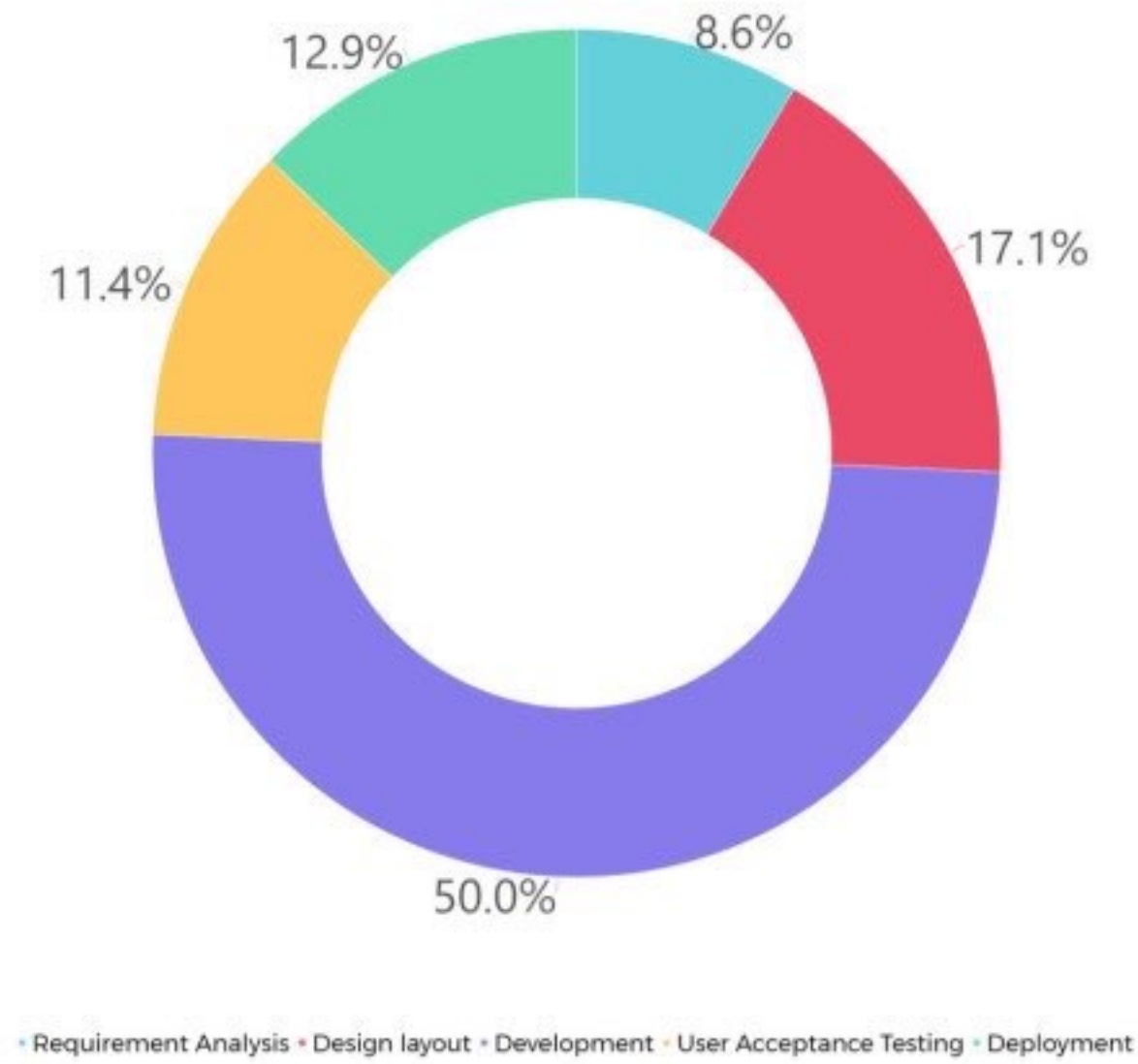


Figure 3.3: Process wise Time Distribution Chart

1. **Requirement Analysis:** Gathering requirements is a crucial task before the onset of any project. If the requirements are not properly gathered and analyzed, it can lead to project failure. Similarly, for our project. We dedicated 9% of the entire work to Requirement Analysis

2. **Design Layout:** The need for a good Design Layout is key. The main user of will be all types of users. Therefore, the design of this system should be intuitive so that the user can easily understand what each component of the system is doing. We allocated 17% of the entire workload for this. Requirements Analysis 9% Design layout 17% Development 50% User Accepting Testing 11

3. **Deployment:** At the very end we have Deployment. After checking everything, the system is hosted on the client's domain and handed over to them. Some training is also given to 13% was allocated to this phase.

4. **User Acceptance Testing:** After everything is developed, some revisions must be done to the system to check for any underlying bugs before it is handed over to the client. Some documentation also needed to be done. About 11% of the workload was allocated to this phase.

5. **Development:** The most crucial part of any system is the development. If it is not developed properly, it will be received poorly by its users. From designing a good and

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responsive system to making it fast, reliable and bugs fixed is very important. For this phase, we allocated 50% of the entire workload.

3.3 Gantt Chart

One of the most common and effective methods of displaying activities (tasks or events) displayed against time is a Gantt chart, which is frequently used in project management. A list of the activities is located on the chart's left side, and a suitable time scale is located along the top. A bar is used to symbolize each activity, and the position and length of the bar correspond to the activity's beginning, middle, and finish dates. We can monitor the project's advancement with the use of a Gantt chart.

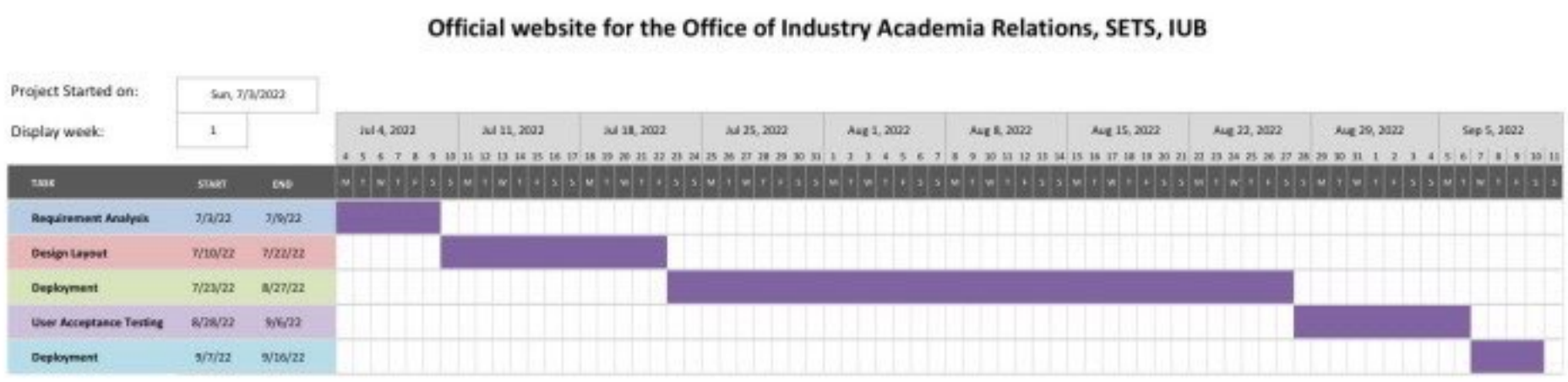


Figure 3.4: Gantt Chart

3.4 Process wise Resource Allocation

The process of assigning resources in a way that supports team goals is known as resource allocation. The success of the project depends on having the correct resource at the right moment. The personnel allocated to this project are listed in the table

Serial No.	Position	Input(months)
1	Research Coordinator	3
2	Intern	3
3	Intern	3

Table 3.1: Process wise Resource Allocation table

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3.5 Estimated Costing

Several services are included in the projected cost of "OIR WEBSITE." the project's development before being delivered to the office Three hundred thousand is the approximate cost. The system's estimated cost is provided below. It can be expanded to include software updates and maintains itself.

Serial No.	Position	Staff Month Rate	Input (months)	Sub Cost (BDT)
1	Research Coordinator	40000	3	120,000
2	Interns	30000 (15*2)	3	90,000
Sub-Total				2,10,000
Reimbursable Expenses				30,000
Total without VAT				2,40,000
VAT 4.5%				10,800
Total with VAT				2,50,800

Table 3.2: Estimated Costing

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Chapter 4

Methodology

An agile environment was used for our work. We utilize the Extreme Programming (XP) method to decide which agile framework to use. It aids teams in producing high-quality software quickly while also allowing for demand flexibility. We decided to employ extreme programming for these five rationales, as well as additional benefits, as its foundation.

1. We had to make sure the management and workers were on the same page. Nothing was to be interpreted or depicted in any way that was false. Effective team communication is important, and it may be achieved through team meetings and discussions, according to XP.

2. The process must be maintained as straightforward as possible. As a result, we had time to make swift adjustments. As a result, we were also able to keep our meetings brief, clear, and focused. The designs of the system should also be straightforward, tidy, and thorough, implying that only the bare necessities should be fulfilled and that it should be orderly and simple to support, maintain, and modi

3. Throughout the development phase, feedback was greatly valued. Relevance of customer comments was essential. The excellent feedback we received from prototypes helped us to



Figure 4.1: Agile Methodology

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better our work. Feedback on completed tasks and activities aids the team in identifying areas for improvement and supports the straightforward concepts.

4. Everyone in the firm had the utmost respect for one another. Every choice and recommendation received careful scrutiny and, when necessary, constructive criticism. To communicate, offer and accept criticism, and work together on fundamental ideas and solutions, team members must respect one another.

5. We heard this advice to be courageous all the time. In order to increase the pace and effectiveness of activities, one should think outside the box and experiment with novel implementation techniques.

6. We completed our assignment swiftly while still meeting the needs of the user at each level thanks to the utilization of XP.

7. Because of the frequent meetings, we were able to understand the project better.

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Chapter 5

Body of the Project

5.1 Work Description

Website helps to establish your image by letting the audience know who you are and what you represent. We know all websites has description and all information about that specific company or organization or office. So, in this website we have created we tried to put all the information regarding our office which will help people know about the office. People will get know what is happening under the office which events are organized and what are the possible outcomes as well. Even they get to see the reports on each programs organized as well.

This website consists of different modules. These are:

1. **Home page:** At the very first stage the homepage is shown to the people where they get see the short information about the office. They get to see the glimpse of other pages and events and few gallery pictures as well. Here they get to select what they want to see further in details.

2. **About us:** Here all the information regarding the office is placed in detail. Even the missions and goals of the office are also described here. So that people can understand about the office in details.

3. **Events:** All the events organized by the office shall be described. People get to see the events in detail as well get the event reports there. Not only that they get to see the output of the events as well

4. **Gallery:** People get to see all pictures of the officials and guests whenever an event is organized, and they get to know the officials and the persons who were present in the event.

5. **Contact us:** People visiting the website will get the contact details in this section. They get to connect through mail or phone number as mentioned in the contact section. Not only that they get to visit the office in person using the location provided as google map.

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6. **Login:** Here the admin and put the mail and required password and can log in to make any sort of changes

7. **Change Password:** Here the admin needs to put the previous password and needs input the new password to change the password.

8. **Manage Event:** In this section the admin can add different upcoming events, can edit previously updated events, even can delete any event information if required.

9. **Manage Member:** Here the members information is updated. If required any new member can be added or removed from previously added member.

10. **Edit OIR website information:** Any information related to OIR can be updated or edited here

11. **Add images to gallery:** In order to add image to the gallery the admins need to be here after login.

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5.2 Requirement Analysis

Rich Picture

Rich picture helps to understand the complexity of the environment in which the development intervention is operating, providing a spatial overview of the situation. Below is the rich picture of our system.

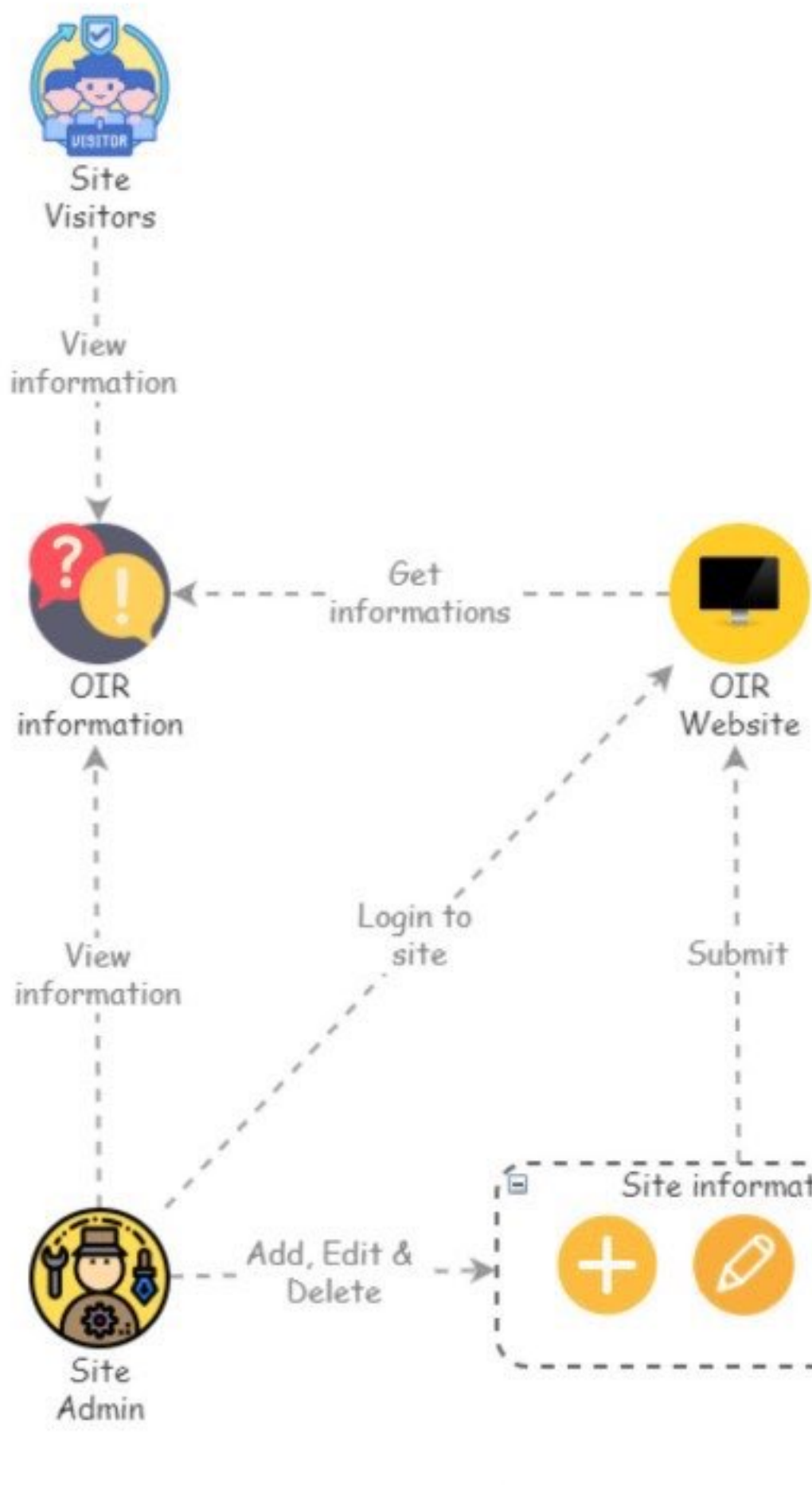


Figure 5.1: Rich Picture

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Functional and Non-Functional Requirements

Our system has the following functional requirements:

Function: Login		
Input: Username, Password	Process: Match credentials with database.	Output: Redirected to the admin dashboard
Precondition	Internet access is required.	
Postcondition	The user receives a confirmation message and is forwarded to the dashboard page.	

Table 5.1: Functional Requirement Login

Function: Change Password		
Input: Old Password, New Password	Process: Match credentials with database and change to new one	Output: The database will be updated with the new password.
Precondition	Only administrators may login and add to the system, and they must do it as administrators.	
Postcondition	A notification of the stored result will be sent	

Table 5.2: Functional Requirement Change Password

Function: Update Website Information		
Input: All the information that needed to be update	Process: Change the old information with the new ones.	Output: The database will be updated with the new information.
Precondition	Only administrators may login and add to the system, and they must do it as administrators.	
Postcondition	A notification of the stored result will be sent	

Table 5.3: Functional Requirement Update Website Information

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Function: Add team member		
Input: Name, Designation and image	Process: Add new team member	Output: Added new member to the database
Precondition	Only administrators may login and add to the system, and they must do it as administrators.	
Postcondition	A notification of the stored result will be sent	

Table 5.4: Functional Requirement Add team member

Function: Edit team member information		
Input: All the information that needed to be update	Process: Change the old information with the new ones.	Output: The database will be updated with the new information.
Precondition	Only administrators may login and add to the system, and they must do it as administrators.	
Postcondition	A notification of the stored result will be sent	

Table 5.5: Functional Requirement Edit team member information

Function: Delete a team member		
Input: Team member id	Process: Delete a team member.	Output: Selected team member will be deleted from database
Precondition	Only administrators may login and add to the system, and they must do it as administrators.	
Postcondition	A notification of the result will be sent	

Table 5.6: Functional Requirement delete a team member

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The system will have the following non-functional system requirements:

1. The system will be very secure as only authorized users is allowed access to the system
2. The system will be fast providing users with utmost performance
3. The system will be intuitive so that users can easily navigate through the system
4. The system will be responsive and follow the mobile first approach
5. The system will be very reliable with almost zero downtime unless maintenance take place

It is a process of planning a new business system or replacing an existing system by defining its components or modules to satisfy the specific requirements. Before planning, you need to understand the old system thoroughly and determine how computers can best be used in order to operate efficiently.

5.3 System Analysis

5.3.1 Six Element Analysis

Process	System Roles					
	Human	Non-Computer Hardware	Computing Hardware	Software	Database	Communication and Network
Admin Sign in	Admin (Admins have already been pre-registered in the system.)	For keeping track of needs and identifying difficulties, use a pen and paper or a pdf.	Desktops, Laptops, Smartphones	Web Browsers, VSCode, Git, Discord: To test the system, note taking, documentation, and collaboration with team	SQLite	WAN/LAN to visit the website

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Add, Edit, Remove team member	Admin (Admins have already been pre-registered in the system.)	For keeping track of needs and identifying difficulties, use a pen and paper or a pdf.	Desktops, Laptops, Smartphones	Web Browsers, VSCode, Git, Discord: To test the system, note taking, documentation, and collaboration with team	SQLite	WAN/LAN to visit the website
Manage website information	Admin (Admins have already been pre-registered in the system.)	For keeping track of needs and identifying difficulties, use a pen and paper or a pdf.	Desktops, Laptops, Smartphones	Web Browsers, VSCode, Git, Discord: To test the system, note taking, documentation, and collaboration with team	SQLite	WAN/LAN to visit the website
Visit website	Visitors and Admins	For keeping track of needs and identifying difficulties, use a pen and paper or a pdf.	Desktops, Laptops, Smartphones	Web Browsers	SQLite	WAN/LAN to visit the website

Table 5.7: Six element analysis

5.3.2 Feasibility Analysis

A very significant preliminary study was undertaken before the creation of the Office of Industry Academia Relations, SETS, IUB website to ascertain a crucial finding: is this project feasible? We were able to create a thorough report on the advantages, disadvantages, possibilities, and dangers for this project by completing a feasibility study.

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- **Technical feasibility:** This project is technically sound and safe. It doesn't need complex hardware or anything of the sort. The system validates all system requirements because it was created using the most cutting-edge web technologies.
- **Legal feasibility:** The cybersecurity laws are entirely followed by this system.
- **Operational feasibility:** A website is a fantastic platform for branding. A strong website is the best approach for an office to establish its own online brand in 2022 given how frequently people share information online. Visitors can find out more about the staff members' roles and activities as well as how to get in touch with them. This website will assist both individuals and the office in spreading their name.
- **Economic feasibility:** This system does not need to be overly moderated. Furthermore, no additional financing was needed for the development of this project because it was created utilizing open source software.

5.3.3 Problem Solution Analysis

Our approach to resolving issues faced by our team and organization is improved by developing the system utilizing tried-and-true tools and methods. There are four basic steps to solve a problem:

1. An explanation of the issue.
2. Come up with alternates.
3. Reviewing and choosing an alternative.
4. Put solutions into action.

We ran across problems that prevented us from progressing. But we gave it some thought and used these four techniques to solve these issues. The choice of frame and technologies was the key issue. There are numerous technologies accessible nowadays for building websites. It was challenging to select the best technique from all of the available possibilities. We had some trouble starting the project because we are not Python specialists, but thanks to the running time, we were able to get beyond the problems and complete the work on schedule.

5.3.4 Effect and Constraints Analysis

Our strategy is to build a website that will include all of the office's information. Additionally, all information may be checked and changed as needed after the site is published. be made public first so that people can be informed and receive regular updates.

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5.4 System Design

Basically it's a system to set up a new business or replace the old version one by mentioning the components and modules to meet up the specification but it is a must that we need to understand the previous system before planning the new one.

UML Diagrams

Use Case Diagrams: A use case diagram is a way to summarize details of a system and the users within that system.

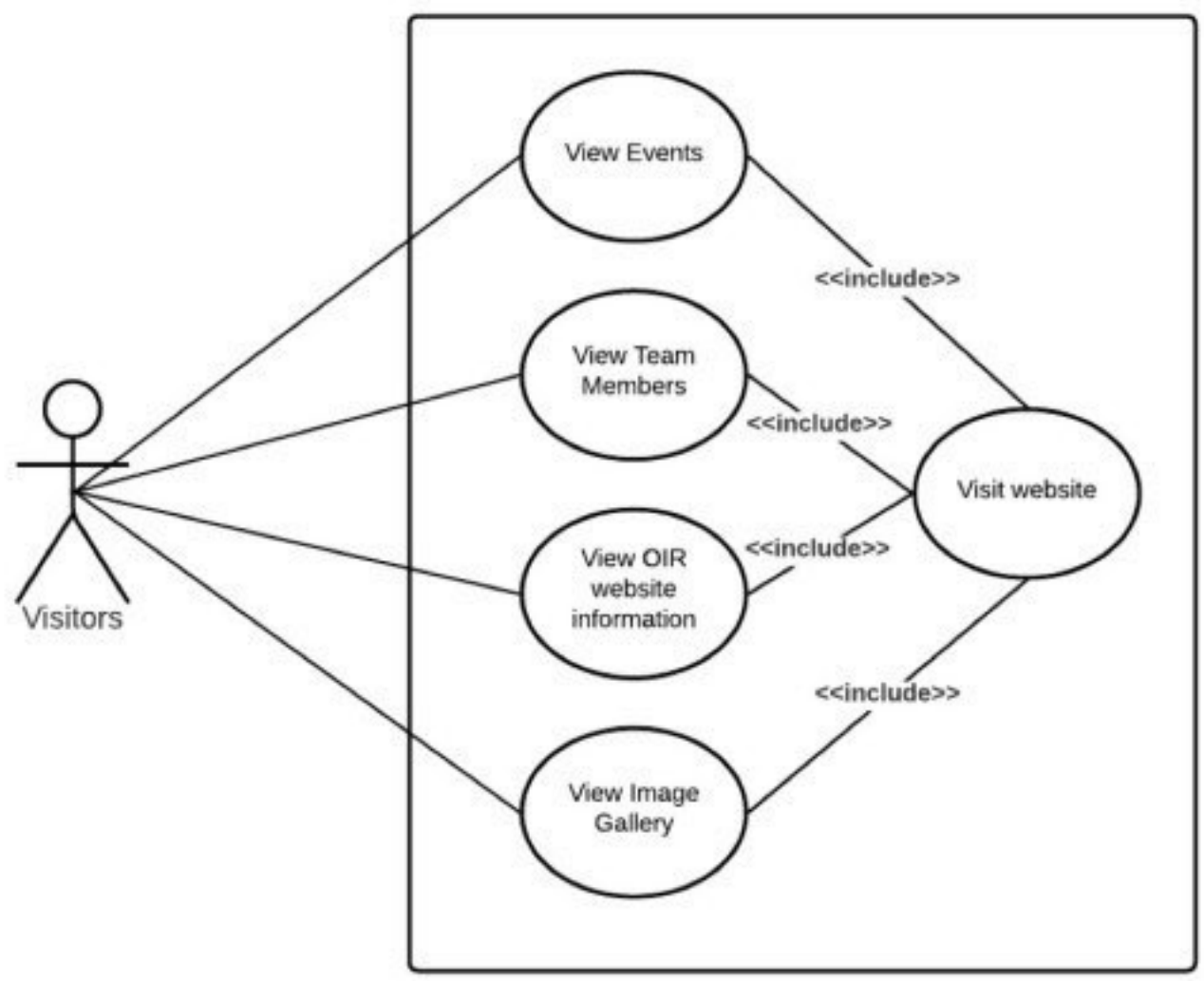


Figure 5.2: Use case diagram of site visitors

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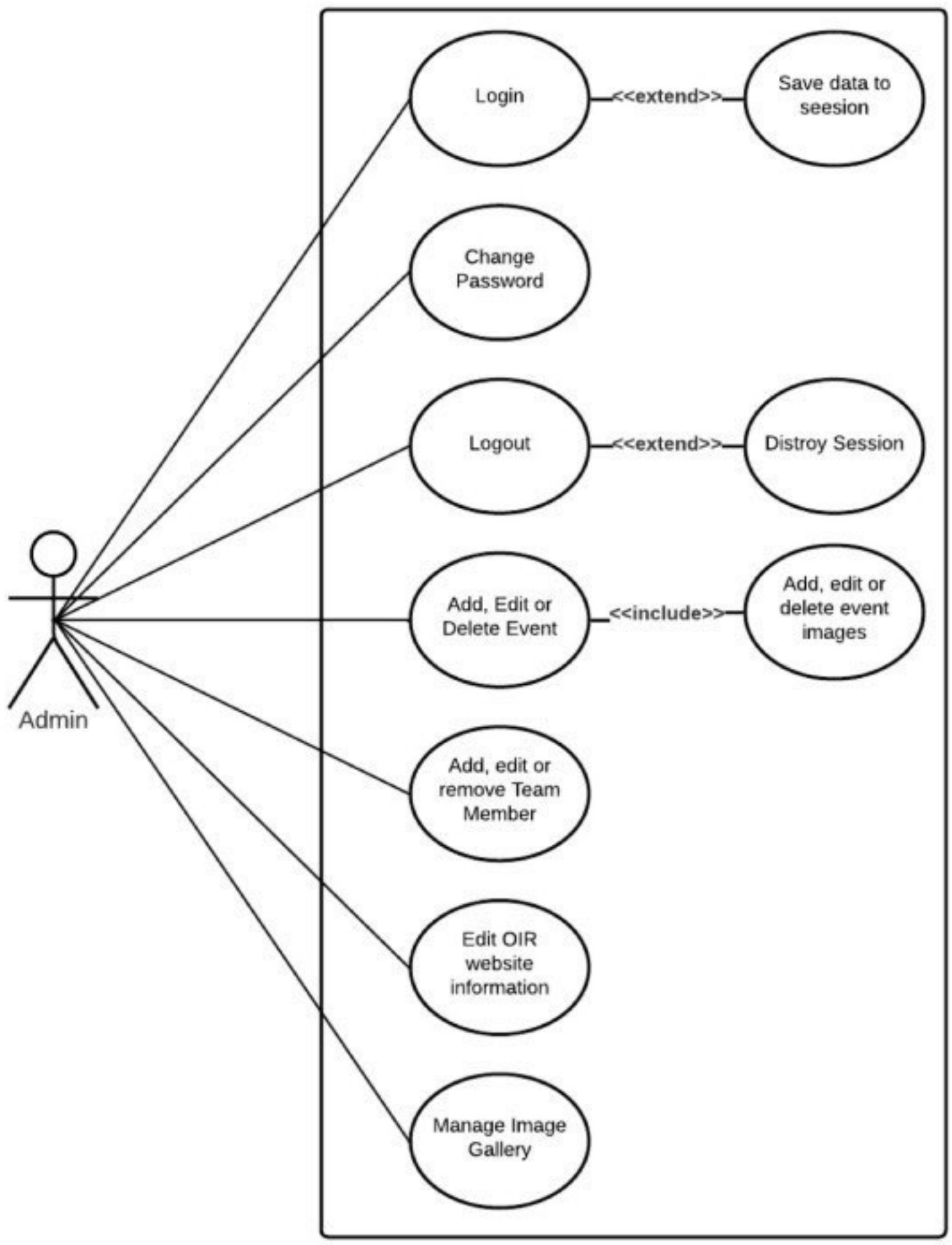


Figure 5.3: Use case diagram of site admin

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Activity Diagram: To describe the dynamic aspects of a system activity diagram is very important.We can consider activity diagram as a operation of a system

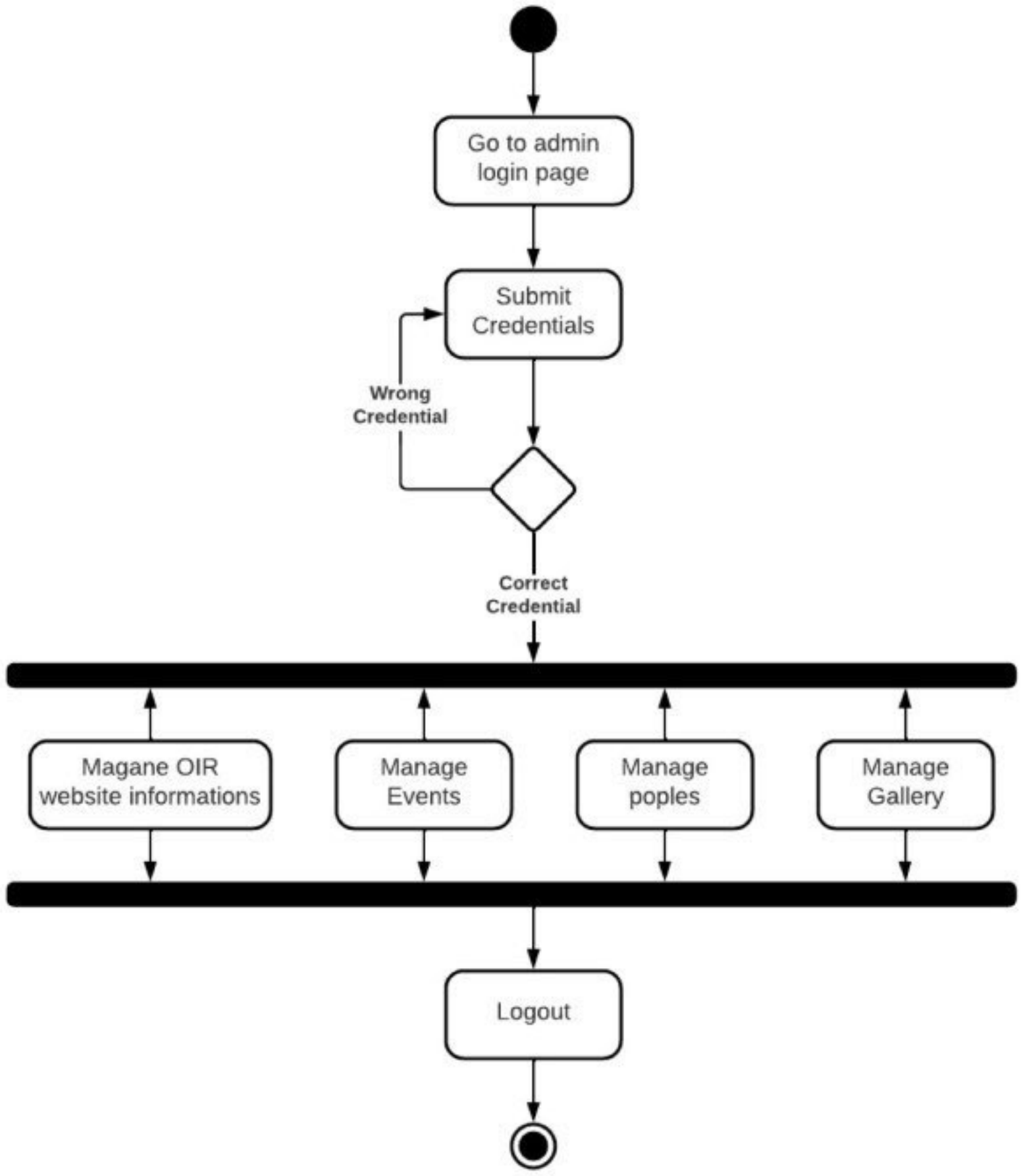


Figure 5.4: Activity diagram of site admin

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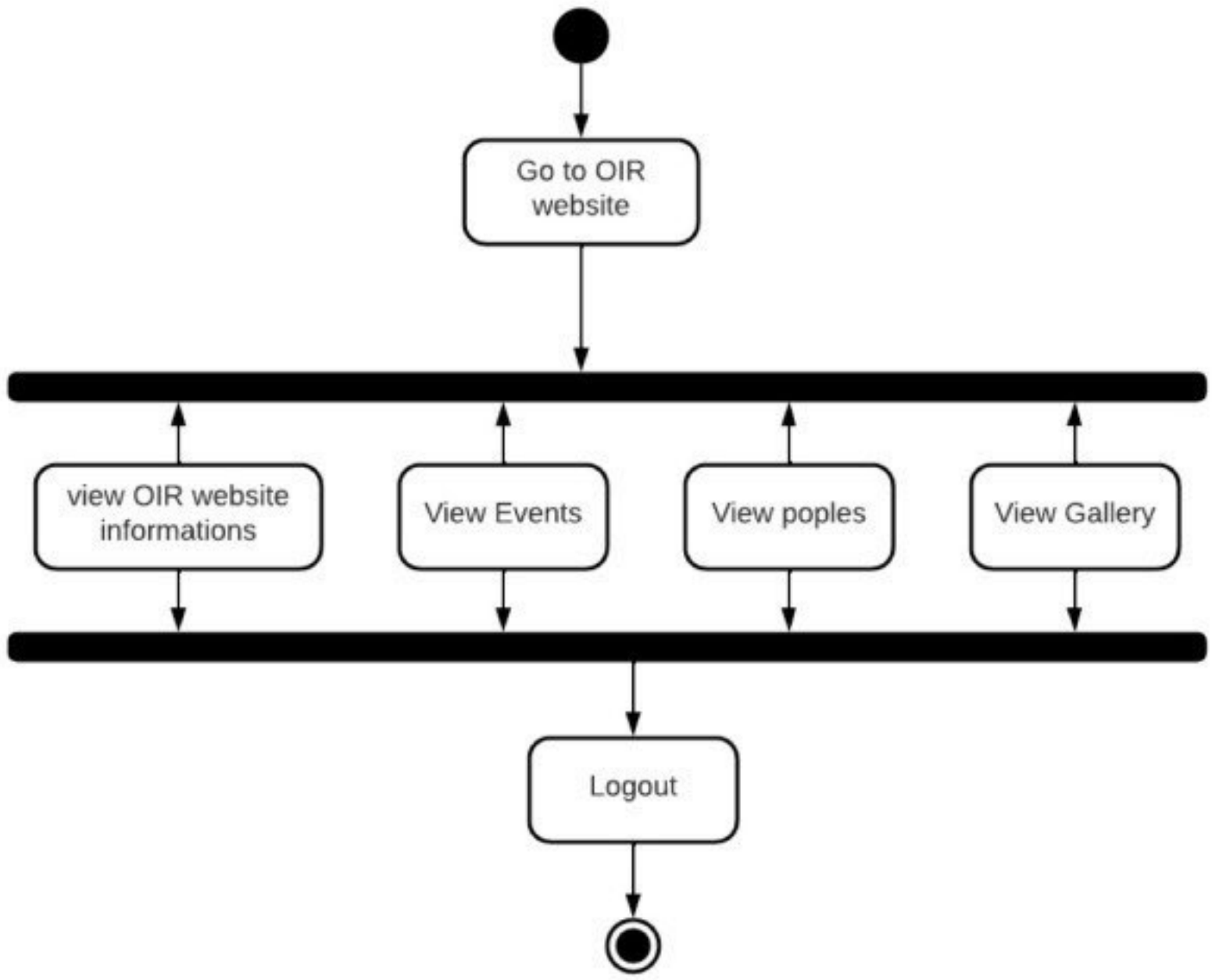


Figure 5.5: Activity diagram of site visitors

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Class Diagram: The class diagram is basically a static view of an application. The relationships between types of objects and their residing are represented by this.

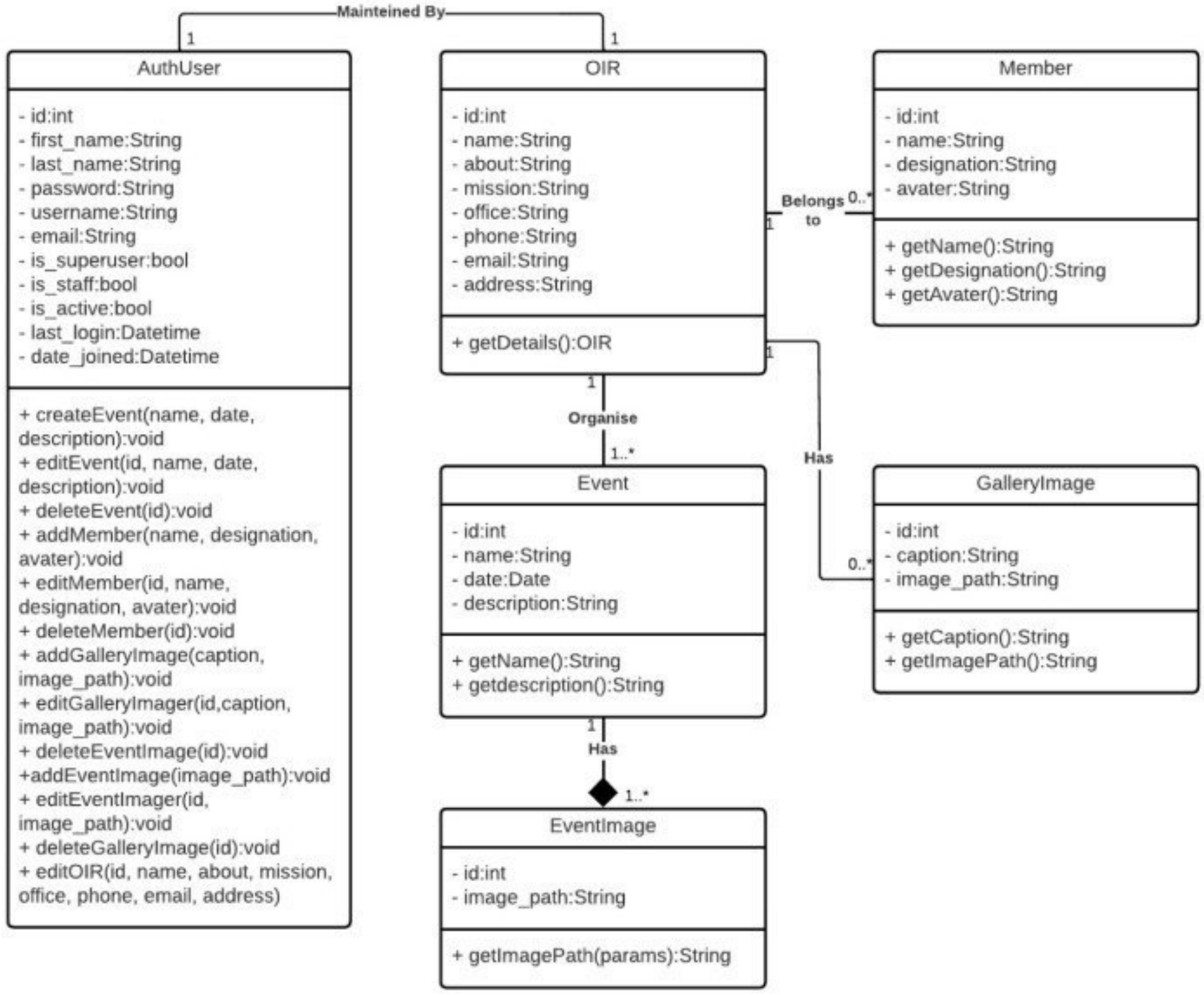


Figure 5.6: Class diagram

Architecture

A system's architecture acts as a blueprint. The MVT (Paradigm View Templet) model is used to manage system complexity and develop a communication and coordination mechanism among website elements for the Office of Industry Academia Relations, SETS, and IUB. The role of the model in MVT is to act as a data interface. Throughout the entire application, it serves as a logical data structure and is represented by a database. In this instance, SQLite was used as the database. When a client accesses a URL, the user interface is shown to them as the view. HTML, CSS, and Java Script make up View. Template, coupled with some unique terminology that explains how dynamic, is the static portion of the view. The graphic shown shows very clearly that a user can only read and interact with a view; a request or command from a user is received by the view and sent to the web server, which then collects and stores

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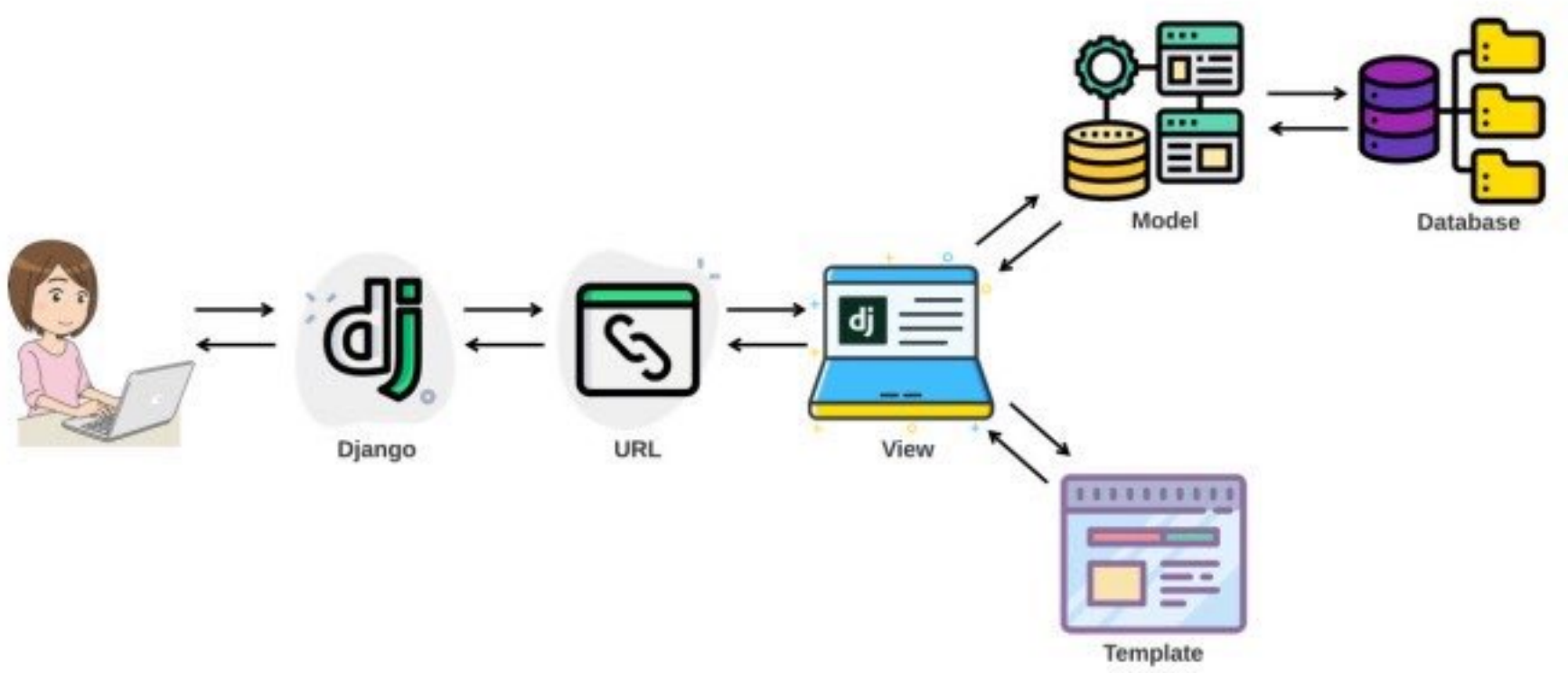


Figure 5.7: MVT Architecture

the necessary data from the file system and database and inserts it into the template. The template is then produced to provide the users with a comprehensive view as a response.

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5.5 Implementation

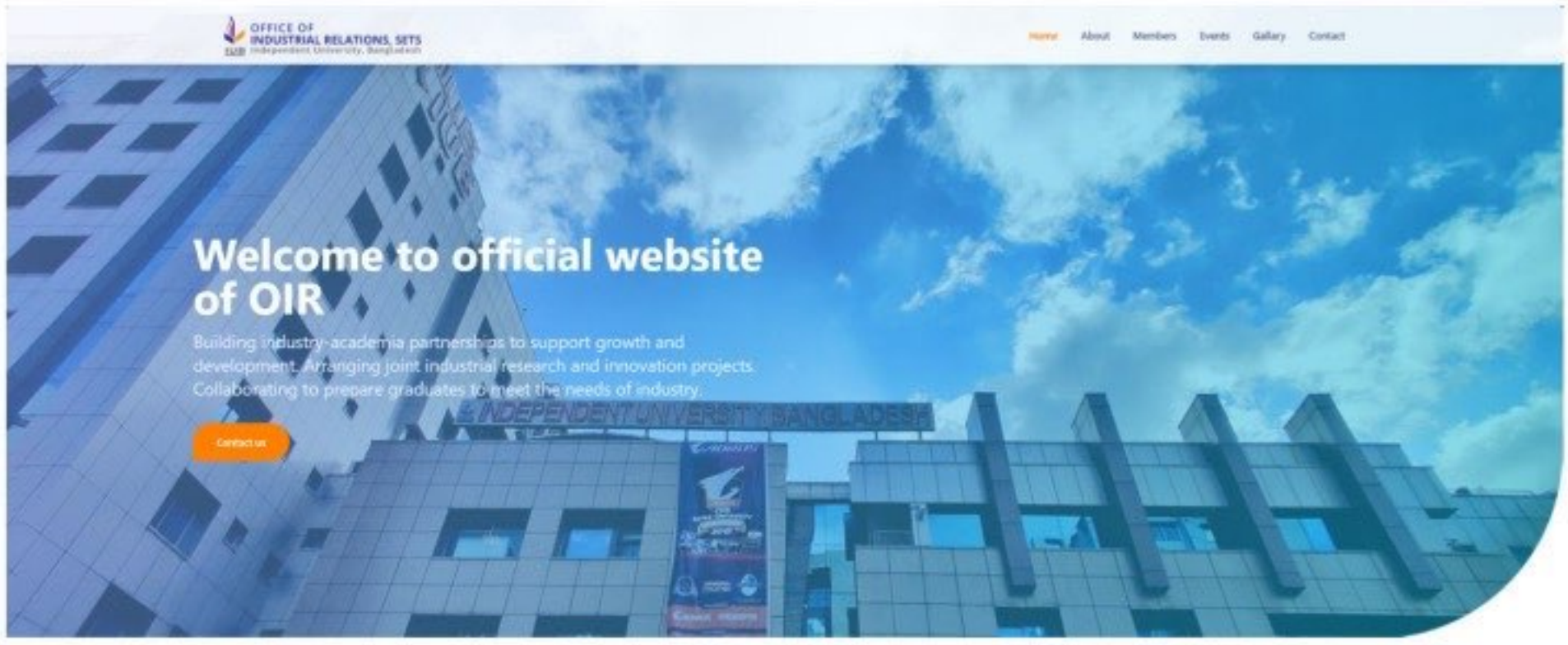


Figure 5.8: Homepage Hero Section



Figure 5.9: Homepage About Section

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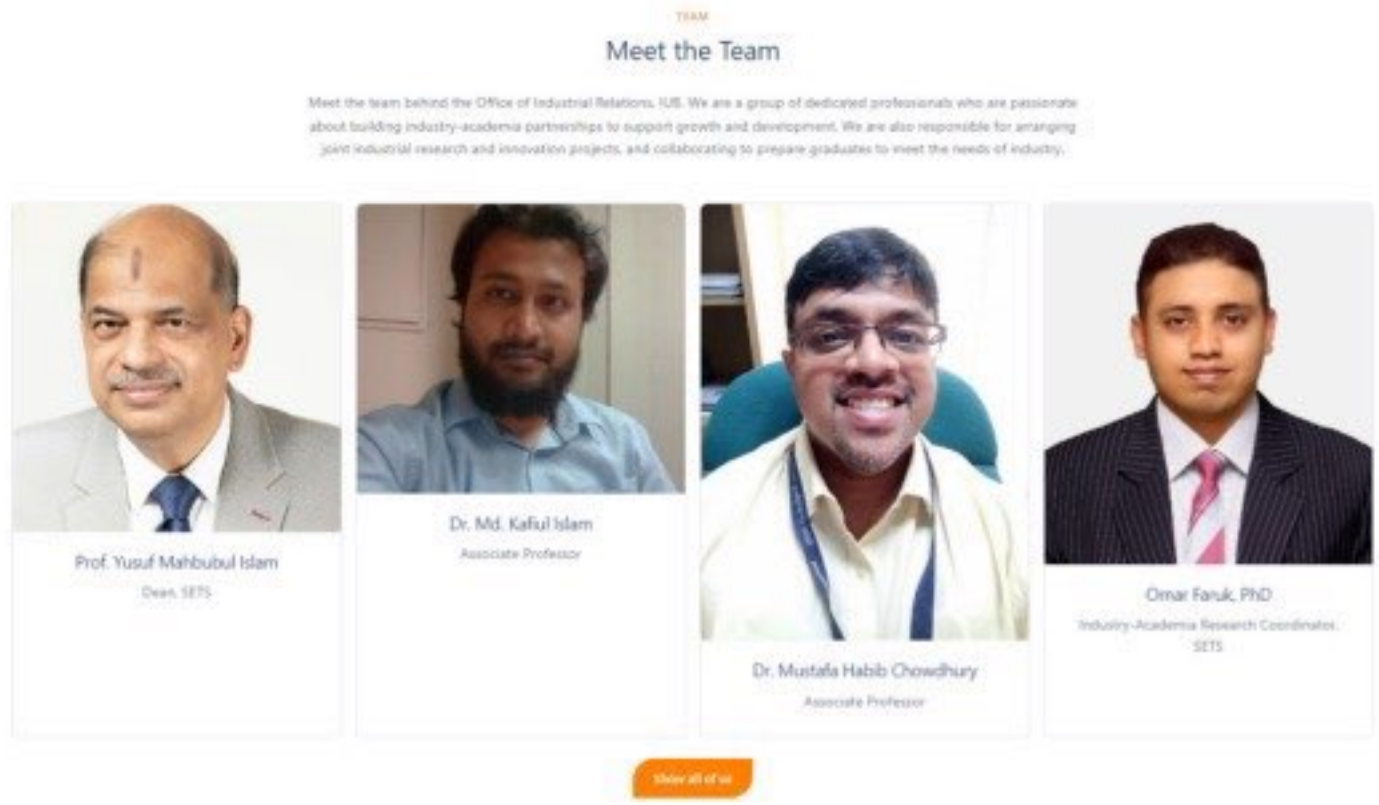


Figure 5.10: Homepage Team Section

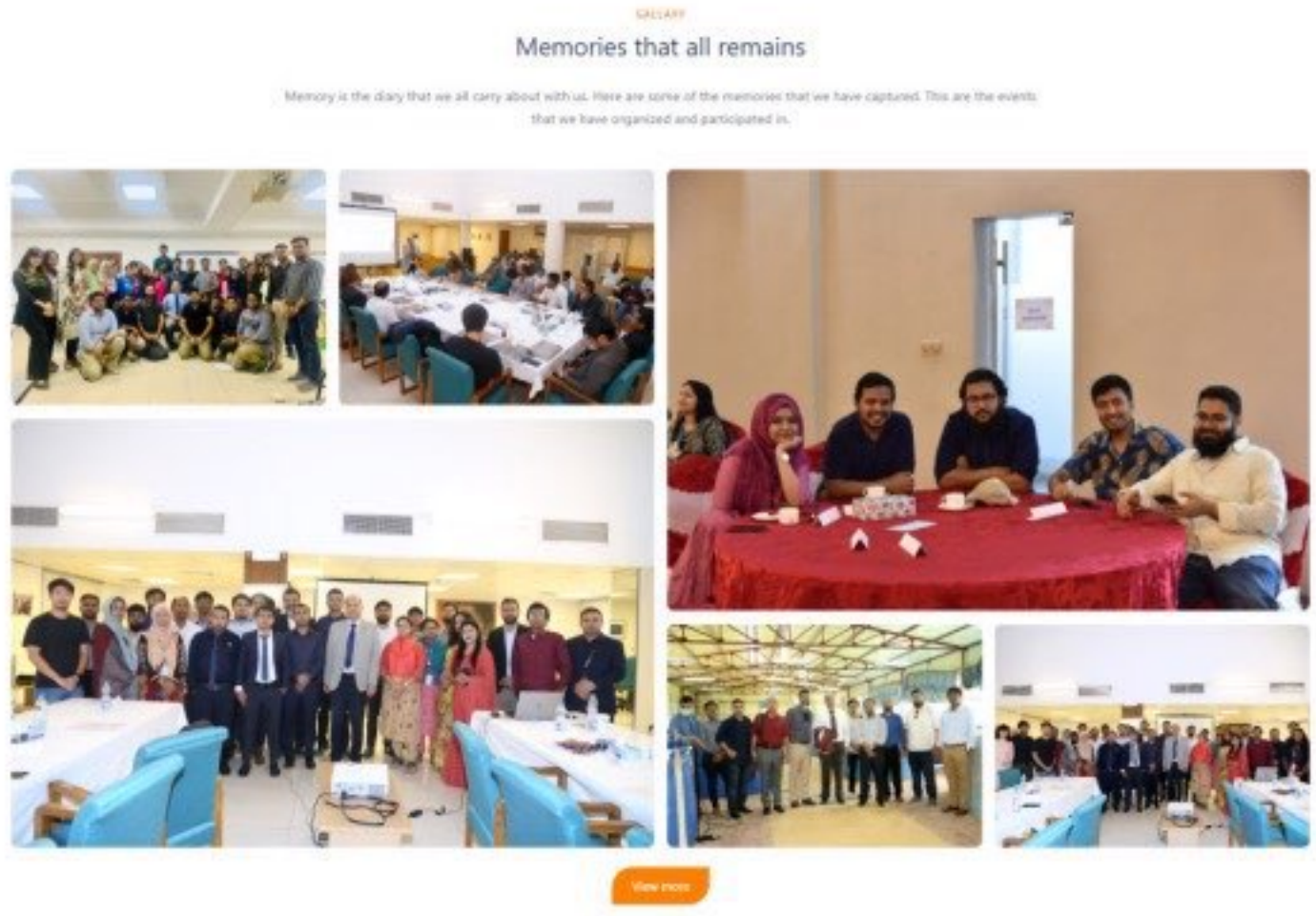


Figure 5.11: Homepage Gallery Section

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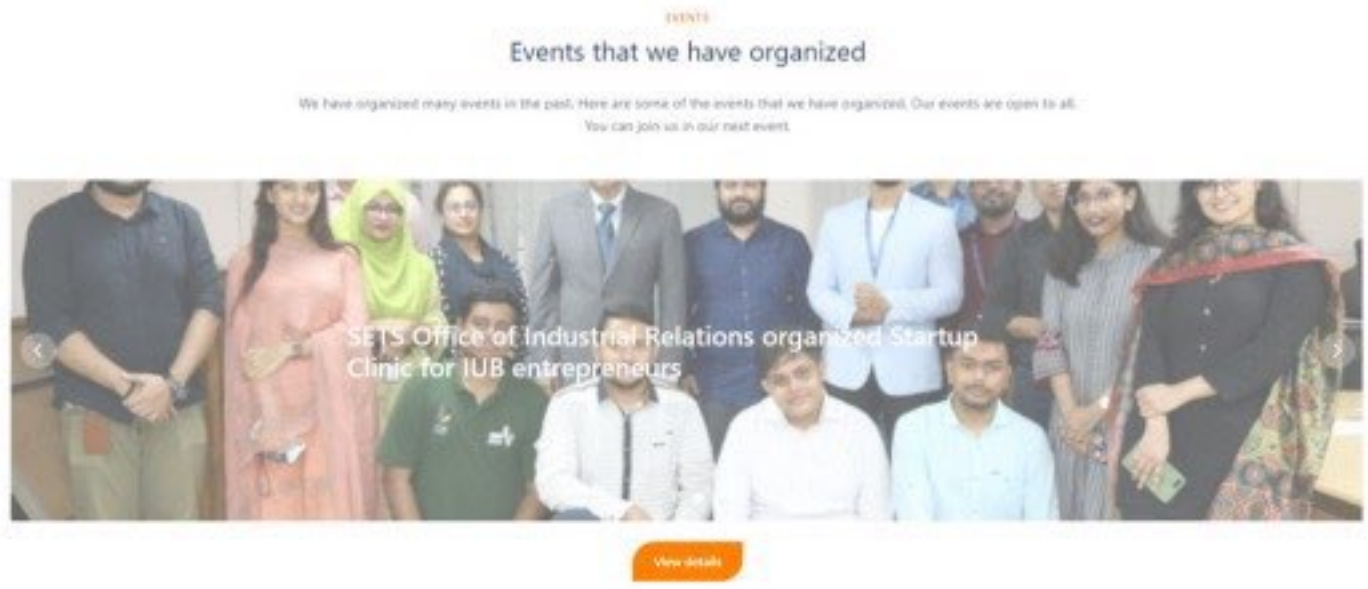


Figure 5.12: Homepage Events Section

Figure 5.13: Homepage Contact Section

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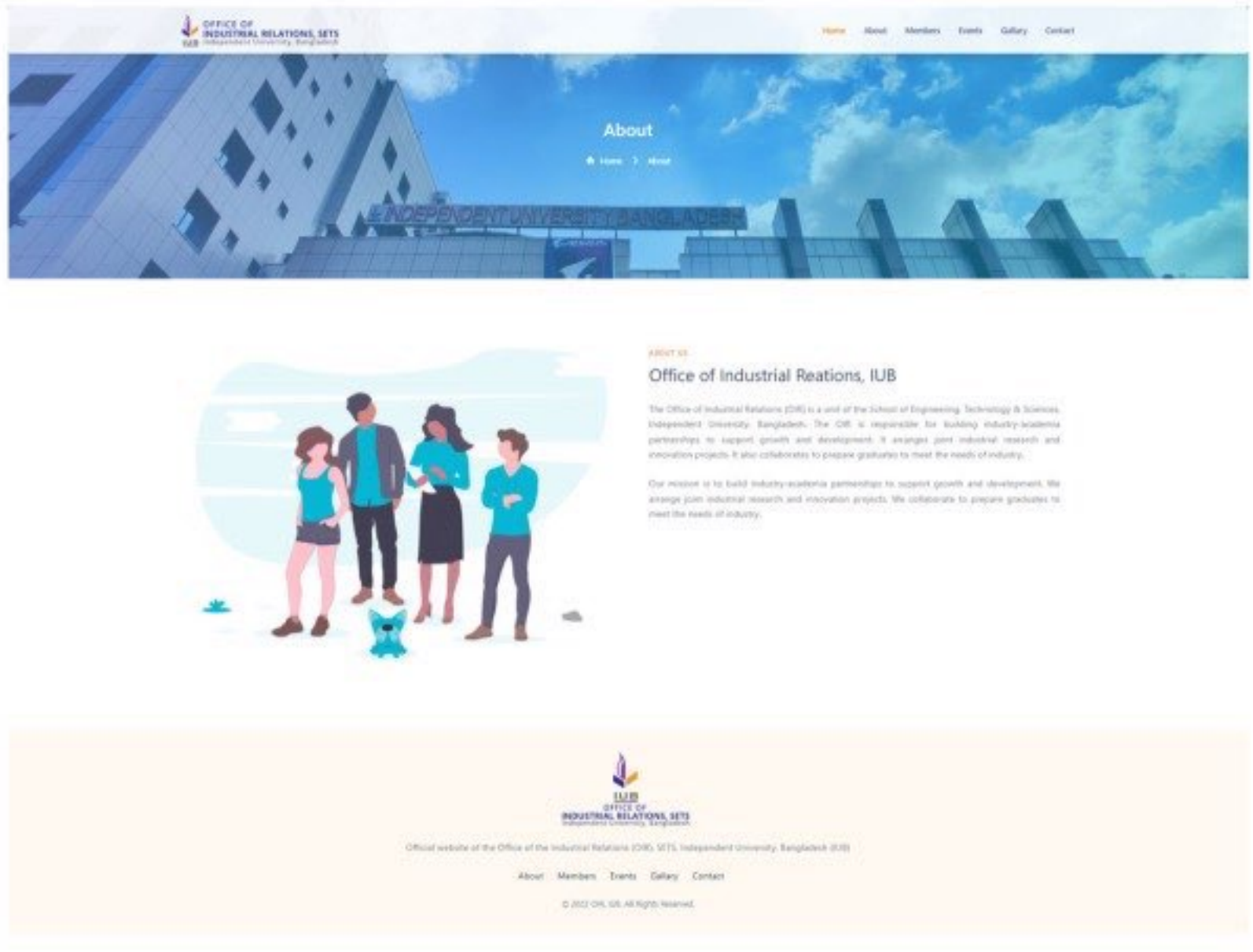


Figure 5.14: About page

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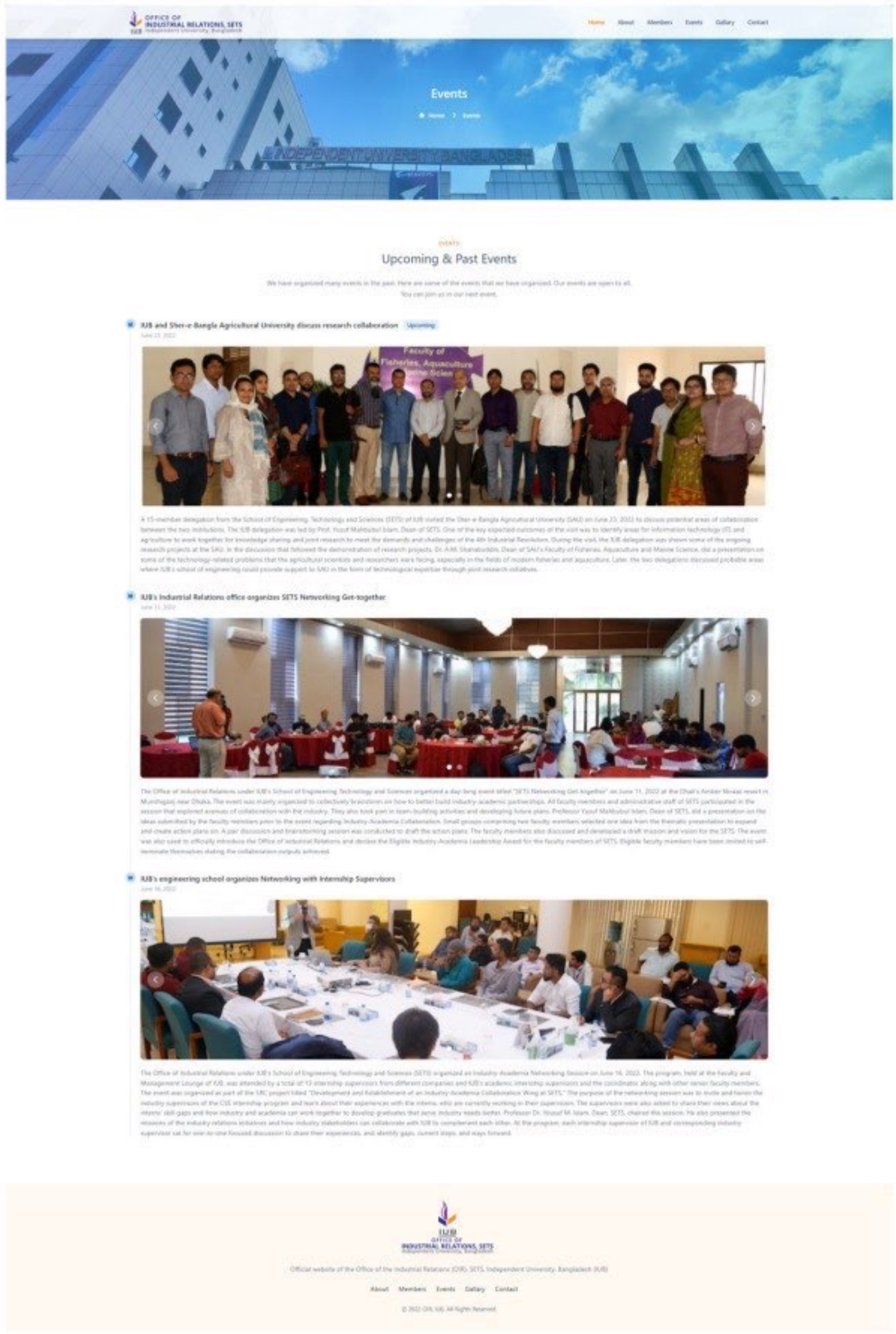


Figure 5.15: Events page

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Figure 5.16: Gallery page

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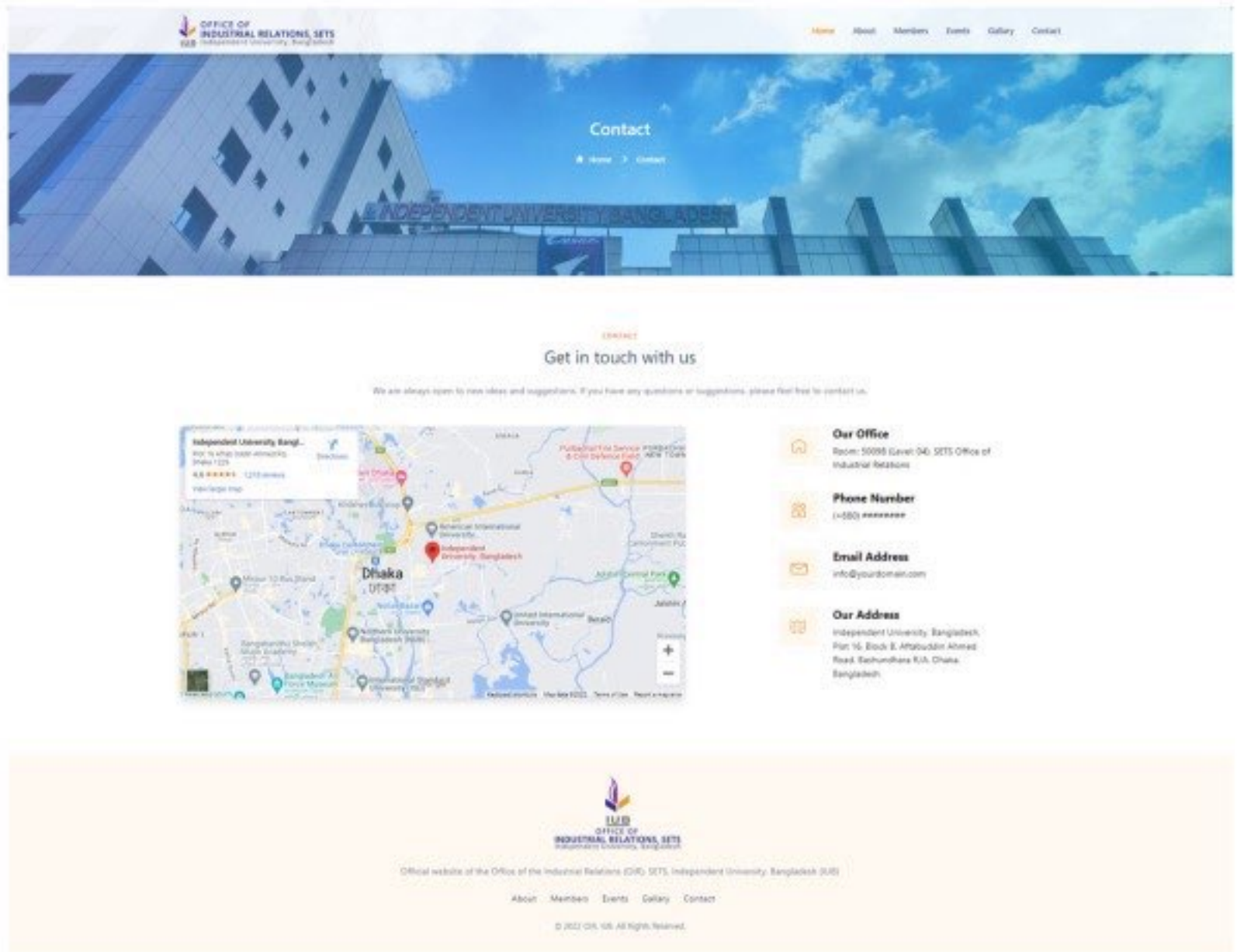


Figure 5.17: Contact page

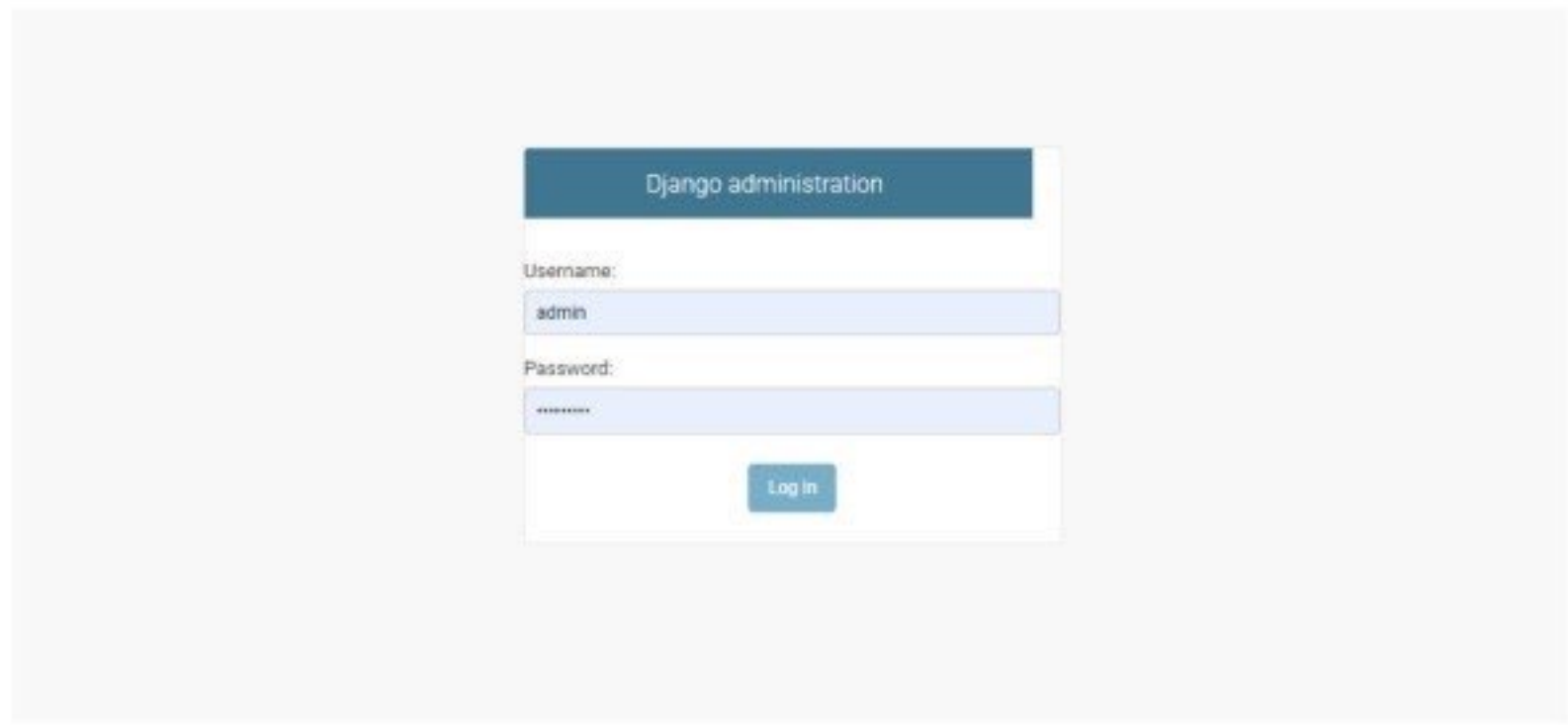


Figure 5.18: Admin Login page

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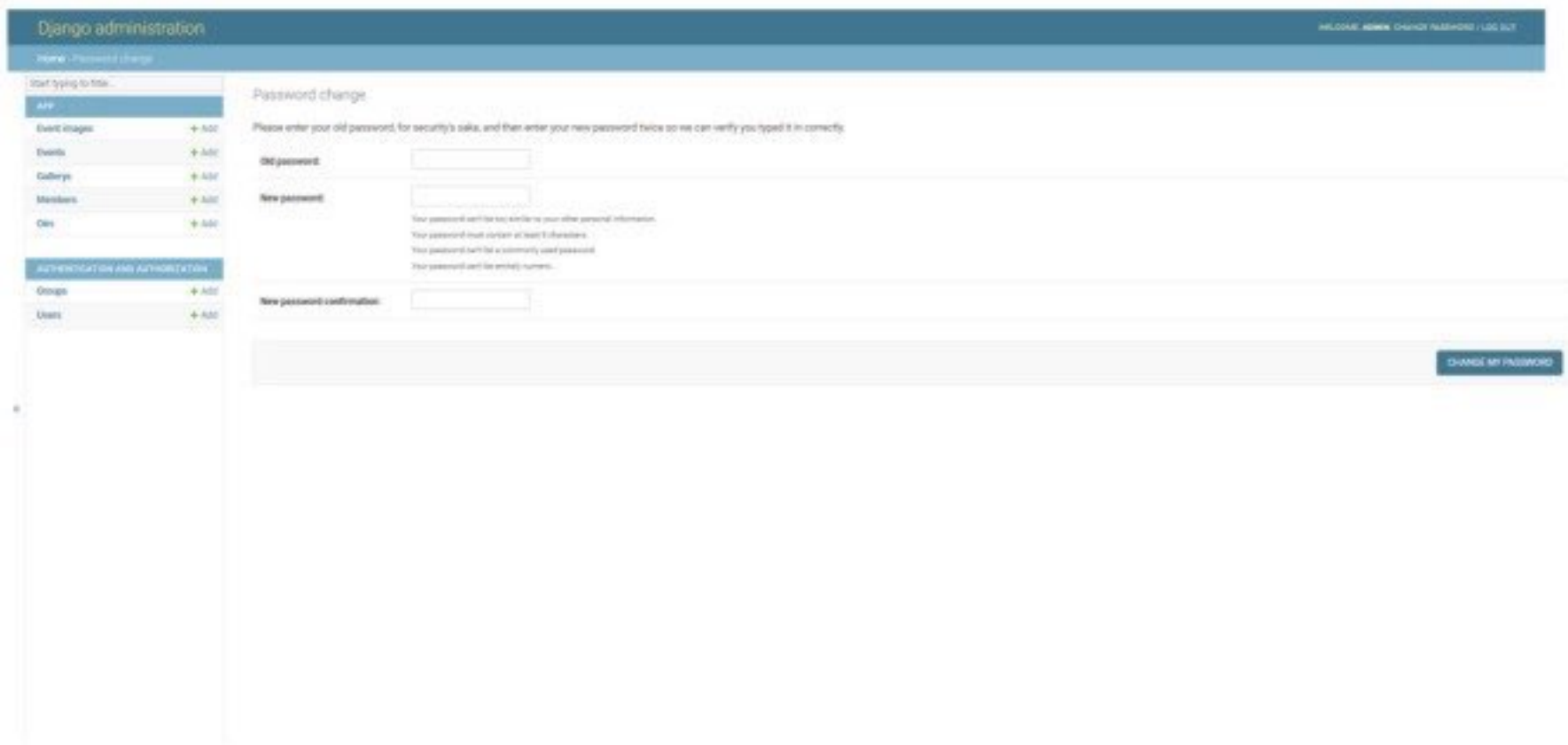


Figure 5.19: Admin Change Password page



Figure 5.20: Admin Dashboard

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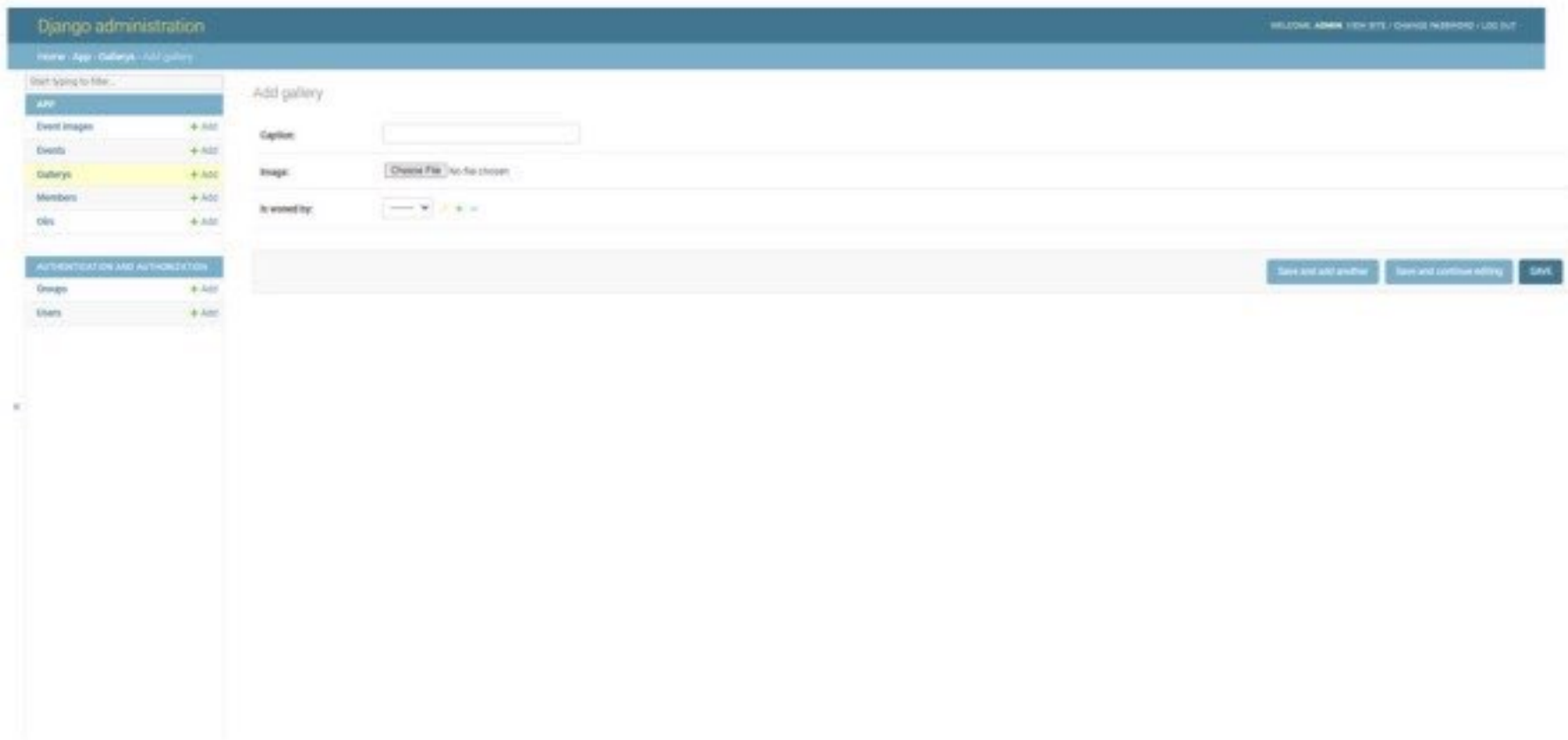


Figure 5.21: Admin add image to gallery

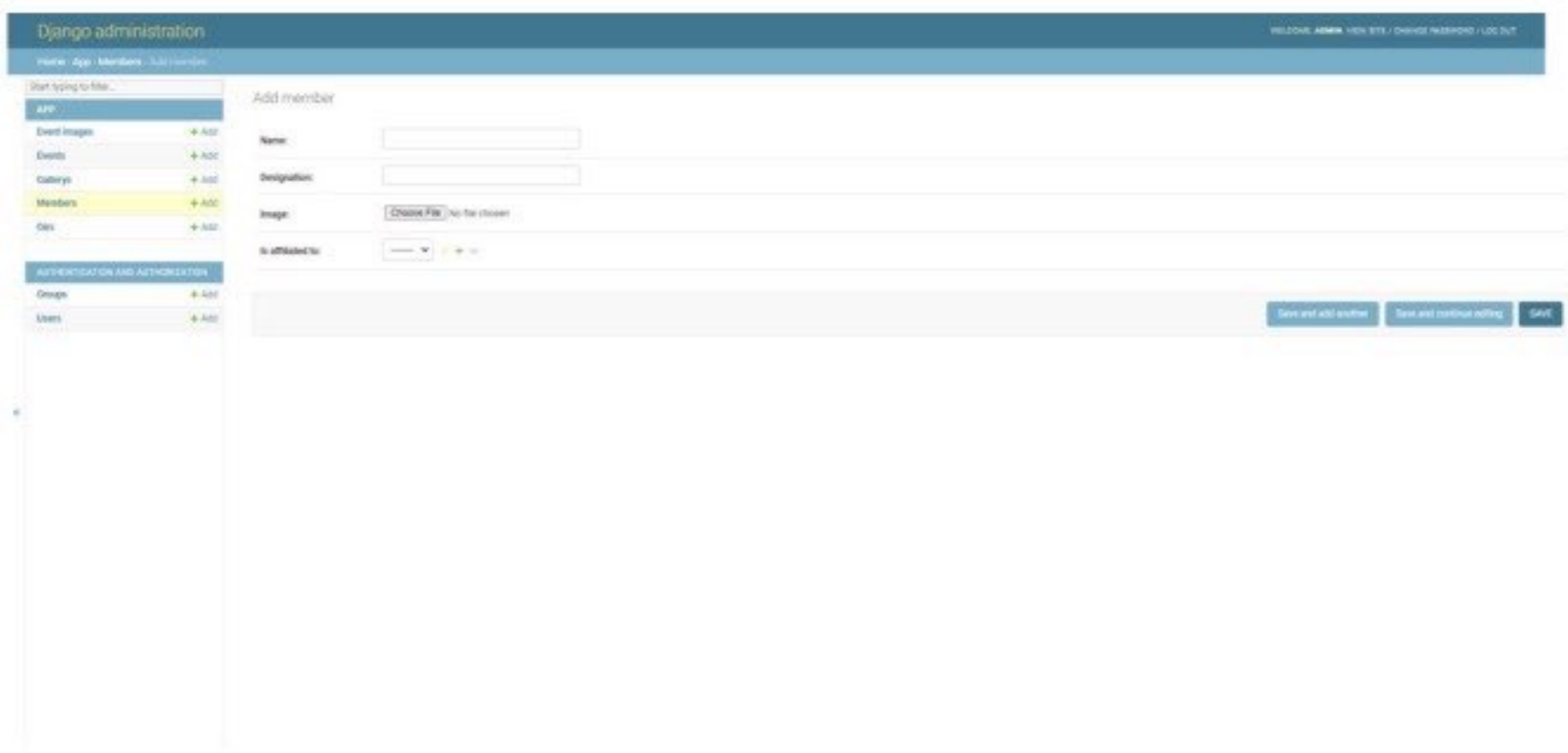


Figure 5.22: Admin add member

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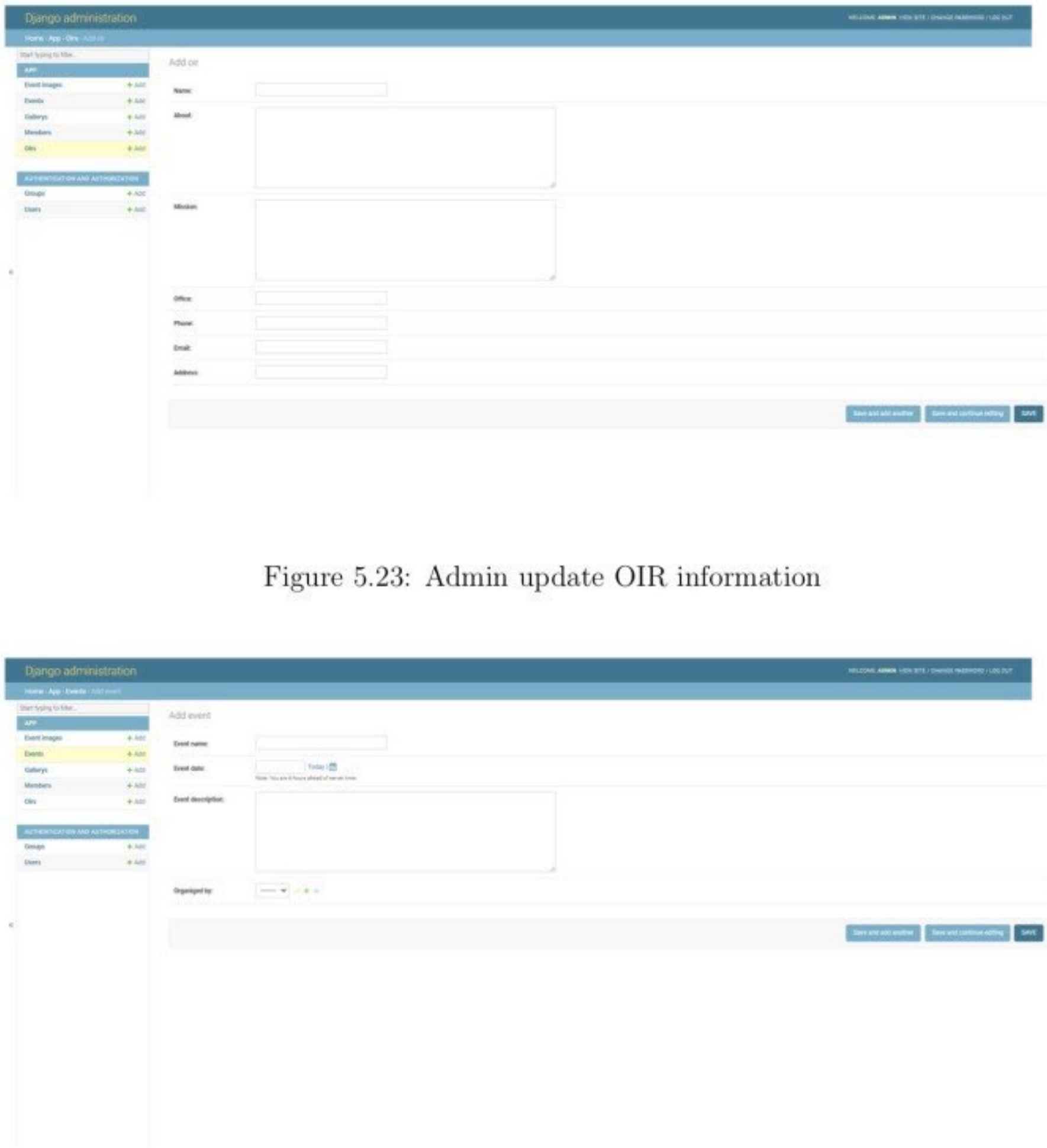


Figure 5.23: Admin update OIR information

Figure 5.24: Admin add event

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5.6 Testing

Test Case ID	Test Scenario	Test Steps	Pre-requisites	Test Data	Expected/ Intended Results	Actual Results	Test Status – Pass/ Fail
#Q01a	Admin Login	Enter Valid Email and password in input field and press login button	Already have an account	Email and Password	Redirect to Admin Dashboard.	As Expected.	Pass
#Q01b	Change Password	Enter old password and new password in input field and press change password button	Already have an account	Old Password and New Password	Change password in the database.	As Expected.	Pass
#Q01c	Update website Information	Provide information's that need to be update.	Information needed to be present.	All the information that needed to be update.	Update will be reflected on the website.	As Expected.	Pass
#Q01d	Add new team member	Fill up the input fields with the member information.	Must be logged in as admin and username and email must be unique.	All requirement information	User will be added to database and Update will be reflected on the website.	As Expected.	Pass

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#Q01e	Remove a team member	Select the user and from dropdown action select delete	Must be logged in as admin.	Member id	Member Will be deleted from the database and update will be reflected on the website.	As Expected.	Pass
#Q01f	Edit team member information	Select the user and from dropdown action select edit	Must be logged in as admin.	All requirement information	Information Will be edited in the database and update will be reflected on the website.	As Expected.	Pass

Table 5.8: Testing

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Chapter 6

Results & Analysis

The results part should endeavor to recount the findings without attempting to analyze or assess them, as well as give guidance to the research paper's discussion section. The results are given, and the analysis is revealed. The writer outlines what was done with the data discovered in the analysis section. It is necessary to know what the analysis consisted of in order to create the analysis section, although this does not imply that data is required. The analysis should have already been completed before starting the findings section. Several difficulties arose when creating the website. This was a small problem that we were able to fix. After these issues were resolved, test cases were documented. All test cases have been justified using testing approaches. We conducted our tests on a local server.

6.0.1 Software Testing

Software testing is a process of determining if the actual software product meets the expected criteria and ensuring that the software product is free of defects. It entails running software/system components through their paces using human or automated techniques to evaluate one or more attributes of interest. The goal of software testing is to find mistakes, gaps, or missing requirements in comparison to the actual requirements. The graph below depicts the outcomes of assignments on which I have worked. Each job is only offered if and only if it successfully fits the requirements.

Test ID	Test Case	Test Steps	Test Data	Expected/ Intended Results	Actual Results	Pass/Fail
#Q01a	Admin Login	Enter Valid Email and password in input field and press login button	Email and Password	Redirect to Admin Dashboard.	As Expected.	Pass

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#Q01b	Change Password	Enter old password and new password in input field and press change password button	Old Password and New Password	Change password in the database.	As Expected.	Pass
#Q01c	Update website Information	Provide information's that need to be update.	All the information that needed to be update.	Update will be reflected on the website.	As Expected.	Pass
#Q01d	Add new team member	Fill up the input fields with the member information.	All requirement information	User will be added to database and Update will be reflected on the website.	As Expected.	Pass
#Q01e	Remove a team member	Select the user and from drop-down action select delete	Member id	Member Will be deleted from the database and update will be reflected on the website.	As Expected.	Pass
#Q01f	Edit team member information	Select the user and from drop-down action select edit	All requirement information	Information Will be edited in the database and update will be reflected on the website.	As Expected.	Pass

Table 6.1: Software Testing

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Chapter 7

Project as Engineering Problem Analysis

7.1 Sustainability of the Project

Engineering problems usually have more than one solution. It is the aim of the engineer to obtain the best solution possible with the resources available. Engineers are professionally responsible for the safety and performance of their designs. The objective is to solve a given problem with the simplest, safest, most efficient design possible, at the lowest cost. Engineering is obviously one of the applied sciences.

A product can be sustainable in three main categories:

- **Community Sustainability:** After the development and official release of "OIR Website" it is predicted that it will create a strong user base and from that will emerge a community of users with mutual likeness.
- **Financial Sustainability:** The system aims to be free to use for everybody. It will show all the reports of all events will occurred or shall take place. As the majority cost of maintenance of "OIR Website" will be consisting of domain hosting and database storage cost.
- **Organizational Sustainability:** It relates to how the organization will continue to operate after the release of the website. After the release of an website, usually the organization maintains it with current team, an extended team or by a fresh new team. Also, organizations update their project by adding newer features to it and organization may pivot to other projects, expand the teams, create new teams, etc.

"OIR Website" has many more features planned to be worked on and released. Since the website has further plans, the project will be maintained and updated after its release as well and release premium services to it. In conclusion, it can be said that the project is organizationally sustainable.

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7.2 Social and Environmental Effects and Analysis

Technology is increasing at a very fast pace. To keep with technology, people are in need of computers. Be it schools, work, home or any other aspect in life.

- **Social Effect:** In the current situation, safety is the top priority for all service providers who wish to reopen once the restrictions are eased. The risk of COVID-19 is likely to persist for a long time, so investing in solutions that can help with managing organizations to deliver their services while maintaining a high safety standard.
- **Environmental Effects:** The environmental factors investigated include the variability of service times, the probabilities of no-shows and walk-ins. The effects of these factors are evaluated using a near-optimal rule that already adjusts.

7.3 Addressing Ethics and Ethical Issues

Ethics is rooted in the ancient Greek philosophical inquiry of moral life. It refers to a system of principles which can critically change previous considerations about choices and actions. It is said that ethics is the branch of philosophy which deals with the dynamics of decision making concerning what is right and wrong. Scientific research work, as all human activities, is governed by individual, community and social values. Research ethics involve requirements on daily work, the protection of dignity of subjects and the publication of the information in the research.

- **No Sharing of Data:** The system will not compromise any data to any one nor will it allow purchasing of any data.
- **Data Security:** Only the owner, admin(s) and lead will have access to the database of the system to limit the chances of data compromise.
- **No discrimination Policy:** Apart from certain restrictions, no one shall be discriminated in "QIR Website". It does not discriminate any kind of users based on race, sexuality, gender, religion, color, beliefs, political, be it national or international, birth or status.

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Chapter 8

Lesson Learned

My time as an intern at OIR has been a great eye-opener. I faced multiple challenges which I overcame by brainstorming for a workaround or a solution to those problems.

8.1 Problems Faced During this Period

Apart from all these, I have faced lots of challenges while working on this Project. Some of these are listed below:

- **Work Environment:** I faced some difficulties at work too. I had to be punctual and attend daily meetings. There were rules and regulations that were to be strictly maintained and I had to make sure that I followed them properly. I had to get myself familiar with their work culture in a very short period of time.

- **Adapting to New Technologies:** Since this was the first time, I have ever worked on a website in an office environment I had to learn and adapt to new technologies of the company. Although acquiring the skill set was possible it became hard to apply them in real life situations.

- **Identifying and Fixing Bugs:** Often there were bugs which were very hard to find, and even after they have been found it became a big problem to fix it. There were bugs that were so difficult to deal with that it would take a whole week to fix it.

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8.2 Solution of those Problems

The last 4 years as an undergraduate student has taught me valuable lessons. Which helped me to find most of the solutions of this problem. Solution for those problems are listed below:

- **Work Environment:** From the university lessons, I learned the crucial ability of time management. Because of this, I was able to adjust appropriate time for myself so that I can meet the strict deadlines and also study for my other courses as well as work on Website.

- **Adapting to New Technologies:** In the beginning it was a difficult situation for me to adopt with new technologies. But after some days I habituate with the entire process by the help of my supervisor and support of my team mate.

- **Identifying and Fixing Bugs:** Most of the time I take help from online platform Tailwind CSS and a senior developer helped me to fix some issues. The issue that i cannot solve was fixed by another approach, for that i had to rewrite my code.

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Chapter 9

Future Work & Conclusion

9.1 Future Works

The "OIR Website" is still under development. Some Features still need to be polished before it can be developed. "OIR Website" is the first version of the system. It has many sides for improvement.

Some of them are:

- More Information will be updated
- Add some Internship Knowledge Information
- Add Query System For New visitors to website
- Improve the existing system

9.2 Conclusion

One of the prime reason that wesite is gaining popularity in recent days is that, the system provide an easier facilities to the general users. This paper has proposed an website for the office Of Industrial Relations so that people get to know their work and missions and their output. . This system is design to achieved maximum user satisfaction. I got a first-hand experience of what it is like to work in a professional environment. I learned state of the art technology in web development like Tailwind CS. I also learned how to collaborate with other software engineers, and consequently improved my inter-personal skills such as communication, teamwork, edibility, working calmly under pressure and how to maintain a rapport with my co-workers. I am very grateful for an experience like this. I feel like working and applying my skills in actual development is really rewarding and self-satisfying. In conclusion, I would like to thank both my supervisors whose guidance and encouragement Persuaded me to strive for the success in this project and for the endless project to come in my way in future.

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Bibliography

[1] M. M. M. Mong, "What is a work breakdown structure?"," 2021.

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An Undergraduate Internship/Project on Website For The Office Of Industry Academia Relations SETS,IUB

By

JAED BIN ALAM

Student ID: **1720685**

Summer, 2022

Consent Form

The student modified the internship final report as per the recommendations made by his/her academic supervisor and/or panel members during final viva, and the department can use this version for archiving.

Asif 14/9/22

(Signature of the Supervisor)

Md. Asif Bin Khaled

Department of Computer Science & Engineering

Independent University, Bangladesh

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