TRIPPLANNER: Embracing New Adventures in Pakistan "Providing Safe Haven to the Tourist"

Noor Ullah[1], Nor Afifah Binti Sabri[2], Minnu Helen Joseph3

[1]Student, BSc (Hons) Forensic Computing, Asia Pacific University of Technology & Innovation (APU)

[2,3]Faculty of Computing, Engineering & Technology, Asia Pacific University of Technology & Innovation (APU)

1noorullah-@hotmail.com, 2afifah@apu.edu.my, 3minnu.helen@apu.edu.my

Abstract
A "TRIPPLANNER" system which is a standalone application is being built to focus on the tourism industry of Pakistan. It is to help boost the tourism in Pakistan and also help the travelers that come to Pakistan by easing their planning for the trip. Most of the travelers use various apps to plan their trip but most of the time the apps are always missing out on something. The main aim of this project is to design and implement a windows-based system that would assist the tourists that opt to come to Pakistan. The system aims to provide all type of functions that the travelers use to plan their trip to a certain destination.

Keywords: Tourism, Application, Travelers, System.

1. Introduction

Travel and tourism have great connotation with other industries in the national economy making major ancillary earns and also augments foreign investment, opportunities of trade, investments in private, local development, and public infrastructure. Pakistan has an astonishing potential of tourism due to its prodigious culture, geographical and biological diversity, and history. Tourism has developed as an instrument for creating considerable economic gains. The country has various tourist destinations other mountainous ranges, and historical and archaeological sites.

Pakistan offers remarkable offers and miscellaneous opportunities for tourists which include trout fishing in the glacial waters of the northern region. Similarly, the jeep and camel safari in the Cholistan desert has definitely been an attraction for tourists over the years. Apart from these there are some breath-taking activities that include wild hunting and crabbing in the Arabian Sea.

However just like a coin, travelling isn't as easy as it seems like. You lean towards to face all sorts of obstacles when you visit a new place. That is however truly natural as you are not familiar with the environment and you need time to acclimatize to various situations that come on the go.

Specially, when we talk about travelling to Pakistan, then one must be ready to face all sorts of obstacles, if they determine to visit Pakistan [1].

2. Background

Pakistan's image in the world as a tourist destination is negative due to the existence of security issues in the country. The law and order issues do exist in some areas of the Pakistan; however, the reality is much better than the perception and the local and international media creates unnecessary sensationalizing, just to increase their viewership. Travel advisory reports are developed by the diplomats who rely only on the media and have no exposure to ground realities. This negative image becomes a strong barrier for the international tourists to travel to Pakistan and also discourages the domestic tourists for travelling. After years of fighting against terrorism in the region, Pakistan is finally considered as a safe country to travel to [2]. Travelers going to Pakistan have to face language barrier since most of the people living in

Pakistan face problems when it comes to understanding English.

Also, the fact that the country rules are not specified anywhere and even if they are, they are not written in English. Due to which foreigners often find themselves in trouble. Another major issue could be that tourists also face security issues as anything unpleasant event could take place and the tourists need to ensure that they remain safe. And, the fact that information stated on the internet is quite in general and not precise which makes it harder for the traveler to make important decisions. Mostly there is definitely a high chance of having lack of map support because of the fact that hidden roads and places are not that visible on various application [2].

Apart from these issues, the various travel systems available do not provide all the functionalities that the travelers require these days. Some systems have features that focus on a particular aspect of travelling. There are several travelers who find several problems when they travel. For instance, some of the travelers would look for halal food and also a place to pray. Similarly, the applications available ask for money if you are to use their premier features. A lot of travelers also tend to face communication problems as there is clear language barrier that varies from country to country.

Similarly, many travelers don't find accommodation according to their budget and even if they do it's not up to the mark. Also, the fact that routes and maps are not readily available on the internet and people struggle to travel in another country. Transportation is outlined as a major flaw when it comes to endeavoring, you're travelling ambitions. People are also not aware of the currency differences, so they end up spending more than their budget. Similarly, the local people are trying to manipulate the foreigners by over charging them.

2.1. Similar Systems

Several existing systems that are used for traveler to plan trip are available in internet. This section explains the difference between existing similar systems.

2.1.1. Travefy

Travefy can help you build travel itineraries, of each day and the good part about it is that you can actually invite your friends and add them to your trip. One of the key features that Travefy comes with is the ability to search for various destinations. Simply by keying in we can find good restaurants, sightseeing, and even a map to locate them. Travefy is built to assist various group travelers. There are numerous amazing features associated with this system that manage the trip collaborations, expenses and scheduling. Travefy aims to keep everything together in one place [3].Figure 1 shows the Travefy system.

Figure 1.Travefy system

2.1.2. TripAdvisor

TripAdvisoris one of the world's most popular websites for travel destinations and in terms of finding accommodation. However rather than serving online it aims to provide unbiased recommendations from various travelers. Being unique, TripAdvisor doesn't support and direct moving directions and allows its users to book everything through third party links that they find on the website [4].

TripAdvisor stands out as the most prominent usage of tourism systems available. Sites such as TripAdvisor allow users to share their post-trip experiences and because of this it has gained immense popularity [5].

However, even with positive reviews there has been a lot of criticism laid of TripAdvisor. The complaints made of TripAdvisor were considered coming from various third parties [6].

Figure 2. TripAdvisor

2.1.3. TripIt

TripIt, the world's highest-rated travel-organizing app, instantly organizes all travel plans in one place. Simply by forwarding the itinerary for each excursion the system will align your outing altogether. The top-notch service has all the organizing intensity of TripIt plus additional features that assistance members stay one step ahead while traveling. Real-time flight alerts, discount notifications, and the ability to track reward points and miles are just a couple of the additional benefits TripIt Pro members get. Companies can stretch out TripIt Pro to their employees, while managing travel plans from each reserving channel [7].

Figure 3. TripIt App.

4. System Development Methodology

The software development methodology is a framework that is acquired when it comes to plan, structure and control the processes of evolving an information system. This project was using Agile as system development methodology.

Agile is an iterative, team-based way to deal with development. This methodology stresses the quick conveyance of an application in total functional components. Instead of making tasks and calendars, record-breaking is time-boxed into stages called sprints. Each dash has a characterized span for a few weeks with a running rundown of deliverables, planned toward the beginning of the run. Deliverables are organized by business esteem as controlled by the customer. In the event that all planned work for the dash can't be finished, work is reprioritized, and the data is utilized for future run arranging. As work is finished, it very well may be looked into and assessed by the project team and customer, through day by day constructs and end-of-dash demos. Agile depends on an exceptionally abnormal state of customer involvement all through the project, yet particularly amid these reviews.

Figure 6. shows the Agile Model.

Figure 4. Agile Model

The complete system integrated a system which is defined as TripPlanner and is a desktop-based system. The system comes with the mechanism that allows the admin to add, delete and update various details that are embedded into the services offered by the system.

The admin adds information about the accommodation, historical places, famous eateries, tour guides, health services, money exchange services and travelling options to assist the customer to plan accordingly. The admin credentials are extremely vital so that any third party is restricted to access confidential data of the users and the organizations linked in the system.

The admin can also register the users by using their name, email, address, username and password so that they can access the system with their respective credentials. Only authorized registered users have the privilege of using the system. Addition and deletion

of the users is done in the database. After being registered the users can view everything without any obstacles. The admin has the control of updating the information which is linked to any of the services so that customer can get the desired option.

For the users who want to choose accommodation, they will have a range of options available in the city and they can choose according to their budget and requirements. Similarly, they can view the various captivating food options and opt according to their mindset. They can also view the historical places in the city and visit them as they are an essential part of a tourist's journey. Travelers also have the option of getting health services by knowing about the health centers and hospitals around the city. Similarly, they can acquire a tour guide's services as well which would enable them to explore the city with ease. Users can also know about various reputable money changers that are located around the city to ease their financial transactions.

The system has user-friendly interface with details of all the functionalities available in the system which allow users of all age to use the system effectively and without any hassle.

Figure 5. shows the designed Use Case Diagram.
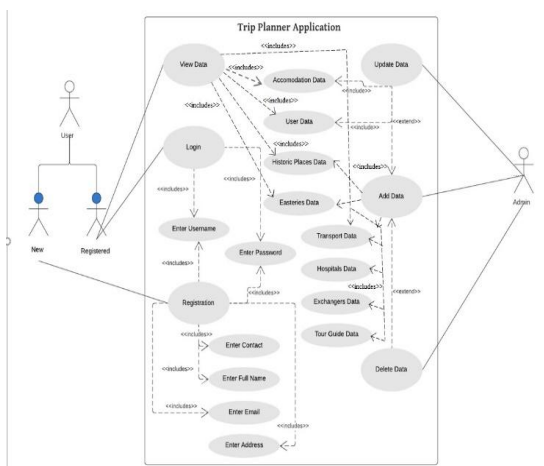
Figure 5. Designed Use Case Diagram

5. Implementation

The application starts with the Home Page shown below, indicating the two types of users for trip planner.Admin and user will login with their respective credentials.

Figure 6. Home Page

In the admin page, various entitiesassociated with the Trip Planner application. Being in the admin panel, the user can add, update or delete attributes for each of this entity. The logout button directs the admin to the Home Page.

Figure 7. shows the entities in the TripPlanner.
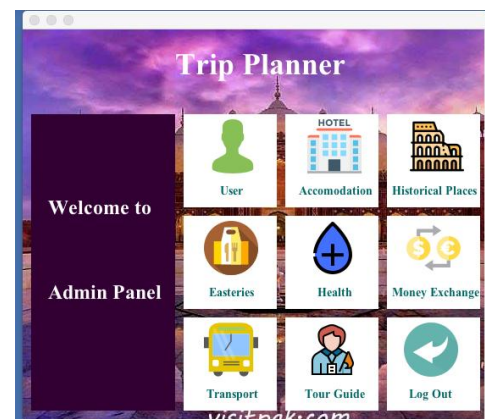
Figure 7. Features in admin panel

The 'User' entity is the most important one as accounts for a User are created by the admin to allow them and use TripPlanner as a User. The data for the attributes shown above are added for this entity and an image button adds a blob image for the user for its identity. The data entered can be either 'Added', Updated' or 'Deleted' as shown in the image above. Adding the User adds their record in the database. The username and password settled are used for Login as a User. Both should be unique. Figure 8 showsthe user management page.
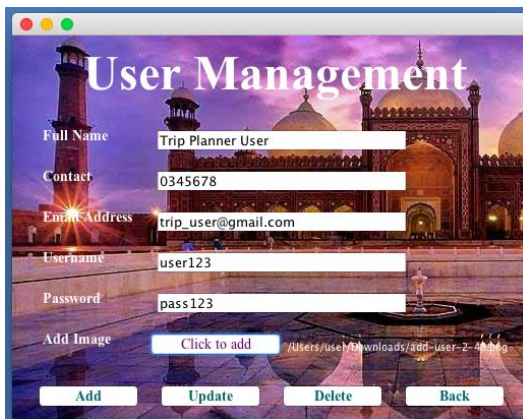
Figure 8. User Management page

Clicking the 'Add' button shows this dialog box that the account is created. The database record in figure 9 validates this. The table columns showing the added data in 'user' table of the database. These credentials can be used for Login.
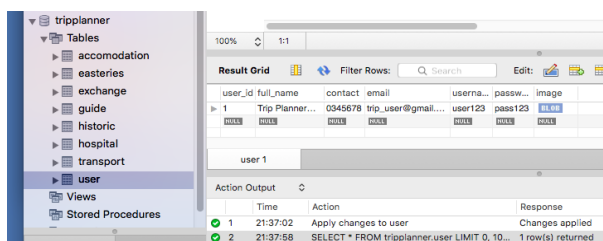

Figure 9. User Database

The add function first takes in all the fields from the textboxes, checks their verification through function defined for each type of verification. Then inserts data in those fields to the 'user' table in the database via the insert query shown above. The field variables are passed as parameters for the insert statement.

Figure 10. Code Snippet for Add Operation

The update function also takes in the field data in variables then performs the required checks. It then checks each variable individually, if it is not empty, it is updated using the Update query shown above and the success message shown. After the success message the updated field is set to null using the .setText("") method as shown above. The u_name variable gets the username from the system and makes updates for that specific username, the where clause in the update statement shows this. This update verification function assures this, that the username is always entered.

Figure 11. Code Snippet for Update User Data

Figure 12. Code Snippet for Checking Each Field

The Admin uses the Trip Planner to Add, Update and Delete data for the entities involved. The image above shows an example of addition of data for the 'Exchangers' entity. The admin can enter the fields and click add for this. In all entities except for 'User' there is no need to enter the username or password since there is no login or users for these. The update and deletion of data for these can be done using their ids, which is an auto-incremented field when data is being added in the database.

Figure 13. Money Exchangers page

The data below is added for the Hospital entity. After adding this data, the admin can click on the 'View Data' option shown above. This will show the entire list of the Hospitals, including the hospital that was just added. The admin can see the details of this list and point out the ID No of the Hospital they want to update or delete.

Figure 14. Hospital Management page

Clicking on the 'User' option from the Home Page opens the Login Page for the user, where they can enter their login credentials and log in the user panel to view data.

Figure 15. User Login page

The User Panel as shown in figure 16 has the same entities as the Admin Panel, the difference is that here clicking on the entity only gives the 'View Data' option whereas in Admin it gave Add, Update, Delete and View data options. The User entity here is called My Profile where the user can see their profile details.

Figure 16. User Panel

6. System Testing

Unit Testing and User Acceptance Testing had been run on this system to ensure that this system is fully functioned.

6.1. Unit Testing

Unit testing had been executed to observe how the system react with different inputs. The purpose of this unit testing is to observe and to check whether the system provides responses as what it had been programmed. Table 1 shows the Unit Testing for the system.

Table 1. Unit testingof the system functions.

Test Case	Action	Expected Result	Actual Result	Pass /Fail
Login	1. Leave username and password empty 2. Click 'Login' button	"Please enter the required fields."	"Please enter your username and password."	**Pass**
Add Data	1. Leave one of data blank 2. Click 'Add' button	Enter data in all the fields.	"One or more fields are empty."	**Pass**
Update Data	1. Leave data blank. 2. Click 'Update' button	"Enter data to update."	"Enter data in a field to edit."	**Pass**
Add User	1. Leave user data empty 2. Click 'Add' button	Enter data in all fields.	"One or more fields are empty" "Please	**Pass**
	button	Enter contact in correct form. Enter email in correct form.	enter contact in correct form" "Please enter email in correct form"	
Update User	1. Leave user data empty 2. Click 'Update' button	Enter username to update record Enter contact in correct form	"Enter username to update record." "Please enter contact in correct form."	**Pass**

6.2. User Acceptance Testing

User acceptance testing was conducted before deploying the completed system in order to test every functions in the system. Different categories of users had been invited to test the TripPlanner system.

7. Conclusion and Future Works

According to the problem stated out in problem context, a TRIPPLANNER system which is a standalone application is being built to focus on the tourism industry of Pakistan. It is to help boost the tourism in Pakistan and also help the travelers that come to Pakistan by easing their planning for the trip. Most of the travelers use various apps to plan their trip but most of the time the apps are always missing out on something. To resolve that a system would be there to support the tourists coming to Pakistan and to resolve their indispensable needs.

This project will help the tourists coming to Pakistan without any ambiguous opinion. Consequently, the staggering facilities will also motivate the travelers to come to Pakistan. The system will also help the

tourists to plan out everything in advance and do it efficiently.

There are several elements that need to be embedded into the system to make it more efficient. First of all, the system must be linked to all the organizations listed out in the system so that they can be updated at regular intervals to help customers in selecting the correct option. There should be a language translation facility available in the system to assist people who don't have English as their first or second language. A chatbot must be present in the system as well to allow users to clear out any of their ambiguities. Similarly, a voice recognition system must be present to entertain people who are blind. Visually impaired people must also have the facility of seeing the letters enlarged to ease their use. The last but not the least, the system should be implemented for all types of operating systems out there so that it could be used by various users.

Acknowledgments

References

[1] Muhammad Irshad Arshad, M. A. I. & M. S., 'Pakistan Tourism Industry and Challenges: A Review', in 2018Asia Pacific Journal of Tourism Research, 23(2), pp. 121-132.

[2] Rana, A. U. R., 'A Position Paper on Challenges Faced by Tourism Industry of Pakistan, Islamabad', in Sustainable Tourism Foundation Pakistan, 2017. [Online]. Available:https://www.tourism-generis.com/_res/file/5265/52/0/Position-Paper_Tourism-in-Pakistan.pdf. [Accessed: 28-Mar-2019].

[3] Page, R., 'Travel planning apps.', 2017. [Online]. Available: https://www.choice.com.au/travel/on-holidays/advice /articles/travel-planning-apps. [Accessed: 28-Mar-2019].

[4] Law, R., 'Internet and Tourism – Part XXI: TripAdvisor', in 2006Journal of Travel and Tourism, 2006, 20(1), pp. 75-77.

[5] Pasquarelli, A.., 'TripAdvisor Plans a Social Network via New Feed, Site and Partners', 2017. [Online]. Available: https://adage.com/article/cmo-strategy/tripadvisor-lays-social-feed-site-partners/314958/ [Accessed: 28-Mar-2019]..

[6] Vasquez, C.., 'Complaints online: The case of TripAdvisor', in 2011Journal of Pragmatics, 2011, 43(6), pp. 1707-1717.

[7] TripIt, 'About us', 2019. [Online]. Available: https://www.tripit.com/web. [Accessed: 28-Mar-2019].