

Online Travelling Planner: An Interview and Use Case Testing

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Abstract: This study developed an “*Online Travelling Planner*” based on the waterfall methodology. The online travelling planner enables tourists to plan their tour through features to book a hotel, flights, and famous locations through one platform. Traditional travel agencies incorporated with various issues that lead tourists to online travel agencies. The primary issue is the COVID-19 pandemic that restricts face-to-face interaction. Consequently, it takes the tourists a longer time to book a tour in a traditional travel agency. Use case based testing has been performed to evaluate the system functionalities. In a nutshell, an “*Online Travelling Planner System*” would be an alternative to be used by tourists for their tour plans.

Keywords: Use case testing, Waterfall Model, Structured Interview

1. Introduction

Travel is a trip from one location to another, regardless of the distance as part of one's job, during leisure and for any reason, using any mode of transport by air, land or sea [1]. Services such as searching for well-known restaurants, hotels, airlines, and other renowned locations are commonly provided by travel agencies.

The dominant roles of travel agencies are services, reservation, information, and distribution [2]. In addition, travel agencies implement a set of procedures to assist tourists to go on a tour. The first step is the customers would go to the travel agency's office to ask about the deals they provide. The travel agency will ask some questions related to the tour, such as deals, where the tourist wants to go, and the places the tourist wants to visit. Then, the tourists and travel agents would discuss the budget expected for the travel. Finally, the customers would pay the amount charged for the tour before the actual trip.

Even though the traditional travel agencies have opted for quite a while, there are several considerable advantages in using online travel agencies. Firstly, the intermediaries such as wholesalers,

the supplier takes up additional commission than needed [3]. Second, the trust issue between tourists and travel agencies exists because the travel agent sells different prices for different customers. The lack of customer reviews and Google Maps in traditional travel agencies makes online travel agencies more preferred than traditional travel agencies. Moreover, during the COVID-19 pandemic, which restricts face-to-face discussion, the online travel agency is the best choice for tourists.

Some well-known online travel agencies such as Traveloka, Pegipegi, and Agoda are reviewed as a reference before developing the online travel planner.

Table 1 : Comparison between existing systems

Comparison Criteria	Traveloka	Pegipegi	Agoda
Ability to book all services	Yes	Yes	Yes
Sorting search result	Yes	Yes	Yes
Hotel	Yes	Yes	Yes
Famous Location	No	No	No
Rating	Yes	Yes	Yes
Customer Reviews	Yes	Yes	Yes
Favourite Icon	Yes	No	Yes
Flight	Yes	Yes	Yes
Google Map	Yes	Yes	Yes

Traveloka is designed to provide the ability to book all services at a time, such as hotels and flight booking. Tourists may use Traveloka's sorting feature to sort returned search results only based on what the users filtered. Tourists would be able to search for hotels and flights using the search bar. As a result, tourists may pick the most suitable and convenient facility based on the price and provided facilities. In addition, the Traveloka website has some crucial features such as rating, customer reviews, and favourite icon. Traveloka also provides a customer reviews section where a customer can review the experience in the hotel. These features become handy for the tourists to select the best hotels, flights, and famous locations. Tourists can also visualise where the locations are using Google Map in Traveloka. Unfortunately, the Traveloka website does not display the famous location in a specific country or city.

The Pegipegi website provides the ability to book services such as hotels, flights, and famous locations with the sorting functionality to search results based on rating, prices and facilities provided. Tourists can easily pick a nice, pleasant hotel and a flight for a journey by viewing the details listed out on the Pegipegi website. However, the Pegipegi website did not show well-known locations or offer a favourite icon feature. Thus, tourists might not be able to found the famous location that can be visited during the travel, and tourists could not bookmark a hotel or other services. Additionally, the Pegipegi system offers a rating, customer reviews and google map features.

Agoda provides hotel and flight features to tourists. Tourists can check out the hotel and flight information for reservation. Tourists can book flights and hotels in Agoda to sort out the result based on specific criteria such as budget and quality. Agoda provides a Google map feature for the user to better view the travel location. Agoda also has rating, customer reviews and favourite icon functionality. The tourists would also benefit from using these functionalities and find a suitable service to have a fantastic journey. Tourists could save a specific search result using the favourite icon feature. However, Agoda did not include famous locations on the website.

In this study, a system called an “*Online Travel Planner*” is developed primarily to solve the issues faced by tourists with the travel agency, especially during the pandemic season. This system provides an integrated service consisting of a best-fit hotel, low budget flight, famous locations and assign a travel agent to the tourists. Therefore, the tourists could manage the tour entirely through the use of this

online travel agency. The system can be utilised by the travel agency, travel agents as well as actual tourists. The process of consulting the “*Online Travel Planner*” is similar to the process implemented in the traditional travel agency. The following section will discuss the materials and methods used in this study.

2. Materials and Methods

This study adopts the Waterfall methodology in implementing the “*Online Travel Planner System*”. The waterfall method is a systemic and sequential implementation paradigm for information systems [4].

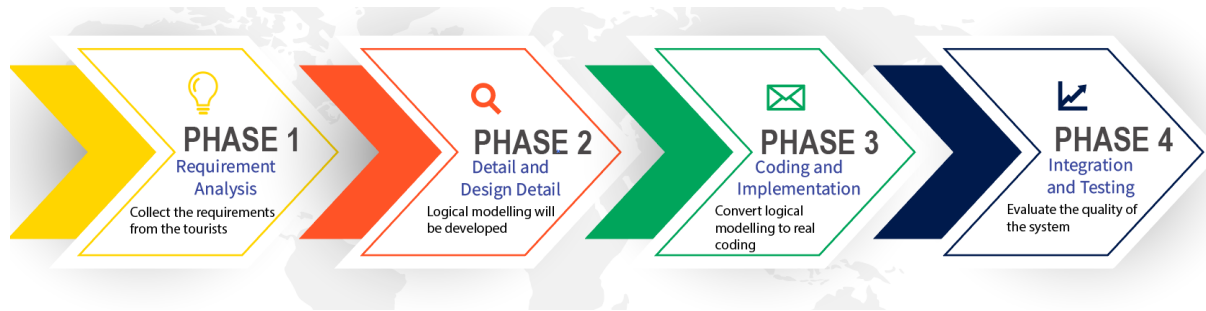


Figure 1 : Waterfall method

A waterfall model consist of four phases namely requirement analysis, detail and design detail, coding and implementation, and integration and testing [5]. The first phase is carried out to collect the requirements from the tourists who will be using the “*Online Travelling Planner*”. A structured interview has been performed where the interviewees are asked pre-determined questions [6] to collect the functional and non-functional requirements for the system. The interviewees are the students of the Center for Diploma Studies (CeDS) at University Tun Hussein Onn (UTHM). The meeting is conducted via Google Meet for seven hours. Beforehand, a Google meet link is provided to the participants through a personal WhatsApp group. Firstly, 36 students from Department of Information Technology have been selected randomly. Six of them were not able to participate in the interview, thus the interview is conducted with only 30 of the students. Then, they are divided into three groups, with each group has ten students. Each group is administered by the three of the authors as the interviewer. The interviewer will ask the interviewees a set of pre-determined questions while the interview is recorded using “Apowersoft” screen recorder application to document and analyse the elicited requirements. Subsequently, the interview feedback is documented in Microsoft Word and analysed using Statistical Package for the Social Sciences (SPSS) software version 26.0 to analyse the interview feedback. **Table 2** lists the interview scripts.

Table 2 : Interview Scripts

No.	Questions
1.	Do you have any travel experience before this?
2.	Do you travel in groups or individual?
3.	Do you deal a tour with a travel agency before this? If Yes, what is the process?
4.	How do you plan your travel itinerary?
5.	What is your consideration in choosing the popular places?
6.	What problems do you face with the travel agencies nowadays?
7.	Why these problems are considered as problems based on your opinion?
8.	How do you solve this problem?
9.	What functionality do you think is needed in an Online Travelling Planner/Dealer System to enhance the user experience?

The second phase describes the preparation and the problem-solving process [7]. The design phase plays an essential role in apparel, algorithm design, architecture, engineering projects, conceptual database schema, graphical user interface, product development, and art [8]. In this phase, the flowcharts, diagrams such as Data Flow Diagram, Entity Relationship Diagram, and, Flowcharts are generated.

In the third phase, the diagrams from the design phase are converted to accurate coding using HTML, CSS, PHP, and JavaScript programming. The requirements elicited from the interview is utilised to develop the “*Online Travelling Planner*”. **Figure 2** shows the developed plan travel features on the tourist page. The user can search for a place or destination by listing the required information such as current location, destination, departure date, return date and type of travellers.

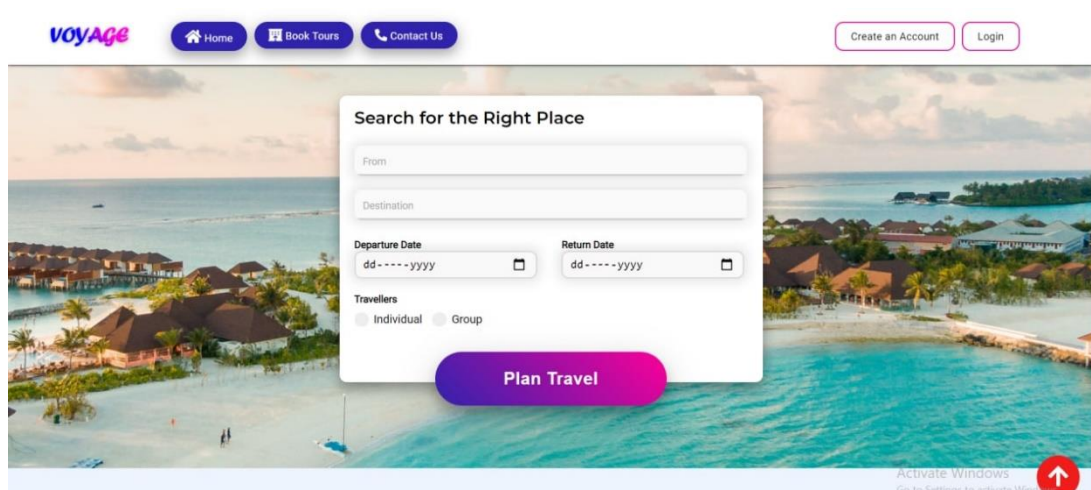


Figure 2 : Search input field

Figure 3 resulted from user search of **Figure 2**. The filter section on this page allows the user to sort out the displayed information based on their preferences, such as price, facilities available, ratings, and meal plans.

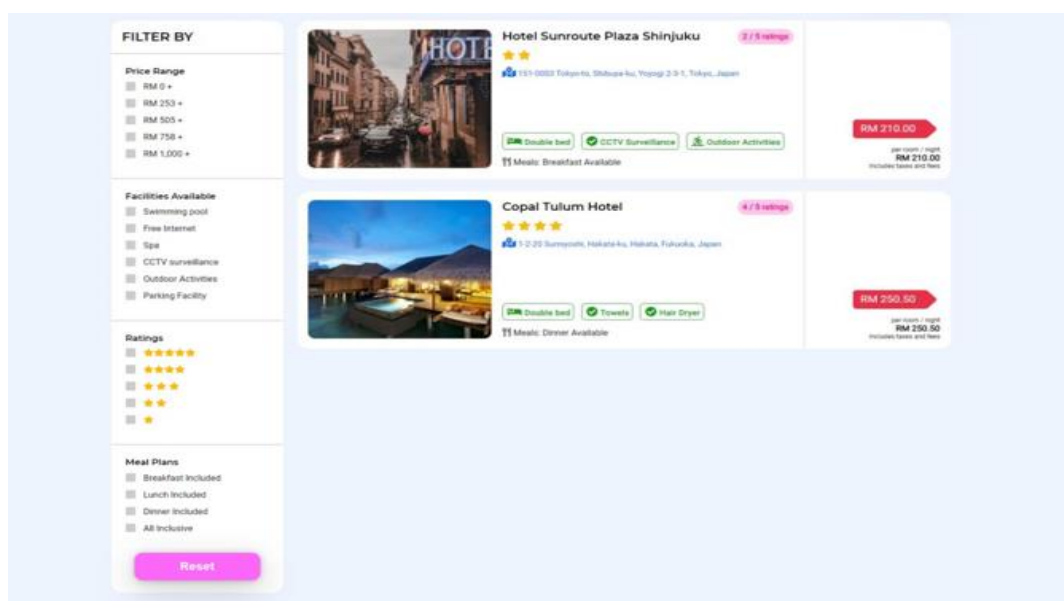


Figure 3 : Filter Section

The fourth phase is where the testing of the system takes place to evaluate the quality of the system. After the “*Online Travelling Planner*” has been developed, use case testing was performed to evaluate

the system. The use case testing is also known as subfunction use cases [9], [10]. The template for the use case testing is adopted from IEEE Standard for Software Test Documentation [9]. The template includes details required on the project name, test case specification ID, a test designed by field, test designed date field, test title, test description, pre-condition, steps, and expected results before the testing is executed. During the testing phase, the test executed by field, test execution date, test data, actual result, and status are filled.

Project Name: Online Travelling Planner						
Test Case						
Test Case Specification ID: ID_3		Test Designed by: Taruna Kugan		Test Executed by: Taruna		
Test Priority (Low/Medium/High): High		Test Designed date: 18 June 2021		Test Execution date: 18 June 2021		
Test Title: User Login.						
Description: Test whether the pop-up form is working or not. Test whether the user is able to login.						
Pre-conditions: The pop-up window for creating an account must pop-up. The user must enter valid values for their name, email, password, and, phone number.						
Dependencies:						
Step	Text Steps	Test Data	Expected Results	Actual Result	Status (Pass/Fail)	Notes
1.	Click "Create An Account" button on the navigation pane.	<Taruna>	The pop-up window popped up.	The pop-up window popped up.	Pass	
2.	Provide valid name.	<tarunakugan1851@gmail.com>				
3.	Provide valid email.	<taruna1851>				
4.	Provide valid password.	<01122130230>				
5.	Provide valid phone number.					
6.	Click "Submit" button.	<Taruna>	Navigate to home page with success message.	Navigate to home page with error message.	Pass	

Figure 4 : Use case to test user login

There are a total of 14 use cases that test 14 different functions of the system. The results of the use case testing are 100% passed, and the failed test cases are 0%.

Table 3 : Tested functions with use cases

Test ID.	Functions	Test Result
ID_1	Navigation buttons in the system.	Pass
ID_2	Creating an account for the tourists.	Pass
ID_3	User login.	Pass
ID_4	Tourist searching for a hotel.	Pass
ID_5	Filter section to filter the results based on user preferences.	Pass
ID_6	Google Maps for a specific hotel.	Pass
ID_7	Writing reviews for hotels.	Pass
ID_8	Admin search for a specific hotel.	Pass
ID_9	Admin adding a new hotel.	Pass
ID_10	Admin editing the existing hotel's information.	Pass
ID_11	Admin deleting a specific hotel's information.	Pass
ID_12	Travel agent searching for a specific tourist's information.	Pass
ID_13	Travel agent editing their personal information.	Pass
ID_14	Admin verification before logging in to the account.	Pass

Table 3 lists the tested functions of the system. Fourteen different functions have been tested. The result indicates that all of the functionalities of the system has been implemented without any issues.

3. Results and Discussion

This section presents the results and discussion for the interview, use case testing, and the developed system.

3.1 Results

30 Diploma students from University Tun Hussein Onn Malaysia (UTHM) has been invited to participate in an online interview. The primary purpose of the interview is to obtain system requirements from user to develop an “Online Travelling Planner”, identify the problems in the traditional travel agency, and obtain suggestions or solutions to overcome them for implementation in the developed system.

Figure 5 shows the number of students interviewed that have travelled overseas, local, and both. More than 70% of the interviewee have experiences in travelling locally.

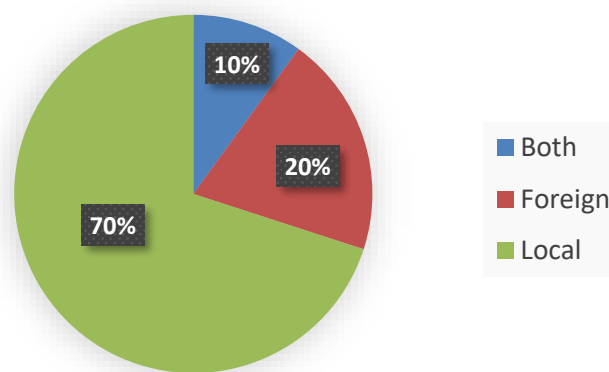


Figure 5 : Types of travel experience

Figure 6 shows what is the consideration of tourists when going to tour places. A total of 19 interviewees has chosen the famous locations as a consideration in choosing the popular places. The interviewees defined famous location by a place history and culture, scenery, season, and attraction. The result indicates that famous location received the most excellent attention from the user as 63% as the top consideration in identifying popular places.

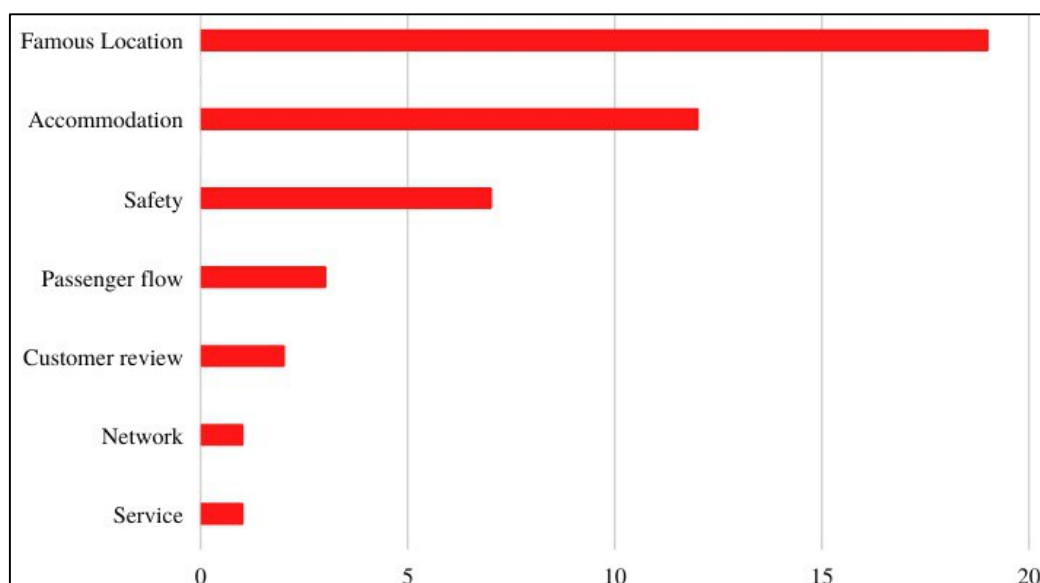


Figure 6 : Consideration in choosing the popular places

Figure 7 shows the issues faced by tourists when dealing with travel agencies. The undetailed information category is the problems most interviewees face, which are approximately 17% of them. Undetailed information is where the travel agency does not provide detailed information to the tourists on the tentative of the travel.

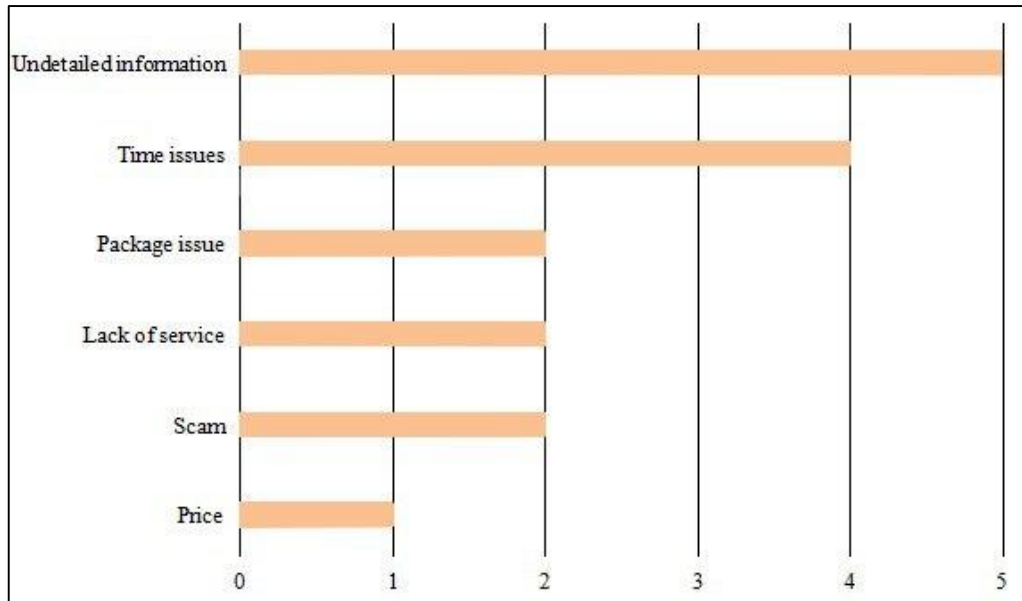


Figure 7 : Problems faced when dealing with travel agencies

Figure 8 shows the functionality required in an online travel agency. Fifteen interviewees requested Google Maps functionality in an “Online Travelling Planner” to enhance the user experience. Google Maps functionality allow the tourists to get to know where they will be visiting by road.

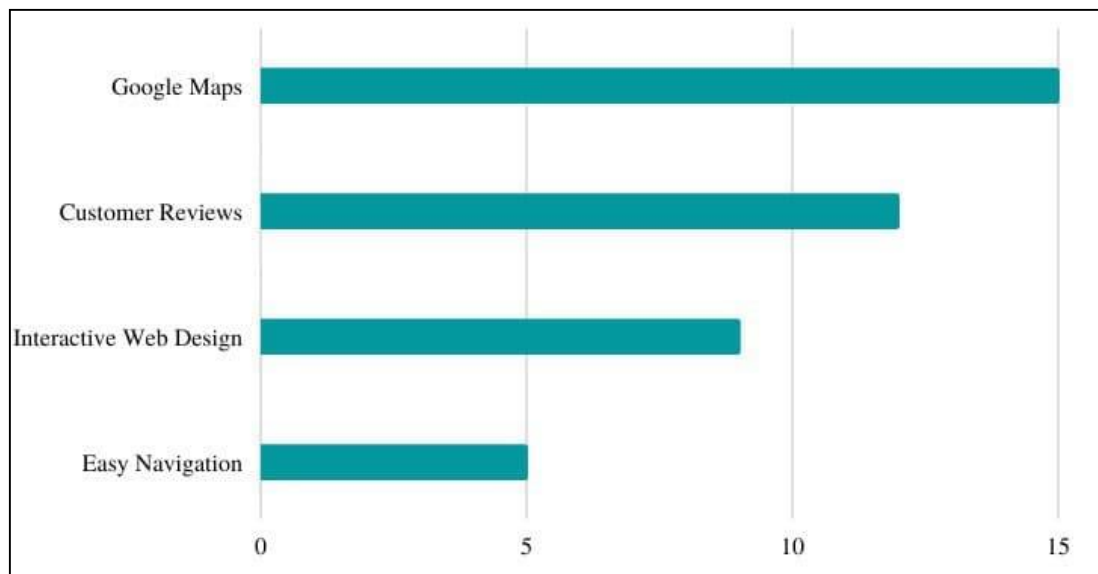


Figure 8 : Required functionality in an online system

3.2 Discussions

The interview from the 30 students assisted in developing this system as they have travel experience. They were asked about their consideration when choosing popular places, problems in traditional travel agencies, and suggestions of functionality needed in an “*Online Travelling Planner*”.

This system is developed by addressing the problems faced by the interviewees. Finally, use case testing is performed to test the system functionalities. The testing evaluated to 100% pass.

4. Conclusion

This study has developed an “*Online Travelling Planner*” as an integrated service for the tourists through features to book hotels, aeroplanes, and famous locations. The structured interview was conducted before developing the “*Online Travelling Planner*” to identify the functional and non-functional system requirements. The system also covers the functionalities suggested by the interviewees, such as Google Maps, customer reviews, as well as, easily navigable links. The system provides helpful features that display the hotel, hotel room, flight, and famous locations as a package to the tourists. The system sends emails to the tourists about their assigned travel agent for the tourist as a reference for consultation. However, this project is the system is not implemented on a live server. In the future, this system can be upgraded with more advanced technology.

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