Tour Guide Web Site

Group no.02

Final Assessment

ICT 3113 - Web Application Development

Department of Information and Communication Technology

University of Sri Jayewardenepura

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Introduction

We are 3rd year students of the Department of Information and Communication Technology, Faculty of Humanities and Social Sciences, University of Sri Jayewardenepura. There is a subject unit as **ICT 3113- Web Application Development** in the first semester of the third academic year of our department. As the final team project, we were assigned to build a web application.

According to that assignment, our group consisted of 4 students, and the final project design was built based on the discussions of all the group members. After several discussions, everyone agreed that our final web application project should be done to suit a current need. It was suggested that a project related to Sri Lanka's tourism industry should be carried out according to everyone's agreement.

After that, with the unity of everyone in the team, we developed a tour guide web site. Through this project, we hope to provide the necessary help to achieve their goals by providing guides to tourists by including information related to the places that have attracted tourist attractions in Sri Lanka.

Our system is developed using a MERN (MongoDB, Express.js, React, Node.js) stack, ensuring a responsive frontend coupled with a powerful backend. The system's APIs are custom-built to manage key operations like user authentication, tour management, and booking functionalities.

Motivation

The tourism industry can be introduced as a very popular field in Sri Lanka today. The tourism industry, which is the main source of foreign exchange earnings for Sri Lanka, is also a factor that directly affects the local economy.

There are many other side benefits that the country receives from the tourism industry. Through this, many employment opportunities are created in Sri Lanka; unemployment is reduced; the demand for local products increases; and facilities in the state are further improved; Sri Lankans should pay more attention to the tourism industry which contributes so much to various sectors of Sri Lanka. That is, promoting the tourism industry in Sri Lanka is a very important task.

The promotion of the tourism industry based on Information and Communication Technology is very beneficial according to current trends. Based on this situation, our team decided to develop a web application to promote the tourism industry.

We think the web application that we have decided to develop, will make a very small contribution to the development of Sri Lanka's tourism industry as mentioned above.

Tourists can manage their trips very easily through this web site. Also, they can easily know about previous bookings, exploring attractive places, details about special places in Sri Lanka, etc.

If we introduce such web site to tourists, the tourism industry in Sri Lanka will improve. Due to the convenience provided through this, many tourists will undoubtedly use these mobile applications.

Based on this motivational background, we present our final project, the tour guide website.

Problem and Objectives

Problem Statement

As I mentioned above, it is our responsibility to encourage the tourism industry, which is a major way of bringing foreign exchange to Sri Lanka.

In such a background, we understood the various problematic situations existing in the tourism industry. It is true that those problematic conditions may lead to the decline of Sri Lanka's tourism industry.

Such problematic situations that we have identified can be lined up like this.

- Lack of resources for foreign tourists to explore Sri Lanka's attractions well
- Difficult to establish direct contact with local guides.
- Accommodation and travel booking issues
- Reliability and security issues
- Problems with obtaining accurate, truthful information

We publish this website as a solution to such practical problems faced by local as well as foreign tourists.

Objectives

These are some of the main goals that our team hoped to achieve through this website development project.

- Achieving all the points mentioned in the given assignment
- Delivering quality project deliverables
- Designing and developing the project to suit the time requirement
- Creating a user-friendly website
- Ensuring security of user information and transactions.
- Providing accurate information to users.

- Establishing trust and security
- Adding new things to the knowledge of everyone in the group
- Identifying new technical practices and incorporating them into the project

Our first goal was to develop a project that conformed to the instructions received within the given time frame. We first identified the scope of the project and built the website accordingly.

We also made sure to ensure the quality of the website we build within a limited time frame. One of our goals was to complete a project with maximum quality using limited resources.

Our next objective was to create a user-friendly, more attractive website. And it had to be a reliable, more secure website.

Local as well as foreign tourists get information through this website. Therefore, the website had to be developed to attract all of them. Also, the information provided to them through this website should be more accurate. Otherwise, they will have to face many difficulties.

Tourists can book various tours through this website. We must protect the security and reliability of this system while doing transactions. We also receive user data as input, and it is our responsibility to provide security for them.

Finally, another important thing that we hoped to achieve through this project was that everyone in the team would gain new knowledge and technical knowledge and new experiences.

We were able to achieve all the goals mentioned above through this project.

System overview

UI design

As everyone in the group discussed together, it was confirmed that the following features should be included in the website we are building.

1. Verify the user's identity and login to the web site
2. Newly register if you are not currently registered in the web site
3. Facility to reset password if forgotten
4. Ability to edit user details
5. Searching for special places in Sri Lanka
6. Getting details about the places you want to visit
7. Tours booking facility
8. Ability to subscribe the website

When introducing the features designed in this way to our website, a suitable UI design had to be created. For that we first designed a wireframe using "Figma".

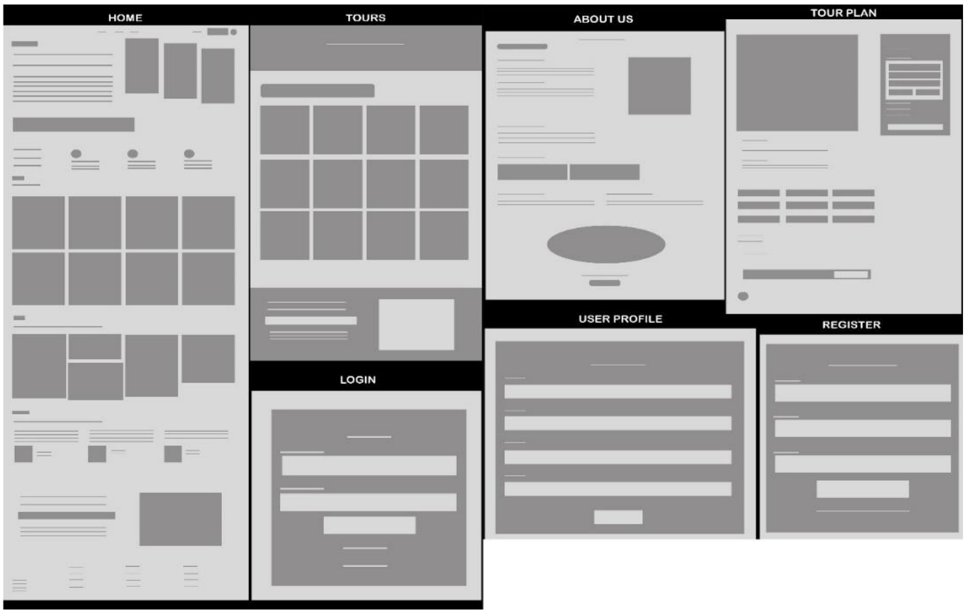
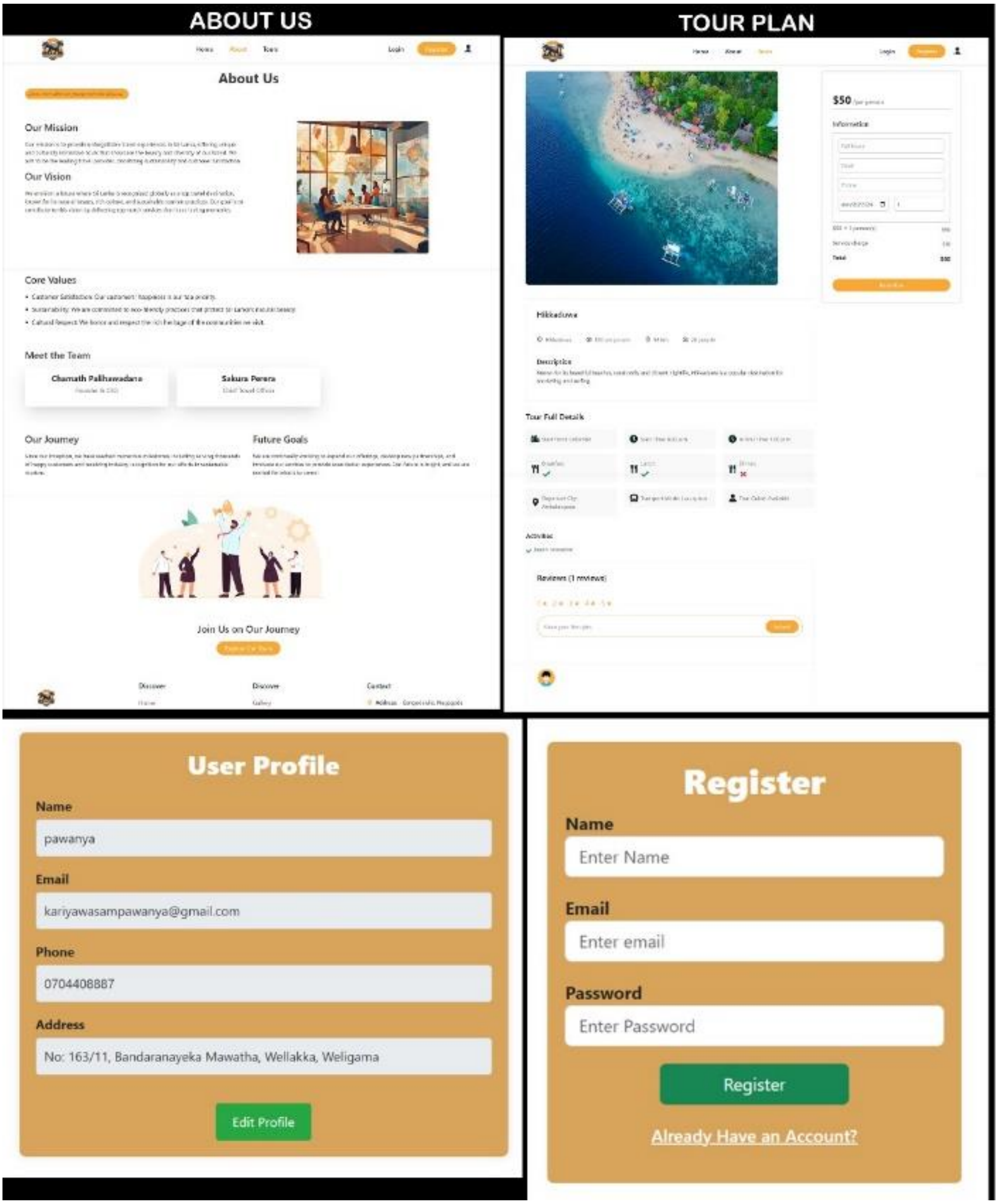


Figure 1: Wireframe design of the web site

After designing the wireframe, we created the UI design using "Figma".



User Profile

Name: pawanya

Email: kariyawasampawanya@gmail.com

Phone: 0704408887

Address: No: 163/11, Bandaranayeka Mawatha, Wellakka, Weligama

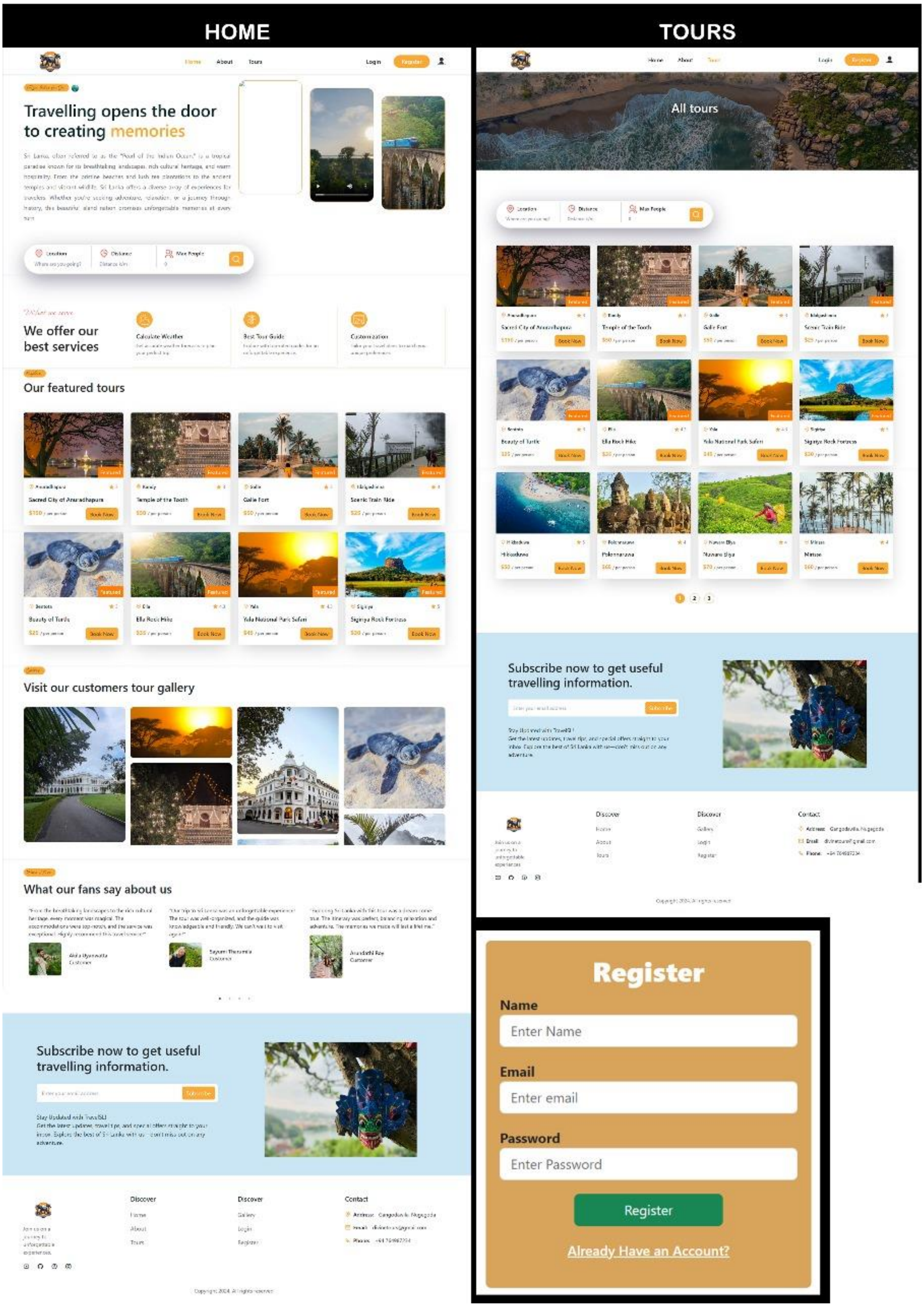
Register

Name

Email

Password

Figure 2:UI design



HOME

Home About Tours Login Register

Travelling opens the door to creating memories

Location Where are you going? Distance Distance k/m Max People 0

We offer our best services

Calculate Weather Best Tour Guide Customization

Our featured tours

Sacred City of Anuradhapura Temple of the Tooth Galle Fort Scenic Train Ride Beauty of Turtle Ella Rock Hike Yala National Park Safari Sigiriya Rock Fortress

Book Now

Visit our customers tour gallery

What our fans say about us

Subscribe now to get useful travelling information.

Subscribe

Discover Home About Tours

Discover Gallery Login Register

Contact Address: Gangodawila, Nugegoda Email Phone

TOURS

Home About Tours Login Register

All tours

Location Distance Max People

Sacred City of Anuradhapura Temple of the Tooth Galle Fort Scenic Train Ride Beauty of Turtle Ella Rock Hike Yala National Park Safari Sigiriya Rock Fortress Hikkaduwa Polonnaruwa Nuwara Eliya Mirissa

Book Now

1 2 3

Subscribe now to get useful travelling information.

Subscribe

Stay Updated with TravelSL!

Discover Home About Tours

Discover Gallery Login Register

Contact Address: Gangodawila, Nugegoda Email Phone

Register

Name

Enter Name

Email

Enter email

Password

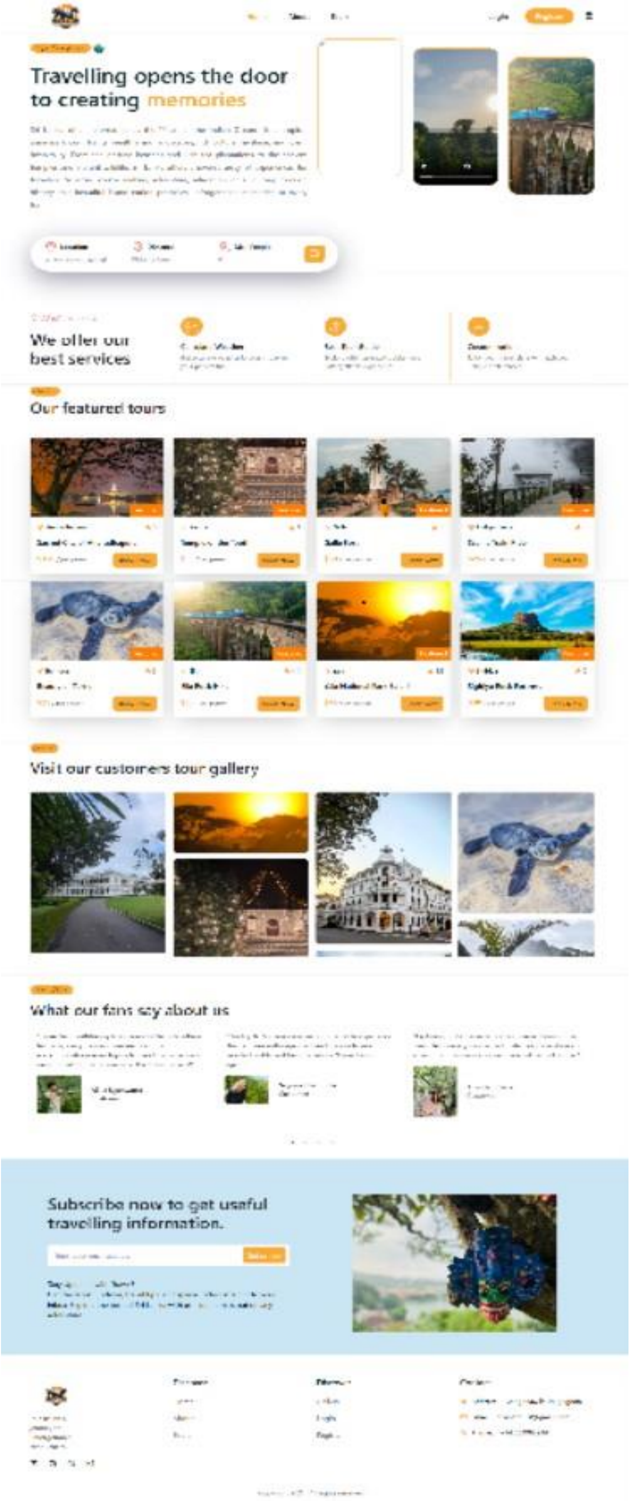
Enter Password

Register

Already Have an Account?

Figure 3:UI design

Home Page



Travelling opens the door to creating memories

We offer our best services

Our featured tours

Visit our customers tour gallery

What our fans say about us

Subscribe now to get useful travelling information.

Figure 4:Home page

Purpose

The Home page is a special page of your TravelSL website which visitors see first when they enter the website. This takes the users through the home page of the app where it highlights beauties of Sri Lanka, the featured tours, services that are on offer, experiences of customers who have used the app, and other testimonies.

GUI (Graphical User Interface)

Hero Section:

Layout:

- The intention of this section is to catch the user's attention right away with the help of images and attractive text.
- The given section is split into several columns where possible to put various images and videos.

Content:

- A text block providing the readers with an idea of traveling in Sri Lanka and especially the concept of memento makers.
- A subtitle "Know before you Go" followed by the world icon.
- Pictures include sigiriya, ella; and a video videoSL, which captures some of the famous tourist attraction sites in sri lanka.

Styling:

It is plain and simple and uncluttered with the use of images and videos presented in a way that will capture the attention of the viewer.

Services Section:

Layout:

- Some information about the services that TravelSL offers.
- There is the title and a subtitle on the left of the section, and on the right there is placed the list of services rendered by ServiceList component.

Content:

The companies' leading title "We offer our best services" followed by a subtitle "What we serve" discloses the provided services.

Styling:

The layout work is simple, the words are written from left to right while the icons of the services provided and their descriptions are well highlighted.

Featured Tours Section:

Layout:

Includes a list of featured tours which helps to engage the user and recommend the destination's options of TravelSL.

Content:

- The section is preceded by a subtitle in the form of the word "Explore" and a title of the section "Our featured tours".
- The FeaturedTourList component is used to show more details about the tours such as general information and descriptions among others.

Styling:

There are wide margins, and generous use of padding which ensures that each of the featured tours stands out from the other.

Experience Section:

Layout:

- A section that will showcase the company TravelSL and the experience the company has had in the travel industry.
- The section is split into two columns: the left column has continuously rheumatoid and text while the right column has an image tag labeled as experirnce.

Content:

- The second word 'Experience' in the subtitle also refers to the capability of the company By using the heading 'With our all experience we will serve you' the company highlights their experience in the business.
- To create credibility, there are numbers such as '12k+ Successful Trips,' '2k+ Regular clients,' and '10 Years of experience. '

Styling:

The section is aimed to look like a professional one and look as credible as possible.

Gallery Section:

Layout:

Provides a gallery of customer tour photos so that people can have an idea on what is being offered to them.

Content:

- Featured by the subtitle, which is titled the 'Gallery,' as well as the title, 'Visit our customers tour' gallery.
- Images are placed in the web-site by the help of the part call MansonryImagesGallery.

Styling:

The gallery feature is well designed and utilizes a masonry layout that creates a more responsive design with the images.

Testimonial Section:

Layout:

The 'Customer Testimonials' section brings out what previous customers have to say about their experience in TravelSL.

Content:

- The section is called "Fans Love" and it has the subtitle "What our fans say about us. "
- The Testimonial element is used to present the customers' feedbacks.

Styling:

The couple's testimonials are easily seen and thus serve to offer one proof of the authenticity of the product offerings from the firm.

Newsletter Section:

Layout:

Promotes the TravelSL newsletter to obtain users' subscriptions for future announcements and promotions.

Content:

The Newsletter is placed at the end of the page which is usually the bottom part of the page among the Kontakt information and alternative links.

Styling:

This is simple and clean and only asks for the readers to subscribe to the blog.

Database Interaction

- The Tours page interacts with the backend to fetch tour data using axios. It handles the following:

Data Fetching:

- Fetches all tours from the API (http://43.205.195.152:3001/tours) and sets them in the component state.

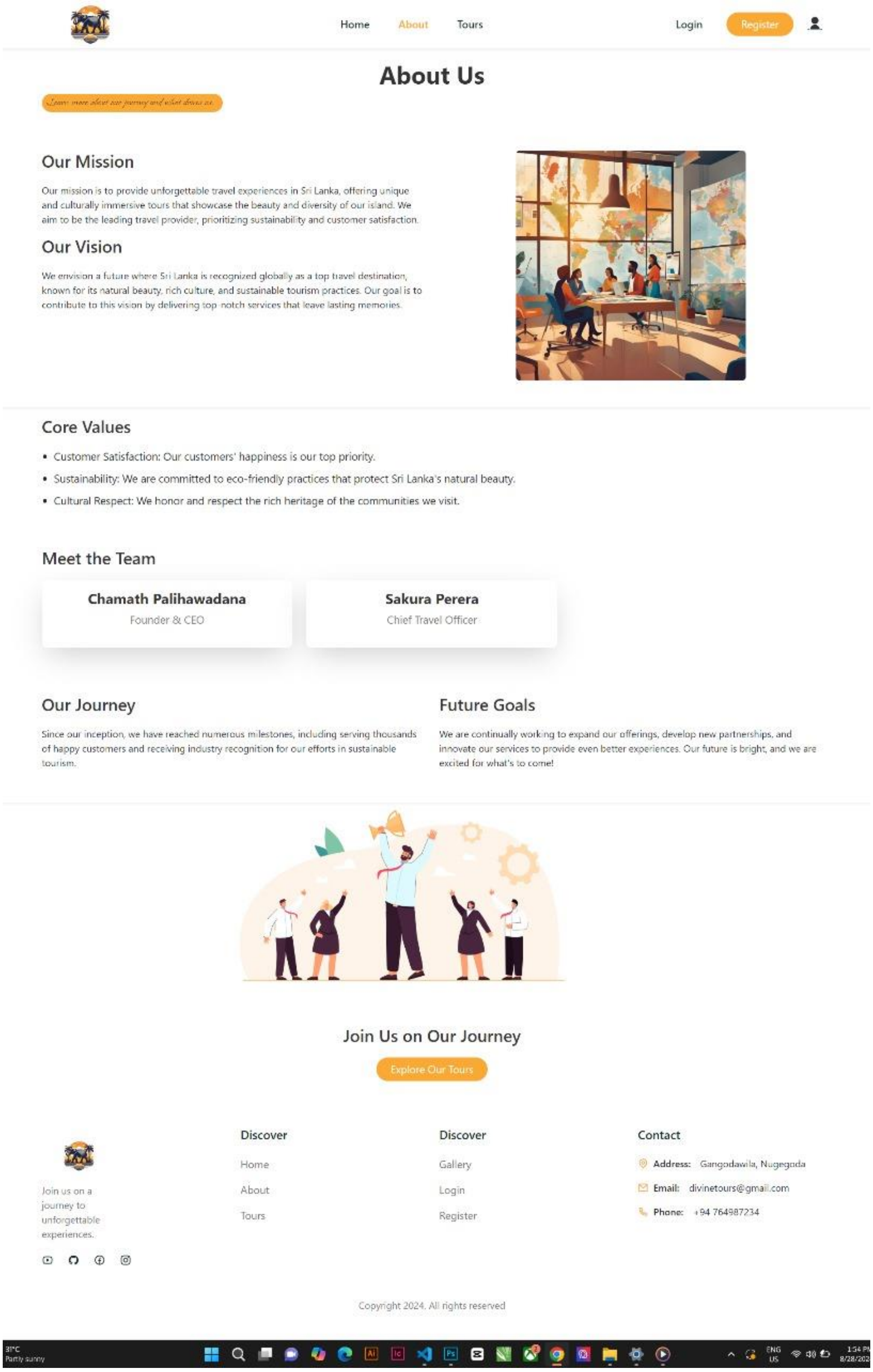
Filtering:

- **Applies filters based on user input to display relevant tours.**

Pagination:

- Manages pagination to display a subset of tours per page.

About page



About Us

Learn more about our journey and what drives us.

Our Mission

Our mission is to provide unforgettable travel experiences in Sri Lanka, offering unique and culturally immersive tours that showcase the beauty and diversity of our island. We aim to be the leading travel provider, prioritizing sustainability and customer satisfaction.

Our Vision

We envision a future where Sri Lanka is recognized globally as a top travel destination, known for its natural beauty, rich culture, and sustainable tourism practices. Our goal is to contribute to this vision by delivering top-notch services that leave lasting memories.

Core Values

- Customer Satisfaction: Our customers' happiness is our top priority.
- Sustainability: We are committed to eco-friendly practices that protect Sri Lanka's natural beauty.
- Cultural Respect: We honor and respect the rich heritage of the communities we visit.

Meet the Team

Chamath Palihawadana
Founder & CEO

Sakura Perera
Chief Travel Officer

Our Journey

Since our inception, we have reached numerous milestones, including serving thousands of happy customers and receiving industry recognition for our efforts in sustainable tourism.

Future Goals

We are continually working to expand our offerings, develop new partnerships, and innovate our services to provide even better experiences. Our future is bright, and we are excited for what's to come!

Join Us on Our Journey

Join us on a journey to unforgettable experiences.

Contact

Address: Gangodawila, Nugegoda
Email: divinetours@gmail.com
Phone: +94 764987234

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Figure 5:About page

Purpose

- The About page is the page that introduces your travel company to the visitors with the information about its goal and objective, main values, employees, achievements, and plans for further development. That way, it seeks to establish credibility with the target consumers by introducing them to the face behind the brand.

GUI (Graphical User Interface)

<u>Company Background and Mission:</u>

Content:

- **Mission:** Introduces the company’s vision based on providing unique travel experiences in Sri Lanka thereby ensuring sustainable outcomes and fulfilling the customers’ expectations.
- **Vision:** Takes an account of the overall vision which aims to establish Sri Lanka as an internationally-famous ‘tourism destination’ that is replete with astonishing sights and vibrant cultural heritage.

Layout:

Located at the top left corner; the company’s mission and vision are presented systematically.

Styling:

This text can also be easily read, sectioned by headings and paragraphs, some of which denote the mission and the vision.

<u>Team Image:</u>

Content:

- Casts the image of the team (teamImg) thus bringing people into the picture of the company.

Layout:

Located at the right side aligned at the middle of the column.

Styling:

The image is bordered to enhance its professional look and the border has a round shape.

Core Values:

Content:

- Incorporates the company’s main values which include Customer Satisfaction, Organization Sustainability as well as Cultural Respect.

Layout:

- I have presented the findings will full bullet points for better understanding and to stress on the points that have been discussed.

Styling:

- High priority is also paid to the simplicity of the structure of the section where essential information about the core values is to be provided.

Meet the Team:

Content:

Has unique laminated cards for each specific team member, that includes the Founder & CEO and the Chief Travel Officer.

Layout:

It now shows details of members in a card form, in each card, there is name of the team member and the role of the member.

Styling:

Cards are aligned and formatted to be business like, with the text in the middle of the card and spaces in between that make the text easy to read.

Milestones:

Content:

- Focuses on the company’s accomplishment and its possible developments for the future.
- It also contains a picture (milestoneImg) to enhance the timeline of the company.

Layout:

- Split into two columns: and one for the accomplishments achieved in the process and one for future plans.

Styling:

- The section is dedicated to the achievements and future plans with the straightforward headings and the background images.

Call to Action:

Content:

- Prompts people to familiarize themselves with the company’s tours through a large button provided that leads to the Tours page.

Layout:

- Drawing much attention located at the center of the page.

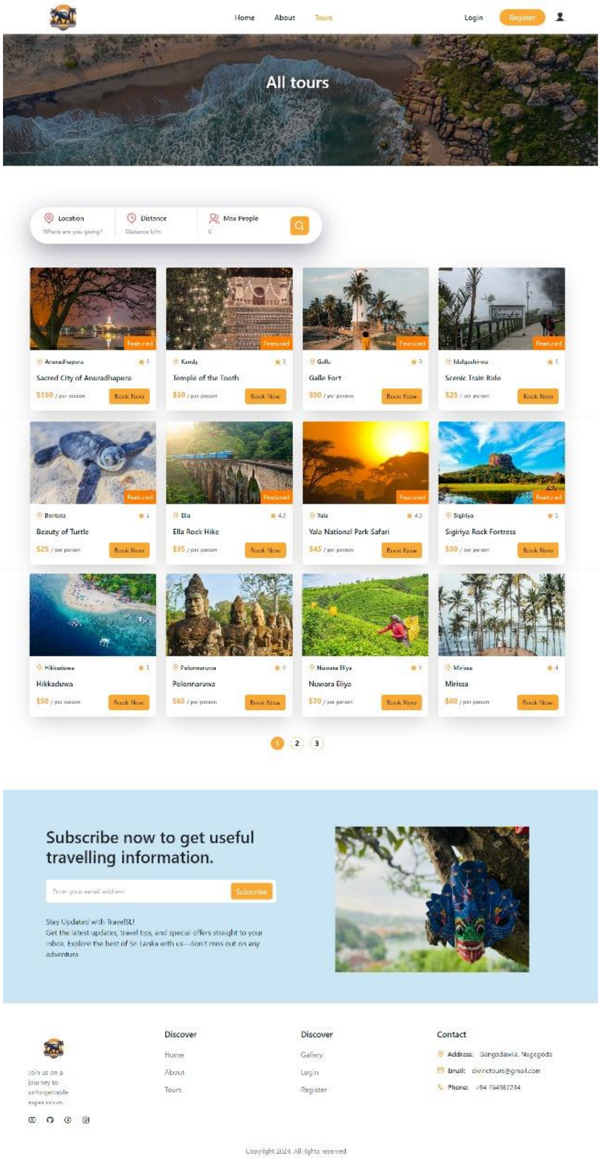
Styling:

- The button also has the primary color and has a link that leads to the /tours page which prompts the users to take the next action.

Database Structure

On the About page there is no direct communication with the database, though the company's values, team information, and achievements may use a database to update the information dynamically.

Tour page



Anuradhapura ★5
Sacred City of Anuradhapura
$150 / per person

Kandy ★3
Temple of the Tooth
$50 / per person

Galle ★3
Galle Fort
$50 / per person

Idalgashinna ★5
Scenic Train Ride
$25 / per person

Bentota ★5
Beauty of Turtle
$25 / per person

Ella ★4.3
Ella Rock Hike
$35 / per person

Yala ★4.3
Yala National Park Safari
$45 / per person

Sigiriya ★5
Sigiriya Rock Fortress
$30 / per person

Hikkaduwa ★5
Hikkaduwa
$50 / per person

Polonnaruwa ★4
Polonnaruwa
$65 / per person

Nuwara Eliya ★4
Nuwara Eliya
$70 / per person

Mirissa ★4
Mirissa
$60 / per person

Subscribe now to get useful travelling information.

Enter your email address

Stay Updated with TravelSL!
Get the latest updates, travel tips, and special offers straight to your inbox. Explore the best of Sri Lanka with us—don't miss out on any adventure.

Join us on a journey to unforgettable experiences.

Discover: Home, About, Tours

Discover: Gallery, Login, Register

Contact
Address: Gangodawila, Nugegoda
Email: divinetours@gmail.com
Phone: +94 764987234

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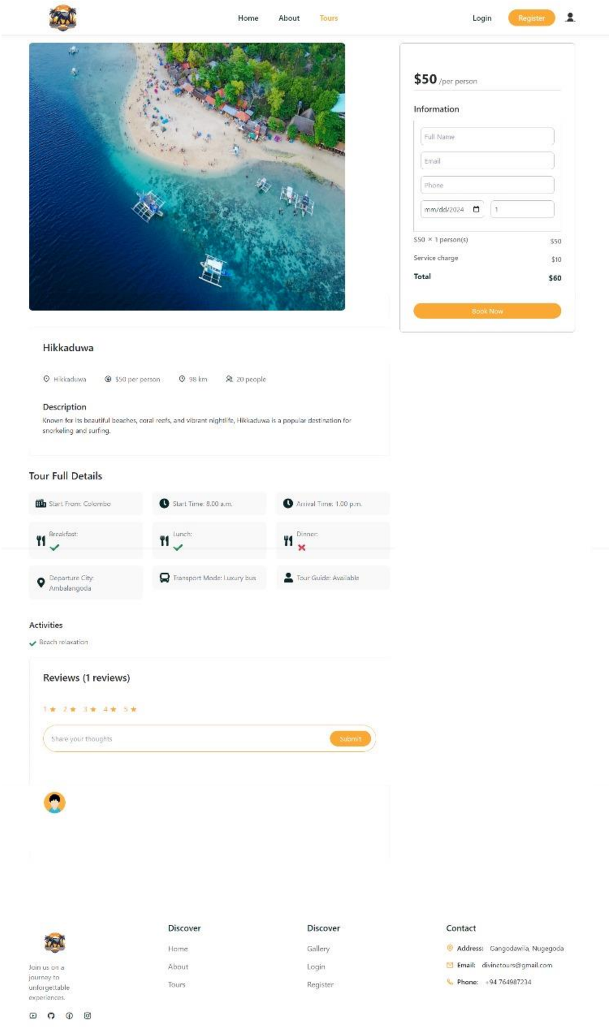
Figure 6:Tour page



$50 /per person

Information
Full Name
Email
Phone
mm/dd/2024 1

$50 × 1 person(s) $50
Service charge $10
Total $60

Hikkaduwa

Hikkaduwa · $50 per person · 98 km · 20 people

Description
Known for its beautiful beaches, coral reefs, and vibrant nightlife, Hikkaduwa is a popular destination for snorkeling and surfing.

Tour Full Details
Start From: Colombo
Start Time: 8.00 a.m.
Arrival Time: 1.00 p.m.
Breakfast: ✓
Lunch: ✓
Dinner: ✗
Departure City: Ambalangoda
Transport Mode: Luxury bus
Tour Guide: Available

Activities
✓ Beach relaxation

Reviews (1 reviews)

Share your thoughts

Join us on a journey to unforgettable experiences.

Discover: Home, About, Tours

Discover: Gallery, Login, Register

Contact
Address: Gangodawila, Nugegoda
Email: divinetours@gmail.com
Phone: +94 764987234

Figure 7:Booking page

Purpose

A tours page is intended to show a list of offered tours which contains the functionality that allows users to search for available tours by location, distance or group size. It also employs pagination to enable users move through the list of the tours as well as a newsletter subscription box to continue with the engagement.

GUI (Graphical User Interface)

Header Section:

Content:

- A title section created out of CommonSection with the title “All tours. “

Layout:

- Placed at the header before the introduction of the concerned section.

Styling:

- Presented in the larger font size and with the bright color to be immediately noticed as a heading of the page.

Search Bar:

Content:

A search bar component that enables the user search for tours based on location, distance, and maximum group size known as search-bar component (SearchBar).

Layout:

- Placed right under the section of the header.

Styling:

- Intended to be easily accessible and located in conspicuous areas within a vehicle. </tool_call>

* [noitemsep]

pneumonia mortality, comparing sites using a simplified version of the modified Global Observer Form (GLOF). The simplified GLOF included multiple items assigned to reflect the construct of pneumonia severity, including symptoms of pneumonia, oxygen saturation, oxygen supplementation, fluid resuscitation, antibiotics, and steroids. </s1>

Tour Cards:

Content:

A list of the Tours is presented, using components of TourCard. On each card there is information that informs about a specific tour including its title, city, price and a small image.

Layout:

Tours are arranged in the grid format with columns (for example, Col lg='3') that provide for the tours' proper and responsive organization.

Styling:

This is arranged in such a way that every card relates information that is relevant to the tour with spaces in between the cards to avoid clutter.

Pagination:

Content:

- Pagination controls help users to move from one page of tours to the other if there are many of them. Each page consists of several tours which number is given by toursPerPage.

Layout:

- Placed slightly lower than the tour cards and placed right at the center of the page.

Styling:

- First of all, pagination buttons are also highlighted so that now the user knows which one is active and can easily click on them to jump to the correspondent page. active__page class differentiate between current page and others.

Loading and Error Handling:

Content:

Shows the message “loading tours…. ” if tours are being fetched and shows a message, “cannot fetch tour details” if the fetch operation has failed.

Layout:

Located at the top of the page each time that the loading or any type of error indicators are displayed.

Styling:

Arranged in a way that you can clearly see them , and are not easily overlooked.

Newsletter Subscription:

Content:

- Newsletter component offers an option for users to subscribe with the site for further information and updates.

Layout:

- Located at an inferior part of the page.

Styling:

- Designed as a headline to grab the user's attention and direct him to subscribe for newsletters.

Database Interaction

- The Tours page interacts with the backend to fetch tour data using axios. It handles the following:

Data Fetching:

- Fetches all tours from the API (http://43.205.195.152:3001/tours) and sets them in the component state.

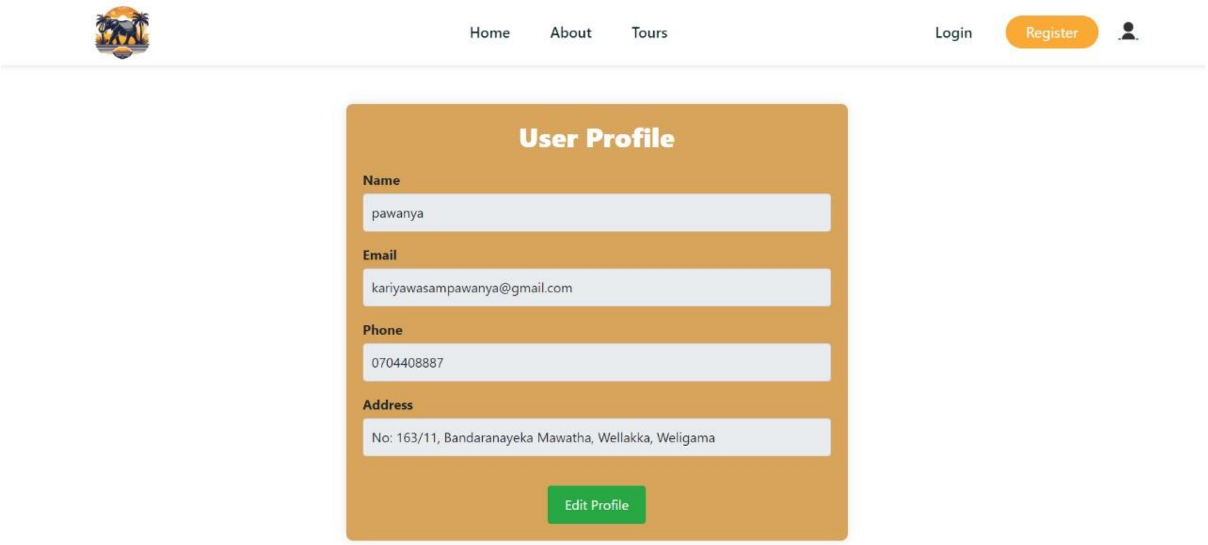
Filtering:

- Applies filters based on user input to display relevant tours.

Pagination:

- Manages pagination to display a subset of tours per page.

User Profile



User Profile

Name
pawanya

Email
kariyawasampawanya@gmail.com

Phone
0704408887

Address
No: 163/11, Bandaranayeka Mawatha, Wellakka, Weligama

Figure 8:User profile

The `UserProfile` component allows users to view and edit their profile information, including name, phone number, and address. The email field is displayed but not editable. The system provides feedback on success or failure when trying to fetch or update user data.

GUI:

- **User Profile User Interface** - The user's profile data is displayed in a form with fields for Name, Email, Phone, and Address.
- **Editing** - Users can toggle between view and edit modes. When in edit mode, the Name, Phone, and Address fields become editable, and buttons to save changes or cancel editing appear.
- **Error and Success Messages** - Messages are displayed above the form to inform the user of any errors during data fetching or updating and to confirm successful updates.

The interface is styled with custom CSS, providing a gradient background and centered text, giving it a modern and clean appearance.

Database Structure

The system is assumed to be connected to a backend with a database structure that might include the following relevant tables:

Users Table

- `userId` (Primary Key)
- `name`
- `email`
- `phone`
- `address`

This table holds the basic user profile information, which the application retrieves and updates.

API Implementation and Endpoints

1. Fetch User Profile

Retrieves the profile information for a specific user based on their `userId`.

- Endpoint: `GET /profile?userId={userId}`
- Request Parameters:
- `userId`: The ID of the user whose profile is being fetched. This is obtained from session storage.
- Response:
- Success - Returns a JSON object with a `Status` field set to 'Success' and a `user` object containing the user's profile data (`name`, `email`, `phone`, `address`).
- Error - Returns a JSON object with a `Status` field set to 'Error' and an appropriate error message.

2. Update User Profile

Updates the user's profile information with the data provided in the request body.

- Endpoint: `PUT /profile`
- Request Body:

- `userId`: The ID of the user whose profile is being updated.

- `name`: The updated name of the user.

- `phone`: The updated phone number of the user.

- `address`: The updated address of the user.

- Response:
    - Success - Returns a JSON object with a `Status` field set to 'Success' and a message confirming the profile update.
    - Error - Returns a JSON object with a `Status` field set to 'Error' and an appropriate error message.

Code Explanation:

State Management:

- `userData` - Holds the user's profile information.

- `isEditing`- Boolean to toggle between view and edit modes.

- `error`- Holds any error message to be displayed.

- `successMessage`- Holds the success message after a successful profile update.

Fetching Data:

The `useEffect` hook fetches user data when the component loads, using the `userId` stored in session storage.

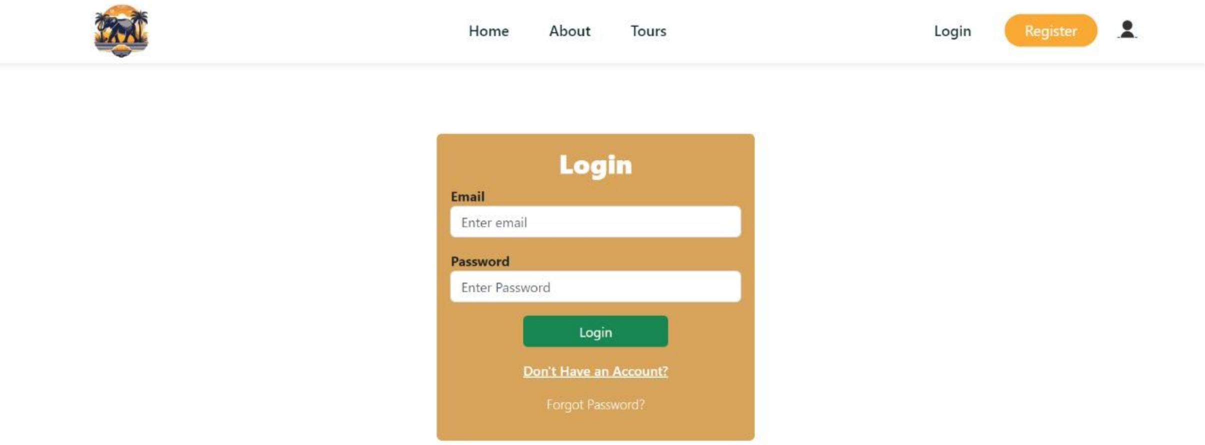
Updating Data:

The `handleSave` function is triggered when the user saves their changes. It sends the updated data to the backend API and handles the response.

UI Interaction:

- The `handleInputChange` function updates the state when the user modifies any input fields.
- The form is conditionally rendered based on the `isEditing` state, allowing toggling between view and edit modes.

Login



Login

Email

Enter email

Password

Enter Password

Login

Don't Have an Account?

Forgot Password?

Figure 9:Login page

The Login component provides a user authentication interface where users can log in using their email and password. It supports both user and admin roles, directing them to different pages based on their role after successful authentication. It also includes links to register a new account and reset a forgotten password.

Login Form:

- Email Input Field: Allows users to input their registered email address.
- Password Input Field: Allows users to input their password.
- Submit Button: Submits the login form to authenticate the user.
- Error Display: Shows an error message if login fails

Links:

- Register: A link that navigates to the registration page.
- Forgot Password: A link that navigates to the password reset page.

Styling:

The form is centered on the page with a gradient background. The form fields and buttons are styled with Bootstrap classes and additional inline styles for a modern appearance.

Database Structure

The system assumes the existence of a users collection/table in the database. Relevant fields include:

Users Table (EmployeeModel):

- userId (Primary Key)
- email
- password
- role (e.g., "admin" or "user")

These fields are crucial for authenticating users and determining their role within the system.

API Implementation and Endpoints

1. User Login

Authenticates the user with the provided email and password.

- Endpoint: POST /login

- Request Body:

- email - The email address entered by the user.
- password - The password entered by the user.

- Process:

- The system checks the email and password against the stored values in the database.
- If the credentials are valid, the system retrieves the user's userId and role.
- The userId is stored in session storage for use in other parts of the application.
- The user is redirected to the appropriate page based on their role (admin or user).

- Response:

- Success

- Status - Returns a JSON object with a Status field set to 'Success', along with the role and userId.

- Redirect - The user is redirected to the home page (/home for admins or / for regular users).

- Error

-Status - Returns a JSON object with a Status field set to 'Error' if the credentials are invalid or if there’s another issue.

-Error Message - The component displays an error message to the user.

Code Explanation

State Management:

- email: Holds the email address input by the user.
- password: Holds the password input by the user.
- error: Stores any error message to be displayed if login fails.

Form Handling:

The handleSubmit function handles the login form submission. It sends a POST request to the /login API endpoint with the email and password. Based on the response, it either navigates the user to the appropriate page or displays an error message.

Navigation:

The useNavigate hook from react-router-dom is used to navigate the user after a successful login or when the user opts to register a new account.

Error Handling:

If the login fails, the setError function updates the error state with an appropriate message, which is then displayed to the user.

Register

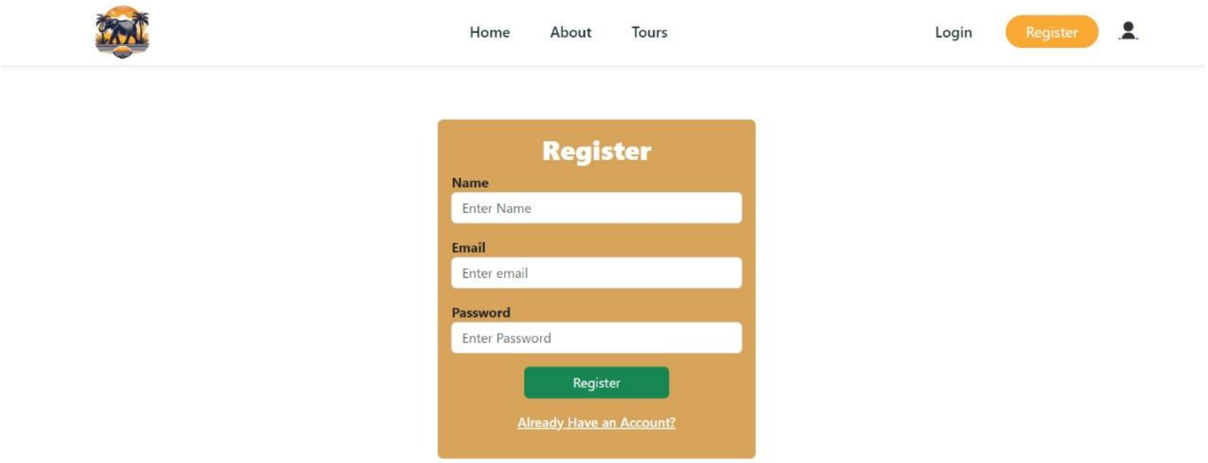


Figure 10:Register page

GUI:

Registration Form:

- Name Input Field: Allows users to input their name.
- Email Input Field: Allows users to input their email address.
- Password Input Field: Allows users to input a password.
- Submit Button: Submits the registration form to create a new user account.
- Navigation Link: A link to navigate to the login page if the user already has an account.

Styling:

The form is centered on the page with a gradient background. The form fields and buttons are styled with Bootstrap classes and additional inline styles to create a modern, clean appearance.

Database Structure

The system assumes the existence of a users collection/table in the database. Relevant fields might include:

Users Table:

- userId (Primary Key)
- name
- email
- password (hashed)

These fields are crucial for storing and managing user accounts. The email field should be unique to ensure that each user has a distinct account.

API Implementation and Endpoints

1. User Registration

Registers a new user by saving their name, email, and hashed password to the database.

- Endpoint: POST /register
- Request Body:
    - name: The name entered by the user.
    - email: The email address entered by the user.
    - password: The password entered by the user (this will be hashed before being stored).
- Process:
    - The system first checks if the email is already in use.
    - If the email is unique, the password is hashed using a secure hashing algorithm (e.g., bcrypt) before being stored in the database.
    - A new user record is created with the provided name, email, and hashed password.
- Response:
    - Success
        - Status - Returns a JSON object indicating the successful creation of the user account.

- Redirect - The user is redirected to the login page to log in with their new credentials.

- Error

- Status - Returns a JSON object with an error message if the email is already in use or if there's an issue during the registration process.

Code Explanation

- State Management

- name, email, password: These state variables hold the values input by the user in the registration form.

- setName, setEmail, setPassword: These functions update the respective state variables as the user types.

- Form Handling

- The handleSubmit function handles the form submission. It prevents the default form submission behavior and sends a POST request to the /register API endpoint with the name, email, and password. Upon successful registration, it redirects the user to the login page.

- Navigation

- The useNavigate hook from react-router-dom is used to navigate the user to the login page after successful registration or when they choose to navigate manually.

Database Structure

The MongoDB database we used comprises five collections, each designed to manage and store information related to employees, subscriptions, tours, and users

Employee Collection:

This collection contains comprehensive details about employees, such as their name, email, hashed password, address, and phone number. It includes fields for password reset tokens and their expiration dates. Each employee document is uniquely identified by a primary _id.

Subscription Collection:

This collection oversees email subscriptions, with each document representing a subscriber's email. The _id field serves to uniquely identify each subscription document. It primarily facilitates the storage and management of email lists.

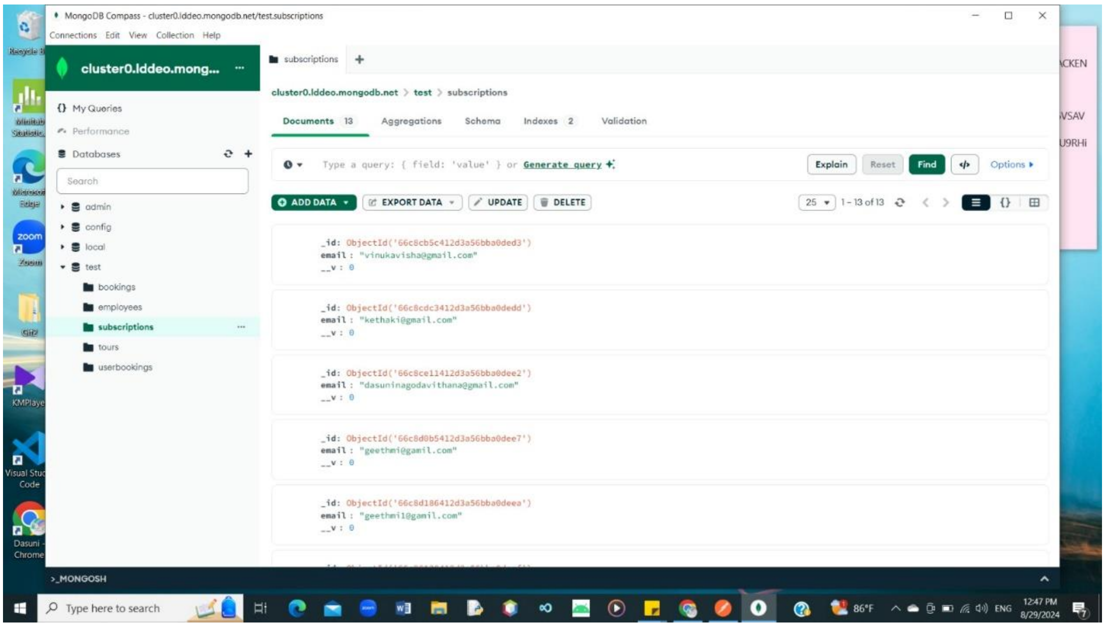
Tour Collection:

The tours series carries precise facts about various tours provided using users. each document includes fields like identity, town, cope with, distance, charge, most institution length, description, average rating, and greater. It additionally shops the start and arrival instances, delivery modes, and whether breakfast, lunch, or dinner is covered within the excursion bundle. The featured discipline highlights whether an excursion is a featured provide, and critiques can keep purchaser feedback.

Userbookings collection:

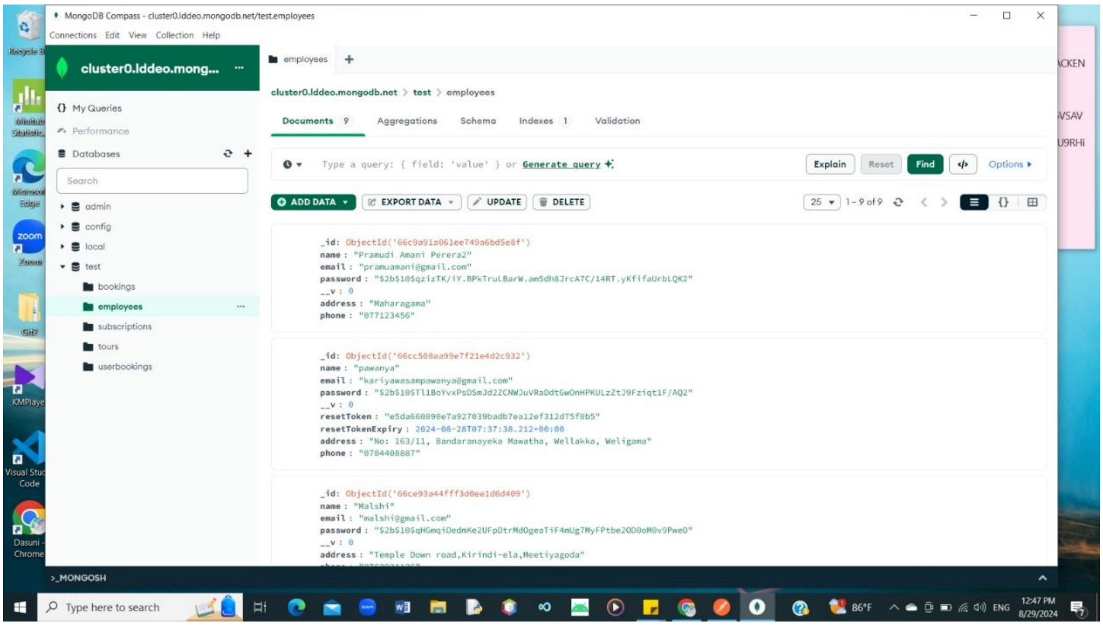
This collection stores user data, such as names, emails, passwords (hashed), and different personal information like address and contacts wide variety. similar to the employee series, it includes fields for handling password resets and authentication tokens.

- Below are the 4 tables that we have built in MongoDB



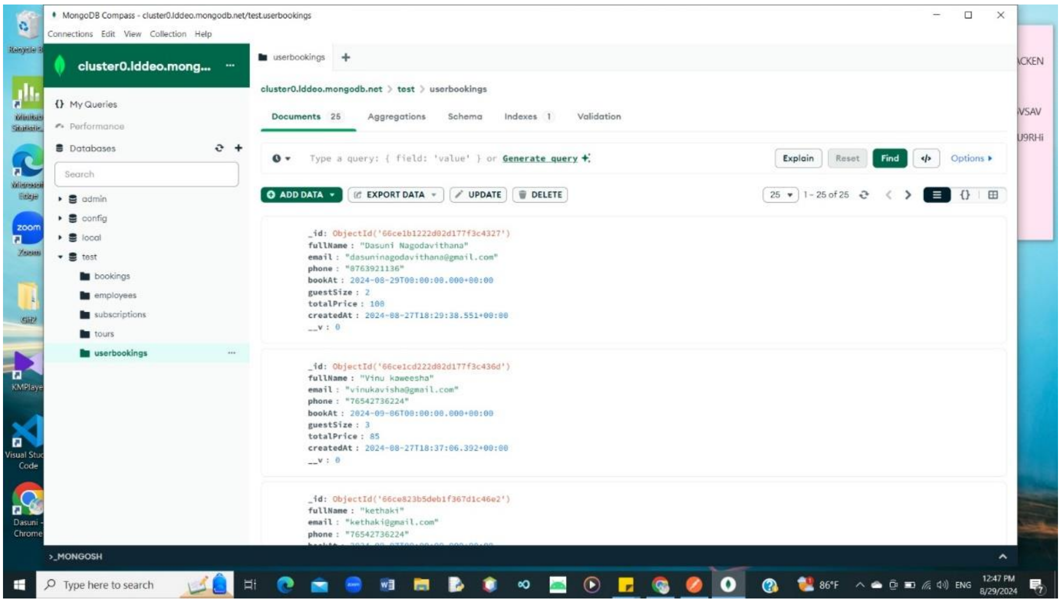
```
_id: ObjectId('66c8cb5c412d3a56bba0ded3')
email : "vinukavisha@gmail.com"
__v : 0

_id: ObjectId('66c8cdc3412d3a56bba0dedd')
email : "kethaki@gmail.com"
__v : 0

_id: ObjectId('66c8ce11412d3a56bba0dee2')
email : "dasuninagodavithana@gmail.com"
__v : 0

_id: ObjectId('66c8d0b5412d3a56bba0dee7')
email : "geethmi@gamil.com"
__v : 0

_id: ObjectId('66c8d186412d3a56bba0deea')
email : "geethmi1@gamil.com"
__v : 0
```

Figure 12:subscription table



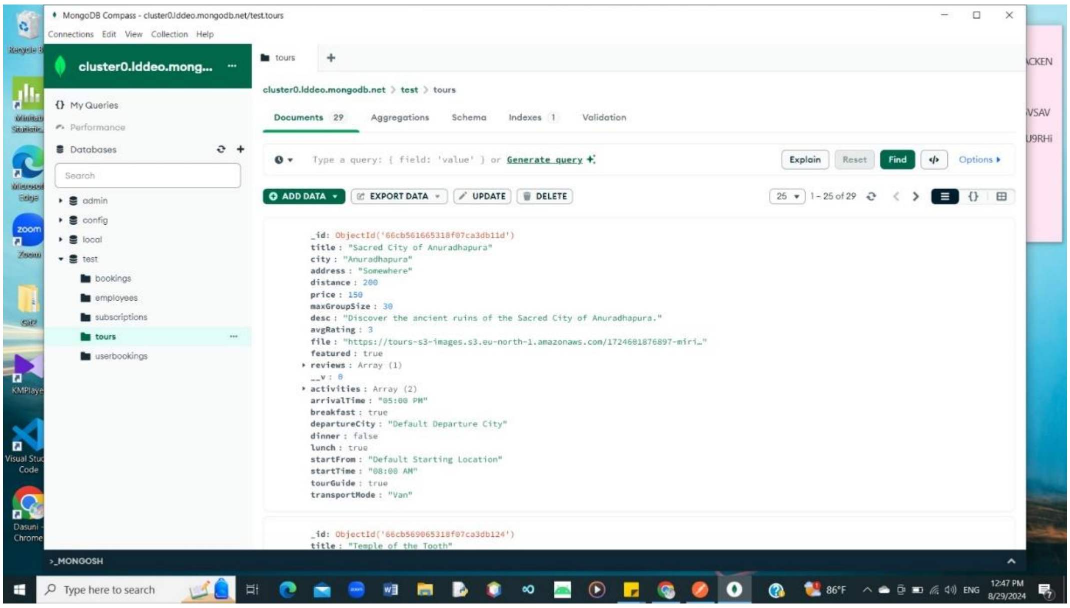
```
_id: ObjectId('66c9a91a061ee749a6bd5e8f')
name : "Pramudi Amani Perera2"
email : "pramuamani@gmail.com"
password : "$2b$10$qzizTK/iY.BPkTruLBarW.am5dh8JrcA7C/14RT.yKfifaUrbLQK2"
__v : 0
address : "Maharagama"
phone : "077123456"

_id: ObjectId('66cc508aa99e7f21e4d2c932')
name : "pawanya"
email : "kariyawasampawanya@gmail.com"
password : "$2b$10$Tl1BoYvxPsDSmJd2ZCNWJuVRaDdtGwOnHPKULzZtJ9Fziqt1F/AQ2"
__v : 0
resetToken : "e5da660890e7a927039badb7ea12ef312d75f0b5"
resetTokenExpiry : 2024-08-28T07:37:38.212+00:00
address : "No: 163/11, Bandaranayeka Mawatha, Wellakka, Weligama"
phone : "0784408887"

_id: ObjectId('66ce93a44fff3d0ee1d6d409')
name : "Malshi"
email : "malshi@gmail.com"
password : "$2b$10$qHGmqiOedmKe2UFpDtrMdOgeaTiF4mUg7MyFPtbe2OD0oM0v9PweO"
__v : 0
address : "Temple Down road,Kirindi-ela,Meetiyagoda"
```

Figure 11:employees table



```
_id: ObjectId('66ce1b1222d02d177f3c4327')
fullName : "Dasuni Nagodavithana"
email : "dasuninagodavithana@gmail.com"
phone : "0763921136"
bookAt : 2024-08-29T00:00:00.000+00:00
guestSize : 2
totalPrice : 100
createdAt : 2024-08-27T18:29:38.551+00:00
__v : 0

_id: ObjectId('66ce1cd222d02d177f3c436d')
fullName : "Vinu kaweesha"
email : "vinukavisha@gmail.com"
phone : "76542736224"
bookAt : 2024-09-06T00:00:00.000+00:00
guestSize : 3
totalPrice : 85
createdAt : 2024-08-27T18:37:06.392+00:00
__v : 0

_id: ObjectId('66ce823b5deb1f367d1c46e2')
fullName : "kethaki"
email : "kethaki@gmail.com"
phone : "76542736224"
```

Figure 13:userbookings table



```
_id: ObjectId('66cb561665318f07ca3db11d')
title : "Sacred City of Anuradhapura"
city : "Anuradhapura"
address : "Somewhere"
distance : 200
price : 150
maxGroupSize : 30
desc : "Discover the ancient ruins of the Sacred City of Anuradhapura."
avgRating : 3
file : "https://tours-s3-images.s3.eu-north-1.amazonaws.com/1724601876897-miri…"
featured : true
▸ reviews : Array (1)
__v : 0
▸ activities : Array (2)
arrivalTime : "05:00 PM"
breakfast : true
departureCity : "Default Departure City"
dinner : false
lunch : true
startFrom : "Default Starting Location"
startTime : "08:00 AM"
tourGuide : true
transportMode : "Van"

_id: ObjectId('66cb569065318f07ca3db124')
title : "Temple of the Tooth"
```

Figure 14:tours table

Overview of API(s)

1. **User Authentication and Profile Management**

Login (‘POST /login’)

- Verifies the user information provided in an email and password.
- In this case, it will employ bcrypt to check if the given password matches the hashed password stored in the database.
- Returns success status and the id of the user specific if the input credentials are correct.

Register (‘POST /register’)

- Originates a new user.
- Utilise to ensure that the user entered email does not exist in the database.
- Encrypts the password with bcrypt algorithm to come up with the hash value that is stored in the database.

Forgot Password (‘POST /forgot-password’)

- We have the option of sending user an email with a link for resetting password that comes with a form.
- Manufactures a reset token and afterwards posts a value holding the expiration time of the said token.

Reset Password (‘POST /reset-password/:token’)

- Logs in the user after entering the token which has been sent to his or her email, and resets the password.
- It stores the new password after hashing it through bcrypt before storing inside the database.

Get User Profile (‘GET /profile’)

- Retrieves the user’s profile based on the user ID that is supplied as an argument in the query string of the URL.

User Profile ('PUT /profile')

- Changes the name, phone or address , the parameters of which are given in the request body in terms of the user's unique identification number.

2. **Subscription Management**

Subscribe ('POST /subscribe')

- Subscribes an email list by adding it's address to the list.
- To prevent duplication of the email id the program first checks whether the email is already subscribed or not.

3. **Tour Management**

Upload Tour ('POST /tours')

- Uses multer and multer-s3to to upload a tour image to AWS S3 for the handling of images to be uploaded.
- Stores the tour details as well as the S3 image URL into the MongoDB database.

Get Featured Tours ('GET /tours/featured')

- Retrieves the tours from MongoDB based with the help of "isFeature" flagged as true or false.

Get Tour Details ('GET /tours')

- Gets information of a given tour with the help of its ID stored and retrieved from MongoDB.
- To ensure that it does not have to search the whole database for a specific tour, this system first validates the tour ID.

4. **User Bookings Management**

User Bookings (‘/userBookings’)

- For managing user bookings, we have defined routes which are controlled by the userBookingsRouter imported and used in the server.

Summary

We present the final project developed by us related to the ICT 3113 Web Application Development course unit.

Being a team project, all the decisions were made by the team and the website was built by consensus.

Here we designed a tour guide website and it was built as expected. Here we used MERN stack to develop the website.

It must be said that through this project we gained many new knowledge and developed many other qualities such as time management and resource management.

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