

TravelGo Tour Management System

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ABSTRACT

The tech-savvy consumer of today has high standards for the customer experience and booking of travel. According to research, online travel booking businesses struggle to convert leads and have the highest rates of cart abandonment. Therefore, to draw in potential clients, turn leads into sales, and differentiate yourself in a market as crowded as the travel sector, it is crucial to have an appealing, interesting, and user-friendly website. Travel websites are now required to bet on innovation, multi-channeling, and the newest web development trends to stay competitive in the tourist industry due to the quick change of customer behavior. Users who use websites as informational resources to organize their vacation look for a streamlined approach and experience. Before making a reservation, the tourist tries to examine various rates and holiday types to determine which is the best and most comprehensive option. The traveler makes his purchase after doing research and exploring various informational sources, such as websites for travel and vacation destinations. Websites must comply with fundamental web development requirements in order to earn the trust of visitors if they don't want to be ignored.

Keywords— Management, Travel, Hotel

I. INTRODUCTION

To introduce, this application is built as a tour management system. This system is built by overcoming the drawbacks of most tour management systems. Mainly, when building this application several drawbacks of tour management systems have been identified clearly. To begin with cyber criminals, target these applications to get the sensitive personal information of users when entering

data to systems. Also at least one system expert is needed to do the bookings from the system as the features are not very much clear to users. Also, if the hotel reservation is done by a tourist, first need to search the places to travel from another site and then find the hotels near those places.

This application has introduced more features to overcome these drawbacks. To overcome the security issue, there is a login and sign-up system. Therefore, unauthorized users cannot access the other user accounts and access levels. Also, to overcome finding traveling details from other sites, here there is a travel blog function which provides user with travel blogs which contains details about travelling places. Not only that, but also user can do hotel reservations and view available tour packages from this system.

From the administrator functions the system maintenance functions can be done. And only the admin credentials can access those functionalities. In this paper these functionalities have been described separately.

II. RELATED WORK/ LITERATURE REVIEW

A. Tour Management

Tour management is a function which is related to managing tour packages which basically can deal with the functions related to interact with the packages. Tour package has two types of users, they are the users and the admin, and both has a different way which they can interact.

Explaining about how users are interacting with the system, Users first signup to the system then they must sign in then the user will be in the landing page where users can

see some blogs and some tour packages related to TravelGo so users can get a briefing of the tour package as the tour package name, tour package image and the tour package price. Users can also click on the view tour package button and read a full description about the tour package so they can get a full idea about the tour. Also, there is an option to download the tour package, so when the user scrolls down the page, they will find the download tour package button so they can download and keep it offline for future referring. Finally, there is and page with only tour packages besides the landing page and there is an option to redirect through the navigation bar. These are the functions which user can interact with.

Mentioning about the admin the admin has the full control over the tour packages, the admins can direct to tour packages management page from the navigation bar and here they have the options to view, add, edit, and delete tour package. When the admin lands into the tour package management page the get all the tour packages which are in the system and there is the option to edit or delete the tour package. To add a tour package there is a button in the page which admin can use to add tour package when the admin clicks on that system will redirect the user to a different page to add tour package there will be a form to be filled by the admin to add the tour package which consist of Tour Package name, description of the tour package, price and also the admin can upload an image to it. The uploaded image will be saved at firebase database and all the other data will be saved at the mongo DB database. Explaining about the other two functions which are update and delete, user will have the update option in the admin tour package page. When the admin click on the update button admin will be redirected to a new page to update the tour package. There the admin can update the tour package. Finally, admin has the option in the tour package management page to delete the tour package with one click. When the admin clicks on the delete button the tour package will be deleted from the database and will show the admin a success message.

These are the functions of admin who is into the tour management.

B. User authentication management

In the user authentication management function, it describes about the user management of the system. In this function there is two actors in this function there are the user and admin. This allows new users to sign up to the system and existing users to login to the system. And the admin can see all the users in the system. And only an existing admin can add another admin to the system. And the admin has the permission to delete or update user details. Users can request the admin to change their details. Based on the credentials insert in the login page the system

identified wheatear the user is a user or a admin. There sperate functions that can be done by the user and admin.

In this system user authentication function is connect with every other function. Because to use the other function either it is admin or user all must first login to the system. In the tour management function to add new tour packages the admin should first login into the system. And only an authorized admin can edit or delete any tour packages from the system. In the hotel management function only, an admin can edit the hotel details and delete them from the system and admin can view the hotel reservations as well. And for the blog management function to do the admin work admin should login to the system. Only after login admin can add, update or delete blogs from the system. For sign up to the system the users should fill form about personal details like full name, email address, mobile number as well. And only admin can update or delete the users from the system. And there can be only one mobile number in the system there cannot be any duplicate mobile numbers in the system. In user authentication function the admin can generate a report including all the system users details. When the user login to the system user will redirected to the tour packages page of the tour management function.

C. Hotel management

This is one of the main functions of the Travel Go website. Admin and user both can use this function and they can do many tasks in this system. First of all, the user need to identify the main tasks of the admin and user. An admin can insert new hotel packages into the system with new hotel details, update hotel package details, delete hotel packages from the system, view all hotel package details with edit and delete options, view all customer reservations and admin can generate a report for getting details of customer reservations. In addition to that users also can do many activities with this hotel reservation function. A user can view the hotel reservation home page, view all hotel packages, add a new reservation with customer details, view all customer reservations with edit and delete options, update reservation details and delete a reservation from the system.

All the information mentioned above is related to the hotel management function on our website. But all admins and users must create their own accounts and login credentials before using this hotel management. Therefore, the hotel management function must connect with the user authentication management function. Explaining how the user authentication management function relates to hotel management. First, a user must register to the system as an admin or a user. Then only they can log in to the system with their admin or user credentials. If the user is not registered to the system, they cannot use the other functions in this system such as the hotel management

function. In addition to that, the admin can insert new admin to the system, update details of admins or users and delete admin or user accounts from the system in the user authentication management function. So, this function must be connected to the user management function because it gets a solution for some authentication problems and unauthorized access can be minimized in the hotel management function.

D. Blog management

In this function it describes about blogs management of the system. It allows customer to read blogs about the places to travel. Therefore, customer can get a clear idea and some knowledge about the places they need to travel. Normally in other tour management systems there are not functions like this. But this system provides user with a feature to read about the travelling places and to get clear idea about that place whether they need to travel or not.

In this system, this blog management function mainly connects with user authentication management function and tour package management functions. To describe with the relation between the user authentication management function and blog management function, there are two sections of users in the blog management function. That is administrator side and the customer side. Customer side is only allowed to view all the blogs in a one page and if wants to read more about a one travel blog they are provided with additional information and images when clicking on the 'read more' button. Therefore, user authentication management function checks whether the logged user credentials are matched with admin login credentials or customer login credentials and allow separately customers to the customer blog functions. If the logged credentials match with the administrator credentials it allows user to access both administrator side and the customer side. In administrator side users are allowed to add travel blogs to the system, update or delete the added blogs and view them in the administrator view and also in the customer view. That is the relation between blog management function and user authentication management function.

For more, blog management function connects with the tour management function. The travel blogs added to the system displays in the tour package page. Therefore, when user logged in to the first system first shows the tour package display page. That is how the travel blog management function connects with the other functionalities of the system.

III. METHODOLOGY

A. Tour management

Explaining about the methodology application is built using the MERNSTACK technology. This technology includes MongoDB, Express, React Js and Node Js further explaining about the technology. MongoDB is used to store data which is sent by the system and keep it for the functions of the system. The reason to use MongoDB is that its cloud based and easy for all the group members to access and it's easier than SQL. For image files saving system uses firebase so all the images uploaded to the system will be uploaded to firebase so it can be accessed for the system functions. And system uses Express as the framework, also used react for frontend finally for backend, system uses Node to develop the backend. Used Azure boards to keep track of the work, so it is easy to manage the milestones of the project and easy to assign work among group members. Used GitHub for the version controlling. So, this is very easy to keep the project updated and easy for every group member to manage the code and easy to work as a group. Used SonarQube and Selenium to test the code, enhance and make it bug free. Finally, these are the technologies used for the development project.

B. User authentication management

User authentication function can be accessed by both admin and user. To login to the system both user and admin can use same login page. The user roles are separated based on the credentials that enter to the system. All the details that enter to the system is recorded in a data based. And there some backend validations as well. There can be only one mobile to one user a user cannot sign up for the system using same mobile number with two different email addresses. And there cannot be duplicate values for email address as well. And all the passwords are encrypted even the admin cannot see the passwords. When user sign up to the system all the details is send to the backend and it is recorded in data base and database will be updated immediately. And the backend will generate a separate token for every user. And based on the user role there is separate functions that can be accessed. There is some function that only can be accessed by the admin. In fronted there is a sign-up form in the form every fill should be filled by the user if not the user cannot submit the form and signup to the system. Only an existing admin can add another admin to the system.

C. Hotel management

Admin and user both can access this hotel management function. Therefore, I created separate folders for admin parts and user parts in the backend. In addition to that, all details of admins and users are recorded in a system database.

If they insert new details into the system. Then all inserted details are recorded in the database via the

backend. And If they update or delete details from the system, then at the same time that all changes are changed in the database via the backend. When they select view details from the system, then it is called to the backend first, gets details from the database, and passes it to the user with the backend process.

D. Blog management

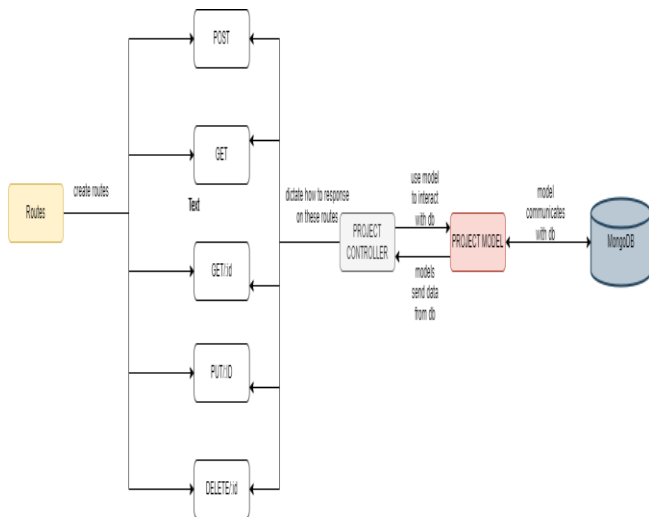


Figure 1.1

As shown in this flow chart [Figure 1.1] the backend has divided into three parts. Those are routes, controller, and the model. From the frontend the end points are calling. Express routers create different routes for the requests sending from the frontend. Controllers return response according to which route has been accessed to. Model is the data template that controller use to interact with. Mongo db is the database where the data is being stored.

IV. PROPOSED SYSTEM

A. Tour management

In this system, tour package management plays a major role. This is very much important since any visitor to this site expect a tour, so tour package is the most important thing. This is how it works; Admin can add the tour package while he/she also the access to update and delete tour package. Also, Users and admins can even view the tour package and download a soft copy of the package.

- Adding Tour Packages [Figure 2.1] page (Admin) – Here Admins can fill the form with the relevant data and upload an image and click on the Add button so the tour package will be uploaded to the database.

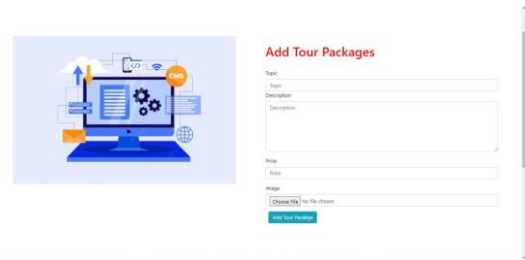


Figure 2.1

- Update Tour Package page (Admin) [Figure 2.2] – Here the admins can update the relevant information they need to update and click on the update button so the database will update the tour package with the updated data.

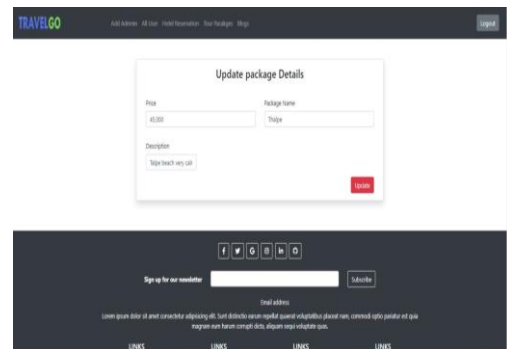


Figure 2.2

- Admin View Page (Admin) – Here the Admin can view all the tour packages and have the option to Add, Update or Delete.

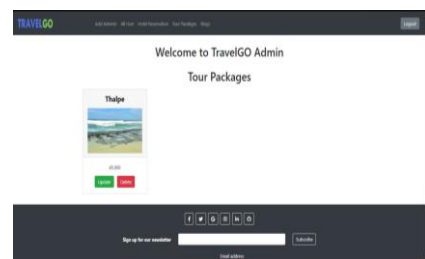


Figure 2.3

- User View Page (User) [Figure 2.4] – User can view the tour package and if the user clicks on view tour package the user will get a full description of the tour.



Figure 2.4

B. User authentication management

User authentication function [Figure 2.5] is a main function in the system because it handles both users and admins in the system it is very understandable and very clear function. This function is very easy to handle by both user and admin.

The admin can handle the admin parts of the user authentication function. In here admin can access many functions. There is a separate navigation bar to admin to access the functions admin can update and remove the user from the system and only an admin can add another admin to the system

- Admin can view all the users in the system and the admin can delete and update the user information options are also can be accessed as shown in the following figure. And admin can directly access the delete function.

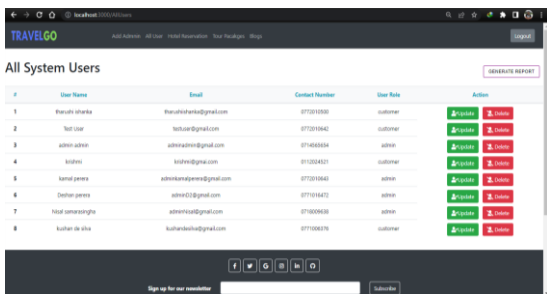


Figure 2.5

- Admin can add new admin to the system as below figure. [Figure 2.6] Admin must enter the details in the form and submit the form by clicking the button. After that new admin details will be shown in the view all user page.

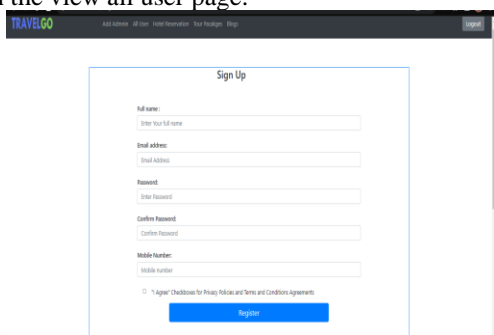


Figure 2.6

C. Hotel management

Travel Go website has many functions and options to handle by both admin and user. Through this, the hotel management function which is one of the main functions is very clearly understandable and easy to handle by both user and admin in this system.

The user can handle the admin parts of hotel management as an admin. In here, the admin can do many more things in this function. I used a navigation bar to use all activities properly and easily in the admin part as below figure. Admin can navigate with view all hotel packages, view hotel reservations, add new hotel packages, update hotel details, delete hotel packages from the system and generate a report for customer reservations options as below the user interface.

- Admin can view all hotel details with edit and delete options [Figure 2.7] that admin added to the system in this figure. In addition to that admin can edit hotel package details via the edit button and delete the hotel package from the system via the delete button in this user interface.

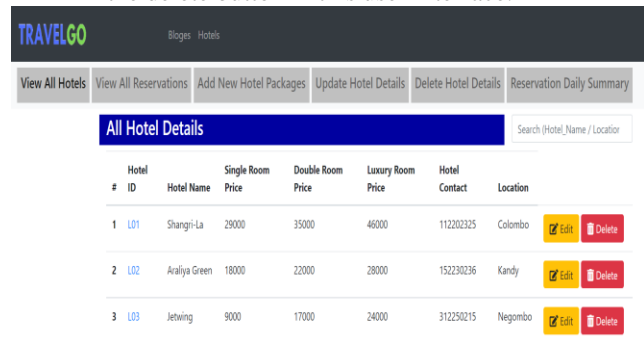


Figure 2.7

- Admin can add new hotel packages with hotel details to the system as the below figure. Admin must enter all data in this form and submit with the button to add successfully. After admin can view that added new hotel package details as the above user interface. [Figure 2.8]

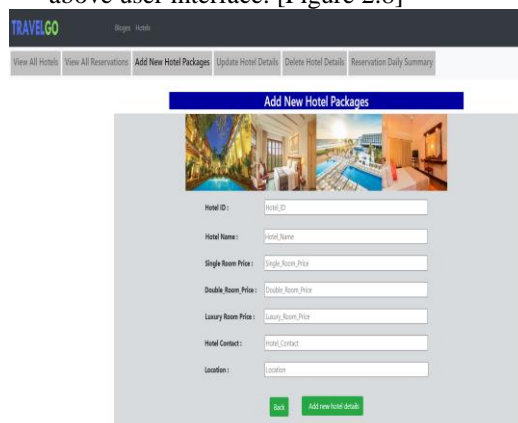


Figure 2.8

- The user can handle the customer parts of hotel management as a customer user. In here, the customer can use all tasks related to the customer with the customer navigation bar in this function as the below figure. Customers can view all hotel packages, view reservation details with edit and delete options, add a new reservation, update reservation details, and delete reservations from the system.
- Users can view all hotel details that the admin added to the system in the above figure. In addition to that user can view all reservations and the user can edit reservation details via the edit button and delete the reservation from the system via the delete button as well as the admin can do.

Users can add a new hotel reservation to the system. The user must enter all data in the form and submit the reservation details to add a new reservation successfully. After the user can view that added new reservation details in the view reservation user interface.

D. Blog management

In this system, travel blog management function is one of the most interesting functions [Figure 2.9] among all. Because in other systems mostly there is not a function like this. While customers are allowed to read the blogs, administrator allows to add blog, update blog, generate report about blog details and delete the added blogs.

From the below figure it shows one of the administrator pages. Here I have used separate buttons to navigate to add blogs page and generate report page. Also, if the administrator wants to update or delete blogs there two standard icons on the added blogs for delete function and to navigate to the update blog page. These standard icons and all the needed buttons in one page give user a better user experience.

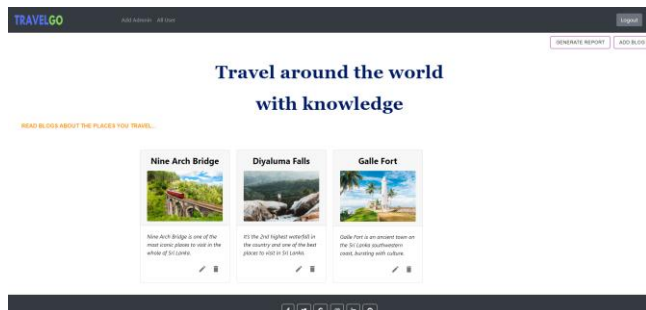


Figure 2.9

This is the update blogs page. [Figure 2.10] To give a better user experience when admin clicks on the edit icon of one of the blogs it redirects user to the edit blogs page. Also displays all the data of blog which wants to edit in the text fields. Therefore, user can easily edit those. Also, if wants to cancel the edit function the cancel option shown in the below figure can be used.

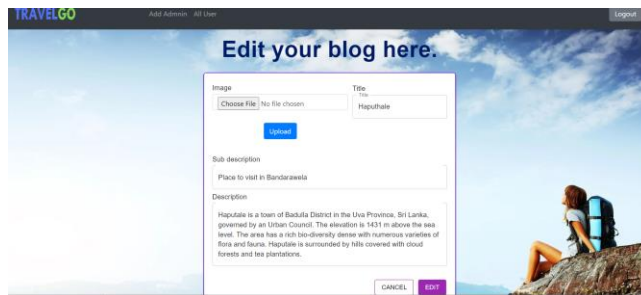


Figure 2.10

Other than that, users of customer side can view all the blogs in a summarized method from a one page, and there is option named 'Read More' on each blog. When click on that user can read more about that blog.

V. DISCUSSION

Describing the discussion, researched a lot into our topic and came with some great ideas to overcome the issues of the system. Since this application is based on tourism, had to focus on the end user of this service who are the tourists. Here the intension was to provide some good information about tourism in Sri Lanka to tourists to promote tourism in Sri Lanka in these crucial times to support the economy of Sri Lanka. We thought that it would be great to give some additional features such as hotel booking and give the tourists with some tour packages, so users get a good idea about where to go and where to stay. Also, users get a price with the tour package so can select the tour package according to the needs and wants of users and specially the tour packages which fit their budget. Users also have their own account in this application so they have the full control over hotel booking, so they can keep track of the hotels they book, and users have the option to cancel it. Overall, we decided to give all the functions to the system in order to make it not only a informative application but also an all in one application with some useful functions.

VI. CONCLUSION

1.4 billion people travel in the world in a year for various reasons for different countries in the world. In 21st century people use various traveling methods to travel. And lots of people do travelling as a hobby. There are lots of people like to travel to different countries and experienced new experiences in the world. There are lots of countries in the world that the main income of the country is tourism. Sri Lanka is also a county that depend on tourism it is one of main income to the country and there is lots of people in Sri Lanka that relies on tourism. If

tourist refuse to travel here it will do a big damage to the economy of Sri Lanka. This system mainly aims most foreign tourist other than local tourist at the development of the system. Now most people used internet and do some research about the travel destinations that they plan to travel. Intension of this project is to build a website regarding traveling named "Travel Go" to attract more tourist to Sri Lanka in this challenging time

This system helps the tourist to find best and most attractive places to travel while their stay in Sri Lanka traveling. In the home page of the system the users can find various tour packages available in the system and they can select any of them based on their travel budget and the time they stay in Sri Lanka. And there can read different blogs about most attractive travel destinations in here and the tourist can get an idea about the travel destinations that they have planned to travel the blogs include various information and pictures that would be helpful for a traveler. Not only travel packages if a tourist wants to find a good hotel to stay in Sri Lanka this system provide that facility as well to the users. Users can find many numbers of hotels all over the country from different price ranges. And the users can make their hotel reservations through the system. By using this system users can find lots of information about Sri Lanka. And this system can save lots of time of the users because they can fulfill their travel needs at one place. For further development team is planning to develop a mobile application to this system because now only the web-based application is available, After the development of the mobile application it will be easy to access for anyone from anywhere of the world.

REFERENCES

- [1] Vipul, A.M. & Sonpatki, P. (2016). *ReactJS by example-building modern web applications with react*. Packt Publishing Ltd.
- [2] Aggarwal, Sanchit. (2018). Modern web-development using reactjs. *International Journal of Recent Research Aspects* 5(1), 133-137.
- [3] Liu Z. (2003). Sustainable tourism development: A critique. *Journal of Sustainable Tourism*, 11(6), 459-75.
- [4] Sharpley, Richard. (2009). *Tourism development and the environment: Beyond sustainability?*. Routledge.
- [5] Naradda Gamage, S.K., Hewa Kuruppuge, R. & Haq, I.U. (2017). Energy consumption, tourism development, and environmental degradation in Sri Lanka. *Energy Sources, Part B: Economics, Planning, and Policy*, 12(10), 910-916.
- [6] Gössling, S. (2000). Tourism development in Sri Lanka: the case of Ethukala and Unawatuna. *Tourism Recreation Research*, 25(3), 103-114.