Software Design Document

for

Yogashala Website

Version 1.0 approved

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Contents

1 Introduction

1.1 Purpose

The purpose of this document is to outline the technical aspects of the Online Yogashala Class booking System and the technologies used to develop and implement the application. The goal of this document is to give the reader a better understanding of how the application is being developed and implemented through examples of requirements, constraints, and system's architecture.

1.2 Scope

Yogashala has recently opened a new studio and want to use a new online booking software that would act as their POS which would take their business onto the online market, make it easy to schedule classes and record teachers and students' attendance along with transaction related to subscription payments.
The students will be able to book classes available for their package and attend online classes through the software. The software also makes it hassle free for the administrators to manage the scheduling of classes based off the statistics the software provides based on foot fall and popular packages that users subscribe to.

1.3 Overview

This document is written according to the standards for Software Design Documentation explained in "IEEE Recommended Practice for Software Design Documentation". Sections 3 – 5 contain discussions of the designs for the project with diagrams, section 6 shows samples of UI from the system, and section 7 contains the class diagrams. The appendices contain the setup and configuration needed for the UUIS, a list of functions that are implemented in this version, and that are to be implemented in future version, and a list of tools and environment used in the entire project, along with the time contribution of team members. The appendices also include the test report and test cases.

1.4 References

The user of this SDD may need the following documents for reference:
IEEE Standard 1016-1998, IEEE Recommended Practice for Software Requirements Specifications, IEEE Computer Society, 1998.

2 System Overview

The Yogashala website is a new website being built specifically for the Yogashala company. This application is intended to solve the following problems:

- Lack of online presence due to which lesser number of customers choose their services
- Explaining the vast and versatile package details on a phone call is tedious and can often generate confusion
- Lack and delayed communication between instructors and customers on class timings, zoom class link and class canceling/rescheduling
- Maintaining a proper record of attendance for every instructor and customer
- Customers whose subscription has expired still get access to zoom class links and obtain free classes
- Poor implementation of preference policies

The software would provide the following functionality:
The website would act as a Point of Sale (POS) for the company to sell their packages to customers online and maintain a ledger of transactions.

2.1 Admin portal

It provides a portal for the administrator to add, edit and delete package details, approve rescheduling of classes and upload digital copies of receipts.

2.1.1 Login

Only the administrator should be able to access his portal.

2.1.2 View Master Time Table

Displays a list of classes that have been scheduled for a week along with details such as timings, instructor details and who are attending.

2.1.3 Process Class Rescheduling

Displays a list of requests from instructors to reschedule classes which either be accepted or rejected.

2.1.4 Edit Master Time Table

This page will be displayed when a class rescheduling request is accepted. It displays a set of queries which when answered will make the appropriate changes and update the Master Time Table and the customers.

2.1.5 Report Generation

Generate daily, weekly, and monthly report using footfall, attendance, and popular packages subscribed.

2.1.6 Account Management

This is used to create accounts for the instructors so that they can login to their portal. It is also used to edit an instructor's data and delete instructors' account.

2.1.7 Package Management

This allows the administrator to add, edit and delete packages t hat are offered by the company.

2.2 Instructor portal

It provides a portal for the instructors to check class timings, configure zoom meetings, update students' attendance and apply for rescheduling of classes.

2.2.1 Login

The instructor should be able to login to their account to conduct and manage their online classes.

2.2.2 Class Time Table

Displays a list of classes the instructor has to conduct on a particular day.

2.2.3 Attendance Tracker

This is used to update the attendance of the class attendees for each class.

2.2.4 Class Rescheduling

This prompts a request form that is to be filled to apply for classes to be rescheduled due to unforeseen circumstances.

2.3 Customer portal

It provides a portal for customers to look up package details, class timings, block class seats and obtain the class meet link

2.3.1 Package information

Displays all the packages offered by the company along with their particular details from which a customer subscribes to one

2.3.2 Class Booking

Displays a list of classes the user can take part in based on the type of subscription. They can select one of the classes based on their convenience and book a seat

2.3.3 Timetable

Displays a list of classes the user has booked a seat in along with timings and which instructor is conducting the class

2.3.4 Transaction history

Displays the digital copy of the payment invoice

This website is aimed to be compatible on both mobile phones and desktop personal computers. As long the customer has internet access, they will be able to access the website.

3 System Architecture

3.1 Architectural Design

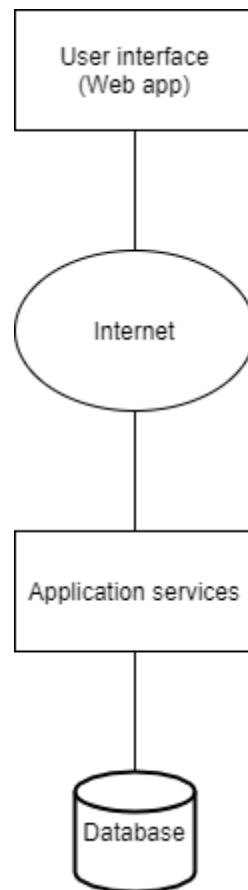The diagram below shows the major subsystems and data repositories and their interconnections.

Figure 1: Block Diagram for Yogashala Webapp

3.1.1 Database Layer

The database is used to hold data, including user registration
information, menu information, order information, employee details, and other data used in the functioning of the application

3.1.2 Application Service Layer

The application service layer is the core of this three-layer structure, the system functions and business logic are handled in this layer. In this layer, the system's business logic is encapsulated, the application service interface is provided for the user interface layer and the system modules between the function calls. The application service layer also updates data in the database, according to the service request of the top layer.

3.1.3 User Interface Layer

The user interface layer is a program that runs on a remote user device. It displays the provided services by the server to the user, based on the user type. When the user selects a service, this program sends a request to the server. When the server returns the processed result, this program shows it to the user.

3.2 Decomposition Description

The top-level view of the DFD shows the main actors interacting with the system.
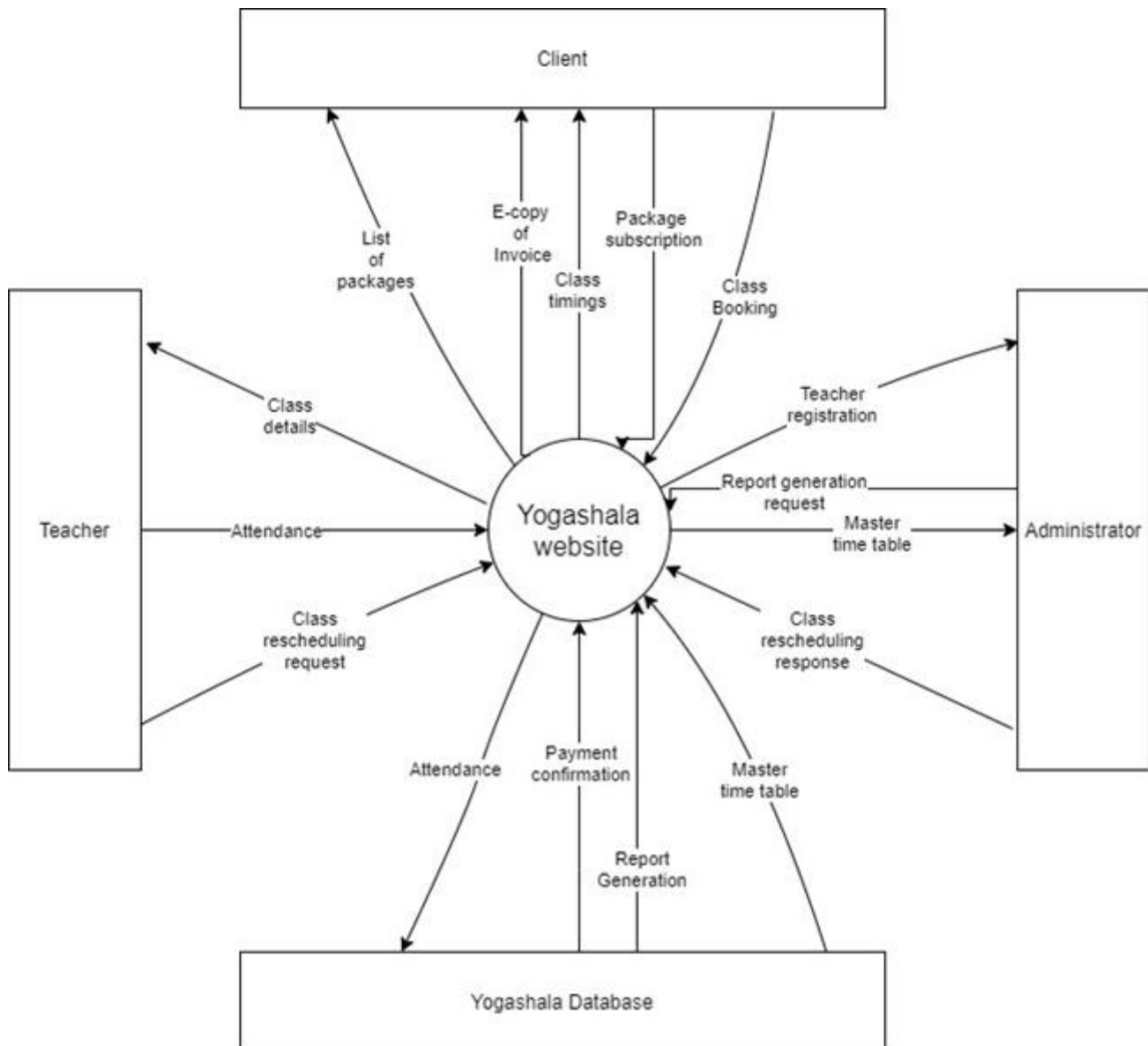
Figure 2: Top Level DFD for Yogashala
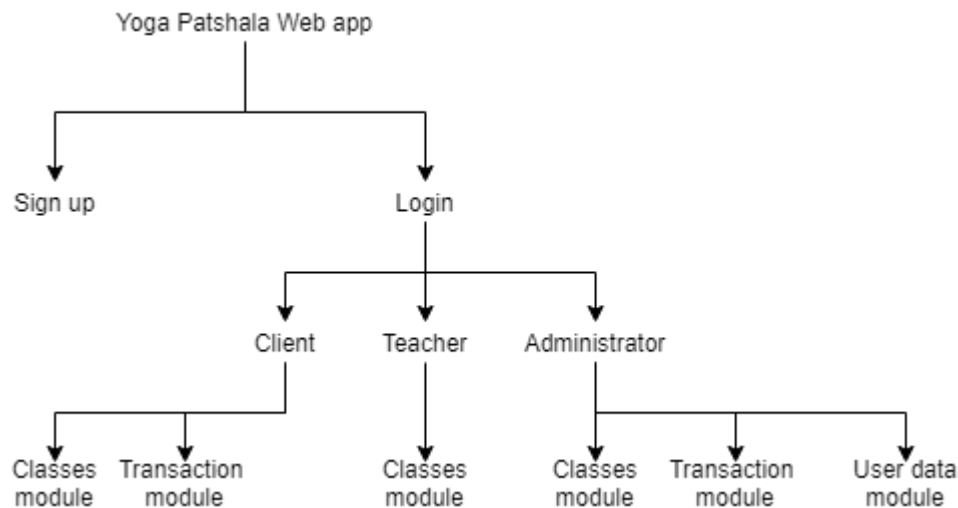
Figure 3: Decomposition Tree for Yogashala

3.3 Design Rationale

Figure 1 describes the architectural overview chosen for the Yogashala Webapp. As seen from the diagram, the User interacts with the application services and accesses the database through the Internet.

The chief benefit of three-tier architecture its logical and physical separation of functionality. Each tier can run on a separate operating system and server platform - e.g., web server, application server, database server - that best fits its functional requirements. And each tier runs on at least one dedicated server hardware or virtual server, so the services of each tier can be customized and optimized without impact the other tiers.

The rationale behind opting for such an architecture lies in the fact that this application is targeted at multiple classes of users, each with a separate level of abstraction. Using such an architectural system not only allows for room to improve, but also helps in hosting and saving backups on the cloud.

4 Data Design

4.1 Data Description

MySQL database and JDBC are used to communicate with the database that is installed locally on the server.

5 Component Design

Provided here are a list of summaries of the algorithm for each function listed in Figure 3:

5.1 Sign up

1) Start
2) Obtain user credentials
3) If check password is the same as password, store it along with user credentials under preferred username in the database
4) Redirect to Login page
5) End

5.2 Login

1) Start
2) Get username and password if it exists
3) Compare usernames password to the entered password
4) If same then redirect to time table
5) Else, display alert
6) End

5.3 Classes Module

1) Start
2) Based on who access this module, options are displayed
   a) Admin will have edit access while instructor and customer have view access only
3) Display time table with relevant data based on who logs in
4) Display all the package details which the admin can access and edit while the customer can only view
5) Displays class rescheduling requests and admin can manage it while instructor can apply for it
6) Customer can access it to view a list of classes to block seats and also view a list of packages to which they can subscribe
7) End

5.4 Transaction Module

1) Start

2) Collect details regarding package
3) Proceed to payment page to complete payment
4) Admin confirms payment and uploads digital copy of invoice
5) End

5.5 User Data Module

1) Start
2) Can create, edit and delete instructor account
3) Upload digital copy of invoice once payment is confirmed by bank
4) Manage all user data and provide statistics derived from footfall and most popular class
5) Maintain ledger of all transactions that take place involving company funds
6) Generate daily, weekly, and monthly report derived using footfall, attendance and popular packages subscribed
7) End

6 Human Interface Design

6.1 Overview of User Interface

The user interface is designed according to UI Design principles:
The structure principle: UI is organized in such a way that related things are combined together and unrelated things are separated.
The simplicity principle: It is easy to follow the provided interface. In the case of mistake, system displays error message.
The visibility principle: All system functions are available through UI. It does not overwhelm users with too many alternatives.
The feedback principle: Through the system of messages, the design keeps users informed of actions, errors, or exceptions.
The reuse principle: In design, same names were used to perform the same operations with different objects in order to reduce ambiguity.

6.2 Overall Process Flow:
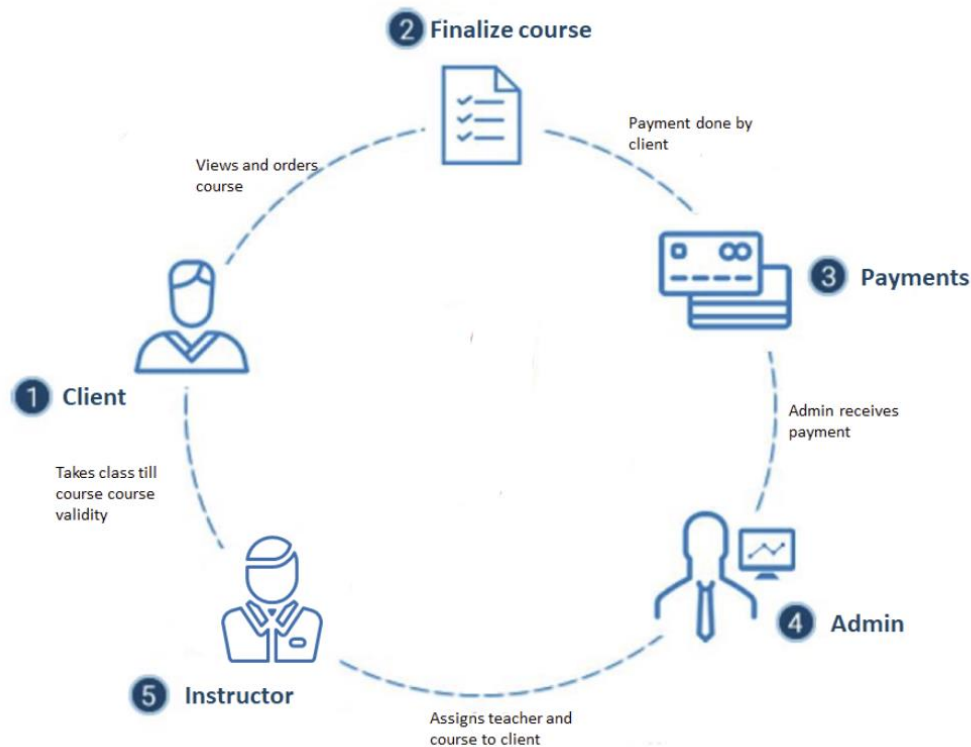
6.2.1 CLIENT PORTAL

When the customer enters the portal, he or she can either sign into their existing account or create a new account if they do not have one. Once they enter their respective accounts, they can view the various packages that Yogashala has to offer. Once they subscribe to the package of their choice, they are redirected to the transaction page (the transaction module is responsible for this). Once the customer makes the payment the admin will confirm the transaction and when successful the admin updates the customer's transaction history. The customer then gets a notification which says that their payment is a success. Now he or she can view the classes availed in the package they subscribed to and block a seat for that class to their convenience. When it nears the class time the customer will get the link through which he or she can access the class. Until the validity of the subscribed package expires the customer can continue to book and attend classes at their convince.

6.2.2 INSTRUCTOR PORTAL

The instructor can only sign into their respective accounts as the admin is responsible for the creation of their accounts. Once they log in it shows all the classes that have been scheduled to them for the entire day. Once he or she clicks on the class they need to teach they enter as the admin into the zoom meeting where they can edit the meet setting to their convince. Alongside this another portal is opened where the instructor takes the attendance of the participants in the meet. In case they cannot take any class during the day he or she can apply for rescheduling that class.

This will then redirect them to another page where they fill an application form containing various details which includes reason for rescheduling. This form is then sent to the admin for approval.

6.2.3 ADMIN PROTAL

Admin is the only one who has complete access to the entire system. They can add, edit or delete any packages offered to the customer through the website. They can also add, edit or delete the instructor's account. They are solely responsible for updating the successful invoice into the customer's account. The admin can also view all the classes scheduled for the entire week and check which instructor is responsible for what class.

The admin has the ultimate authority to approve rescheduling requesting sent by the instructor. If they approve the rescheduling request, he or she will be redirected to the master timetable page with an edit access. Here they will answer a query and then reschedule the class to later date. Once the class is rescheduled the student in that class will get a notification stating that the class is rescheduled with the date it has been rescheduled to.

6.3 Screen Images

6.3.1 Index Page
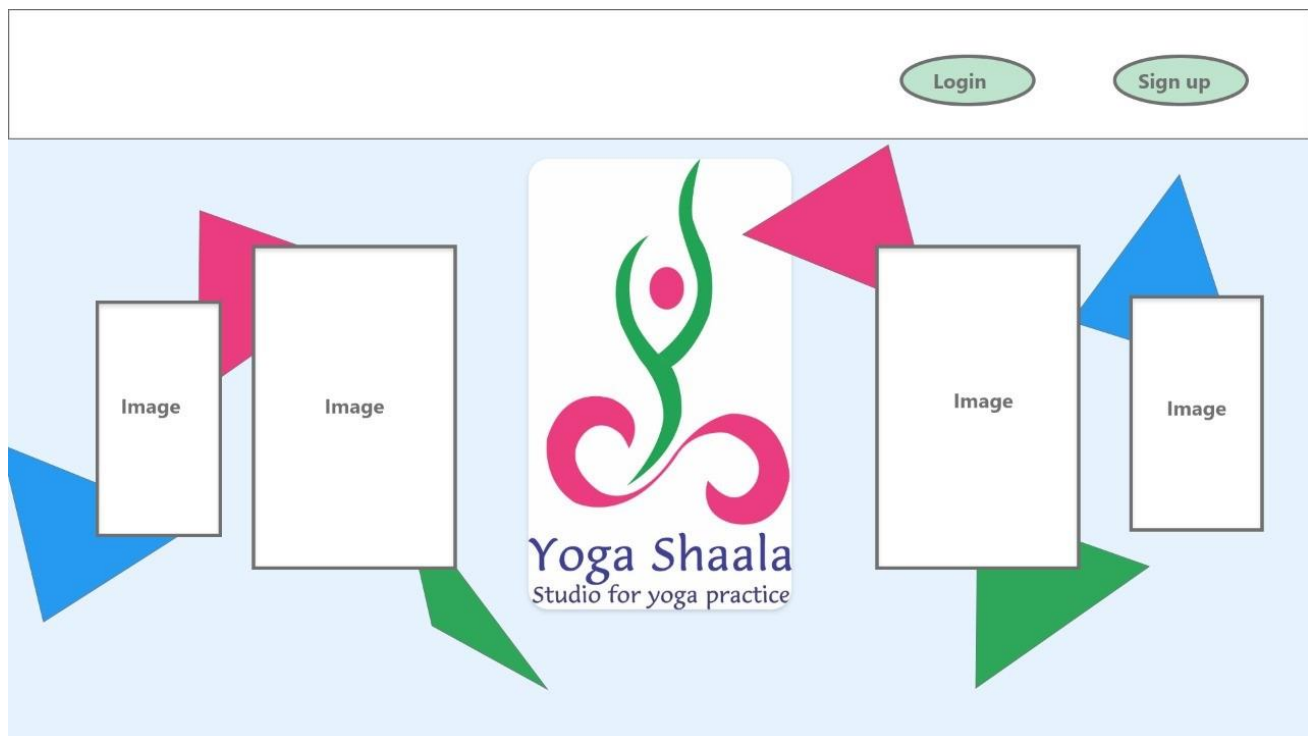
6.3.2 Login Page

Enter username here

Enter password here

Forgot password?

LOGIN

New user? Sign Up

6.3.3 Customer Portal

6.3.3.1 Sign Up Page

6.3.3.2 Package Page

6.3.3.3 Payment Page

6.3.3.4 Class Booking Page

6.3.3.5 Timetable Page

6.3.3.6 Electronic Invoice Page

6.3.3.7 Previous Transaction Page

6.3.3.8   Account Settings Page

6.3.4 Teacher Portal

6.3.4.1 Timetable Page

Home	Time table	Attendance	Rescheduling Request

6:30 am - 8:00am		1:30 pm - 3:00 pm		7:30 pm - 9:00 pm
Sun Yoga		Wall Yoga		Moon Yoga

6.3.4.2 Attendance Page

Home	**Time table**	**Attendance**	**Rescheduling Request**

Date class was held   DD/MM/YYYY

Name of the class   Name of class

Search

Name	Present	Absent
Jhon Doe	✓	
Kirthic	✓	
Sandip		✗

6.3.4.3 Rescheduling Request Page

Home	**Time table**	**Attendance**	**Rescheduling Request**

Original date and time of clas   00:00 / Date

Reason for reschdeuling class

Name of the class   Name of class

Tentative new date and time of class   00:00 / Date

Apply

6.3.5 Admin Portal

6.3.5.1 Master Timetable

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
5AM - 6:30AM	Sun Yoga *Insrtuctor : Alex*		Sun Yoga *Insrtuctor : Alex*		Sun Yoga *Insrtuctor : Alex*		Sun Yoga *Insrtuctor : Alex*
6:45AM - 8AM	Swing yoga *Insrtuctor : Karki*		Meditation Beginner *Insrtuctor : Brindha*				
8AM - 9:30AM	Meditation Beginner *Insrtuctor : Brindha*	Yoga theory Beginner *Insrtuctor : Alex*	Swing yoga *Insrtuctor : Karki*	Sun Yoga *Insrtuctor : Alex*	Meditation Advanced *Insrtuctor : Karki*		
2PM - 3:30PM			Wall yoga *Insrtuctor : Karki*	Yoga theory Intermediate *Insrtuctor : Brindha*		Wall yoga *Insrtuctor : Alex*	

6.3.5.2 Master Timetable Edit Page

	Home	Master time table	Package manager	Rescheduling manager	Account settings

Original date and time of clas — 00:00 / Date

Reason for reschdeuling class — [ ]

Name of the class — Name of class

Tentative new date and time of class — 00:00 / Date

Update Time Table

6.3.5.3 Package Manager Page

	Home	Master time table	Package manager	Rescheduling manager	Account settings

Image

Edit   Delete

Image

Edit   Delete

6.3.5.4 Class Rescheduling Manager Page

6.3.5.5 Add Instructor Account Page

6.3.5.6 Edit / Delete Instructor Page

6.4 Screen Objects and Actions

6.4.1 Index Page

- *Login Button:* The login button is used to direct the user to the login page.
- *Sign-up Button:* The Sign-up button is used direct the user to the sign-up page.
- *Image(s):* The images will contain images of people practising yoga.

6.4.2 Login Page

- **Login Button:** Pressing on login leads to the package page if the entered username and password entered is valid.
- **Username Textbox**: This textbox takes the user's name as the input through the keyboard. This textbox cannot be empty.
- **Password Textbox:** This textbox takes the password set by the customer as the input through the keyboard.
- **Forgot Password:** The Forgot password option is used when the user forgets their password. This option redirects the user to the backend administrator who will then sort of the issue manually.
- **Sign-up:** The Sign-up option directs the user to the sign-up page if they have not signed up already.

6.4.3 Customer Portal

6.4.3.1 Sign Up Page
- **Sign-up Button:** Clicking on the sign-up button directs the customer to the sign-up page where the user will enter his or her details.
- **Full name Textbox:** This textbox takes the customer's full name as the input through the keyboard. This field cannot be empty.
- **Age Textbox:** This textbox takes in the users age in years as the input through the keyboard. This field cannot be empty.
- **Gender:** This is a drop-down type of textbox. On clicking the blue arrow on the side of the textbox a drop-down menu showing the various genders is displayed from which the customer can choose their gender as the input.
- **BMI Textbox:** This is the body mass index textbox. Here the customer types their BMI given to them as the input through the keyboard. This field cannot be empty.
- **Email-id Textbox:** The customer enters a valid email id in this text box as an input through the keyboard.
- **Password Textbox:** Here the customer enters a password unique to their account which they will use to login to their account once set up. The input is taken through the keyboard.
- **Confirm Password Textbox:** Here the customer re-enters the same unique password he/she set for their account to make sure that they remember the password they set initially. The input is taken through the keyboard. This field cannot be empty.
- **Health Issues Textbox:** Here the customer enters any health-related issues they might be having. The input is taken through the keyboard. This field cannot be empty.

6.4.3.2 Package Page
- **Packages Button:** Clicking on the packages button will display the various packages the customer can choose and subscribe to. Once he subscribes to a pack, he is redirected to the transaction portal to make payment.
- **Subscribe Button:** Clicking on the subscribe button of a particular class redirects the customer to the payment page of that class.

6.4.3.3 Payment Page
- **Purchase Subscription button:** The Purchase Subscription button when clicked will direct the customer to the payment portal where they will complete their purchase.

6.4.3.4 Class Booking Page
- **Classes Tab:** Pressing this tab gives the user two options either he or she can book a class or view the timetable of the classes present on that day.
- **Book Class Button:** On clicking this button the customer will be able to view all the classes available for that day.
- **Block Icon:** On clicking on the block icon, the customer will be able to block a seat for themselves in the class they desire to join.

6.4.3.5 Timetable Page
- **Classes Tab:** Pressing this tab gives the user two options either he or she can book a class or view the timetable of the classes present on that day.
- **Timetable Button:** On pressing this button, the customer can view the date and time of the classes he/she chose to enroll into.
- **Join Class Button:** On clicking this button, the customer is redirected to the respective zoom meet of the class.

6.4.3.6 Electronic Page

- **Transaction History Tab:** Clicking this tab presents the customer with two options either he/she can view the status of their current transaction or can view his/her previously made transactions.
- **Electronic Invoice Button:** Clicking this button shows the customer the status of their present transaction.
- **Download Button:** On clicking the arrow mark the customer will be able to download a copy of their invoice onto the device they are currently using.

6.4.3.7 Previous Transaction Page

- **Transaction History Tab:** Clicking this tab presents the customer with two options either he/she can view the status of their current transaction or can view his/her previously made transactions.
- **Previous Transaction Button:** On clicking this button, the customer can view their transaction history.

6.4.3.8 Account Settings Page

- **Account Settings Tab:** On clicking this tab, the customer is redirected to a page that shows the overview of all their details which they entered while creating their yogashala account.
- **Edit details Button:** On clicking on this button, the user can edit/update any of their personal details they had previously entered.

6.4.4 Teacher Portal

6.4.4.1 Timetable Page

- Timetable Tab: On pressing the timetable tab, the instructor can view all the classes that have been scheduled to him/her for the entire day.

6.4.4.2 Attendance Page

- **Attendance Tab:** On clicking this Tab, the instructor will enter the class details as well as the details of the students present in the class and mark them either present or absent.
- **Search Button:** By clicking on this button the instructor can search for a class held on a particular date or under a certain name.
- **Date Textbox:** In this text box the instructor types the date in DD/MM/YYYY format to search for the class they conducted on that date. The input is taken through the keyboard. This Textbox cannot be empty.
- **Name Textbox:** In this text box the instructor types the name of the class they are searching. The input is taken through the keyboard. This Textbox cannot be empty.
- **Present Option:** The instructor clicks on this box if the student was present in their class. Input is taken through mouse or keyboard.
- **Absent Option:** The instructor clicks on this box if the student was absent in their class. Input is taken through mouse or keyboard.

6.4.4.3 Rescheduling Request Page

- **Rescheduling Request Tab:** On clicking this tab, the instructor is redirected to the rescheduling form page. Here the instructor needs to fill in various details along with the reason for rescheduling that class.
- **Apply Button:** By clicking on the apply button the formed filled by the instructor is submitted to the admin for approval.

- **Original Date Textbox:** In this text box the instructor types the date in DD/MM/YYYY format. This is the original date the class was scheduled on. The input is taken through the keyboard. This Textbox cannot be empty.
- **Name Textbox:** In this text box the instructor types the name of the class they are rescheduling. This Textbox cannot be empty.
- **Reason for Rescheduling Textbox:** This textbox is used by the instructor to mention the reason for applying of rescheduling of class. This Textbox cannot be empty.
- **Tentative Date Textbox:** In this text box the instructor types the date in DD/MM/YYYY format. This is the tentative date the class will be scheduled on. The input is taken through the keyboard. This Textbox cannot be empty.

6.4.5 Admin Portal

6.4.5.1 Master Timetable
- **Master Timetable Tab:** On clicking the master timetable tab, the administrator can view all the classes scheduled for the week and can make changes in the timetable if he deems it necessary.

6.4.5.2 Master Timetable Edit Page
- **Original Date Textbox:** In this text box the instructor types the date in DD/MM/YYYY format. This is the original date the class was scheduled on. The input is taken through the keyboard. This Textbox cannot be empty.
- **Name Textbox:** In this text box the instructor types the name of the class they are rescheduling. This Textbox cannot be empty.
- **Reason for Rescheduling Textbox:** This textbox is used by the instructor to mention the reason for applying of rescheduling of class. This Textbox cannot be empty.
- **Tentative Date Textbox:** In this text box the instructor types the date in DD/MM/YYYY format. This is the tentative date the class will be scheduled on. The input is taken through the keyboard. This Textbox cannot be empty.
- **Update Timetable Button:** This button is used to grant the application of rescheduling of classes by the instructor.

6.4.5.3 Package Manager Page
- **Package Manager Tab:** On clicking this tab, the admin can edit or delete the various packages yogashala has to offer to their customers.
- **Edit Button:** On clicking this button, the admin can edit certain aspects of any package that is being offered by yogashala.
- **Delete Button:** On clicking this button, the admin removes(deletes) the package as a whole from the website. The customer would not be able to view the package once deleted.

6.4.5.4 Class Rescheduling Manager Page
- **Rescheduling Manager Tab:** On clicking this button, the administrator can view all the rescheduling requests sent by the various instructors.
- **Tick Button:** On clicking on this button, the admin grants approval for the rescheduling of that class.
- **Cross Button:** On clicking on this button, the admin denies permission for the rescheduling of the class.

6.4.5.5 Add Instructor Account Page

- **Account Settings Tab:** On clicking on this tab, the administrator is presented with two options - either he/she can add an instructor account or can edit/delete an instructor account.
- **Add Account Button:** On clicking this button, the admin initiates the account creation process for an instructor account.
- **Create Account Button:** On clicking this button, the instructor account is created successfully.
- **Full Name Textbox:** In this textbox the admin enters the full name of the instructor who uses this account. The input is taken through the keyboard. This Textbox cannot be empty.
- **Age Textbox:** This textbox takes in the instructors age in years as the input through the keyboard. This Textbox cannot be empty.
- **Email ID Textbox:** The admin enters a valid email id in this text box as an input through the keyboard. This Textbox cannot be empty.
- **Password Textbox:** Here the admin enters a password unique for the instructor's account which they will use to login to their account once set up. The input is taken through the keyboard. This Textbox cannot be empty.
- **Work Experience Textbox:** In this textbox the admin enters a small description of the work the instructor did prior to joining this organization. The input is taken through the keyboard.
- **Image Textbox:** In this textbox the admin uploads a picture of the instructor to whom this account would be assigned to.

6.4.5.6 Edit / Delete Instructor Page

- **Account Settings Tab:** On clicking on this tab, the administrator is presented with two options - either he/she can add an instructor account or can edit/delete an instructor account.
- **Edit / Delete Account Button:** On clicking this button, the admin can either make changes or delete the instructor account all together.
- **Update Account Button:** On clicking this button any changes made to the instructor account by the admin is updated and saved.
- **Delete Account Button:** On clicking this button, the admin completely erases the account created for that instructor.
- **Full Name Textbox:** In this textbox the admin enters the full name of the instructor who uses this account. The input is taken through the keyboard. This Textbox cannot be empty.
- **Age Textbox:** This textbox takes in the instructors age in years as the input through the keyboard. This Textbox cannot be empty.
- **Email ID Textbox:** The admin enters a valid email id in this text box as an input through the keyboard. This Textbox cannot be empty.
- **Password Textbox:** Here the admin enters a password unique for the instructor's account which they will use to login to their account once set up. The input is taken through the keyboard. This Textbox cannot be empty.
- **Work Experience Textbox:** In this textbox the admin enters a small description of the work the instructor did prior to joining this organization. The input is taken through the keyboard.
- **Image Textbox:** In this textbox the admin uploads a picture of the instructor to whom this account would be assigned to.

7 Requirements Matrix

Functional Requirement ID	Functional Requirement	Relevant System Component
F1	The system shall include a login feature	**Login**
F2	The system will include a sign-up feature	**Sign-up**
F3	The system shall include a subscription feature	**Packages**
F4	The system shall include a transaction feature	**Transaction**
F5	The system shall include an edit feature	**Account Settings**
F6	The system shall include an attendance feature	**Attendance**
F7	The system shall include a rescheduling feature	**Rescheduling Request**
F8	The system shall include a display timetable feature	**Timetable**
F9	The system will include a package management feature	**Package Manager**
F10	The system shall include a rescheduling management feature	**Rescheduling Manager**
F11	The system shall include a transaction report feature	**Transaction History**

8 Appendices

Nil