Design and Development on Travel and Tourism
BY

Abu Al Nasir Mitul
ID: 191-15-12800
AND

Jannatul Ferdousi Mou
ID: 191-15-12149
AND

Md. Sharif Patwary
ID: 191-15-12762

This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering

Supervised By

Mr. Saiful Islam
Assistant Professor
Department of CSE
Daffodil International University

Co-Supervised By

Mr. Gazi Zahirul Islam
Assistant Professor
Department of CSE
Daffodil International University

DAFFODIL INTERNATIONAL UNIVERSITY
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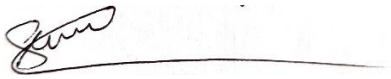
APPROVAL

This Project titled "**Design and Development on Travel and Tourism**", submitted by **Abu Al Nasir Mitul, ID: 191-15-12800**, **Jannatul Ferdousi Mou, ID: 191-15-12149** and **Md Sharif Patwary, ID: 191-15-12762** to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 26th January, 2023.

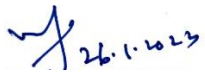
BOARD OF EXAMINERS

Dr. Touhid Bhuiyan — **Chairman**
Professor and Head
Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Sazzadur Ahmed — **Internal Examiner**
Assistant Professor
Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University



Ms. Sharmin Akter — **Internal Examiner**
Senior Lecturer
Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University



Dr. Ahmed Wasif Reza — **External Examiner**
Associate Professor
Department of Computer Science and Engineering
East West University

DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Mr. Saiful Islam, Assistant Professor, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

Supervised by:

Mr. Saiful Islam
Assistant Professor
Department of CSE
Daffodil International University

Co-Supervised by:

Mr. Gazi Zahirul Islam
Assistant Professor
Department of CSE
Daffodil International University

Submitted by:

Mitul

Abu Al Nasir Mitul
ID: 191-15-12800
Department of CSE
Daffodil International University

Mou

Jannatul Ferdousi Mou
ID: 191-15-12149
Department of CSE
Daffodil International University

Sharif patwary

Md. Sharif Patwary
ID: 191-15-12762
Department of CSE
Daffodil International University

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ABSTRACT

To entertain oneself people of this generation surfs social media, play video games, watch movies and dramas on Netflix. However, at some point they all get bored of their virtual amusements which is actually confining them within the four walls so they search for refreshment. When people think of refreshment, they want to get lost in the bosom of nature. In continuation of this they start planning about visiting the tourist places with their family, friends or closest one for eternal peace and enjoying the delicacy of nature. But the actual problem arises when they have indecisive about at what season where to pay a visit or where to stay and which agency will be a best fit for them according to their budget. To ease out their suffering related to travelling across the country we have taken an initiative to design a web-based application which is focused to help in deciding where to spend your vacations without the hassle of searching the best agencies that fits your budget along with managing tickets, booking hotels, reserving resorts, renting automobile, finding tour-mates and proper guidance in the entire journey. Our application – "Design and Development on Travel and Tourism" will build up a tourist community and provide solution to every possible problem that arises in your way of a successful tour.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

This century's digital lives of everyone are confined within small apartments in high-rise modern buildings where they are living a life either with the unpleasant pressure of daily works or laziness. However, whenever the vacations arrive at the very end of the year every nature lover, adventurous or depressed soul starts to plan travelling the vast and varied region of our tremendous beautiful country and gather unique experiences throughout the trip. Unfortunately, most of these plans don't work out as many of us don't have proper guidance for the trip. Some may also find difficulties with seeking tour mates, personal security and best deals from the agencies. People having less knowledge related to tourist places and tour agencies fall into financial and security deceive. People unknowingly face deceives from some agencies who grab more money than usual from the tourist and provides under rated services comparatively. Those bad experiences discourage people from traveling which is a threat to our tourist industry. Our country's tourist industry is growing rapidly but technological uses are seen less in this sector for ease out the hassle of the tourist across the world. We want to create a substantial impression of our country's tourist industry both for country people and foreigners with the use of modern technology.

1.2 Motivation

Beauty of Bangladesh touches the heart of every tourist world-wide. Local and foreign tourist praises the heavenly boundless beauty of the chaotic nature. Though all tourists are amused by the beauty of our largest Mangrove Forest, largest sea beach, hill tracks, finest archeological structure and dignified ancient signs yet the anomaly in the tourist area and the chicanery of tour agencies creates apathy among the tourists to visit those places. Insecurity takes places in the tourist regarding their safety, conscientious tour guide, money worthy deals. There are many websites for tour related agency and they work like a tour booking e-commerce platform. As there are many of those platforms therefore tourists are not certain which one to trust. We want to remove those insecurities from the tourist over the world that take place against our country's tourist industry and introduce them with a trustworthy community through our tourist social media platform which will solve every problem regarding tour.

1.3 Objective

Our foremost objective is to develop this project as a platform for tourist where they will become a part of a tourist community. Specifically, followings are the principal objectives of our project:

- To represent our country's tourist industry in a renowned way to the tourist world-wide with modern technology.
- Bringing all tourists, tourist-agencies all together in one place as a trustworthy tourist community.
- Bringing together all tourist service providing agencies so that tourist can comparatively distinguish their services quality and packages.

- Those who want to travel through any agency can choose the best agency amongst lot of agencies those are ready to provide service the tourist according to the desires.
- Those who want to stay away from all the hassle related to managing tickets, booking hotels, reserving resorts, renting automobile, finding tour-mates for their trips can choose the agency of their preferences.
- Providing solutions to travel within their own means.
- Meet new people through travelling, increase networking.

1.4 Expected Outcome

We are expecting to bring all the tourists and travelers on one platform in order to build a community network. All the people having the interest in traveling will be in this community and share their experiences and feedbacks through the newsfeeds which possibly will make other people interested in traveling too. Apart from this the most renowned tourist places of our country which are not well known by the foreign travelers can get the attention. Moreover, there will be those agencies who work with tours and travels. Common people will be able to arrange tours through any agency according to their desire and means. Commonly there are many such agencies but people are usually confused about which agency to choose. In this case they will get a help in choosing the agency from our platform. Where the agencies will receive reviews of people who have traveled before. People who intend to travel in the future can choose the agency by checking those reviews and ratings. Additionally, we expect that our platform will play a signification role in promoting and expanding the tourism industry where new employment will be created and local people will get employed as tourist guides. We expect tourist places will become much more popular and businesses related to this will tremendously expand in those areas which will financially benefit our tourist industry.

1.5 Report Layout

We have scheduled this report as the following composition:

Chapter 1: Introduction

It introduces our entire web application and describes the motives, objectives and expected outcome.

Chapter 2: Background

It illustrates the background studies related to our web project what has a significant role before modeling, designing, implementing and testing the application,

Chapter 3: Requirement Specification

It demonstrates our project's modeling and requires. We have analyzed the requirement specification with different type of modelling as for instance business process modeling and use case modeling.

Chapter 4: Design Specification

Design specification meets the design requirements for client-side and server-side. It specifies the interactions of the design and user experiences. Implementation requirements which include the system software and hardware are well described in this chapter.

Chapter 5: Implementation and Testing

It illustrates the implementation and testing of the project. Implementation of database, front-end as well as testing results, authentication and testing reports. The summary of testing for each feature are shown in this chapter.

Chapter 6: Impact on Society and Environment

In this chapter the direct and indirect impact of our web application on our society is discussed openly. We have considered all aspects and taken an in-depth look at the impact of our project on society and environment.

Chapter 7: Conclusion and Future Scope

This is the conclusionary chapter which also describes the future development scope of our project. We have drawn a conclusion considering the future scopes of our web application.

CHAPTER 2

BACKGROUND

2.1 Preliminaries

"Design and Development on Travel and Tourism"- a web application for arranging and managing tours and gradually building up a community platform for tourists and agencies where there will be no hesitation and boundaries. The aim of our application is to simply build a community which can also open the business opportunities for the entrepreneurs and provide affiliation for the unemployed. Another aim is to eliminate the sufferings of foreign tourists when they pay a visit in our country and return with a negative attitude for our country and country people. This community will definitely help the foreigner to find the right peoples and places. Indeed, our application will serve as a complete guideline for every individual connected to tourism.

2.2 Related Works

Undoubtedly there are a bunch of similar works about tourism. Some of the notable ones are: Travel Mate, Avijatrik, Pathfriend, Tour Operator, Deshghuri.com, Nijhoom tours, Tours & Trips Bangladesh, ShareTrip, Discovery Bangladesh [1]. However, all of the mentioned ones are tour agencies and they are simply selling their packages and doing businesses through those websites. They are serving one purpose and that is business [2]. That is where we want to think one step ahead than them. There is not a single platform where all the tourists, agencies and tour guides connecting together and building a community. Though Facebook groups serves to create community related to tourism and they are not exactly similar to ours. It is seen in Facebook groups that the community is created are mostly added group members comes from friends of friends, so it is not possible to bring foreign tourists under these groups in all cases. Therefore, it is not possible to present the tourism industry of our country in front of foreign tourists and gain credibility by attracting it through Facebook groups [3]. And that's exactly where we want to stand firm with our project to create a wonderful community.

2.3 Comparative Analysis

Our web application "Design and Development on Travel and Tourism" undoubtedly distinguish than other available tourist website and applications. None of those static websites and applications intends to create a tourism community or represent our country tourist industry's dignity world-wide. All of those are business applications for tourist agencies or organizations and there is no way to interact with the agencies directly. They don't even provide the proper information about agencies, tour guides and their service qualities. There is huge lacking in security as none of those agencies or tour guides are verified properly. "Design and Development on Travel and Tourism" is taking the initiative to lights these problems. Only we intend to create this beautiful collaboration with tourist across world-wide and giving them the opportunity to share a network where they don't have to worry about deceive, security or tour mates. Moreover, we believe this platform will be able to connect the tourist from every corner of the world and endorse our tourist industry. Additionally, "Design and Development on Travel and Tourism" will play a helpful role in eliminating unemployment because we hope that some of the manpower of

the tourist area will be recruited as tourist guides for the agency, in continuation of this new entrepreneurs will also be created as form the agency.

2.4 Scope of the problem

Usually, the work is not finished by completing a project and publishing it. It has to be kept in continuous maintenance. Otherwise, it is likely to be lost in vain soon. It needs to be updated regularly according to the preferences of the users and if any changes need to be made considering their experience. In such a situation, if the website / project is not constantly maintained, a big problem can be raised in the future. In several cases, it is seen that after completing a project, those who have contributed to that project are not found together lately. In such a case, if someone new wants to update the project, it becomes a time-consuming matter to understand the previous work pattern and work accordingly. Adequate human and financial support are also needed to carry a project forward after post-publication.

2.5 Challenges

When a service is used by people carrying different thoughts, everyone may have different opinions regarding it. Everyone has different expectations and user experiences. In such a situation, it is somewhat challenging to constantly update the application according to the preferences of the users because there will be different opinions of different people and there will not always be a situation to prioritize everyone's opinion. Besides, it is also a bit challenging to ensure that the agencies who sell their services from our website are serving customers with excellent services to engage more people day by day.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Business Process Modeling

Business Process Modeling refers to system engineering activity evolving a virtual representation of any business analyzation, improvement and automation [4]. This business process modeling will help to understand the process or the system clearly to improve them continuously. Additionally, this will assist in visualizing the system requirements, workflow and construction.

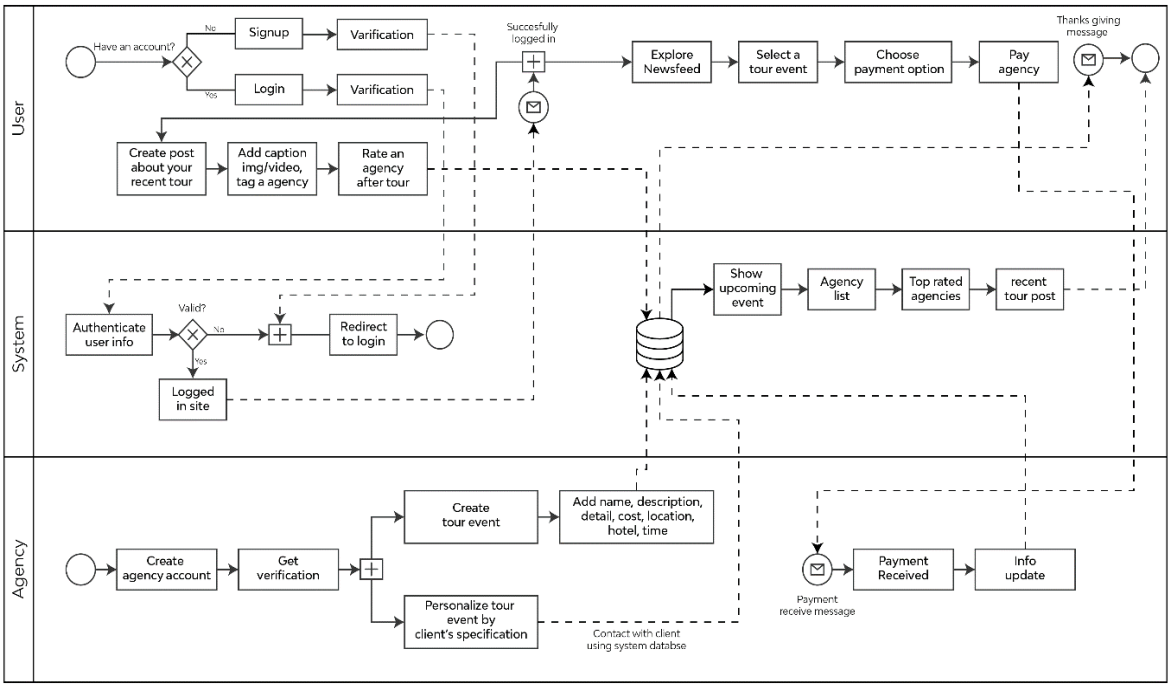

Figure 3.1.1: Business Process Modeling of Design and Development on Travel and Tourism

The above figure 3.1.1 describes the business process modeling of our application. We have three distinguish participant in here namely User, System and Agency. Here, a new user signup to the application and after verifying the user email the user is redirected to the newsfeed of the application. From the newsfeed user is able to access the other options available for the user role such create post, rate agency, tour events, payment details which gets updated on the database each time. For a registered user the user needs to login to the application and another quick verification of email and password is taken place. If the user is verified as the registered one then the user gets access to the application. An Agency role is distinguished with the user role. A user needs to login to the application then create an agency account then the admin verification is required to act as an agency. After receiving the verified agency account an agency can create tour event by adding names, description, detail, cost, location and time. Agency can also personalize tour event by client's specifications further. When the payment is received, the information is sent to the database to store.

3.2 Requirement Collection and Analysis

We have analyzed the basic and unavoidable existing problems in our tourist industry and have identified the most significant requirements of our website to solve those problems. Some of the most compelling requirements are as follows:

We are already certain about that agencies that are working for tourism have their own websites and running their individual businesses [2.2]. It is required to allure the agencies and tourists from all over the world to engage in our website. Secondly, Throughout the registration process we need to collect the user and agency information respectively to make our website more user friendly and only let the verified agencies be the part of our website for security purposes. Thirdly, a number of admins are required to serving the maintenance motives. Without admin panel is not possible to operate the agency approval, removal and handling complaining against the agencies. Fourthly, to grow the community we definitely require users as a form of tourists or agencies. Without their interaction in the website our intended tourist community is just a day dream. Fifthly, it is required to verified the agencies in personnel before approval to ensure the security of our tourists. Sixthly, Data security which includes, the provided data by all users' needs to be kept safe. We are using several securities namely Jason web token, firebase authentication for ensuring this.

3.3 Use Case Modeling and Description

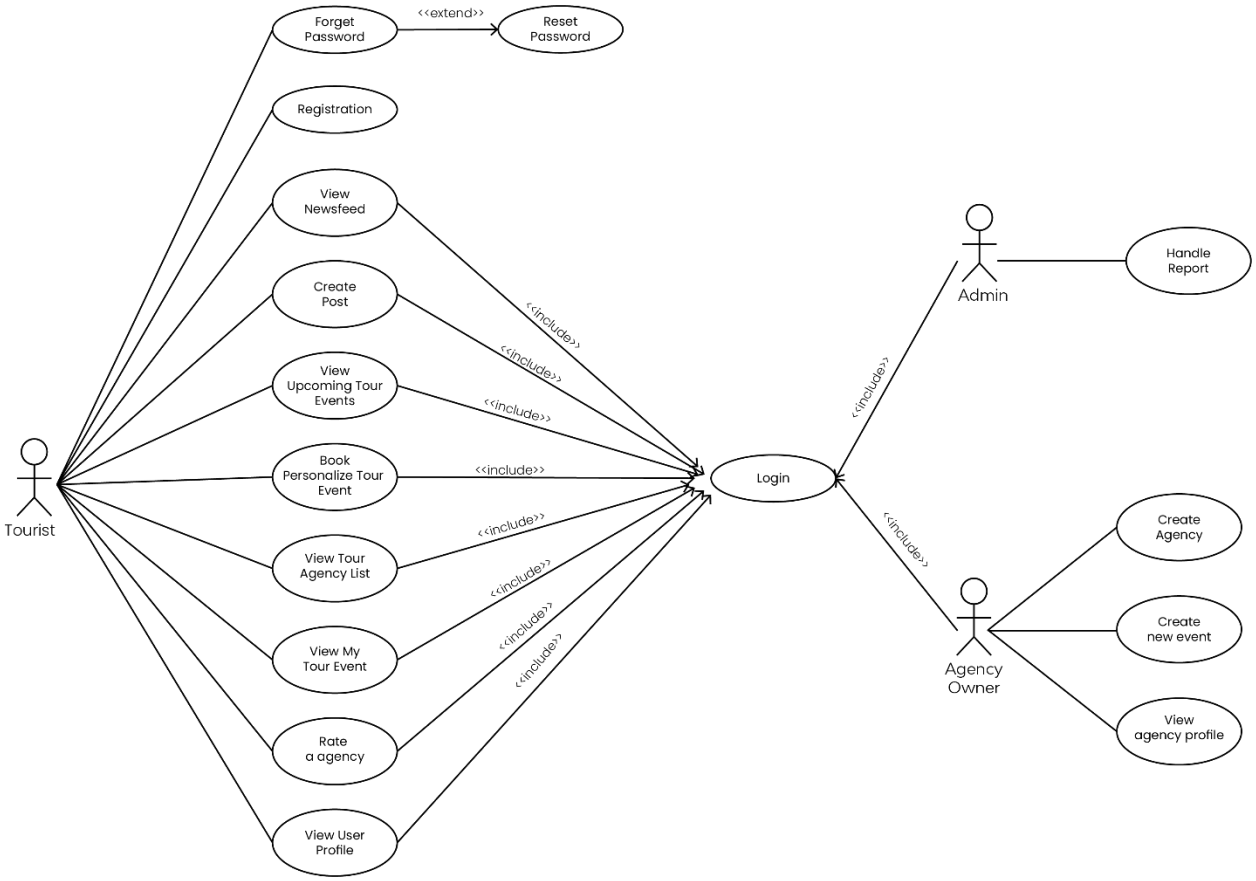

Figure 3.3.1: Use Case Modeling of Design and Development on Travel and Tourism

Use Case Description: The followings are demonstrating the overall interaction of the website and the all the users namely tourist, agency owner and admins. To keep the Use Case simple for making it understandable by non-professionals too we have shown only the most significant features of our website.

Table 3.3.1: Use case description of Registration

Use Case 01	**Registration**
Pre-requisite	Must have valid email account.
Actor	Tourist, Agency Owner, Admin.
Primary Success Scenario	Tourist, Agency Owner and Admin need to provide their valid email address, name, password and gender to sign up which will redirect to login or user will be redirected to newsfeed by continuing with google.
Exceptional Scenario	Invalid email address or name, unsuitable password, empty fields or connection lost.

Table 3.3.1 is the tabular description of our application's registration process. Every individual user needs to register to the application by creating accounts. For opening an account in our application, a user must have a valid email access with genuine accessibility.

Table 3.3.2: Use case description of Login

Use Case 02	**Login**
Pre-requisite	Must complete registration and email verification process.
Actor	Tourist, Agency Owner, Admin.
Primary Success Scenario	Tourist, Agency Owner and Admin need to provide their registered email address and correct password to login into the website or continue with google.
Exceptional Scenario	Providing invalid email or password leads to unable to login.

Table 3.3.2 is the tabular description Login process of "Design and Development on Travel and Tourism". User must log in to application to get the access. To log in to the application user must complete the registration and verification process. Tourists, Agency Owners and Admins must log in to the application to use it any further. Invalid email or incorrect password while login can interrupt the login process.

Table 3.3.3: Use case description of View Newsfeed

Use Case 03	**View Newsfeed**
Pre-requisite	Must be logged in to the website.
Actor	Tourist and Agency Owner.
Primary Success Scenario	Able to view posts and do react, comment on those.
Exceptional Scenario	Sluggish to view posts due to poor internet connection.

Table 3.3.3 is the tabular description of View Newsfeed process. When a user successfully logged in to the application then the user is able to view recent tour post, upcoming tour posts. Tourists and Agencies can view the newsfeed.

Table 3.3.4: Use case description of Create Post

Use Case 04	**Create Post**
Pre-requisite	Logged in to the website.
Actor	Tourist and Agency owner.
Primary Success Scenario	Pictures will be uploaded and stored in the database with a toast “Posted”.
Exceptional Scenario	Unable to post due to sluggish internet connection or database failure.

Table 3.3.4 describes the Create Post process of our application. Each post must contain short description (max 3000 characters) and pictures (max 10 images).

Table 3.3.5: Use case description of View Upcoming Tour Events

Use Case 05	**View Upcoming Tour Events**
Pre-requisite	Logged in to the website
Actor	Tourist
Primary Success Scenario	Proceed to tour booking.
Exceptional Scenario	Unable to load data from database due to poor internet connection.

Table 3.3.5 is the tabular description of View Upcoming Tour Events of our application. All users are able to view the upcoming tour events posted by agencies. Tourists are the primary actor of this process.

Table 3.3.6: Use case description of Book Personalize Tour Event

Use Case 06	**Book Personalize Tour Event**
Pre-requisite	Logged in to the website
Actor	Tourist
Primary Success Scenario	Individual tourist is capable to personalize their own events by contacting the preferred events or agents.
Exceptional Scenario	Unable to load data from database due to poor internet connection.

Table 3.3.6 is the tabular description of process Book Personalize Tour Event. Tourists are able to book personalized tour events by customizing agencies, hotels, automobiles and many more.

Table 3.3.7: Use case description of View Tour Agency List

Use Case 07	**View Tour Agency List**
Pre-requisite	Logged in to the website.
Actor	Tourist.
Primary Success Scenario	Choosing agencies from the list and personalize tours according to preferences.
Exceptional Scenario	Unable to load data from database due to poor internet connection.

Table 3.3.7 is the tabular description of View Tour Agency List process of the application. Tourists are able to view all the agencies in this process.

Table 3.3.8: Use case description of View My Tour Event

Use Case 08	**View My Tour Event**
Pre-requisite	Logged in to the website.
Actor	Tourist.
Primary Success Scenario	Viewing the previous completed tours of individuals.
Exceptional Scenario	Unable to load data from database due to poor internet connection.

Table 3.3.8 in the previous page describes the use case description of View My Tour Event process. Tourist can see his/her own participated tours. This is a private section one tourist cannot see other tourist's My Tour Event. This is not accessible for unauthorized users. Only the completed tours of individual are shown in this process.

Table 3.3.9: Use case description of Rate an Agency

Use Case 09	**Rate an Agency**
Pre-requisite	Logged in to the website.
Actor	Tourist.
Primary Success Scenario	Providing starts and short review which will be saved in the database for overall average rating of the agencies.
Exceptional Scenario	Empty fields, connection lost or error from database.

Table 3.3.9 is the tabular description of the Rate an Agency of the application. Tourist can rate an agency for a purchased service. The ratings of the agencies are shown in their profile. These ratings are helpful for a tourist to choose an agency. Tourists are privileged to choose their agencies through rating comparison. Sort according to the rating is also available in the website.

Table 3.3.10: Use case description of View User Profile

Use Case 10	**View User Profile**
Pre-requisite	Logged in to the website.
Actor	Tourist.
Primary Success Scenario	Tourist can see their followers, followings, all previous posts and detailed information.
Exceptional Scenario	Unable to load data from database due to poor internet connection.

Table 3.3.10 is the tabular description of the View User Profile of the application. Users can view and edit profile details. In the profile section a user will see their timeline, followers, followings and about. Tourist are eligible to see their followers and their profiles. They can also see whom they are following on this media. Tourist can see their posts on their own timeline and they are also able to edit the posts or delete any specific post if needed.

Table 3.3.11: Use case description of Create Agency

Use Case 11	**Create Agency**
Pre-requisite	Logged in to the website.
Actor	Tourist.
Primary Success Scenario	Agencies will be created by providing all required information including NID along with office addresses and verified by Admins.
Exceptional Scenario	Unsuccessful verification status.

Table 3.3.11 is the use case description of Create Agency profile of the application. A user can create an agency profile by providing all the required information. The submitted application then verified by the admins. If the person is eligible and verified then the application gets approval.

Table 3.3.12: Use case description of Create New Event

Use Case 12	**Create New Event**
Pre-requisite	Logged in to the website and must have agency account.
Actor	Agency Owner.
Primary Success Scenario	Required details are given and posted.
Exceptional Scenario	Unable to post in the database due to poor internet connection.

Table 3.3.12 is the tabular description of the use case process Create New Event. Agency Owner can create a tour event with proper details. This will show on the newsfeed of the users and in the upcoming tour section too.

Table 3.3.13: Use case description of View Agency Profile

Use Case 13	**View Agency Profile**
Pre-requisite	Logged in to the website and must have agency account.
Actor	Agency Owner.
Primary Success Scenario	Tourist can see their posted events and detailed information.
Exceptional Scenario	Unable to load data from database due to poor internet connection.

Table 3.3.13 in the previous page is the use case description of View Agency Profile of the application. All tourists and agencies are allowed to view agency profile. However, only the authorized agency owner is able to edit / delete it. Users have total control to manage their profile and timeline.

Table 3.3.14: Use case description of Handle Report

Use Case 14	**Handle Report**
Pre-requisite	Logged in to the website and must be Admin.
Actor	Admin.
Primary Success Scenario	Admins will be able to receives the reports from the tourists and take steps onward.
Exceptional Scenario	Unable to load data due to poor internet connection.

The table 3.3.14 above is the use case description of Handle Report of web application – "Design and Development on Travel and Tourism". If any tourist wants to report for the service, he/she has taken from any agency they can do it. Tourist can report against any inconvenient activities of the agency and tour guide. Admins will get report with necessary documents from the tourists against agencies and admins will take necessary steps further.

3.4 Design Requirements

For accomplishing our web application "Design and Development on Travel and Tourism" we have used hardware, software, programing languages, Libraries and frameworks too. The required elements to complete our desire project are mentioned below:

Requirements of Hardware

- Processor: Intel Core i3 or higher.
- RAM: 4GB (minimum).
- Hard Disk: 20GB.

Requirements of Software

- Windows operating system.
- MongoDB Atlas / MongoDB Compass as database.
- Firebase.
- Visual Studio Code as text editor.
- Chrome/Microsoft Edge as browser.

Language

- JavaScript.
- Cascading Style Sheets (CSS).
- Hyper Text Markup Language (HTML).

Library & Framework

- Bootstrap.
- ReactJS.
- Node.js.
- ExpressJS.

We have used all these mentioned Hardware, Software, Languages, Library and Framework to accomplished our proposed project. We have used Windows as our operating system. In the near future we will work with Linux and Mac operating system too. As our code editor visual studio code has been used as it is easier to use and the packages are helpful for increasing coding ability. As our project background we have used MongoDB as it is a good choice for schema less data which is relevant to social media networking. Our web application is a social platform and NoSQL database like MongoDB is a good option. JavaScript is a scripting language which we have used in our project along with HTML, CSS, Bootstrap and ReactJS. In the backend we have used Node JS and Express JS which is respective a run time environment and a framework.

CHAPTER 4

DESIGN SPECIFICATION

4.1 Design of Front-end

Front-end is a part of user interface which includes all software or hardware and simply a presentation layer above the back-end for the user of the application to interact with the system application. Front-end represents the back-end functionality to the user as a graphical or visual interface which is also well known as client-side development. Our web application "Design and Development on Travel and Tourism" includes a user friendly front-end which is easily understandable by every participant of the application. Design and Development on Travel and Tourism – web application front-end includes HTML (Hyper Text Markup Language), CSS (Cascading Style Sheet), JavaScript (Scripting Language) and ReactJS. With the combination of HTML and CSS we have built the structure of our web application. JavaScript and ReactJS are responsible for functional interaction with the back-end and front-end. For a prominent attractive and responsive user interface open-source framework Bootstrap has been used.

4.2 Design of Back-end

Back-end is a physical infrastructure which is a data access layer that focuses on the databases, logics and APIs (Application Programing Interface). Back-end represents the actual functionality of the system application which serves the end users and is also well known as server-side development. Back-end includes three major divisions respectively Server, Application and Database. Our back-end tools are NodeJS, ExpressJS, MongoDB, Firebase. NodeJS is open-source runtime server environment for JavaScript and ExpressJS is its framework. ExpressJS helps in managing the routes and servers. Design and Development on Travel and Tourism is using MongoDB as its database which is also a cross platform for storing JSON (JavaScript Object Notation) like documents.

4.3 Interaction of Design and User Experience

An application which is simple enough to use, fulfills the user's needs and the designs are appreciated by the users provides the user relevant experiences while interacting with the application. For end users it is significant to give them the experience of user friendliness to evoke their positiveness toward the service to facilitate the business. In order to that Design and Development on Travel and Tourism have ensured the UX design and user's security. Our web application has goal-driven designs which is responsible for guiding the users toward their goal. It is matching the user expectations and serving the end users without any disruptions.

4.4 Implementation Requirements

To carried out the project implementation we have used different platforms, markup language, scripting language, frameworks, libraries and followed our own strategies and methods. Some of the significant appliances are discussed below:

4.4.1 Visual Studio Code

Visual Studio Code is used as a code editor in our web application for building and debugging our application. It is a free tool which is enough powerful source code editor that can be in use to develop highly featured complex application developments. Developers experience with Visual Studio Code is prodigious which is increasing the popularly of this text editor.

4.4.2 MongoDB Database

MongoDB is an open-source cross-platform where you can store your data in a format of NoSQL. This platform is document oriented and simply stores JSON type documents. For working with MongoDB, we had our hands on NodeJS to connect the database cluster. By using NodeJS, ExpressJS and MongoDB as a database we were able to build RESTful APIs for our application implementation.

4.4.3 Firebase Authentication

Firebase authentication allows to authenticate users for applications with its SDKs and UI libraries. In our web application we have used the Email, Password authentication and Google login services from this platform.

4.4.4 JSON Web Token

JSON Web Token is also well known as JWT which helps in sharing information through URLs between two parties in a safe way by encoding. It is been used in our web application for more secure REST APIs and overall establishing a secure information transmission.

4.4.5 Figma

Nowadays designers prefer Figma the most as their designing tool which is cloud-based. Figma is better option for team collaboration and helps in project development designing. We have used Figma for our web application interface designing. The working benefit in Figma is it autosaves the last work and no worries of work loss. Figma made the creation of digital designs way easier and quicker. It is versatile and best for web application's pixel perfect user interface designing.

4.4.6 Illustrator

Illustrator is well known to all of us as it is a vector-based graphics software which is mostly used by the web developers to create pixel perfect web elements. As Illustrator provides CSS property panel and also amazing for vector shapes it is becoming popular day by day. We mainly used Illustrator for designing the logos and other icons in our web application. Illustrator gives the flexibility to design the vector icons and the automatic features of this free tool boosts the working capabilities of a developer.

CHAPTER 5
IMPLEMENTATION AND TESTING

5.1 Implementation of Database

Database is essential to continue the proper integration of any website. Database is a critical component for organizing data of websites. Without database it is not possible to store information and provide user experiences. Our web application – "Design and Development on Travel and Tourism" is using MongoDB database which is a NoSQL database program. MongoDB stores data in JSON document format. For a business web application like ours MongoDB is quite easy to deploy, manage and update.

Below figure 5.1.1 shows the database table of "Design and Development on Travel and Tourism".

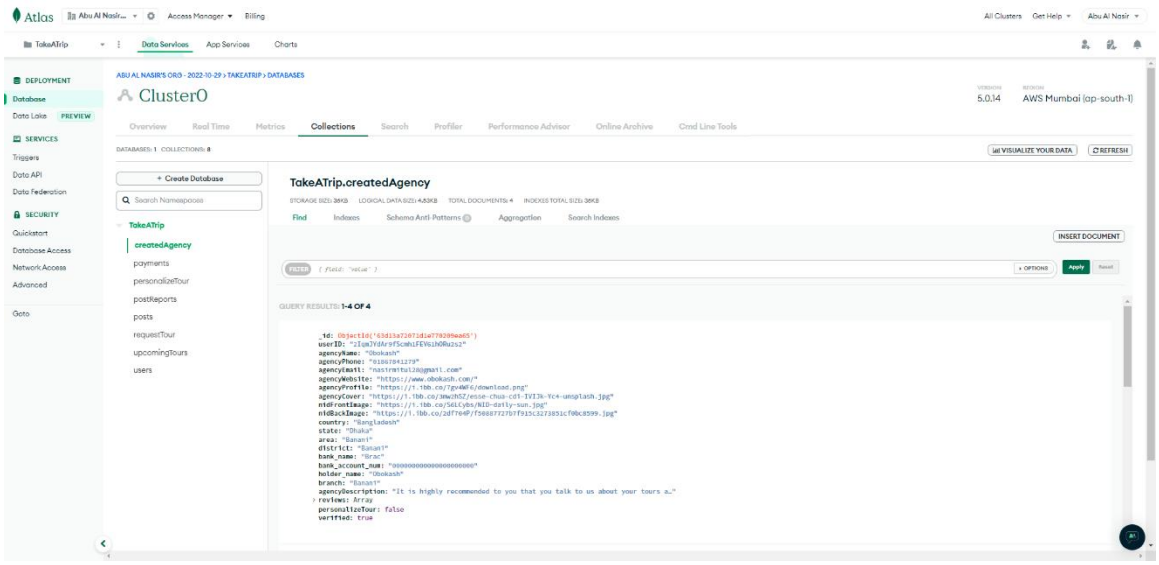

Figure 5.1.1: Database Table of Design and Development on Travel and Tourism

5.2 Implementation of Front-end Design

For getting the most audience responses from your website you must provide topnotch UI designs and easy to use goal driven interfaces. Providing this UX will be time consuming, however it is not comprisable. The website must be responsive in the most used devices to provide UX. The accessibility of the website is another measurement of website for great UX. Slow access to the web leads to bad user experiences. We tried to keep our website design user-friendly and ease in using.

5.2.1 Sign Up

The above figure 5.2.1.1 shows the design and requirements of registering the web application – "Design and Development on Travel and Tourism". First time visitor of the website will see this page and afterward must register to continue the site seeing. The required information to register the website is valid email, user name, valid password and

gender. One can also continue with their existing Google account which will be authenticate by Firebase Authentication.

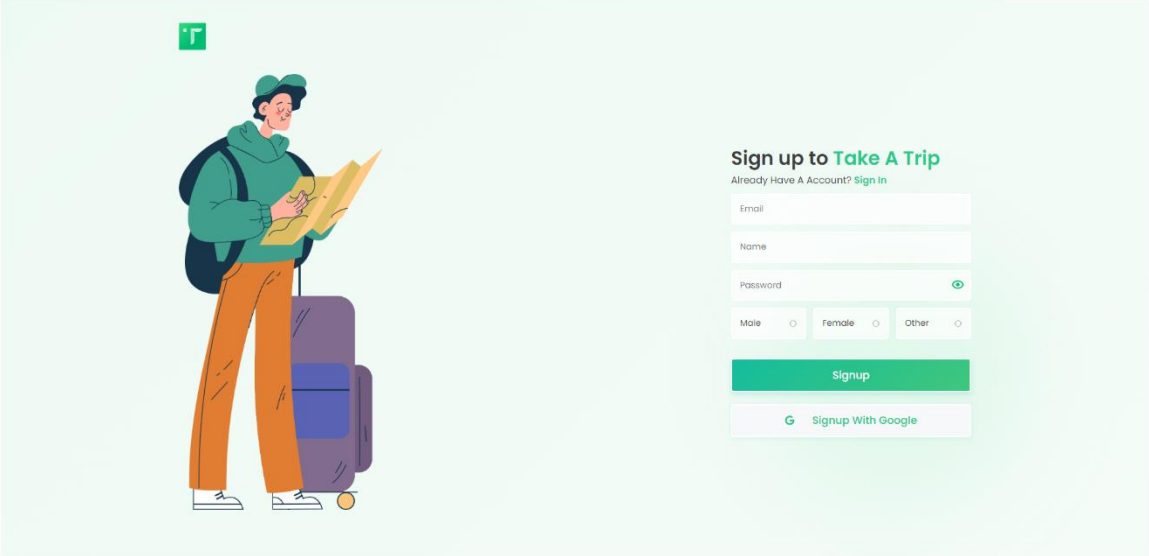

Figure 5.2.1: Sign UP Page of Design and Development on Travel and Tourism

5.2.2 Login

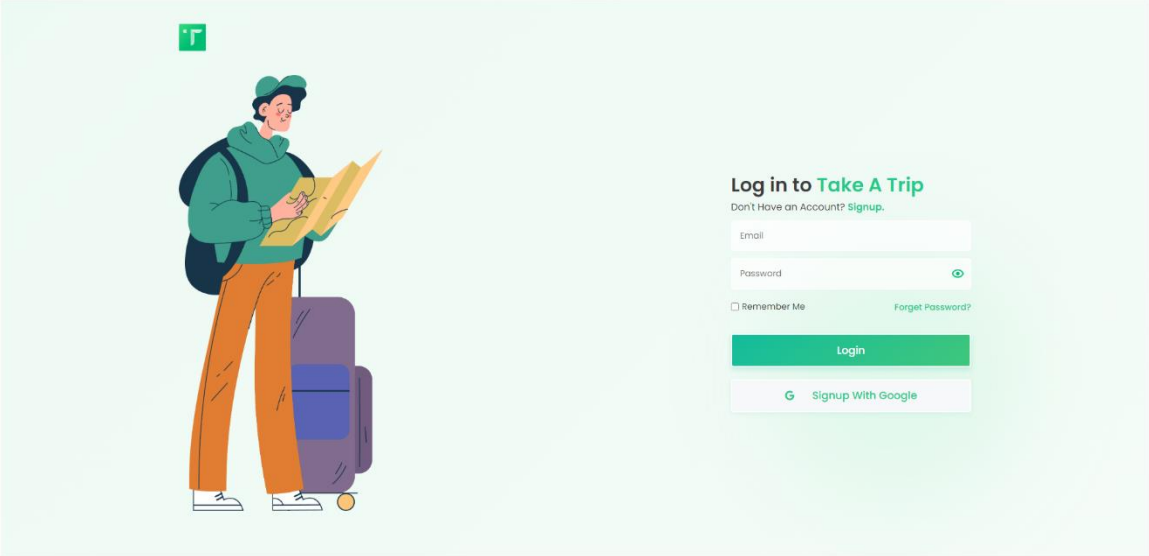

Figure 5.2.2: Login Page of Design and Development on Travel and Tourism

The figure 5.2.2.2 shows the Login page of web application – "Design and Development on Travel and Tourism". Already registered user must login to the system to get the access to the site. A user can login either with user email and password or with user google account. After successfully logged in, user will be redirected to the home page.

5.2.3 Forgot Password

The figure 5.2.3.1 shows the forgot password page of the website. If any existing user forgets the password of the website, user will be redirected to this page by clicking on Forgot Password from Login page. Here user must provide the registered email address where the user will get an email to reset the password.

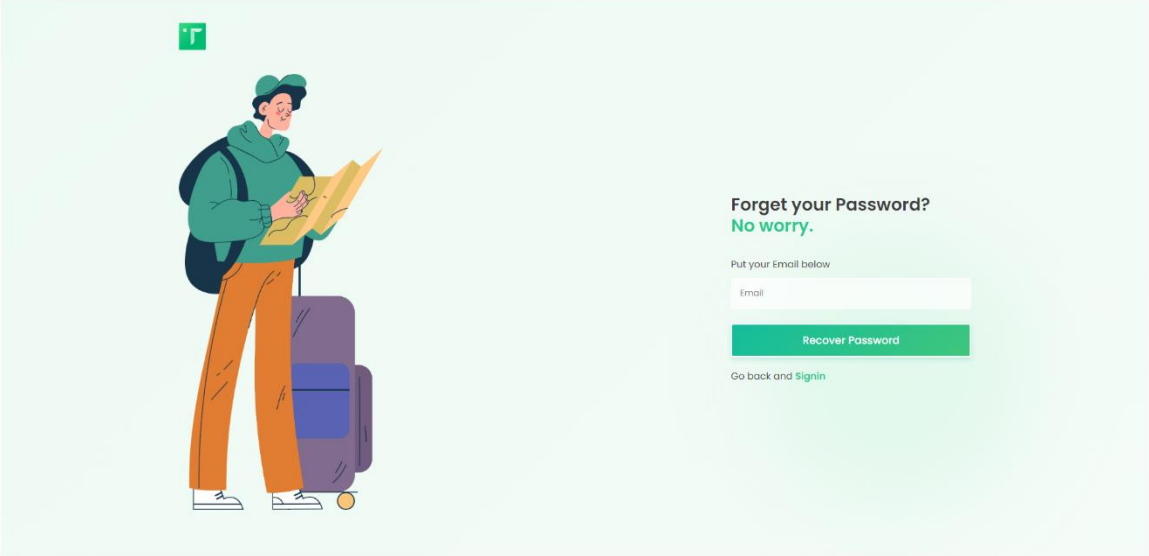

Figure 5.2.3: Forgot Password Page of Design and Development on Travel and Tourism

5.2.4. Home Page

Figure 3.2.4.1 shows the home page of the website. Home page is split into 3 portions. The left most portion is the Menu where some options are available to explore such as Upcoming Tours, Tour Agencies, My Tours, Profile, My Agency, Settings and Log out. The middle portion has a search bar, Create Post and newsfeed.

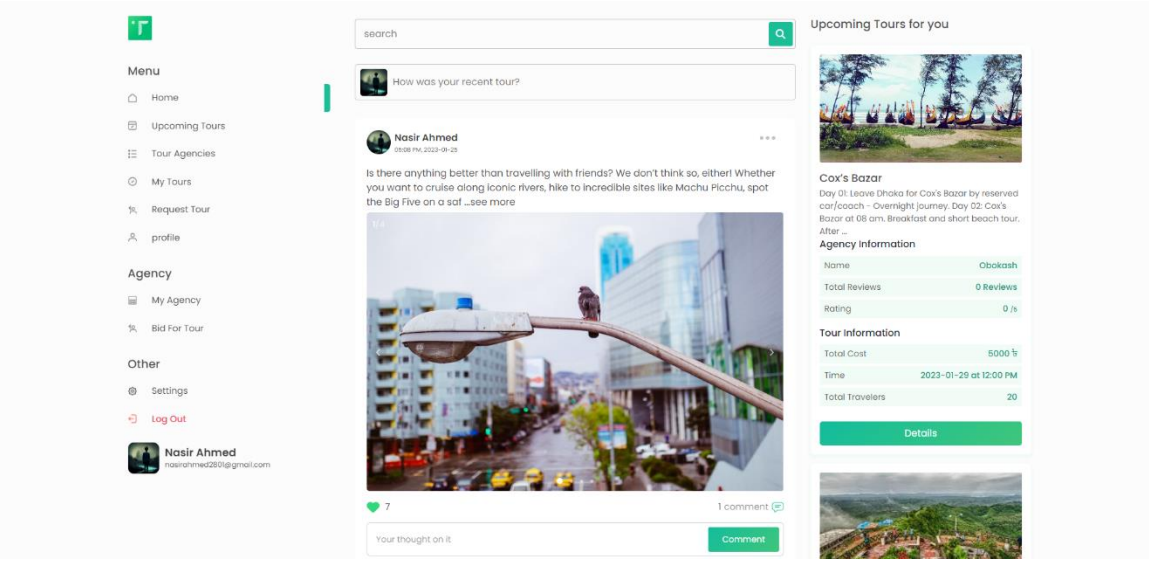

Figure 5.2.4.1: Home Page of Design and Development on Travel and Tourism

Home page shows up whenever a user is successful with their login or first-time registration to the website. We tried to keep it simple and minimal for good user experience. However, this page also provides some settings relevant to the website which will be updated within a specific time lapse.

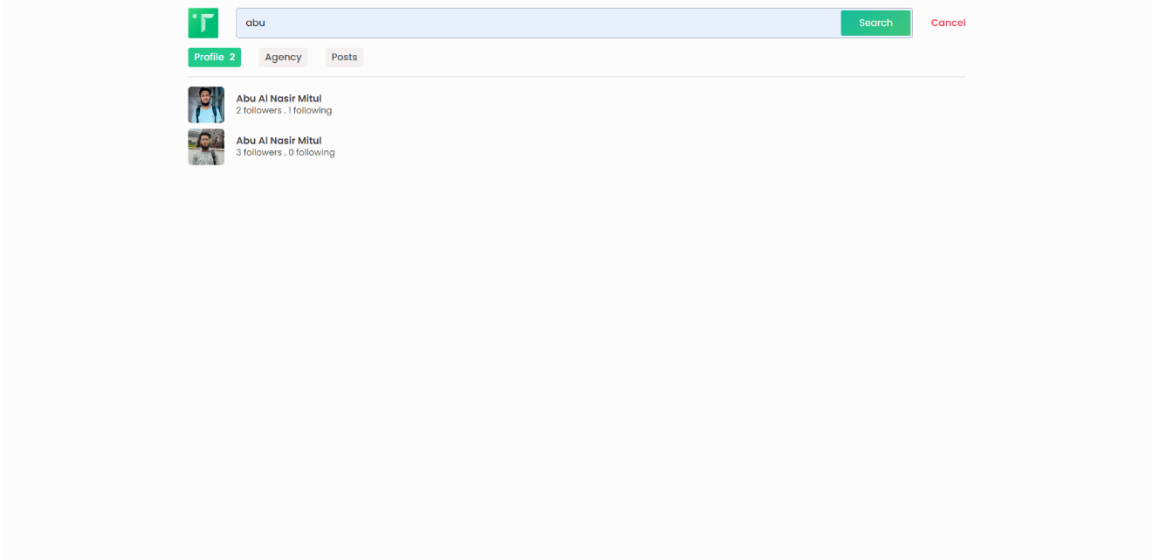

Figure 5.2.4.2: Search functionality of Design and Development on Travel and Tourism

Here, figure 3.2.4.2 shows the search functionalities. Whenever a user is about to search other users of this platform.

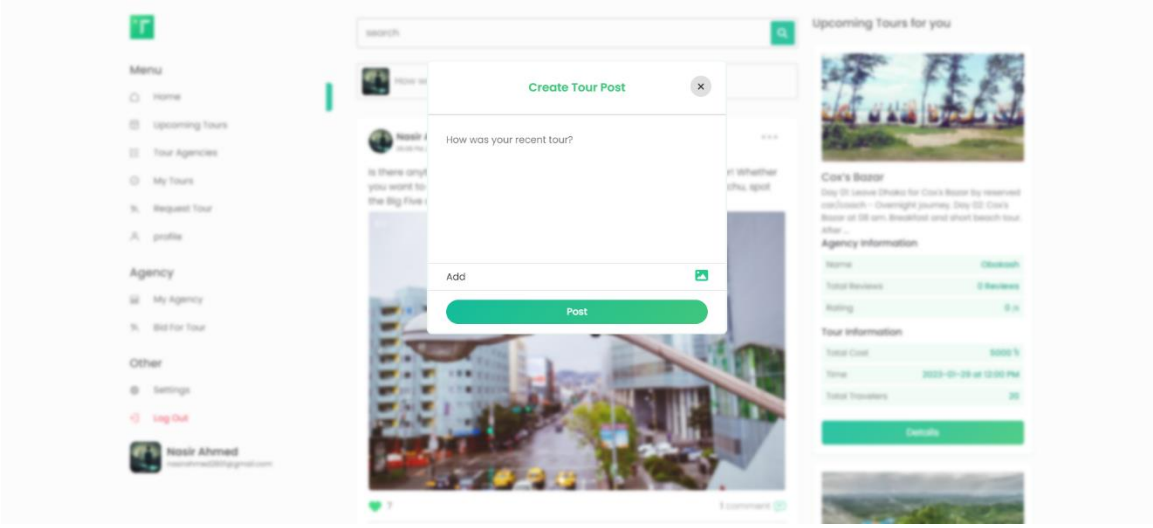

Figure 5.2.4.3: Create Post of Design and Development on Travel and Tourism

Figure 3.2.4.3 shows the Create Post functionalities. Each post must contain short description which is limited to maximum 3000 characters and images which is limited to 10 images.

5.2.5. Upcoming Tours

The above figure 5.2.5. shows the upcoming tours page of the website. A user can view upcoming tours posted by the agencies which includes Location Name, Agency Information and Tour Information shortly. There is also a search and sort functionalities here where a user can search tours by location and sort tours by price ranges.

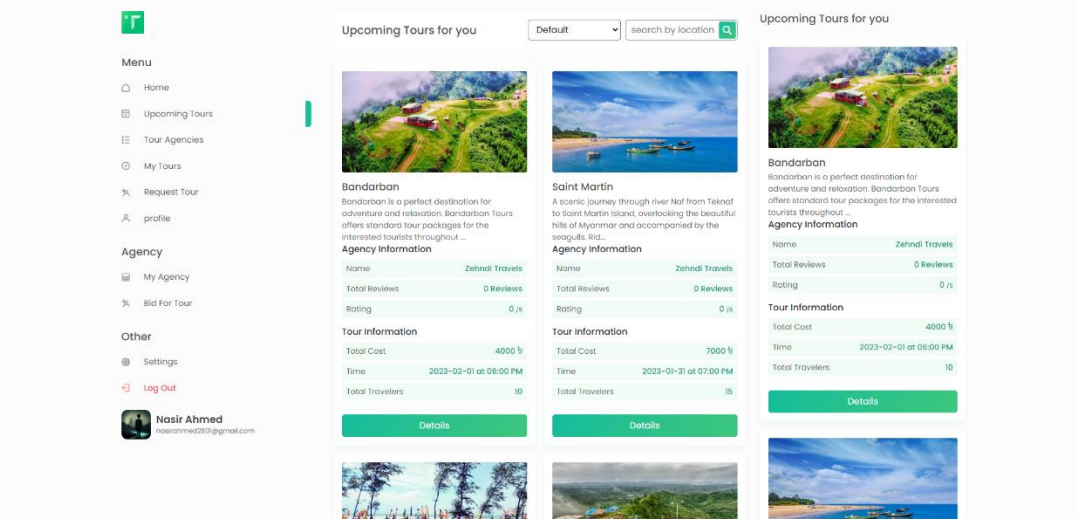

Figure 5.2.5.: Upcoming Tours of Design and Development on Travel and Tourism

5.2.6. Upcoming Tour Details

Figure 5.2.6. is showing the detail page of each tour in the previous page named “Upcoming Tours”. User is redirected to this page by clicking on Details button. User can see the detailed Agency Information and Tour Information here. And if user feel interested to join any of the tours, they can join by clicking in the ‘Going’ button.

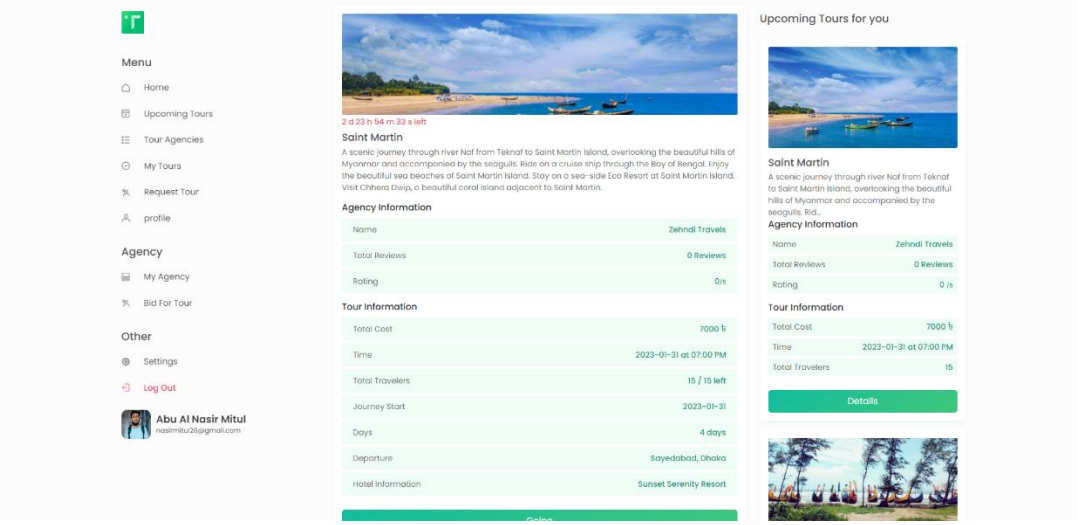

Figure 5.2.6.: Upcoming Tour Details of Design and Development on Travel and Tourism

5.2.7. Payment

Figure 5.2.7.1. and 5.2.7.2. shows the Payment interface of web application – “Design and Development on Travel and Tourism”. When a user books a tour, he/she is redirected to the payment page to confirm the booking. This page shows a payment interface which requires the user’s banking information.

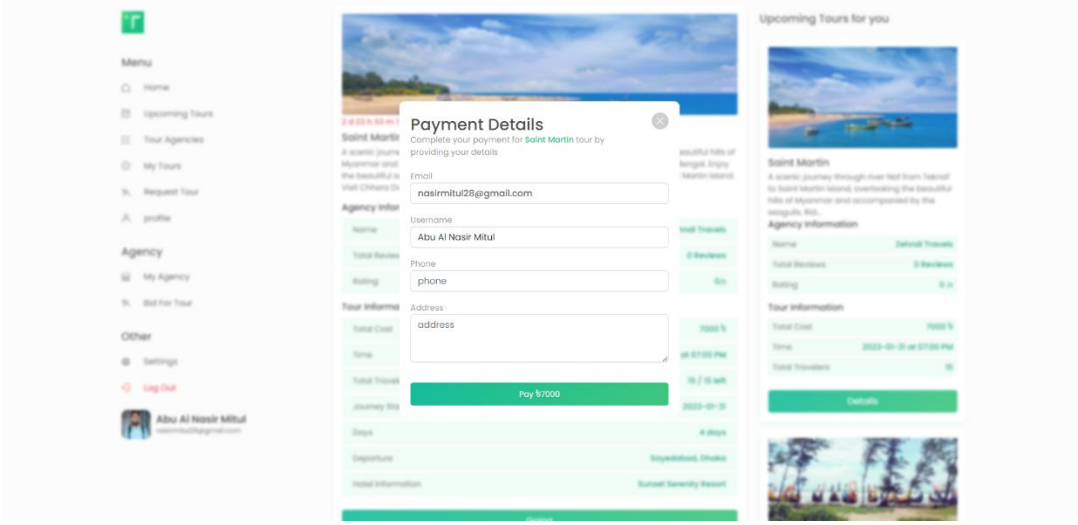

Figure 5.2.7.1.: Payment details of Design and Development on Travel and Tourism

Payment details page shows a form with a modal which requires user email address, username, mobile number, address and shows the payable amount. When a user clicks on the payable amount button, he/she is redirected to the Payment option page.

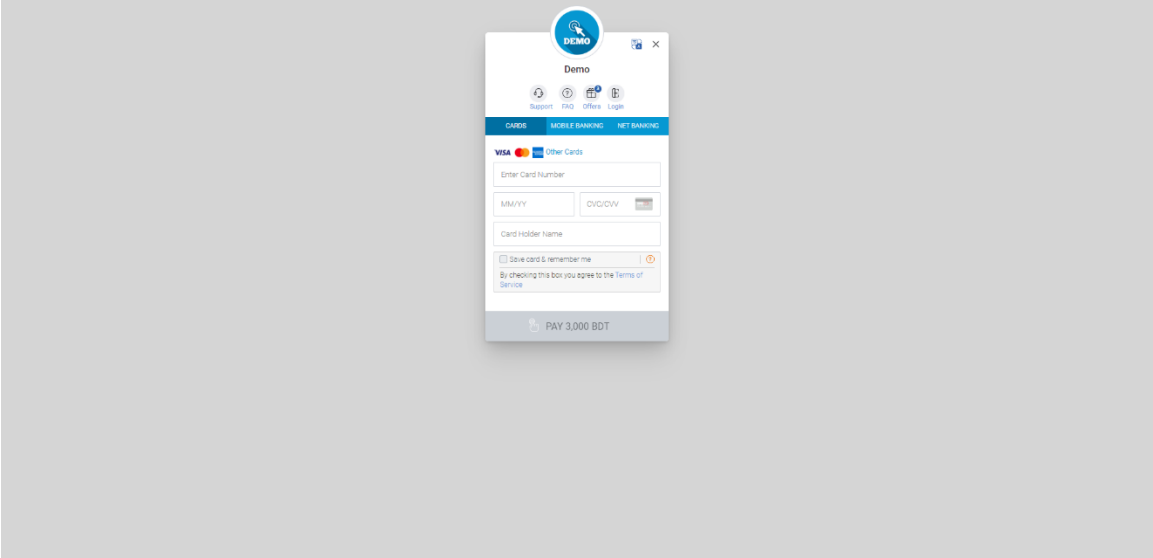

Figure 5.2.7.2.: Payment of Design and Development on Travel and Tourism

This page is for choosing the payment option. User can choose from a variety of options like Visa, Master card, American Express, Bkash, Nagad, Upay.

5.2.8. Tour Agencies

The figure 5.2.8. shows the Tour Agencies of the website where a user can search agencies by name and do the sort operation.

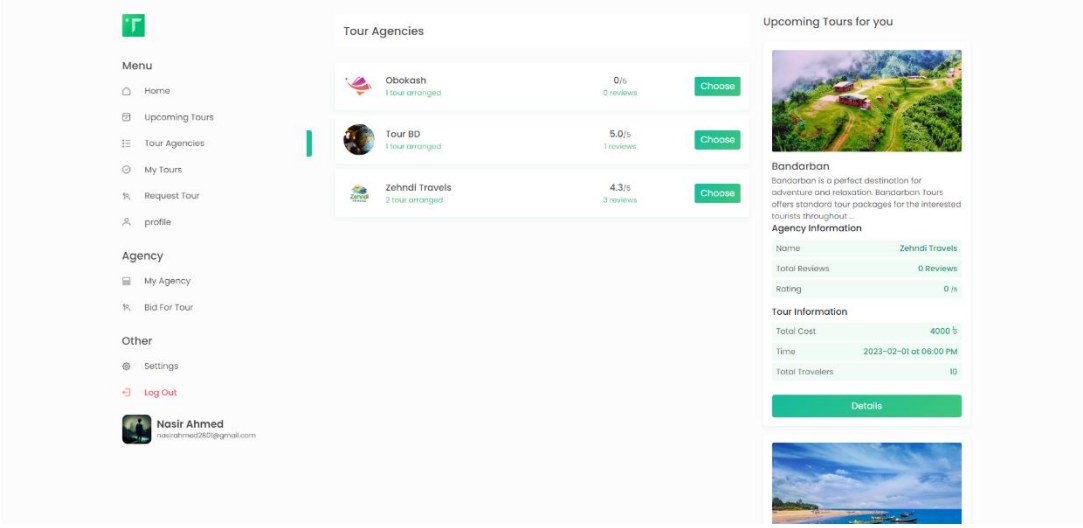

Figure 5.2.8.: Tour Agencies of Design and Development on Travel and Tourism

5.2.9. Agency Details

The figure 5.2.9. below is showing the Agency Details from the previous page. By clicking on the choose button user can view agency profile and personalize tour with the agency. When a user chooses view profile option then the user is redirected to the agency profile and view the agency information. On the other side by choosing personalize tour user is redirected to personalize tour page. From there an user is able to personalize their tours by contacting the agencies very personally.

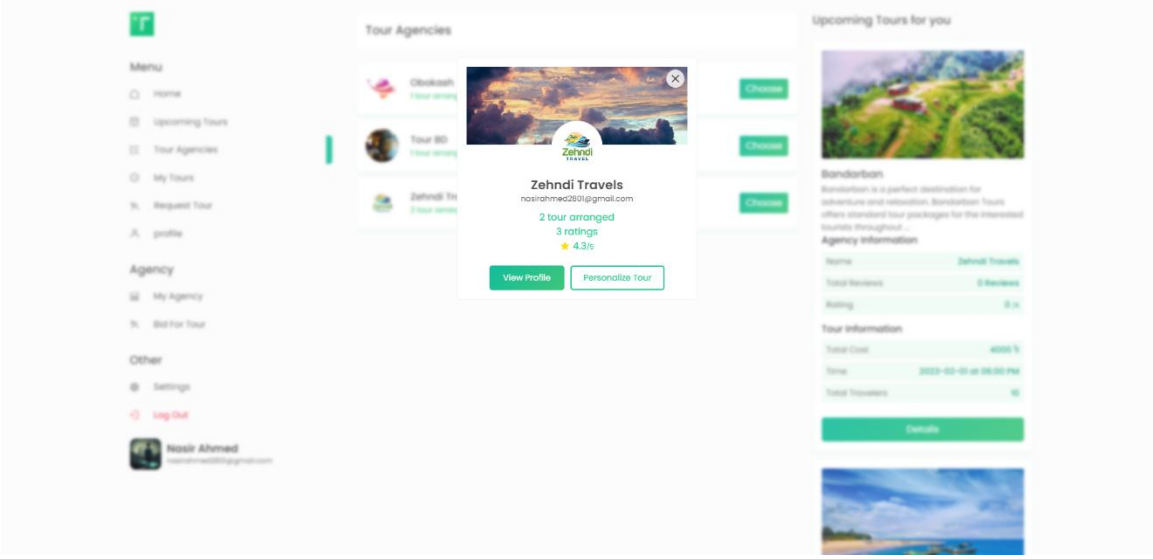

Figure 5.2.9.: Agency Details of Design and Development on Travel and Tourism

5.2.10. Book Personalize Tour

Figure 5.2.10. is the personalize tour page. The interface in here helps the user to personalize a tour according to the user preferences. When a user applies for personalize tour, the application shows up in the agency dashboard.

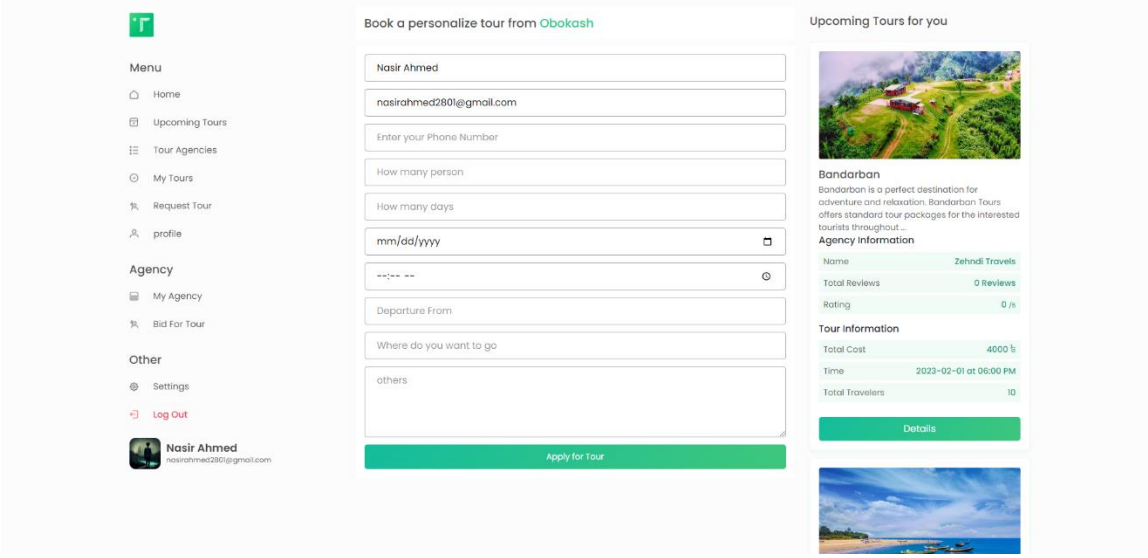

Figure 5.2.10.: Book Personalize Tour of Design and Development on Travel and Tourism

5.2.11. My Tours

Figure 5.2.11 shows the My Tours page of the web application – "Design and Development on Travel and Tourism". Here purchased tours of a specific user will be shown in the 'My Tours' tab and personalized tour of the user will be shown in the 'Personalized Booked Tour' tab.

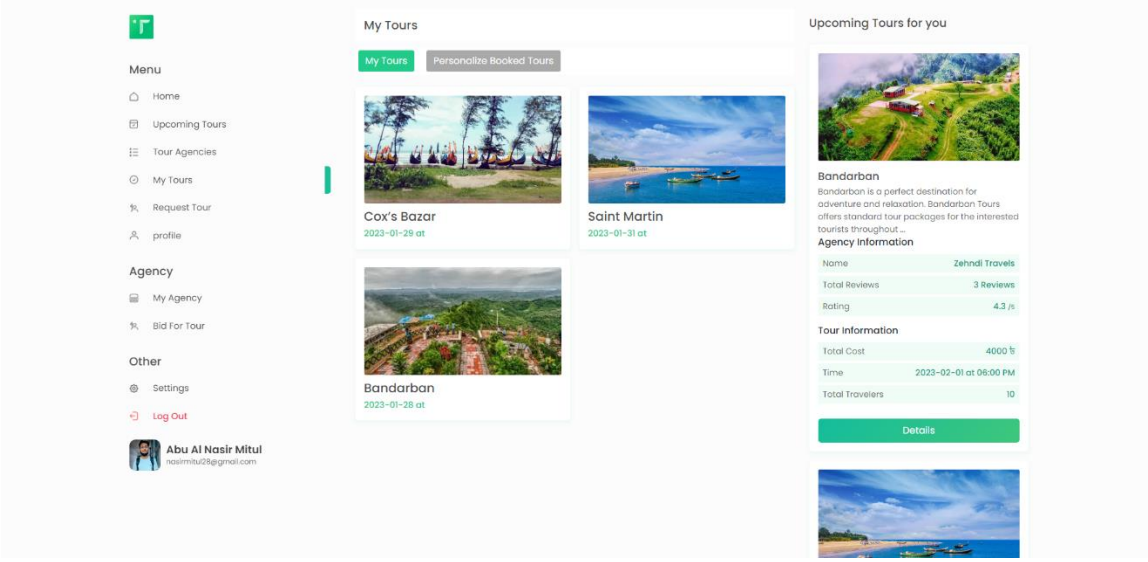

Figure 5.2.11.: My Tours Page of Design and Development on Travel and Tourism

5.2.12. My Personalize Tour

The below figure 5.2.12 shows the personalize tour page of 'Design and Development on Travel and Tourism'. The personalized booked tours of the user are in shown here. It is only visible for the authorized user.

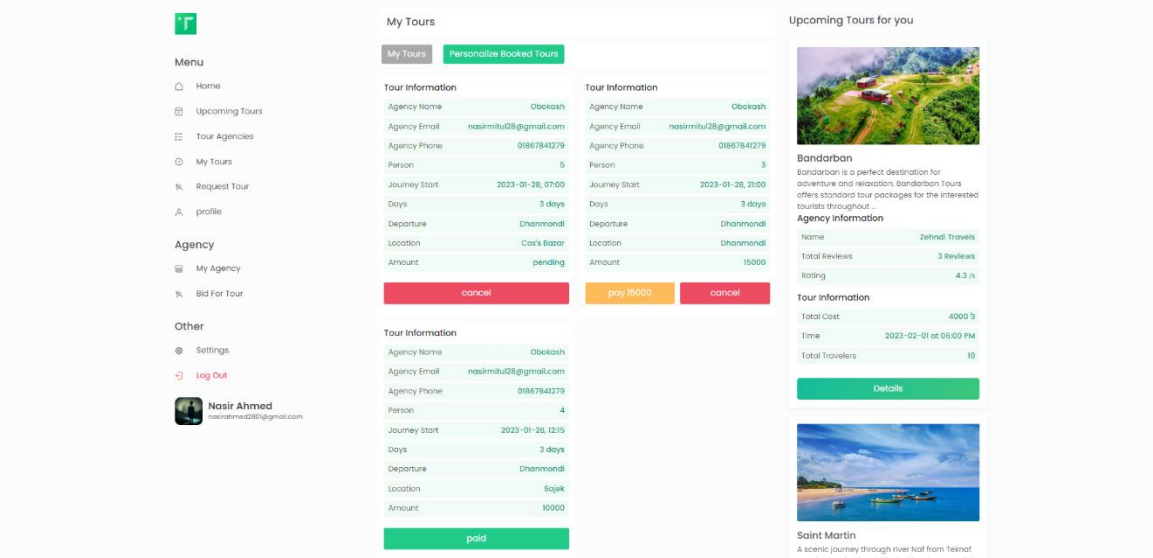

Figure 5.2.12.: My Personalize Tour page of Design and Development on Travel and Tourism

5.2.13. My Profile

My profile's timeline section is shown in the figure 5.2.13.1. About section, Followers and Following section are shown respectively in figure 5.2.13.2, 5.2.13.3 and 5.2.13.4.

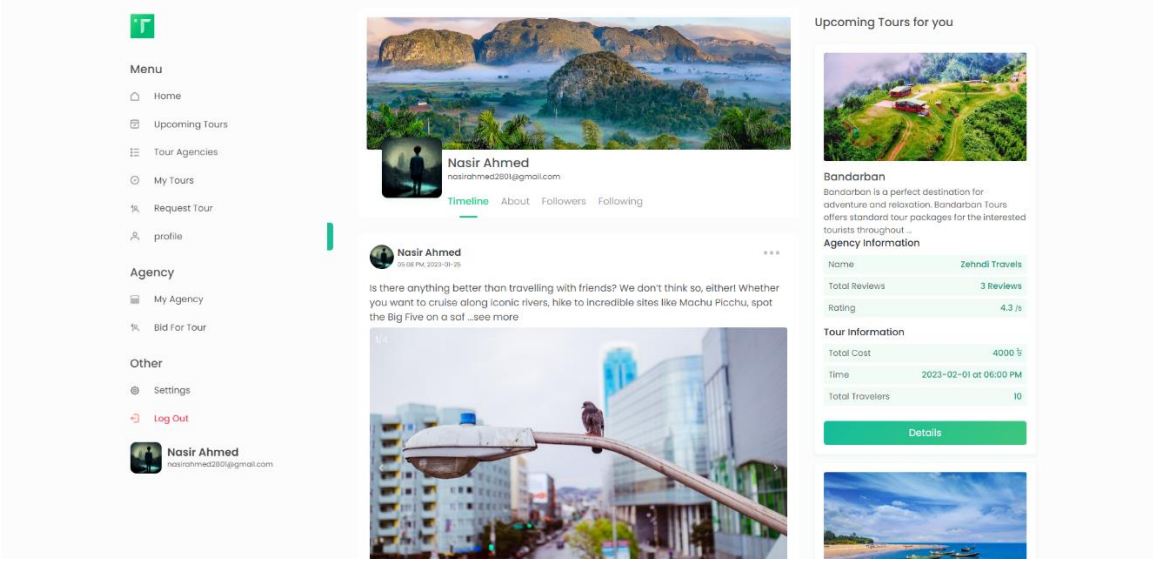

Figure 5.2.13.1.: Timeline section in My Profile Page of Design and Development on Travel and Tourism

Timeline sections shows every post of the user. In this section users are able view, edit or delete their own posts. However, one user can see other user's timeline post and have to power to edit or delete it.

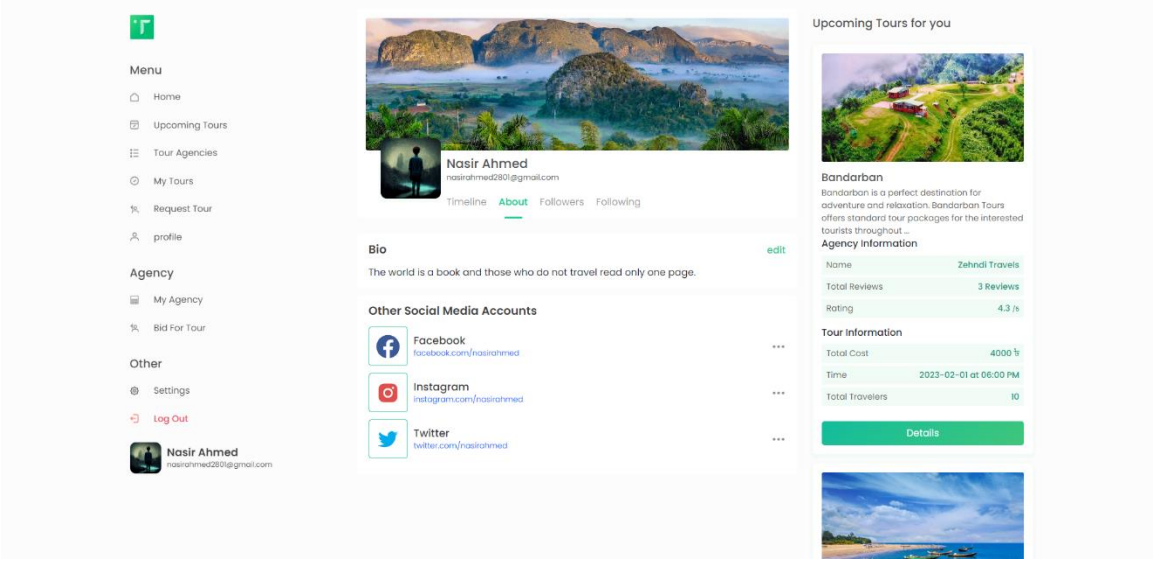

Figure 5.2.13.2.: About section in My Profile Page of Design and Development on Travel and Tourism

The about section shows the bio, check ins and other social media accounts of the user. From this page a user expresses their selves. User can edit their own bio and view others. A user cannot edit other user's bio or about section.

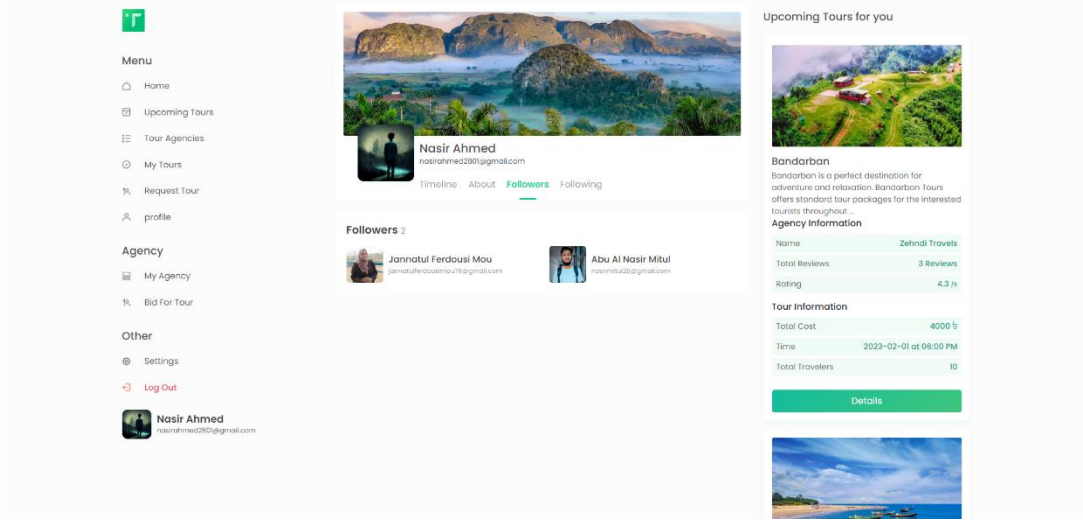

Figure 5.2.13.3.: Followers in My Profile Page of Design and Development on Travel and Tourism

Followers section simply shows the users followers on Design and Development on Travel and Tourism platform. This follower section is private and other users are not capable to see the followers. A user can only see his/ her own followers.

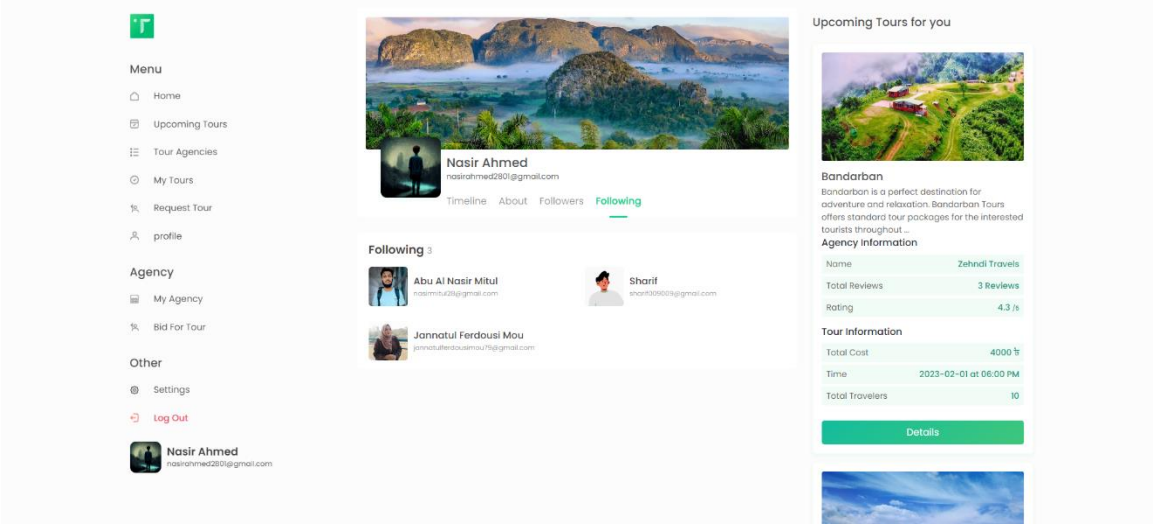

Figure 5.2.13.4.: Following in My Profile Page of Design and Development on Travel and Tourism

5.2.14. Agency Profile

The above figure 5.2.14.1 is showing the Agency profile page. In these page 4 sections are available. Figure 5.2.14.2, 5.2.14.3, 5.2.14.4 and 5.2.14.5 shows the About, Ratings, Dashboard and Revenue page of the agency.

Agency profile page contains “Timeline”. Timeline section shows the created tour posts of the agency. Each time the agency creates a tour post it is added to the agency’s timeline. Agency can also delete any post from timeline.

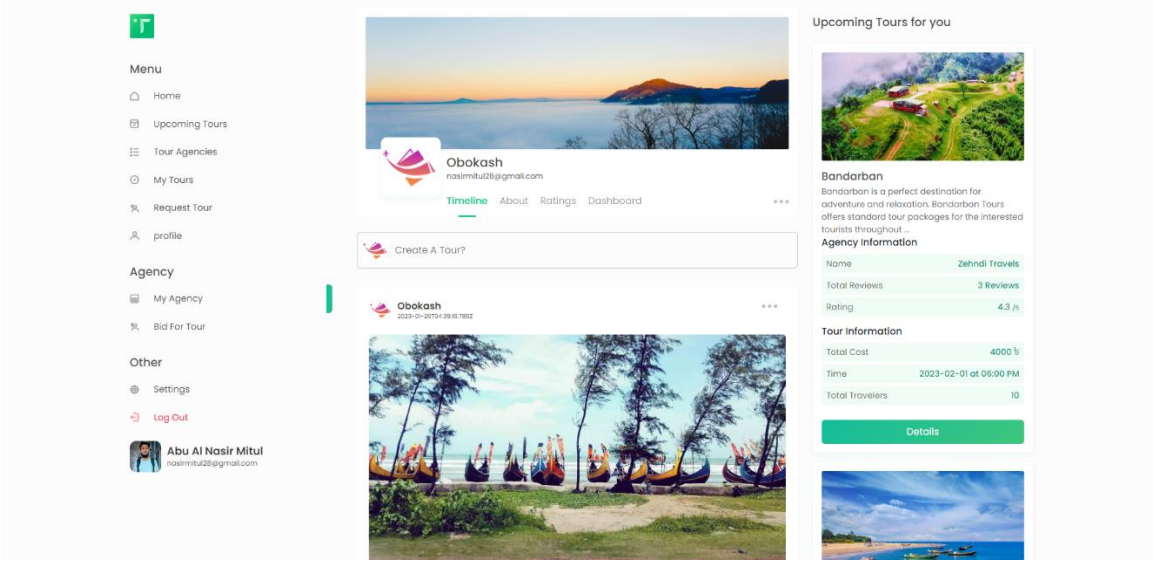

Figure 5.2.14.1.: Agency Profile Page of Design and Development on Travel and Tourism

In the figure 5.2.14.2 below is the Agency About section shows the Agency details information. In the agency about page, there will be agency description and others information as agency phone number, email, website and location information.

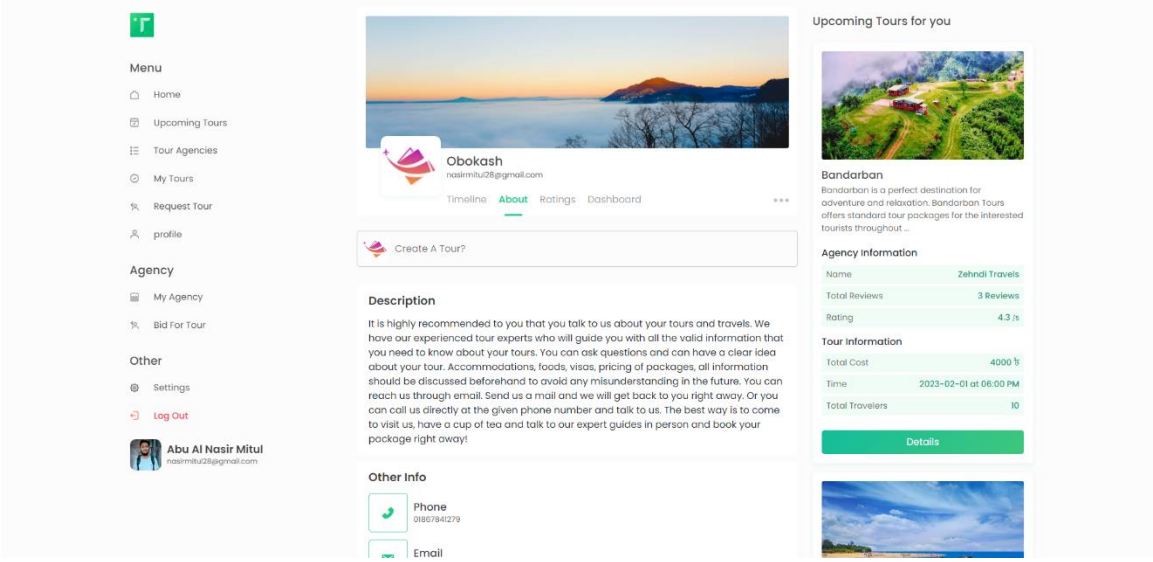

Figure 5.2.14.2.: Agency About Page of Design and Development on Travel and Tourism

In the figure 5.2.14.3 below is the Agency Review section shows the ratings an agency got from their customers. Only the tourist who purchase the tour package from a particular agency are eligible to rate the agency. All the ratings the sums up and shows the average rating of the agency.

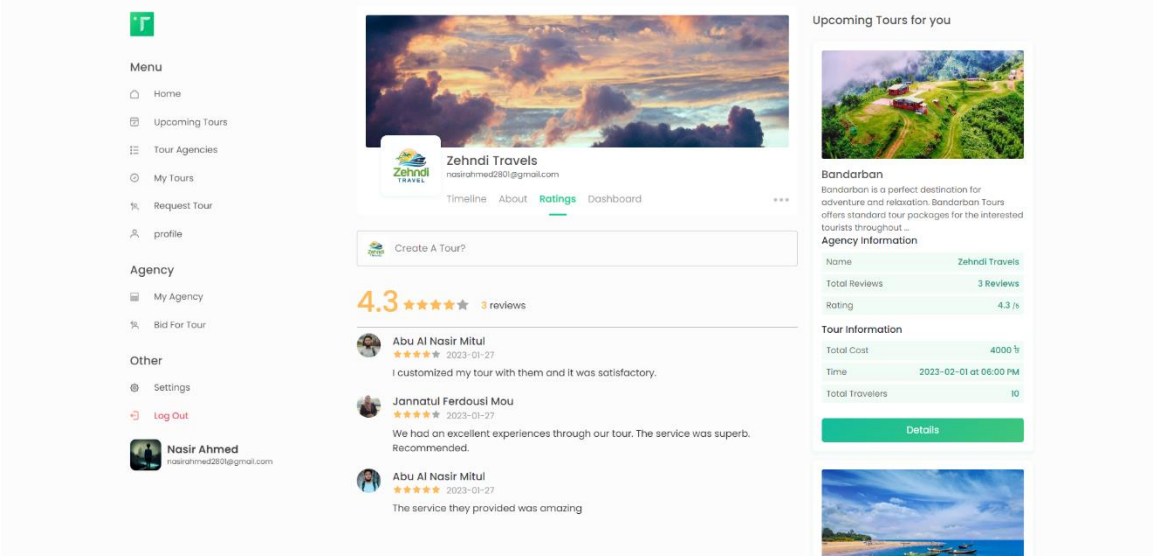

Figure 5.2.14.3.: Agency Review Page of Design and Development on Travel and Tourism

In the figure 5.2.14.4 below is the Agency Dashboard where agency will see two tabs namely ‘Pending Personalize Tours’ and ‘Agency Revenue’. Personalized tour booked by a user is shown in ‘Pending Personalize Tours’ tab. Agency can approve a pending personalize tour by providing asked amount to arrange the tour. However, agency can also cancel pending personalize tour. If the user pays the asked amount of the agency, then agency will be notified.

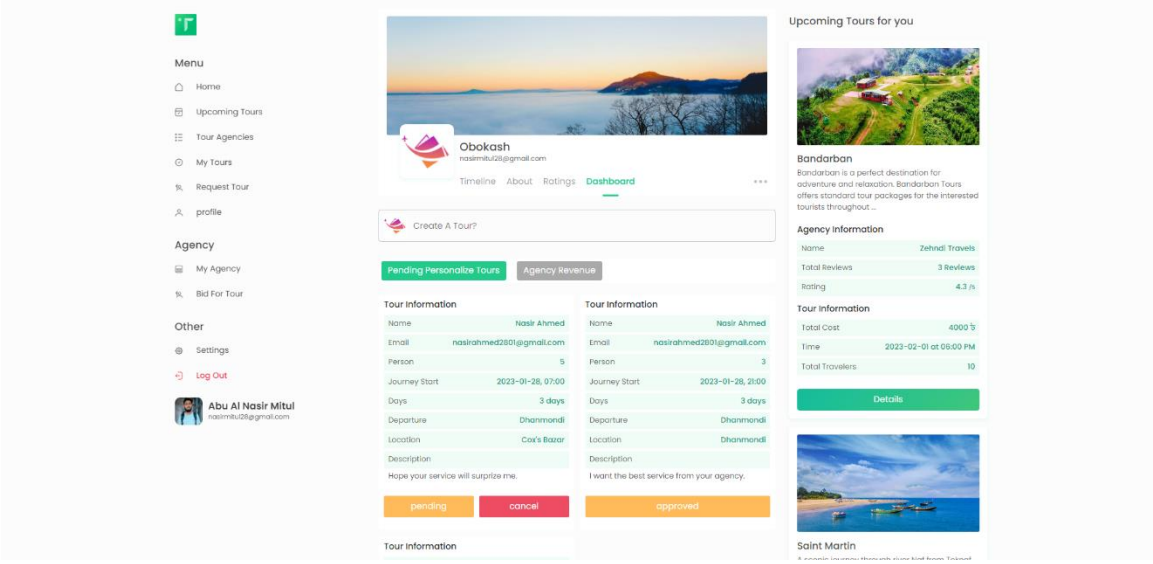

Figure 5.2.14.4.: Agency Dashboard Page of Design and Development on Travel and Tourism

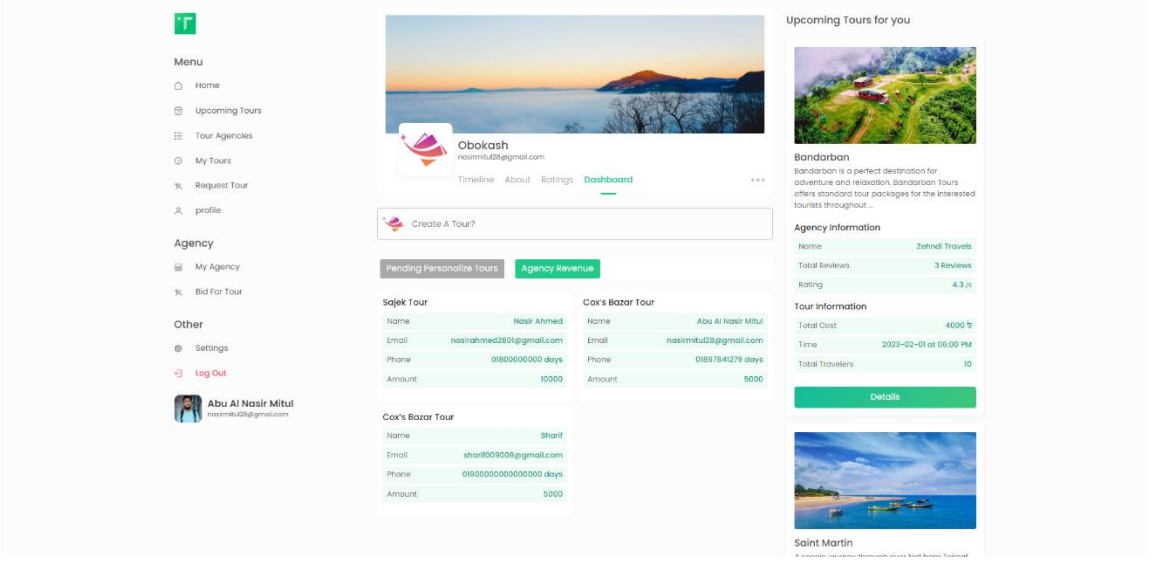

Figure 5.2.14.5.: Agency Revenue Page of Design and Development on Travel and Tourism

In the above figure 5.2.14.5 shows the Agency Dashboard where the annual revenues are visualized. It shows the earnings of an agency from the website.

5.2.15. Create Agency

Figure 5.2.15 shows the interface of Create an Agency. When a user is interested to register oneself as an agency then the user must provide all the information asked in this page including Agency name, mobile number, agency address, NID and back information. When the application of agency creation is submitted the admins verifies it manually and then approve or decline.

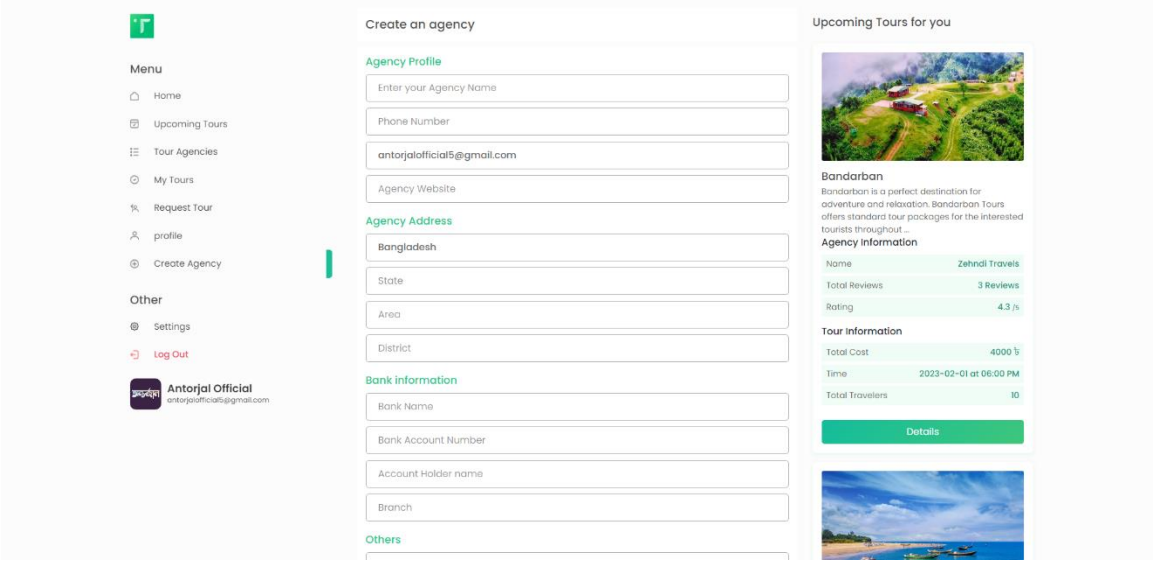

Figure 5.2.15: Create Agency Page of Design and Development on Travel and Tourism

5.2.16. Create Tour

Only the agencies can create a tour post. The above figure 5.2.16 shows the create a tour page of the website.

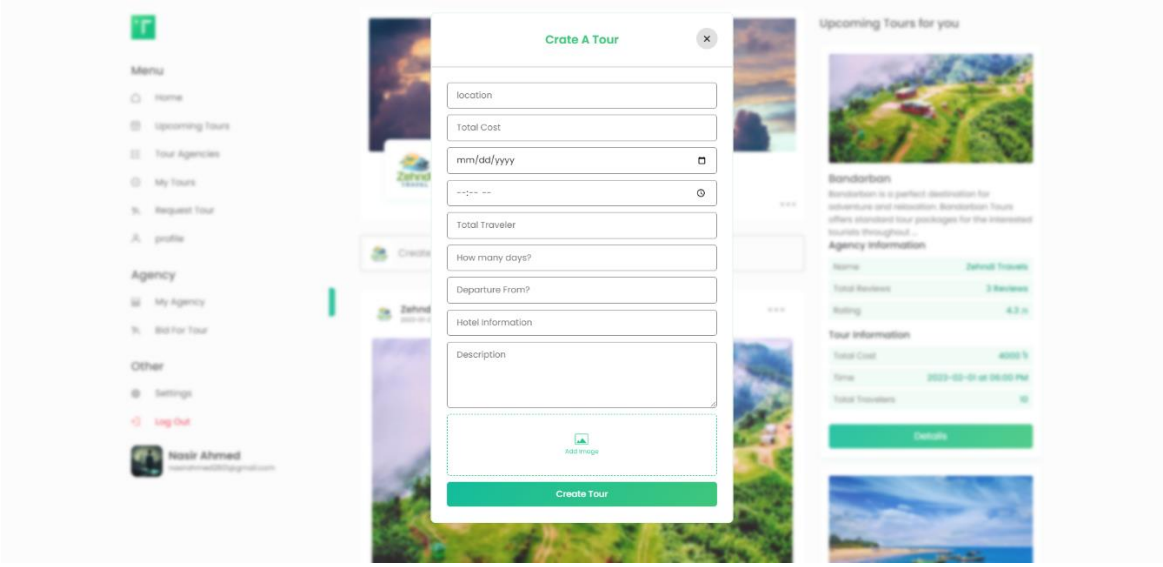

Figure 5.2.16: Create Tour Page of Design and Development on Travel and Tourism – web application

5.2.17. Request Tour

The below figure 5.2.17.1 shows Request Tour page of Design and Development on Travel and Tourism. User can request for a tour by providing necessary information. This request will be visible for all agency on ‘Bid for Tour’ tab.

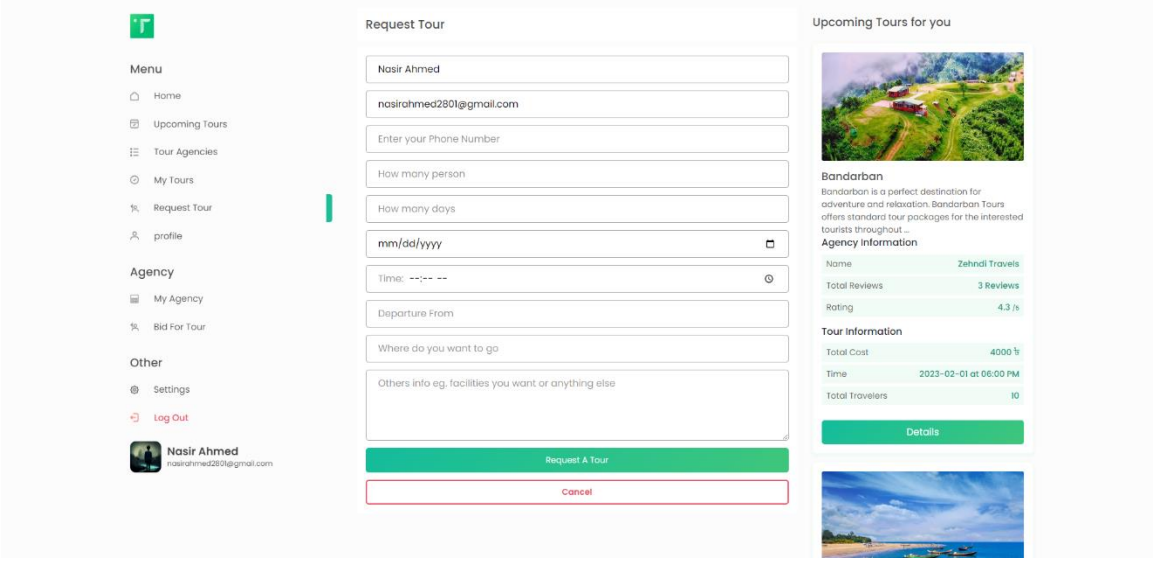

Figure 5.2.17.1: Request Tour Page of Design and Development on Travel and Tourism

The following figure 5.2.17.2 shows Requested Tour page of Design and Development on Travel and Tourism. Requested tour of the user will be shown here. The requested tour has by default timer of 90 minutes. In this mean time agencies can bid for this requested tour.

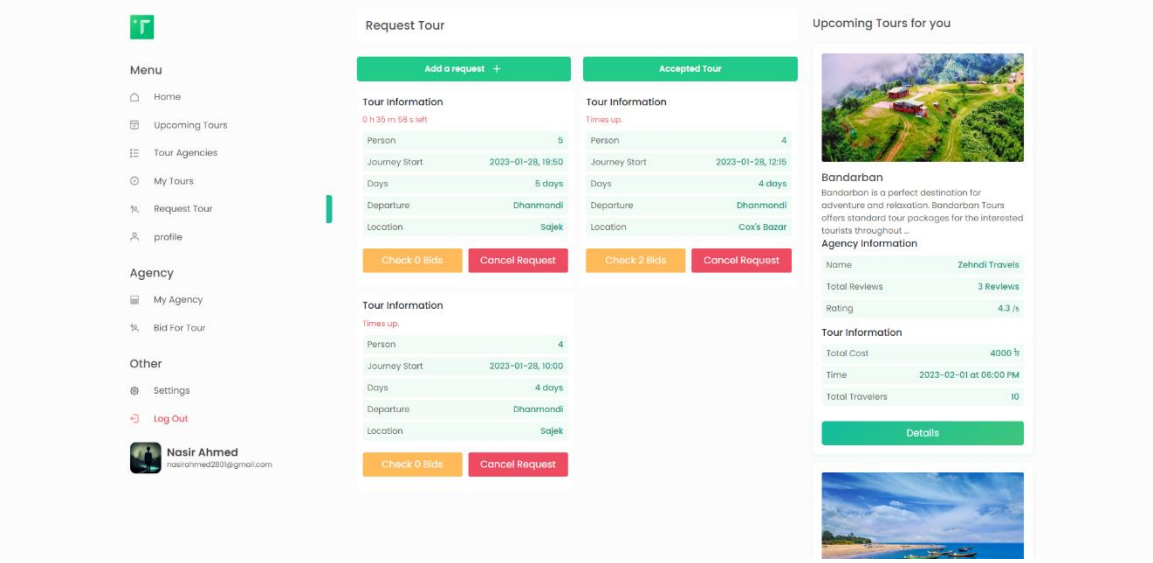

Figure 5.2.17.2: Requested Tour Page of Design and Development on Travel and Tourism

The following figure 5.2.17.3 shows Bids page of Design and Development on Travel and Tourism. From the bids of the agencies, a user can choose the best option and accept. However, the requester can also cancel the request anytime.

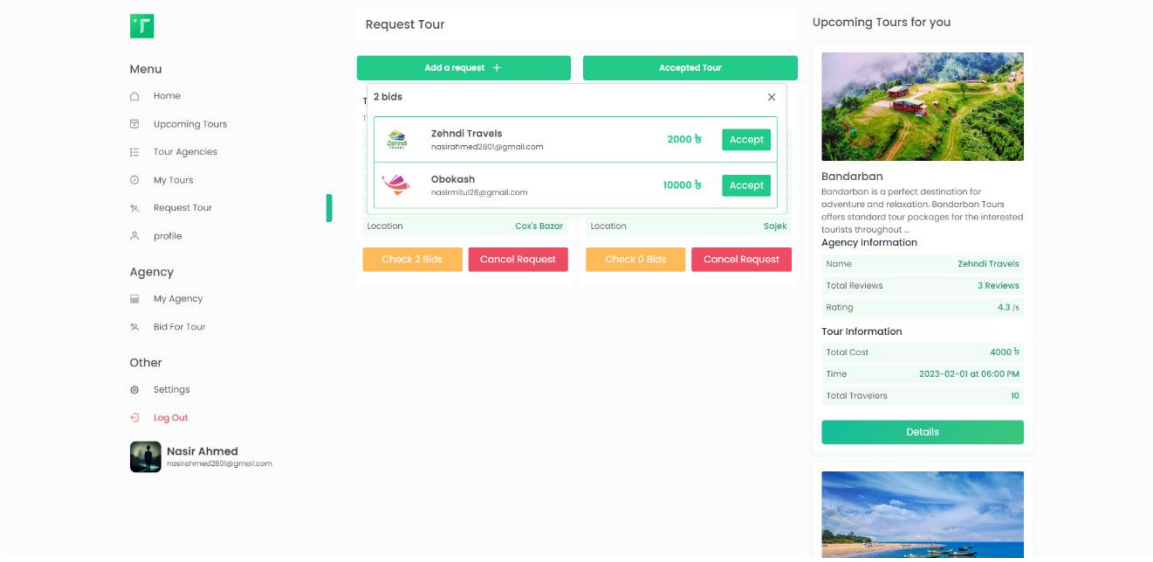

Figure 5.2.17.3: Bids Page of Design and Development on Travel and Tourism

The following figure 5.2.17.4 shows Accepted Tour page of Design and Development on Travel and Tourism. Accepted tours will be shown in this page which was previously requested and approved by the user. This page shows the detail information of the agency such as agency name, agency email, agency phone.

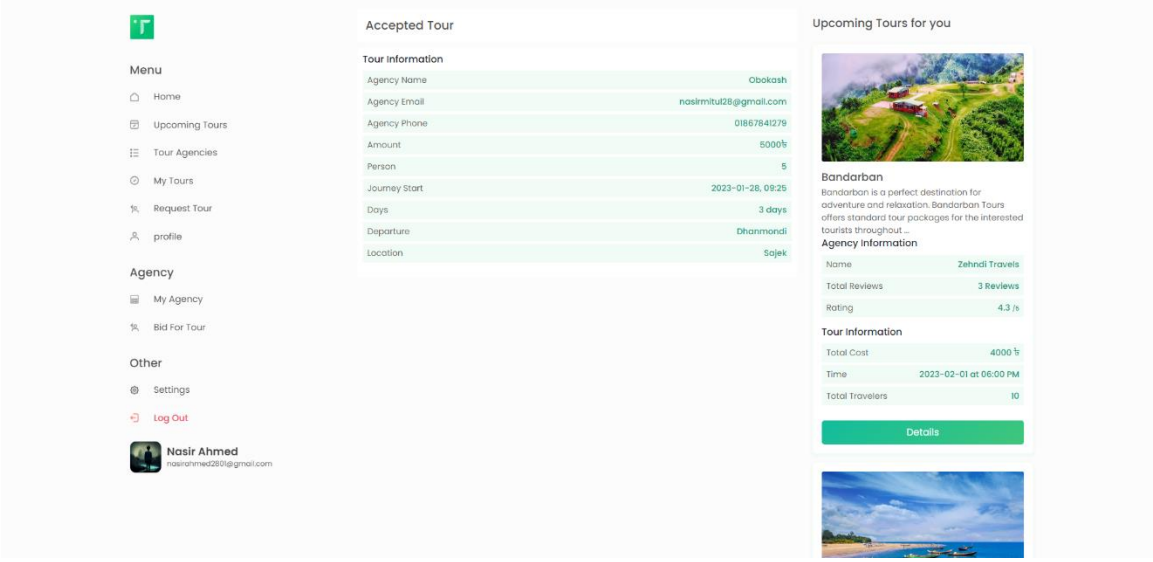

Figure 5.2.17.4: Accepted Tour Page of Design and Development on Travel and Tourism

The following figure 5.2.17.5 shows Bid For Tour page of Design and Development on Travel and Tourism. This bid for tour page is only visible for the agencies. All the requested tour of the user is shown in this page. Agencies are capable of to bid each requested tour by providing asked amount.

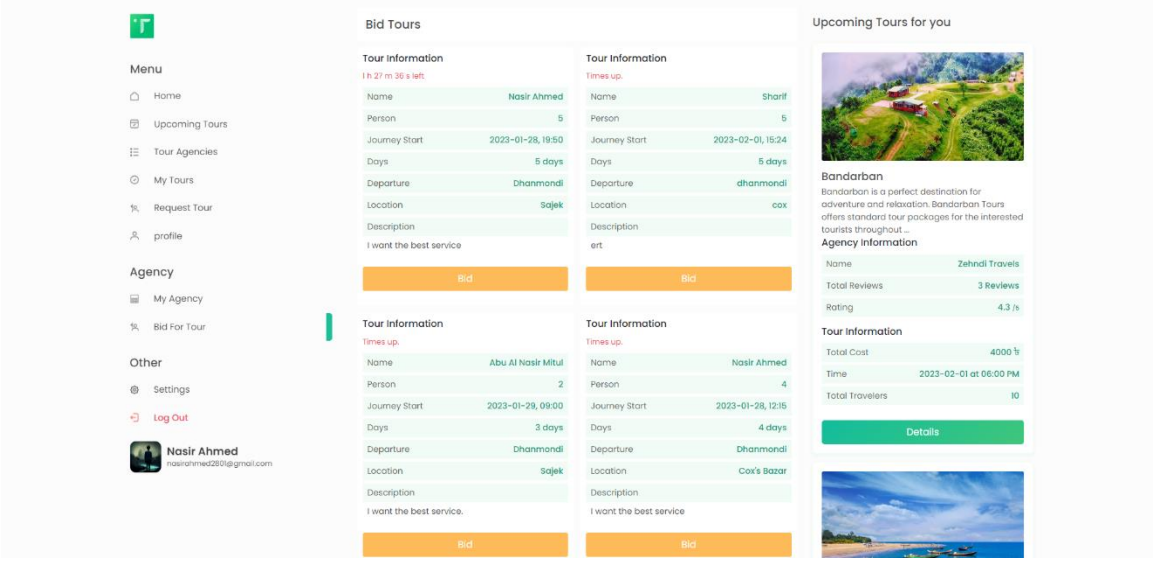

Figure 5.2.17.5: Bid for Tour Page of Design and Development on Travel and Tourism

5.2.18. Settings

Figure 5.2.18 shows Settings page of Design and Development on Travel and Tourism. An user can change his account information such as Name, Email, Password, Profile Picture. Moreover, user can delete his account too. If the user has any agency, then he will be able to change the agency information too such as agency name, agency profile picture. Also, he can delete his agency from here.

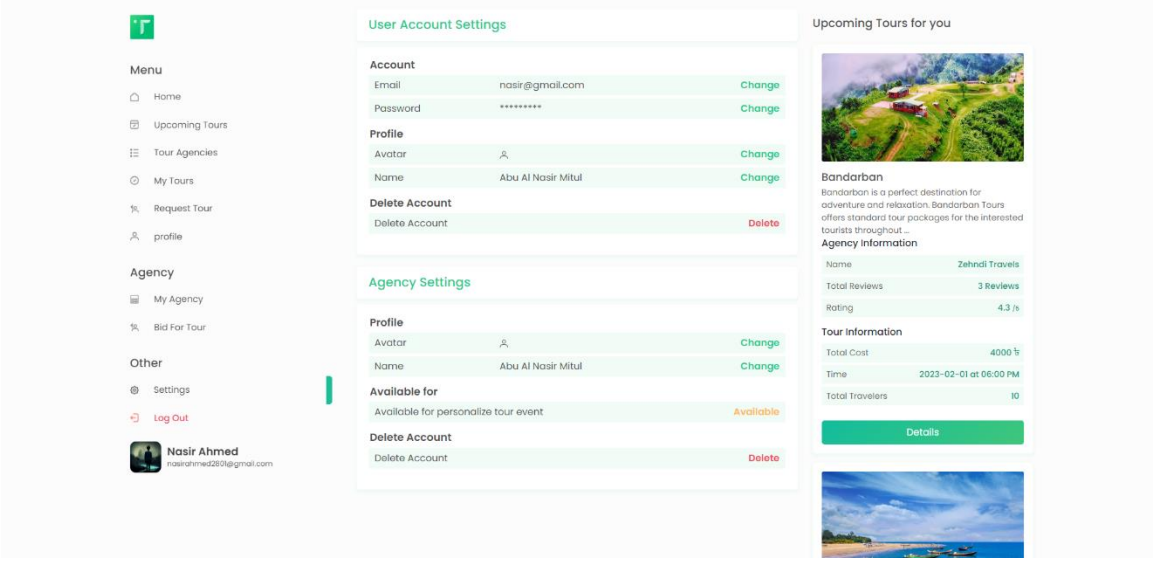

Figure 5.2.18: Settings Page of Design and Development on Travel and Tourism

5.2.19. Admin

Figure 5.2.19.1 shows the interface of Admin Panel. In the admin panel, there are be two tabs namely ‘Pending Agencies’ and ‘Reports’. In the ‘Pending Agencies’ tab, all the newly created agencies will be show. An admin will verify the Agency information and approve. An agency will only be able to sell their service after getting approval.

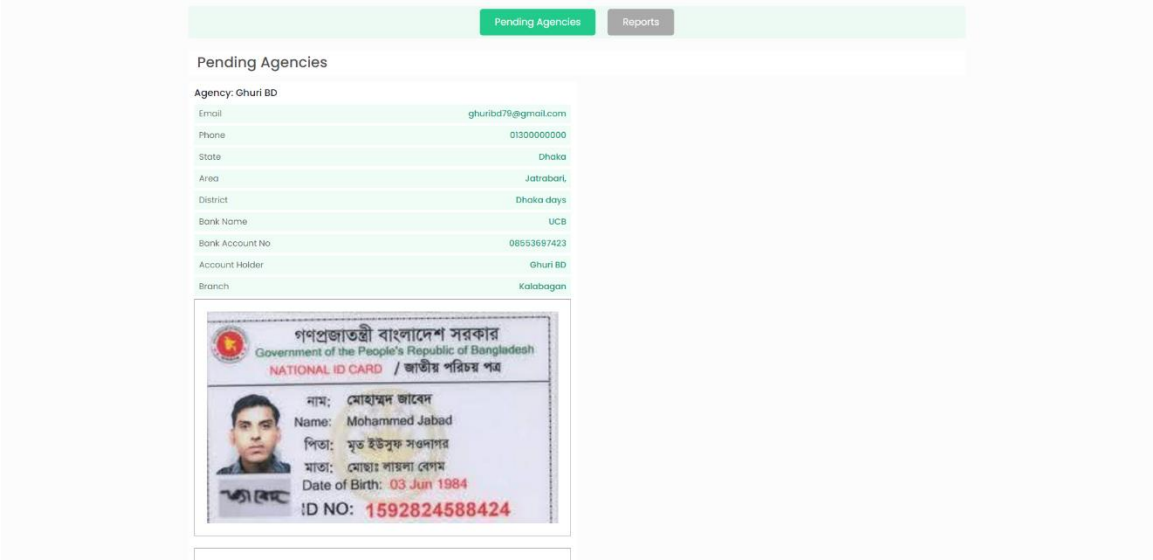

Figure 5.2.19.1: Pending Agencies of Design and Development on Travel and Tourism

The following figure 5.2.19.2 shows Reports of Design and Development on Travel and Tourism. This section will have all the Reports submitted by users. In every report there will be many information respectively Reported Post URL, Reported Email, Reported Name, Report By Email, Report By Name and Total Report count of the following post.

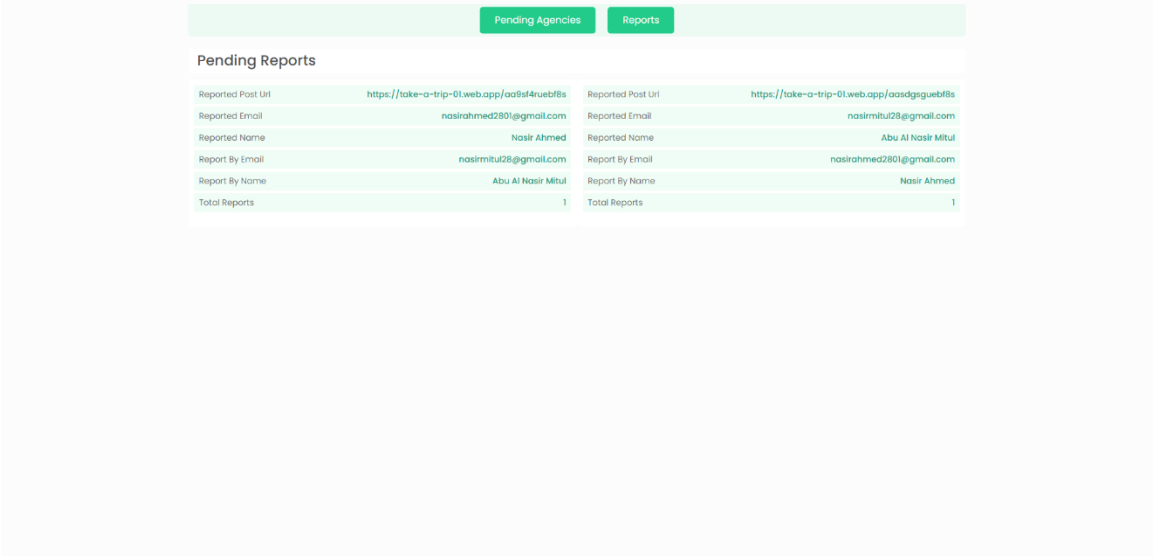

Figure 5.2.19.2: Reports of Design and Development on Travel and Tourism

5.3 Testing Implementation Results and Reports

The below section is a complete testing implementation of our web application – "Design and Development on Travel and Tourism" and we have plotted the test case and test results in a tabular format. The testing of the application is divided into subsections to make it easier to understand. We have done the required testing before final publication of our application.

Table 5.3.1: Login page testing summary

Test Case	Test Input	Expected Outcome	Obtained Outcome	Result
User Registration	User Information	Register Successfully	Registered Successfully	Passed
User Login	User Email and Password	Log In Successfully	Logged In Successfully	Passed
Admin Login	Admin Email and Password	Log In Successfully	Logged In Successfully	Passed
Password	Incorrect Password	Incorrect Password	Incorrect Password	Passed
Forgot password	User registered Email	Reset Email Send	Reset Email Sent	Passed

Table 5.3.2: Newsfeed testing summary

Test Case	Test Input	Expected Outcome	Obtained Outcome	Result
Create Post	Texts and Images	Post Successfully	Posted Successfully	Passed
Others Post visibility	Reload Newsfeed	Posts visible Successfully	Posts visible Successfully	Passed
React on Post	Admin Email and Password	React Successfully	Reacted Successfully	Passed
Comment on Post	Incorrect Password	Comment Successfully	Commented Successfully	Passed

Table 5.3.3: Agency Create, Delete and Dashboard testing summary

Test Case	Test Input	Expected Outcome	Obtained Outcome	Result
Create an Agency Profile	NID, Office address, mobile number	Create Successfully	Created Successfully	Passed
Delete an Agency Profile	Reason of quitting	Delete Successfully	Deleted Successfully	Passed
Revenue Dashboard of Agency	Click on Dashboard	Show Successfully	Shown Successfully	Passed

Table 5.3.4: Upcoming Tours and My Tours testing summary

Test Case	Test Input	Expected Outcome	Obtained Outcome	Result
Upcoming Tours visibility	Click Upcoming Tours	Show Successfully	Shown Successfully	Passed
My Tours visibility	Click My Tours	Show Successfully	Shown Successfully	Passed
Tour Search	Search by preference	Results show Successfully	Results shown Successfully	Passed
Tour Sort	Search by preference	Sort Successfully	Sorted Successfully	Passed
Agency Information visibility	Click Agency Information	Show Successfully	Shown Successfully	Passed

Table 5.3.5: User Profile and Agency Profile testing summary

Test Case	Test Input	Expected Outcome	Obtained Outcome	Result
Profile Edit	User Information	Update Successfully	Updated Successfully	Passed
Tourist / Agency Posts Edit / delete	Click on Profile	Edit / Delete Successfully	Shown Successfully	Passed
Agency created Posts visibility	Click on Profile	Show Successfully	Shown Successfully	Passed
User Followers and Followings	Click on Followers and Followings	Follow / Unfollow Successfully	Follow / Unfollow Successfully	Passed
Agency Rating	Give Stars	Review Successfully	Reviewed Successfully	Passed

Table 5.3.6: Tour Booking and Payment testing summary

Test Case	Test Input	Expected Outcome	Obtained Outcome	Result
Book Tour Events	Mobile Number, Seats	Book Successfully	Booked Successfully	Passed
Book Personalize Tour	Mobile and Email Address	Book Successfully	Booked Successfully	Passed
Proceed to Payments	Payment Information	Payment Successfully	Payment Successfully	Passed

Table 5.3.7: Admin Activity testing summary

Test Case	Test Input	Expected Outcome	Obtained Outcome	Result
Approve Agency Application	Application submitted by agency	Approve Successfully	Approved Successfully	Passed
Decline Agency Application	Application submitted by agency	Decline Successfully	Declined Successfully	Passed
Handle Reports	Report Submitted by Tourist	Receive Successfully	Received Successfully	Passed

Table 5.3.8: Search and Sort Functionality testing summary

Test Case	Test Input	Expected Outcome	Obtained Outcome	Result
Search Users	User Name	Search Successfully	Search Successfully	Passed
Search Agencies	Agency Name	Search Agencies	Search Agencies	Passed
Sort Agencies by Rating	Choose from menu	Sort Agencies Successfully	Sort Agencies Successfully	Passed

CHAPTER 6

IMPACT ON SOCIETY AND ENVIRONMENT

6.1 Impact on Society

"Design and Development on Travel and Tourism" does have significant positive changes on our society which deals with some undiscussed social challenges like anxiety, depressions and other mental health issues. Virtual entertainments and lives are impacting people with their physical and mental health. Our application is able to eliminate this sadness and make their lives mirthful again. Moreover, the travelers from worldwide who visits our country will able to get the best service thus our respect will enhance. This will trigger global economy by creating new business and job opportunity respectively for entrepreneurs and unemployed. It will be able to eliminate scarcity from our society and create new employment for local people. The prestige of our emerging country will increase and overall development of the tourism industry will take place. It is been accused that the socio-cultural identity of the local communities and indigenous values, tradition and lifestyle is destroying by globalization [5]. Tourism and a tourist community like "Design and Development on Travel and Tourism" surely trigger the globalization and this will lead us to face the loss of local traditions and values.

6.2 Impact on Environment

The positive impact of tourism industry is mostly covered by our economy whereas the negative ones are on the environment. Considering the authority, private sector, non-governmental organization, tourist and local community tourism has negative impact on our environment. Though in the beginning of tourism activities had a minimal impact on our environment but now it is seen as a destroyer of the nature and environmental degradation. Tourism is causing pollution of water, soil erosion, depletion of natural resources, flora structural changes and many more.

6.3 Sustainable Plan

We have the roadmap to achieve long term goal along with continue our community growth. A plan that meets our community sustainability, financial sustainability and ensures the future needs of organizational sustainability is documented [6]. The community sustainability continues with the recognition of our project. The immunity of survival financially refers the project's financial sustainability. To maintain the sustainability of our website we need to focus on our marketing and promotions. By marketing and promoting our website we will be able to gain social trust and make the core principle of sustainability. We need to be more accountable to compete our competitors. We must try to get venture capital from investors or get loan to promote our business.

CHAPTER 7

CONCLUSION AND FUTURE SCOPE

7.1 Conclusion

The primary production of "Design and Development on Travel and Tourism" will allow tourist to take services from different tour agencies that are selling their services in our web application. Tourist will be able to grow their community through connecting with other tourist by following their profiles on this application. Tourist, tour agencies, unemployed will get comprehensive benefits from this community we are building. Though build of this massive community will bring us forever new challenges yet it is feasible to build one. Admins have the total control over the entire application for the maintenance of the application absolutely. This application will help people get inspiration for tourism and related business opportunities to it which will surely boost our economy [7]. The purpose of this web application will be successful as time passage.

7.2 Future Development Scope

In the long run "Design and Development on Travel and Tourism" will require several features adjustments and new ones to be added. We want our user's satisfaction while receiving any service from our website therefore we have pointed out the future development scope for our web application below:

a) We will upgrade our website interface on a minimal time lapse to provide the maximum user experience.
b) The website will be polished with new features like Agency Analytics, Live Chat with agencies and the connected people will also be able to chat.
c) For grasping the user's attention animations on websites play a positive role each time. Our website will be more dynamic and animated soon.
d) There's definitely a promotion team requires in our business. A proper promotion team will be recruited in near future.
e) Before launching the website for real-time use, we will purchase and implement the original payment gateways for our website.
f) In near future, we will develop an android and iOS application of our website to get more audience.

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APPENDIX
Appendix A: Project Reflection

Front-end

HTML: HTML is the short form of Hyper Text Markup Language. It is a markup language which is responsible to create the structure of any web page.

CSS: The full form of CSS is Cascading Style Sheets. It is responsible for the styling of markup languages like HTML or XML. Without the application of CSS in website the website looks like a skeleton without its skin.

Bootstrap: Bootstrap is a CSS framework which is compiled framework of CSS and JavaScript. It is so powerful for website designing and prototyping. It gives the responsive and mobile first web application. In our project it has been used to design the frontend components.

JavaScript: JavaScript is the most famous and widely used scripting language. It has been widely used to produce lightweight and dynamic web application. It is easier to find the resources regarding JavaScript that is why we have used it in our web application.

ReactJS: ReactJS is a component-based JavaScript library which is open-source. It has been widely used by the MERN stack developers to build their UI components. As ReactJS provides reusable and declarative UI components it is easier to work with.

Back-end

Node Js: Node Js is mainly used to run JavaScript on the server. However, it is an open source server environment which is responsible for creating dynamic web content. It has become popular for it's non-blocking and high throughput features.

Express Js: Express Js is a framework of node js web application which is capable to provide broad features for both web and mobile applications. Our web application is single page application and we have used Express Js as backend to simplify our APIs.

MongoDB: MongoDB is a document-based database and we have used it to store our application's data. It is open-source and NoSQL which is definitely easy to use as it works with JSON-like documents.

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