



# **An Undergraduate Internship on Full-Stack Web Development and Facial Recognition Based Attendance Management System**

By

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**Spring 2021**

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**May 10, 2021**

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

Department of Computer Science and Engineering

Independent University Bangladesh

# Attestation

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**Full Stack Web and Facial Recognition Based Attendance  
Management System Development of “Yoga Chandrima” at  
“DataSoft Systems Bangladesh Limited”**

An undergraduate internship report submitted by

**Mohammad Tausif Hossain** (Student ID: **1620571**)

has been approved on --/--/--.

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Lecturer

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# Acknowledgments

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First and foremost, I desire to express my deepest sense of gratitude to Almighty Allah, it is because of His mercy and blessing that I have come so far. It has been a great privilege to work for DataSoft as an Intern. I have received so much support and encouragement from the individuals of DataSoft who have years of experience in Software Development. I would like to thank the members of DataSoft for spending their valuable time and knowledge which was essential for the completion of this report. I express my gratefulness to my internal supervisor, Sanzar Adnan Alam, Lecturer, Department of Computer Science and Engineering, Independent University, Bangladesh (IUB), for his invaluable instructions, continuous guidance, support, and motivation during my internship period and preparation of this report. I, likewise, want to express my deepest gratitude to my external supervisor and my mentor M Manjur Mahmud, Director & COO, DataSoft Systems Bangladesh for allowing me to be a part of this organization. His support and leading ability were the driving force of this project. My gratitude also extends to all other employees of DataSoft who helped me learn so much in my skill development process and made me fit right in the environment. Many Thanks to the team members of this project, Pratik, Tapati, and Sowrav for their time, effort, and expert skills. Finally, I proudly acknowledge the great sacrifices, good wishes, moral support, fruitful advice, inspirations, and encouragement from my family members, relatives, and friends.

Mohammad Tausif Hossain

May 2021

# Letter of Transmittal

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10<sup>th</sup> May 2021

Sanzar Adnan Alam

Lecturer,

Department of Computer Science and Engineering,

Independent University, Bangladesh

Subject: Submission of Internship Report, Spring 2021

Dear Sir,

As-Salamu Alaykum. With due respect, I, Mohammad Tausif Hossain (ID: 1620571) from the Internship Program of Spring 2021 Semester, Section 8, would like to submit my Internship report. This report is based on my internship program and the project I have worked on. My internship was conducted at DataSoft Systems Bangladesh Limited from 16th February to 16th May 2021 (3 months duration).

This report is based on my experience and the work I did at DataSoft during my internship period. The objective of my internship was to acquire experience by working in the software industry and acclimate myself with all the distinctive technologies of the organization, including research and development, documentation, software development and to get to know more about software development processes.

Throughout my internship period at DataSoft, I had to learn and adapt to different technologies which are utilized in different circumstances and prerequisites and to have the option to apply them in real-life projects.

I hope the following report can accomplish your endorsement and is satisfactory.

Sincerely,

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Mohammad Tausif Hossain, 1620571

Email: [tausif.iub@gmail.com](mailto:tausif.iub@gmail.com)

# Evaluation Committee

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Supervisor

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# Abstract

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In this modern world, a strong online presence increases the opportunities for popularity and gains credibility by building a brand. Many organizations have an attendance policy. Most organizations are likely to exit the manual attendance process and switching to an online attendance system or automated attendance system. With the advancement of technologies, people are becoming more dependent on their mobile phones, so web presences and management systems are highly required to be more mobile-friendly and responsive for every screen size.

A team of DataSoft Systems Limited; including myself, had to deal with such kind of situation while working on a project of an organization named “Yoga Chandrima”. The background of work, objectives and other analysis will be discussed in detail in this report.

**Keywords:** responsive website, attendance management system, facial recognition

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# Chapter 1: Introduction

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## 1.1 Background of the Work

“Yoga Chandrima” represents the health enthusiasts among Dhaka city dwellers. People come here to be a part of society that promotes healthy and systematic living with a meaningful lifestyle. It is a way of preaching peace and motivate people to live a healthier life and maintain calm of mind. “Yoga Chandrima” is an organization and like other organizations, it also has an attendance policy. Taking attendance is a hectic method for any organization. Each organization has embraced different techniques of taking attendance i.e. calling by the names, ID, or passing the sheets. A few mainstream automatic attendance systems which are currently in use are RFID, FINGERPRINT, and so forth. Nonetheless, making a queue is fundamental in these cases, which requires additional time and is nosy. On the off chance that there is any damage to the RFID card, it might bring about improper attendance. On large scale, these systems are not expense-efficient and take lots of effort and time to post attendance. Since face is people's fundamental process of personal identification, the reasonable answer to have both time and cost-effectiveness with no human contribution is facial recognition. With the fast advancement in the fields of image processing, the efficiency of this system is continuously expanding. In this system, we use an image to record attendance. After creating the database of the students, it requires almost zero effort from the user side. The system will help both admin and members to track their attendance easily.

## 1.2 Objectives

- **Responsive Web Presence:** The web presence will attract people, especially young people to join the “Yoga Chandrima” team in the field, motivate them to enjoy exercise on the field.
- **Booking Session:** The web presence will allow people to book a trial exercise session with the “Yoga Chandrima” team on their preferable date.
- **Member Registration:** Registering new members easily and enroll them into the class.
- **Automated Attendance Management System:** After all, an attendance management system where the admin can take member’s attendance by ID or by Facial Recognition effortlessly. All members will be able to track their attendance records also.

## 1.3 Scopes

Features available to the Admin after the development of Web Presence:

- Homepage
- Menu bar
- Notification through email with booking details when someone books a trial exercise session with the “Yoga Chandrima” team
- Sign in page
- Admin dashboard
- View all users
- Edit users’ information
- Add/ delete users

Features available to the User after the development of Web Presence:

- Homepage
- Menu bar
- Notification through email with important information when someone books a trial exercise session with the “Yoga Chandrima” team
- Registration page
- Sign in page
- User dashboard
- Track attendance record
- Edit information

# Chapter 2: Literature Review

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## 2.1 Relationship with Undergraduate Studies

Theoretical knowledge, programming skills, and practical experience by working on various projects gained from the undergraduate courses of Computer Science and Engineering have helped me a lot in the development of the “Yoga Chandrima” project.

Some of the courses are mentioned below:

**CSE 203 + Lab: Data Structure:** This course taught me how to control and deal with complex arrays, classes, objects, an array of objects, nested objects, nested arrays, and so forth. As “Yoga Chandrima” includes numerous complex data structures, the abilities acquired from this course made dealing with them much easier.

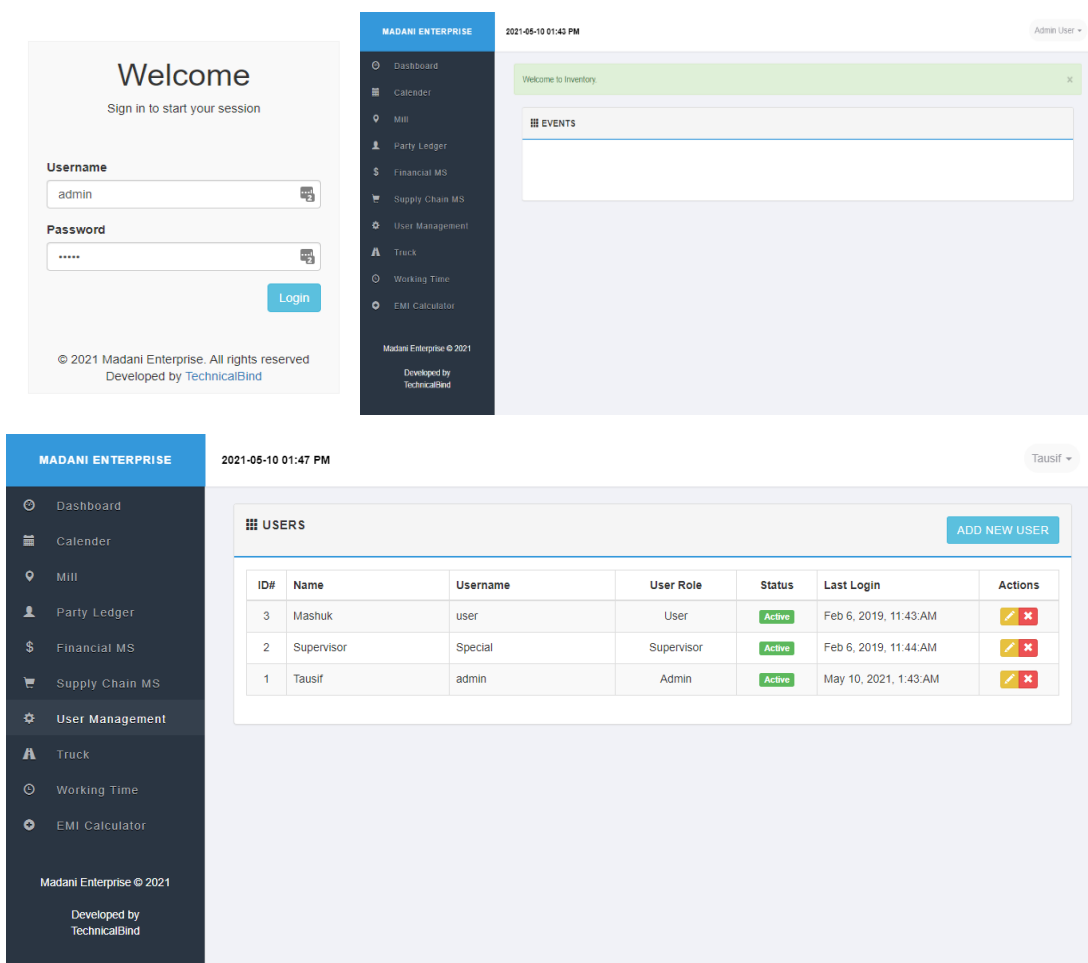
**CSE 213 + Lab: Object-Oriented Programming:** This course is a profound jump into classes and objects of programming. It likewise instructed how to compose modular programs which made codes not so much redundant but rather more reusable. It assisted to design the “Yoga Chandrima” code in a modular format. Additionally, as the application code became lengthy, this practice helped me to avoid writing new modules from scratch by utilizing portions of old modules.

**CSE 303 + Lab: Database Management:** This was the first course that taught me how to design a database. It additionally covered famous planning and techniques like Business Requirement Analysis, Software Development Life Cycle, Rich Picture, Entity Relationship Diagram, Business Process Model, and some more. These procedures helped in the development and planning of “Yoga Chandrima” and they helped in writing this report.

**CSE 309: Web Applications and Internet:** This is the course where web application development was taught. It covered very important topics on the tools and technologies that are used and highly demandable at present in the software industry, such as HTML, CSS, Bootstrap, JavaScript, PHP, and SQL, Github, Cloud Server, and many more. The knowledge I gather about the tools and technologies from this course immensely contributed to the development of “Yoga Chandrima” as it is a very responsive web presence that uses similar tools and technologies.

## 2.2 Previous Related Projects

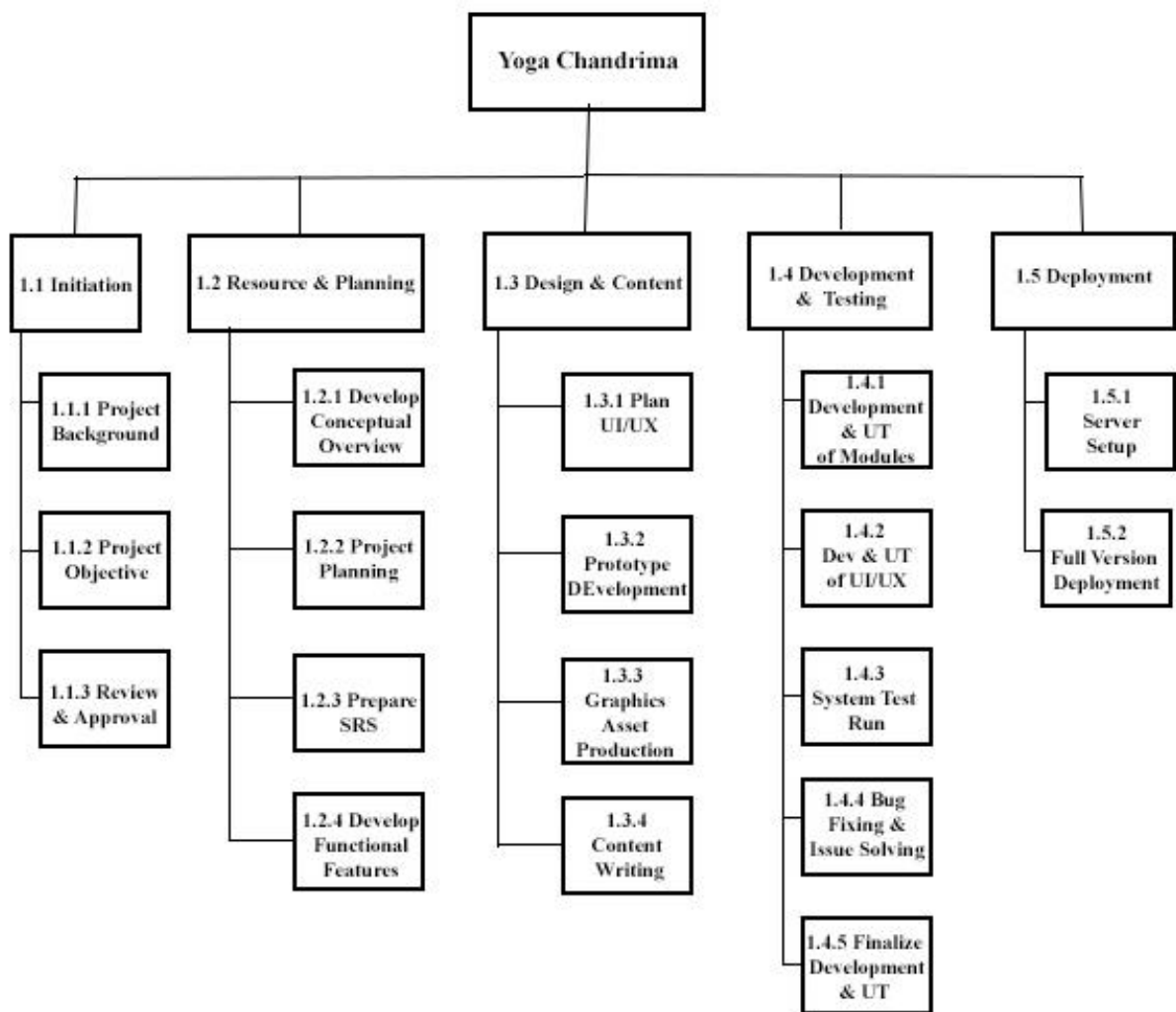
[Madani Enterprise Resource Planning System](#) developed by me for “Madani Enterprise”



**Figure 2.1:** UI of Madani Enterprise Resource Planning System

# Chapter 3: Project Management

## 3.1 Work Breakdown Structure



**Figure 3.1:** Work Break Down Structure of “Yoga Chandrima”

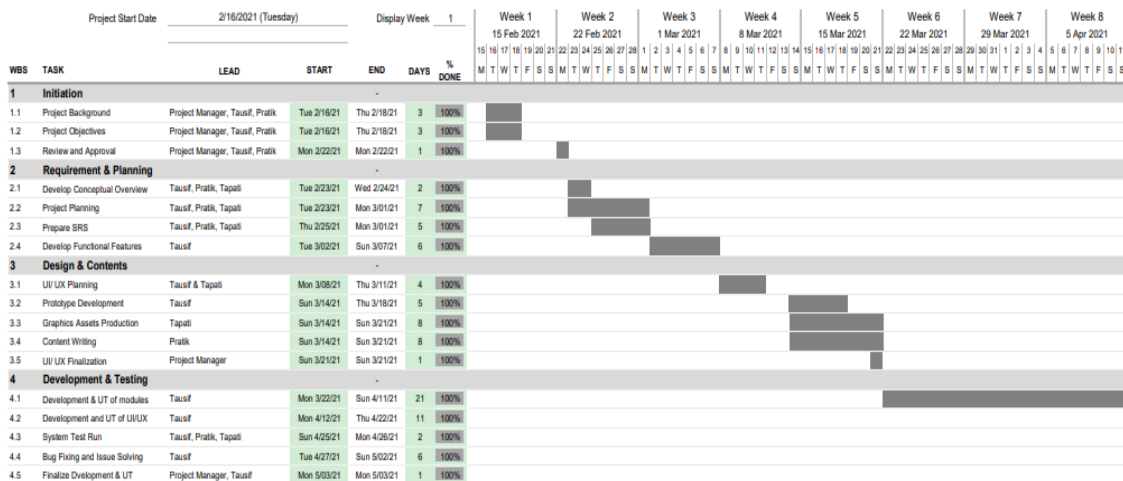
## 3.2 Gantt Chart

Full names for each input names are:

- Tausif – Mohammad Tausif Hossain
- Pratik – Md. Hasnat Awal Pratik
- Tapati – Tapati Sarkar

### Web Presence of Yoga Chandrima

DataSoft Systems Limited



### Web Presence of Yoga Chandrima

DataSoft Systems Limited

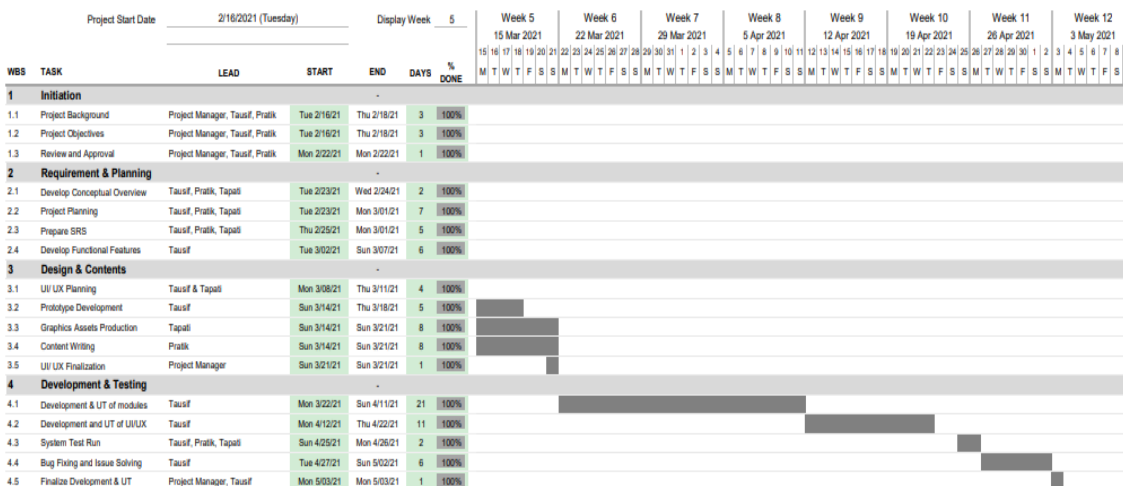


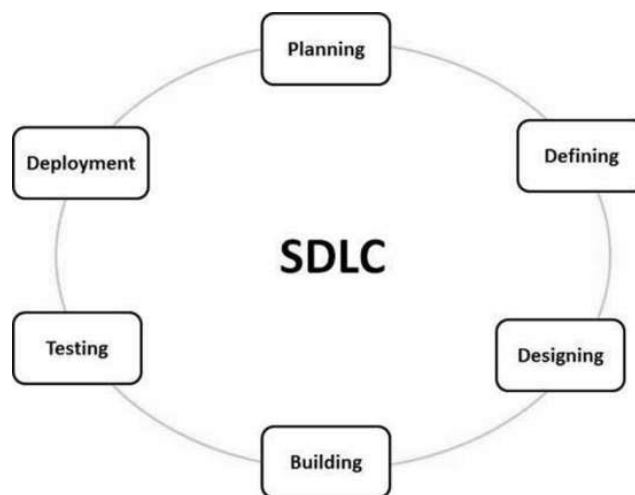
Figure 3.2: Gantt Chart of “Yoga Chandrima”

# Chapter 4: Methodology

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## Software Development Life Cycle (SDLC)

Software Development Life Cycle (SDLC) is a procedure utilized by the software industry to develop, design, and test top-notch software. The SDLC plans to develop top-notch software that meets or surpasses client expectations, reaches the completion of development within time and estimated cost.



**Figure 4.1:** Graphical representation of the various stages of a typical SDLC

## SDLC Models

There are different software development life cycle models characterized and planned which are followed during the software development process. These models are additionally alluded to as Software Development Process Models. Each process model follows a Series of steps one of a kind to its sort to guarantee achievement during the process of software development.



The most popular SDLC models are given below.

- Waterfall Model
- Agile Model
- Rapid Application Development
- Iterative Model
- V-Model
- Spiral Model
- Big Bang Model
- RAD Model
- Prototyping Models

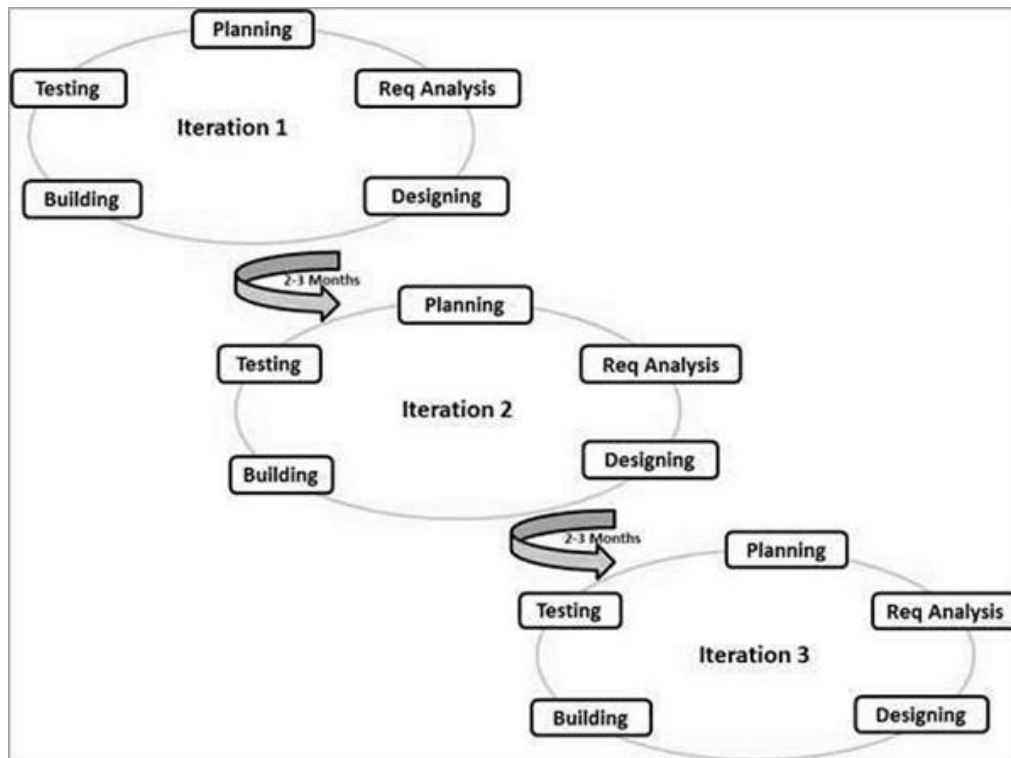
### **Agile SDLC model**

The engineers of DataSoft Systems Limited follow the Agile SDLC method. It is a mix of iterative and gradual process models with a focus on process adaptability and consumer satisfaction by quick conveyance of working software products. Agile Methods break the product into little gradual forms. These forms are given in emphasis. Each iteration normally endures from around one to three weeks.

Each iteration includes cross-functional groups working all the while on different zones like

- Planning
- Requirements Analysis
- Design
- Coding
- Unit Testing and
- Acceptance Testing

Toward the finish of the iteration, a functioning product is shown to the client and important stakeholders.



**Figure 4.2:** Graphical representation of Agile Model

Following are the Agile Method standards

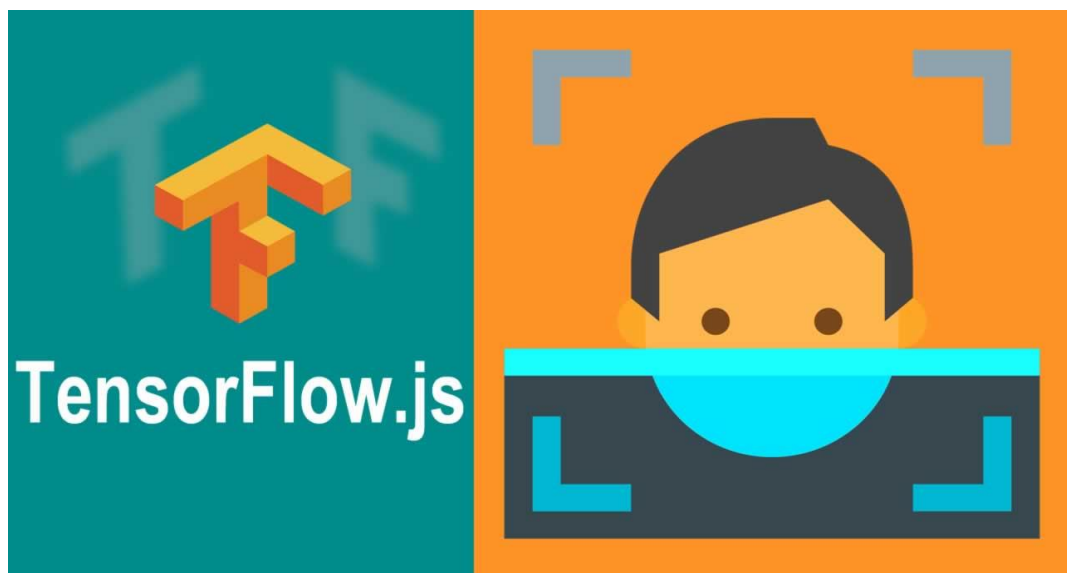
- **Individuals and collaborations:** In Agile development, self-association and inspiration are significant, as are communications like co-area and pair programming.
- **Working software:** Demo working software is viewed as the best method of correspondence with the clients to comprehend their prerequisites, rather than simply relying upon documentation.

- Customer cooperation: As the requirements cannot be assembled totally toward the start of the project because of different factors, persistent client interaction is vital to get appropriate product requirements.
- **Responding to change:** Agile Development is focused on fast reactions to change and consistent development.

## Full-Stack Responsive Web App Development

- **Responsive Web Design:** Responsive Web Design is about utilizing HTML and CSS to automatically resize, enlarge, hide or shrink a website, to make it look good on all devices (mobiles, laptops, desktops, and tablets). Responsive images and text scaled pleasantly to fit any screen size. Moreover, to resize text and pictures, it is likewise common to utilize media queries in responsive web designs. With the help of media queries, different styles for different screen sizes can be defined.
- **Web Development Languages Used:** HTML5, CSS3, Bootstrap, JavaScript, JQuery, PHP, SQL are the programming languages that are used to develop “Yoga Chandrima” Web Presence.
- **Database:** Database Management System (DBMS) technology is another significant part of backend development. Oracle, MongoDB, MySQL, SQLServer, Redis are broadly used for this purpose. I used MySQL Database for this project.
- **Server:** A computer or computer program which oversees admittance to an incorporated service or resource in a network. The current most well-known servers are Apache, IIS, Nginx servers, and Microsoft IIS. I have used a Linux server for this project.

- **Application Programming Interface (API):** A bunch of conventions, schedules, functions as well as commands that are utilized to develop software or work with the connection between particular systems. APIs are accessible for both pc and mobile use and are ordinarily helpful for programming GUI (Graphical User Interface) parts, just as permitting a software program to ask for and oblige services from another program. In this project, I have used face-api.js which is a JavaScript API for Face Recognition in the browser built on top of tensorflow.js core. It implements several Convolution Neural Networks to detect the face. This API is very optimized for web and mobile devices.



**Figure 4.3:** Graphical representation of tensorflow.js face-API

# Chapter 5: Body of the Project

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## 5.1 Project Description

The Web App starts by going to the “[Yoga Chandrima](#)” website from any browser on pc, tablet, mobile while being connected to the internet. Admin can log into the management system with email/username and password. Then the Admin decides whether he/she wants to take the attendance by calling every member's name/ID or by facial recognition. If the admin selects “Attendance by facial recognition”, then he/she shall select the camera option and capture a group photo of members. Then the system will start to analyze every faces detected and show which people are present in the session. After taking the attendance admin has to submit it. Moreover, Admin can approve members who submitted the registration form, add new members in the system and see every member’s profiles, edit or delete their profiles.

On the other hand, normal users can signup to become a member of “Yoga Chandrima”. After the signup verification, members can log in to their dashboard with their email/username and password. They can check their attendance report date-wise, edit information in their profile.

If someone wants to join a trial exercise session with the “Yoga Chandrima” team, then he/she can book an exercise session simply by filling up a booking form and submit it. Both the Admin and the person who booked will be notified regarding the session with an email.

## 5.2 System Analysis

Systems analysis is a process to understand what humans need to analyze the data input or data flow systematically, store data, and output information in the context of a particular organization. It is a problem-solving technique, which helps to identify and solve the right

problems. Furthermore, systems analysis is used to analyze, design, and improve the functionality of the business.

### 5.2.1 Six Element Analysis

Process	System Roles					
	Human	Non-Computing Hardware	Computing Hardware	Software	Database	Comm. & Net
View Home Page	Admin/ User	N/A	pc/ smartphone/ tab	Any browser	MySQL	WAN
Navigate between menus	Admin/ User	N/A	pc/ smartphone/ tab	Any browser	MySQL	WAN
Log in to the system	Admin/ User	N/A	pc/ smartphone/ tab	Any browser	MySQL	WAN
Take Attendance by ID	Admin	N/A	pc/ smartphone/ tab	Any browser	MySQL	WAN
Take Attendance by Facial Recognition	Admin	N/A	pc/ smartphone/ tab	Any browser	MySQL	WAN
View All Users	Admin	N/A	pc/ smartphone/ tab	Any browser	MySQL	WAN
Edit Any Account's Information	Admin	N/A	pc/ smartphone/ tab	Any browser	MySQL	WAN

Delete Any Account	Admin/ User	N/A	pc/ smartphone/ tab	Any browser	MySQL	WAN
Edit Personal Profile's Information	Admin/ User	N/A	pc/ smartphone/ tab	Any browser	MySQL	WAN
View Attendance Results	Admin	N/A	pc/ smartphone/ tab	Any browser	MySQL	WAN
Logout	Admin	N/A	pc/ smartphone/ tab	Any browser	MySQL	WAN

**Table 5.1:** Six Element Analysis of “Yoga Chandrima”

### 5.2.2 Feasibility Analysis

Feasibility analysis is a study to assess the feasibility of a proposed system. It is a proportion of the software development as far as how useful software development will be for the association from a functional perspective. A feasibility analysis is dependent on numerous reasons to analyze whether software products will be right as far as improvement, implantation, the commitment of the system to the association, and so on.

Main sectors of Feasibility Analysis:

- Technical Feasibility:** In Technical Feasibility, both hardware and are analyzed/assessed software along with required technology to develop the system. Feasibility analysis also analyzes the technical capabilities of the technical team, existing technology can be used or not, maintenance and up-gradation is easy or not for chosen technology, etc. “Yoga Chandrima” is built using HTML, CSS, Bootstrap,

JavaScript, PHP, and SQL. These are the technologies that are very popular in the modern industry and everyone involved in the making of this project had the skills to work with at least one of the technologies mentioned. Hence, it can be concluded that the project is Technically Feasible.

- **Operational Feasibility:** In Operational Feasibility degree of providing service to requirements is analyzed along with how easy the product will be to operate and maintain after deployment. Along with these, other operational scopes are determining the usability of the product and determining whether a suggested solution by the software development team is acceptable or not, etc. “Yoga Chandrima” is a web application made with complex technology but for any end-user, it is quite self-explanatory. Even if a user is confused about how to use the application, they can simply refer to the “How to Use” section to have a much clearer idea of how the application operates; and so, the project can be determined as Operationally Feasible.
- **Economic Feasibility:** In Economic Feasibility analysis, cost and benefit of the project is analyzed; a detailed analysis of what will be the cost of the project for development which includes all required cost for final development like hardware and software resource required, design and development cost, operational cost, etc. analyzed whether the project will be beneficial in terms of finance for the organization or not. In the development of “Yoga Chandrima”, the services that needed to be paid were domain and hosting. Since the cost of these services had to be paid yearly, it can be easily covered from the estimated revenue gained from advertisements and paid subscriptions. Thus, in conclusion, it can be said that the project is Economically Feasible.

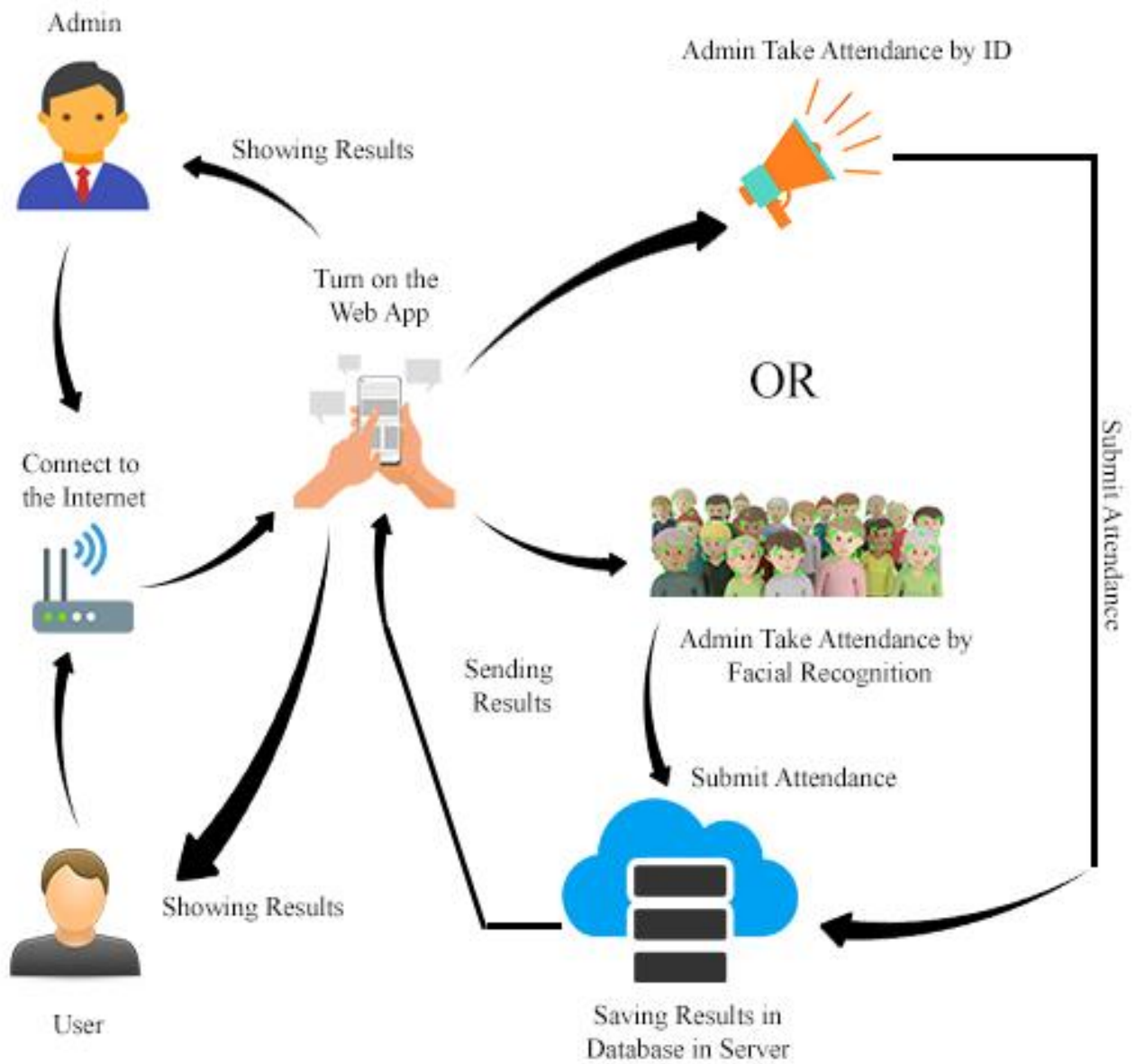


### 5.2.3 Problem Solution Analysis

- **Problems:** “Yoga Chandrima” did not have any web presence. So many people did not know about what this organization does, how it operates, and much more. Also “Yoga Chandrima” had to do member registration and take attendance manually, in pen and paper, which takes lots of time and effort.
- **Solution:** The problems have been analyzed and solved by the web application of “Yoga Chandrima”. Now people can know more about “Yoga Chandrima”. Health enthusiasts can join in a trial exercise session with the “Yoga Chandrima” team whenever they want, simply by booking a session. New members can complete their registration online easily. Attendance can be taken online by ID or by Facial Recognition effortlessly. Moreover, members can see their attendance result in their accounts.

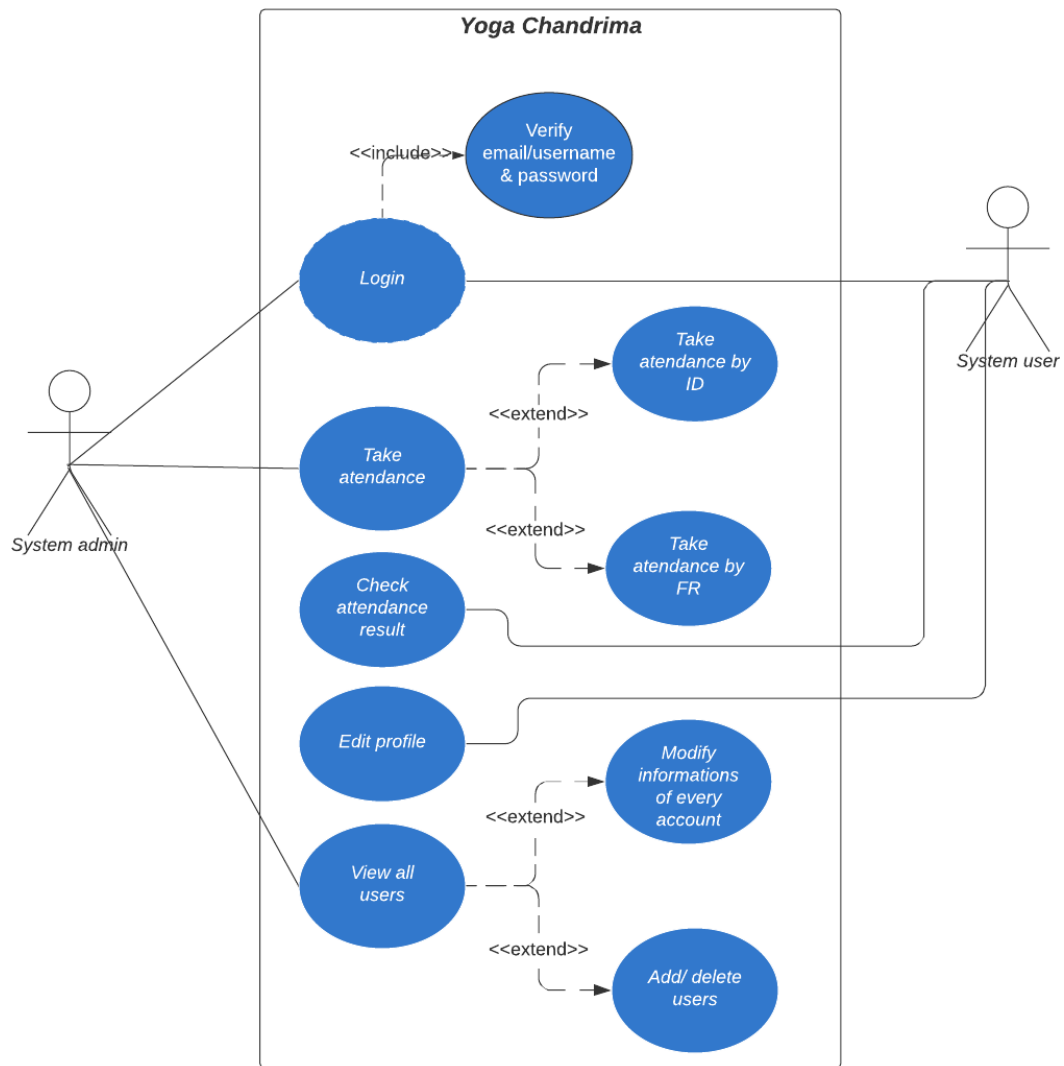
## 5.3 System Design

### 5.3.1 Rich Picture



**Figure 5.1:** Rich Picture of "Yoga Chandrima"

### 5.3.2 Use Case Diagram



**Figure 5.2:** User Case Diagram of “Yoga Chandrima”

### **5.3.3 Functional and Non-Functional Requirements**

#### **5.3.3.1 Functional Requirements:**

The web presence must be compatible with all kinds of browsers, screen sizes, and devices.

Precondition: Must have an internet connection.

#### **User:**

- **Booking Session:** The web presence shall allow visitors to book an exercise session with the “Yoga Chandrima” team by filling up the booking form with their name, email, phone number preferable date.
- **Registration:** Users shall be able to register themselves by filling up the registration form with their name, email, username, password, date of birth, gender phone number, address, photo, and some other information.
- **Login:** User must have the availability to log in to their dashboard and start the session with their email/username and password.
- **Check Attendance:** User can check their attendance performance.
- **Edit Account:** The attendance management system shall allow users to change their photos, password, and other information.
- **Logout and end session.**

#### **Admin:**

- **Booking Session:** Admin shall receive an email whenever someone books an exercise session.
- **Login:** Admin shall be able to log in to the attendance management system and start the session with email /username and password.
- **Take Attendance by ID:** The attendance management system shall allow the admin to take attendance of the members by their ID.

- **Take Attendance by Facial Recognition:** The attendance management system shall allow the admin to capture pictures and take attendance of the members by facial recognition.
- **Add Accounts:** Admin shall be able to add new users to the attendance management system.
- **Edit Accounts:** Admin shall be able to edit every account's information.
- **Delete Accounts:** Admin shall be able to delete any accounts from the attendance management system.
- **Logout and end session.**

#### **5.3.3.2 Non-Functional Requirements:**

Another type of requirement is non-functional requirements which describe the characteristics of the system as well as the constraints.

##### **Security:**

- **Account Identification:** The system requires every user to identify himself /herself using email/username and password.
- **Modification:** Any modification (insert, delete, update) for the database shall be synchronized done by the admin.

##### **Performance:**

- **Responsive UI:** The web presence must be responsive for every kind of screen size of devices.
- **Response time:** The system shall respond within 3 seconds in every action
- **Capacity:** The system must support 100 people at a time.

**Constraints:**

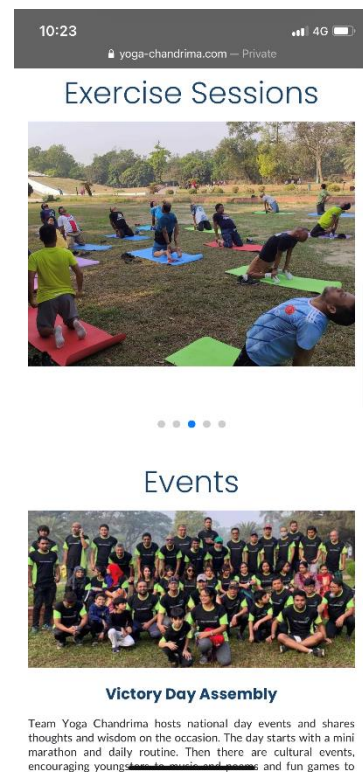
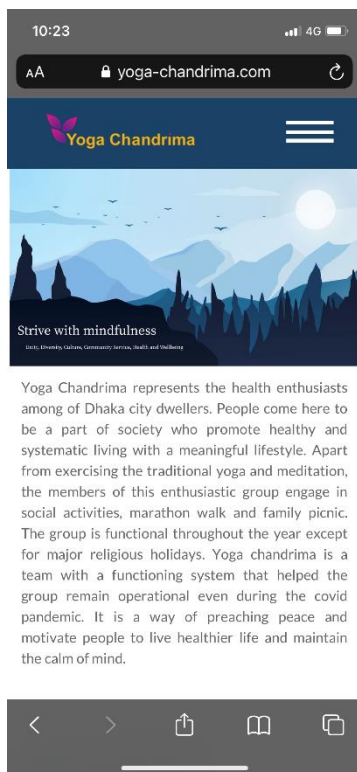
- Must be able to handle a significant number of actions at any time.
- Always Log all actions to be able to know what happened, allowing to replay events, understanding bugs, and ensuring the integrity of information.
- Always Ensure the integrity of the information, even in concurrent consultation.
- Always Make information accessible, even in concurrent consultation.
- Guarantee a speed of data display, no matter how much information to look for in several different databases.

# Chapter 6: Results & Analysis

As mentioned earlier, HTML5, CSS3, Bootstrap, JavaScript, PHP, and SQL have been used to build this web presence. MySQL database has been used for the database. Face-api.js has been used for facial recognition.

This chapter contains screenshots of the application from mobile to showcase the actual application.

## Homepage :



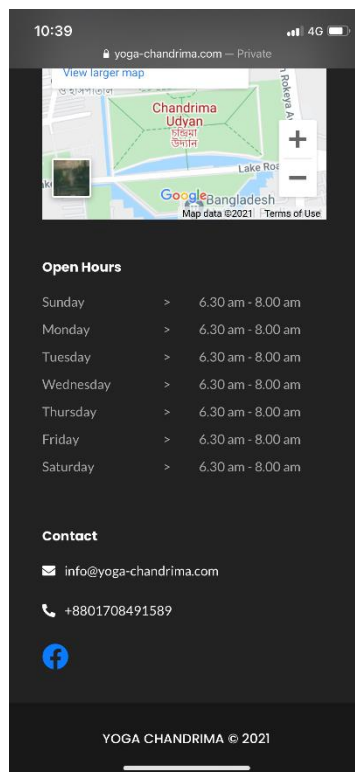
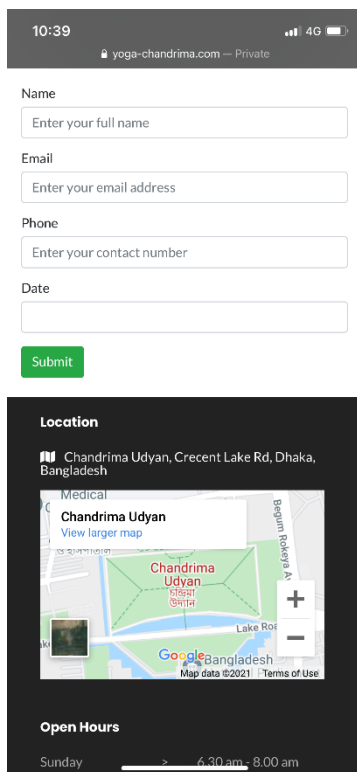
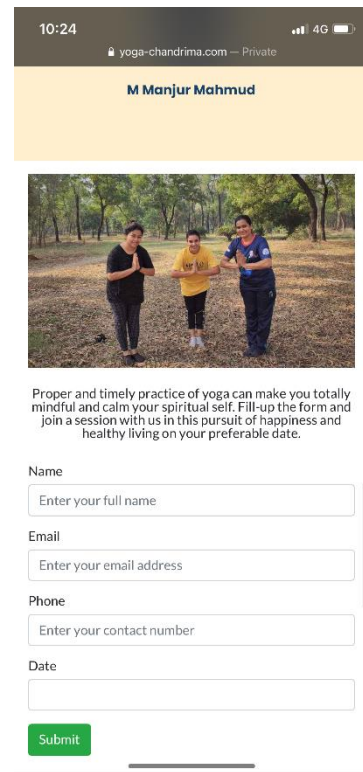
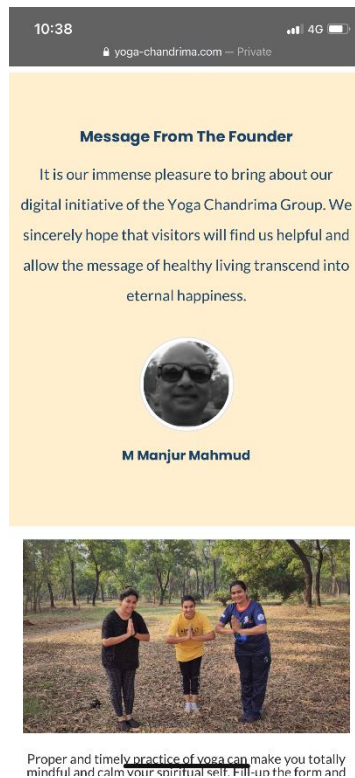
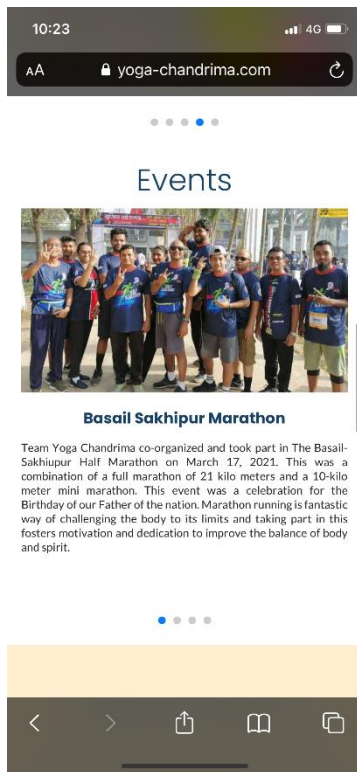


Figure 6.1: Homepage of “Yoga Chandrima”



**Sign-in and Signup Page:** Admin and user can log in to the system with the required email/username and password. New members can complete their registration form on the signup page.

The figure displays three mobile application screens for the Yoga Chandrima system. The first screen, titled 'Sign In', shows a login form with fields for 'Username or Email' and 'Password', a 'Log In' button, and a link to 'Create New Account'. The second screen, titled 'Sign Up', shows a registration form with fields for 'Name\*', 'Username\*', 'Email\*', 'Password\*', 'Gender', 'Date of Birth', and 'Phone No.'. The third screen shows a detailed registration form with fields for 'Select Gender', 'Date of Birth', 'Phone No.', 'Alternate Phone No.', 'Address', 'Passport Size Picture', 'Picture of Right Palm', 'Picture of Left Palm', 'Blood Group', and 'Health Issue'. It also includes a 'Sign Up' button and a link to 'Log in' for existing users.

Figure 6.2: Screen view of sign-in and signup page

**Admin Dashboard:** When the admin login with the required email/username and password, he/she see the admin dashboard. There is a menu bar, on the top right side of the screen.

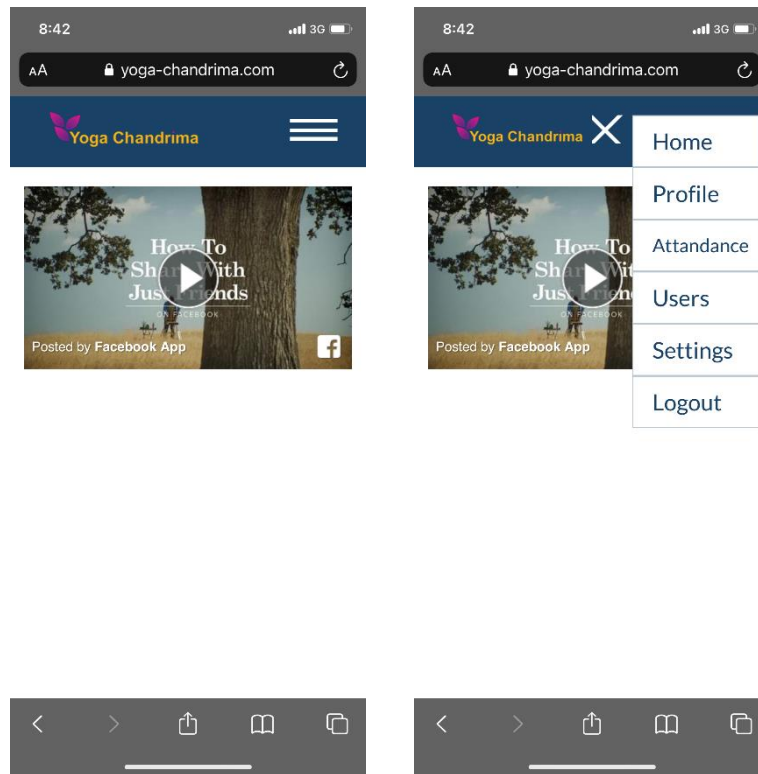


Figure 6.3: Screen view of Admin dashboard

**View All Users:** On this page, the admin can view all the users in the system. Admin can add/delete users from the system and edit users' information.

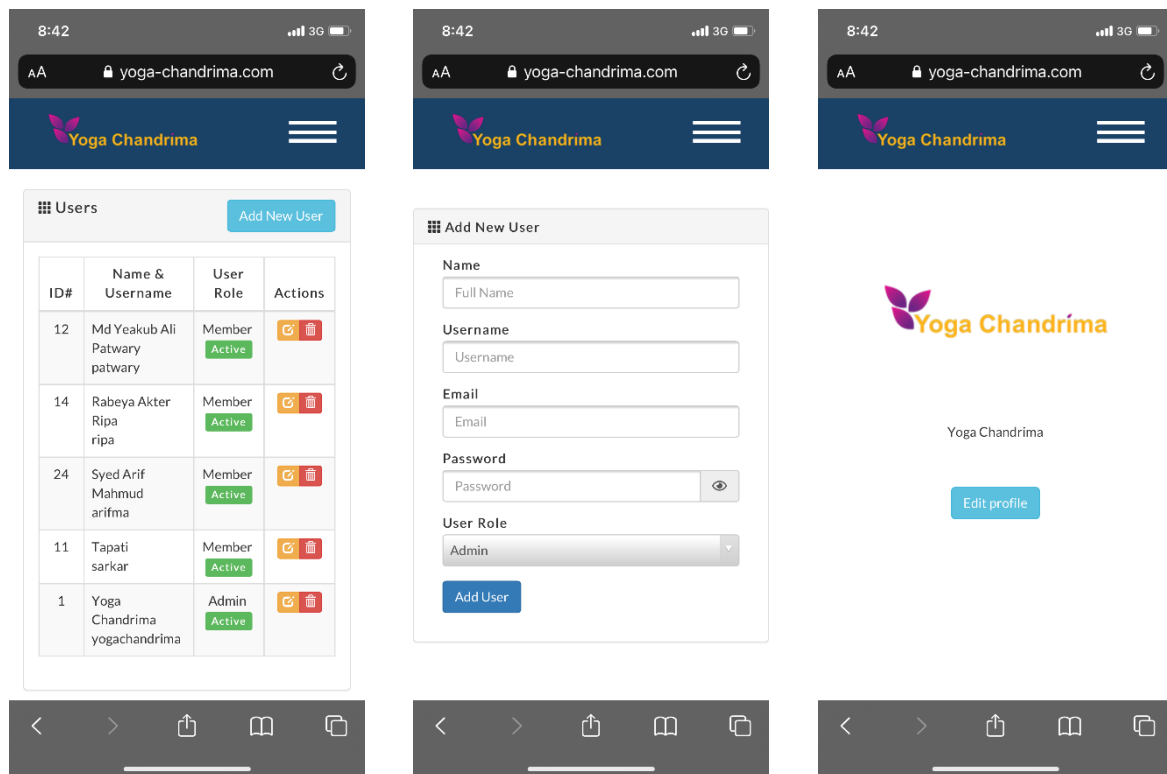
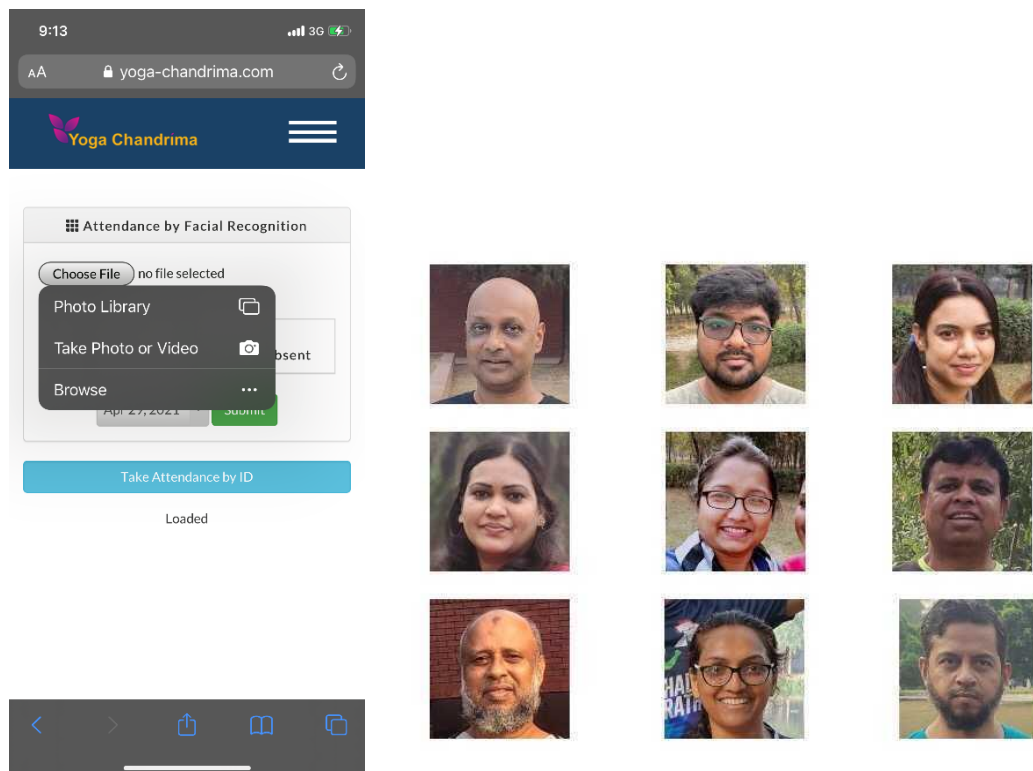
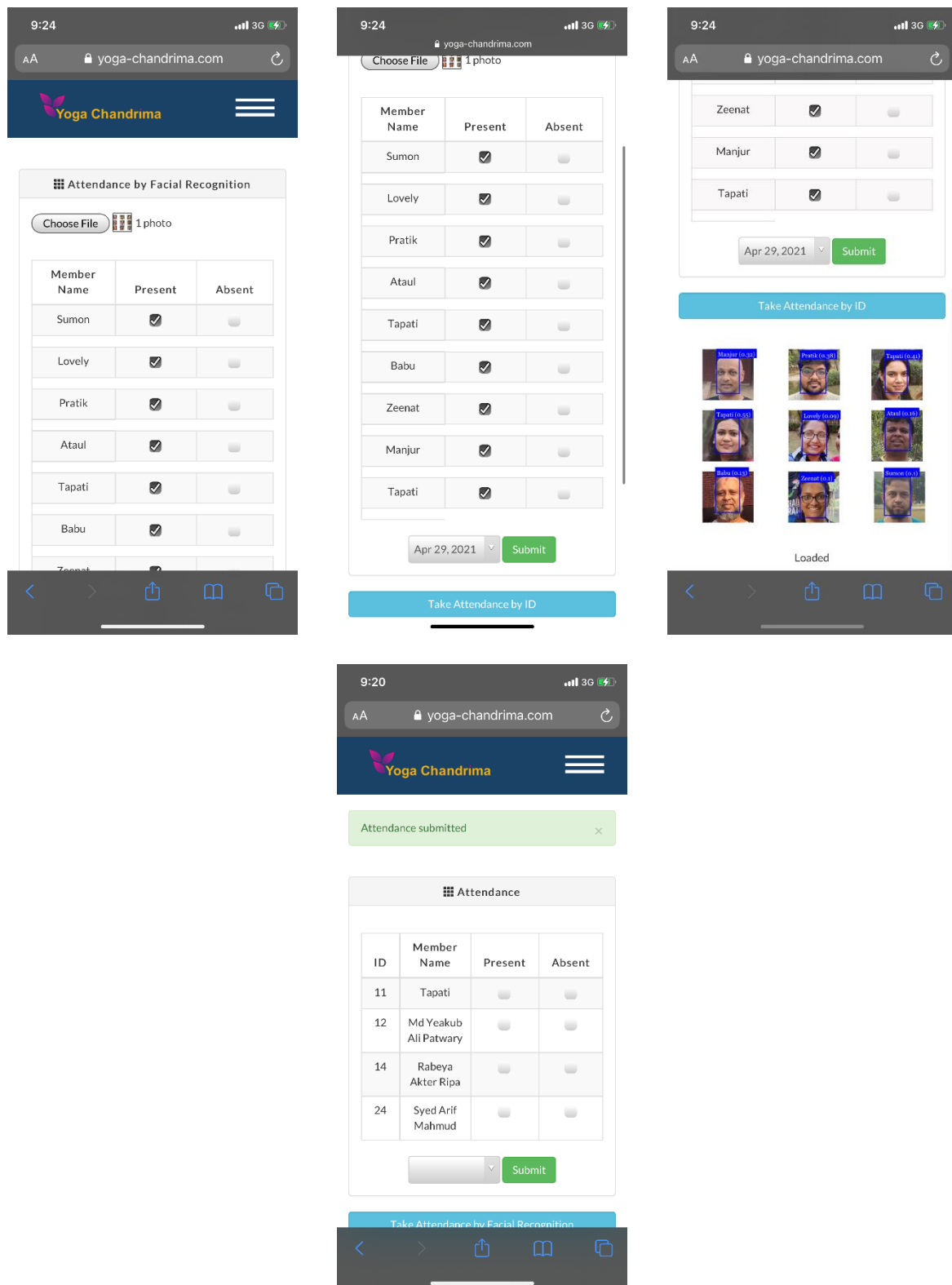


Figure 6.4: Screen view of all users

**Attendance by Facial Recognition:** Admin can take attendance of members by facial recognition. At first, they have to capture a photo of members. Then the system's AI will detect all the faces and show their names. The admin can take their attendance accordingly and submit it.





**Figure 6.5:** Screen view of attendance by facial recognition

**User dashboard:** User can track their attendance and manage their profile

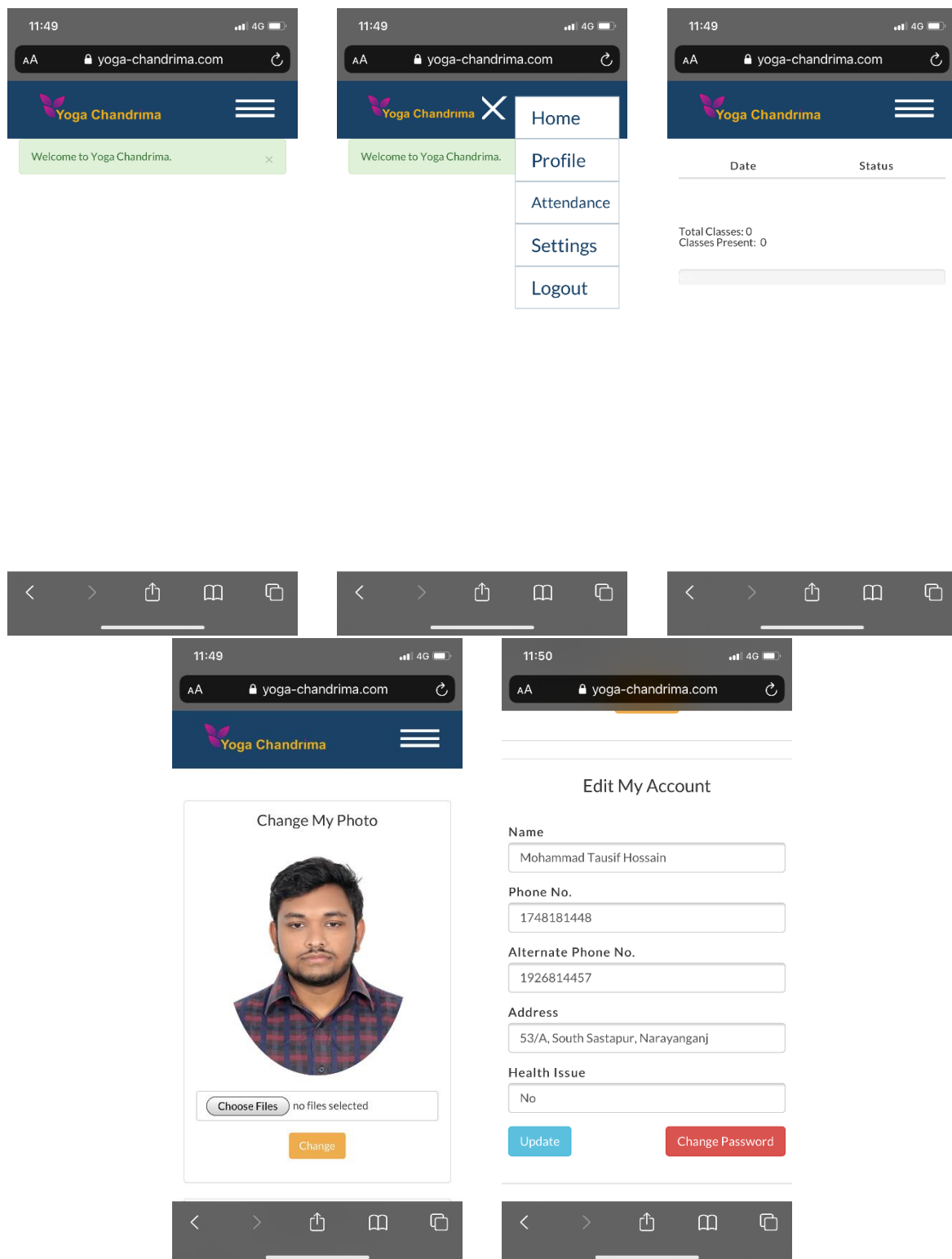


Figure 6.6: Screen view of user dashboard

# Chapter 7: Project as Engineering

## Problem Analysis

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### 7.1 Sustainability of the Project/Work

Sustainability is the capacity of an association to proceed with its main goal or program far into the future. A project or association can be sustainable in three main categories: organizational, financial, and community sustainability.

**Organizational Sustainability:** It refers to how the association will proceed to work after the launching of the website. After launching a website, Usually, companies maintain the software with their current team and plan to develop it and include new features. This web presence project “Yoga Chandrima” has so many planned features to develop in the future. So this project is organizationally sustainable.

**Financial Sustainability:** This refers to how the application's running expense will be maintained after it has been launched and whether it will produce sufficient revenue as a benefit. The project “Yoga Chandrima” is a web presence where people can register for their membership by paying and can attend the yoga classes. Even in near future, it is planned to include an online paying system. So this project is surely financially sustained.

**Community Sustainability:** It relates to how the user community will accept and use this project and how they’ll be benefitted from the project. “Yoga Chandrima” has already a bunch of members who are using this web presence on daily basis. The users get to know about routine and upcoming events and they simply can do the registration. They can give their daily attendance or the admin can simply take a group picture and the program detects every

members' face and gives the attendance automatically. This program is attracting the user community more. So undoubtedly this has community sustainability.

## 7.2 Social and Environmental Effects and Analysis

In a world full of technologies and transports and fast food items, people are becoming sufferers from obesity, high blood pressure, diabetes, heart disease at a great rate. At the same time, people are being attracted to stay at home most of the time and that causes unsocial relationships. At this moment they need a platform that will help them to come out and explore and work on their health and society. “Yoga Chandrima” can be a platform like this.

**Social Effects:** “Yoga Chandrima” is a platform that encourages people beyond their age, gender, religion, and profession to come out of their home and practice yoga every day. This not only benefits their health but also makes them socialize more. The web presence “Yoga Chandrima” has pictures of members doing yoga in “Chandrima Uddyan”, some motivational speeches, and the goals of their organization. All these things are seen on the home page and that encourages people to join and be a part of Yoga Chandrima.

**Environmental Effects:** “Yoga Chandrima” reflects the sincerity of people towards nature. Every morning these people reach Chandrima Uddyan which is full of trees and has a completely natural environment. The people joining the organization loves nature and influence others to love nature too. In the web presence, there are so many pictures of the beauty of Chandrima Uddyan. This influences other people to make their home garden by planting trees and doing yoga in their home garden who can't join “Yoga Chandrima”. This surely positively affects the environment.



### 7.3 Addressing Ethics and Ethical Issues

Nowadays cybercrime like data collection, hacking, etc. is a very common issue on the internet. I, as the developer of this project firmly believe that this program does not breach any limits of collecting data. For this project, I maintained some protocols for collecting, using, and securing user data. Such as-

**Data collection:** Users just need to enter their name, email address, phone number, and date of birth to book their session. To sign up they have to enter a few more information like their blood group, gender, and if they have any health difficulties. Also, they have to upload their passport size picture and picture of their left and right palm. All these data are important and relevant.

**Data used:** All the data that users input are important for their membership and attendance by facial recognition. User can create their account on “Yoga Chandrima” and sign in every time using their username or email and password. The pictures they upload while signing in are used to train the machine so that it can recognize the members well and take attendance by facial recognition.

**Data securing:** Not a single data of any member is sold or split out. All the pictures are well reserved and not even their email or passwords can be hacked from this program.

# Chapter 8: Challenges, Future

## Works & Conclusion

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### 8.1 Challenges

During the whole period of my internship in DataSoft, I enjoyed doing all the tasks regarding this project. Still, there were some challenges I faced such as-

- Right after the starting of my internship, the lockdown started for the 2nd wave of Covid19 and we needed to work from home. So the teamwork and meetings and understanding the team became a bit difficult.
- The implementation of a facial recognition system for taking automatic attendance was very new to me and I had to adapt and learn all these for this project.

### 8.2 Future Works

The project “Yoga Chandrima” is still under development and it has some plans to be developed in few things shortly. Such as-

- Including the online payment system
- Starting courses and online course registration
- Starting registration system for the various yoga event

### 8.3 Conclusion

The web presence “Yoga Chandrima” I developed, is an online platform of an organization named “Yoga Chandrima”. The organization is a platform where people can register themselves to become a member and join other members to practice yoga sessions. On this web presence, there’s a homepage that is eye-soothing and filled with pictures, motivational quotes, starting session forms, and event notifications. This is a super responsive and facial recognition-based attendance management system. While working on this project I had to learn and use so many technologies and needed to implement so many things only on one project. The programming languages used for this project are HTML5, CSS3, Bootstrap, JavaScript, PHP, and SQL. Face-API.js had been used for facial recognition.

Moreover, this project made me believe in myself and increased my confidence level. Now that I see this project done, I can realize there’s always something new to learn and I hope this confidence, experience, and knowledge will always push me ahead. That’s why I appreciate each and everyone who had been in support of me with this project.

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