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Self-Planning Traveller System

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ABSTRACT

This study aimed to understand the problems faced by self-planning travellers when they plan for a trip by searching travel information from the Internet and propose a system to facilitate the self-planning travellers to obtain useful travel information. An online survey was conducted via social media to understand the problems, the search criteria and types of content of travel itinerary needed in facilitating the planning. A total of 65 responses were collected. The results showed that there were too many unrelated information on the Web and travellers were unsure of where to start the search. Also, the result revealed that the search criteria needed to generate travel itinerary were travel date, travel duration, travel country and travel budget. Finally, flight schedule, hotel accommodation, sightseeing places, travelling route and things to do were the information required by travellers for their travel itineraries. Based on the results, a travel itinerary recommendation system named eTravelPlanner is proposed.

Keywords: *self-planning, traveller system, recommendation system, travel itinerary, web based system*

INTRODUCTION

The report from World Tourism Organisation (UNWTO) mentioned that international tourism generated 2 billion USD in 1950, 104 billion USD in 1980, 494 billion USD in 2000, and 1220 billion USD in 2016 [1] that are expected to increase in the coming years. From Malaysian perspective, the increase in tourist arrival had risen from 24.577 million in 2010 to reach 26.757 million in 2016 [1]. Despite the economic crisis facing the globe, the total generated revenue of tourism to Malaysian economy stand at 4.9% of the country GDP representing 18,115 million dollar in 2016 [1]. The increase of tourism to Malaysia had also lead to the rise of travel agency in the country. The travel agencies also developed group package tour for the tourists, but they had become unfashionable due to the difficulties the travellers face upon embracing these packages. For example, some people like to visit historical places whereas some people like to do shopping during the travel. This will create conflict between the travellers and difficult to proceed the travel smoothly. Thus, the tourists nowadays plan their own journeys, and they get many benefits such as lower flight ticket and conflict avoidance with the fellow travellers'. These self-planning travellers used internet, tourism brochures, friends and newspapers as their most sources of information. However, some of these information are scattered everywhere on the web and not useful for trip planning. Many of these difficulties have been confirmed by many of the previuos online studies [2].

The internet has become one of the most important sources for tourist to obtain travel information [3-4]. However, many tourists had faced frustrated experience when they utilised the internet for planning their journeys [5]. This is because these travellers search information based on their educational knowledge, personal characteristics, travel experience, tasks, and stages of vacation planning [5-6]. These have resulted in getting obsolete information due to the misuse of the right keywords or phrases when searching for the travel information on the web and the tourist are often overwhelmed by the huge available data. The low income travellers' have the higher perceived risk that leads them to search extensively on the web before they embark on their journey [7]. Thus, this study aimed to understand the problems faced by the self-planning traveller when using the Internet for trip planning and proposed a system named eTravelPlanner to

solve the traveller problems. The eTravelPlanner is a web-based system that provides multiple travel itineraries recommendation. The system applied artificial intelligence (AI) technology to obtain latest and accurate travel information from the cyberspace based on the criteria chosen by the user and constructs several travel itineraries recommendation to the user. Hence, this study will offer many benefits to the self-traveller such as reduced the time for searching on the web, prevent travellers from acquiring outdated or inaccurate information and provide a platform to obtain useful and reliable information for trip planning. The next section will provide a brief review of the existing online travel systems.

EXISTING ONLINE TRAVEL SYSTEM

The purpose of these discussions is to examine the weaknesses that exist among the existing travel online system that will provide the justification for the implementation of the propose eTravelPlanner.

Based on the report released by [8], the top four most popular online travel systems in 2017 were; Booking.com, tripadvisor.com, Yahoo! Travel, and Expedia.com which is ranked based on the number of monthly visitors to the websites. Booking.com is basically an online accommodation booking website which allows the traveller to book for hotel room, homes or apartment when they plan for a trip [9]. The advantage of Booking.com is that the user can choose the most suitable room by filtering the features such as budget, hotel rating, reservation policy, meals, property type, bed preference, review score, room facility and among others. However, Booking.com has property adverts that make users lose focus while browsing the site. It also lacks travel forum and travel blog that allow users to locate other travel information from other related website.

The second popular online travel website of 2017 is tripadvisor.com that provides traveller to book a hotel, plan a flight journey, find restaurants and look for particular travel destination [10]. It allows the traveller to view all of the information at a glance and has travel forum that travellers can use for discussion and sharing of their journey experience among the travellers. The advantage of TripAdvisor is that users can search and compare the prices

of the hotel between multiple booking websites that allow the traveller to get the best deal.

Yahoo! Travel is the third most visited travel website of 2017 with an estimated visitors of 36 million per month. Visitors can view latest articles on tourism around the globe, get travel guides and see the latest travel offers from several travel agencies.

The next popular online travel website is Expedia.com that allows traveller' to book a flight, hotel, car rentals, cruises and various travel packages [11]. It has also travel blog but does not have travel form. The main advantage of Expedia.com is that it offers a bargain for the traveller when both hotel and flight reservations are booked at once.

PassportChop.com is basically a collaborative blog written by a group of individuals to share the travel experience, thoughts and travelling recommendations to the reader [12]. The PassportChop.com does not have travel forum, and travellers cannot make a hotel reservation via the website. However, it has won accolades three times in the row in the year 2009, 2010 and 2011 from international blog communities.

The above discussion had shown that there is currently exist some lapses with regard to the existing online travel site system. To overcome the above limitations, this study proposes a new travel online booking system named eTravelPlanner. The summary of the limitation from each of the reviewed online travel system are outlined in Table 1, with the last column showing the proposed features of eTravelPlanner that aimed to overcome the identified limitation of [9-11] the system.

Table 1: Comparison between Existing Online Travel Systems and eTravel Planner

Features	Booking.com	Tripadvisor.com	Expedia.com	PassportChop.com	eTravelPlanner
Graphical user interface (GUI)	Moderate	Simple	Simple	Moderate	Simple
Travel forum	No	Yes	No	No	Yes
Travel blog	No	No	Yes	Yes	Yes
Places and activities recommendation	Yes	Yes	Yes	No	Yes
Travel itinerary recommendation	No	No	No	No	Yes
Online booking	Yes	Yes	Yes	No	No

The Research Design for Information System (RDIS) methodology was utilised in this study. A self-administered questionnaire was developed and consisted of three sections with nine questions in total. Section 1 seeked to acquire the demographic data of the respondents. Section 2 implored the problems faced by the respondents when searching for travel information on the Web and Section 3 acquired the search criteria and content of the trip itinerary from the respondent. A convenience sampling, a form of non-probability sampling was used to select the respondents. The convenient sampling method is a statistical method of drawing data by selecting the respondents based on their availability or easy access to the survey [13]. Hair, Black [14] stated that this sampling method could be used to select a large number of sample members who could provide the required information and are available to participate in the study. Moreover, convenience sampling is cheaper and provides easy access to the target population [15]. The questionnaire was created in google form, and the link was posted in some travel discussion groups on Facebook and travel blogs. The result of the survey is generated using the statistical tools embedded in Google Forms.

RESULTS AND DISCUSSION

Among the questionnaire distributed, 65 responses were used for the analysis. From the total respodents, 72.3% of the respondents were male, while the remaining 27.7% were female. Majority of the respondents were age between 25 – 34 years old while the remaining one-third were aged between 35 to 44 years old. For the respondent's education level, 49.2% possesses Bachelor degrees, 23.1 had SPM, 16.9% with STPM qualification while only 10.8% possesses Master's degree. Out of the 65 respondent's, about 20 of them (30.8%) take around eight hours to plan their travel itinerary to unfamiliar places as shown in Figure 1. This reveals that over half of the respondents spend not fewer than six hours for planning their itinerary.

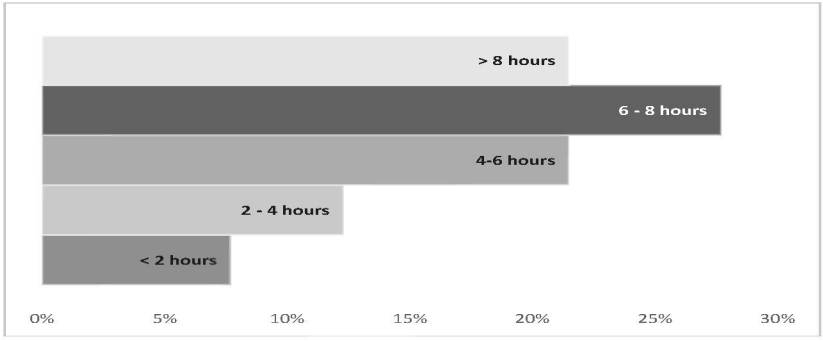
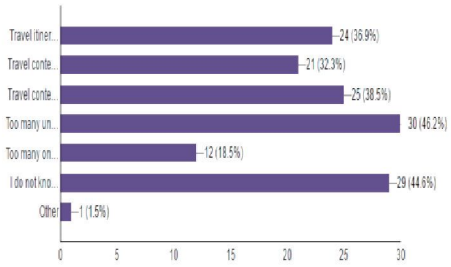


Figure 1: Travel Itinerary Planning Time

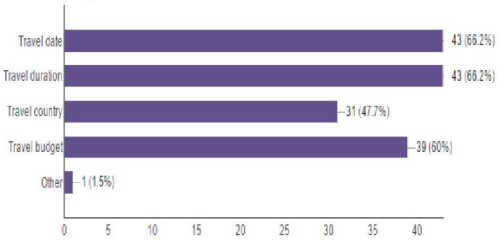
The problems faced by the self-planning traveller are outlined in Figure 2. The figure shows that 46.2% of respondents revealed that they faced 'Too many unrelated information', 44.6% stated the problem to be 'I do not know where to start the search' during trip planning, 38.5% indicated 'Travel content is not trustable', 36.9% indicated 'Travel itinerary is incomplete', 32.3% also revealed 'Travel content is outdated' while 18.5% indicate 'Too many online advertisements'.



Travel itinerary Is incomplete	24	36.9%
Travel content is outdated	21	32.3%
Travel content is not trustable	25	38.5%
Too many unrelated information	30	46.2%
Too many online advertisement	12	18.5%
I do not know where to start the search	29	44.6%
Other	1	1.5%

Figure 2: Problems of Searching Travel Information on the Web

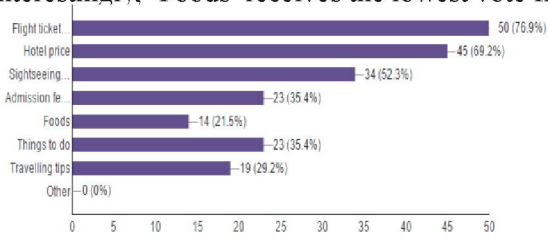
The result in Figure 3, present the criteria's that the self-planning traveller used while planning for trip. The figure reveals that travel date and duration receive equal votes of 43 while travel budget got 39 and travel country got 31 votes.



Travel date	43	66.2%
Travel duration	43	66.2%
Travel country	31	47.7%
Travel budget	39	60.0%
Other	1	1.5%

Figure 3: Information Needed to Plan for a Trip

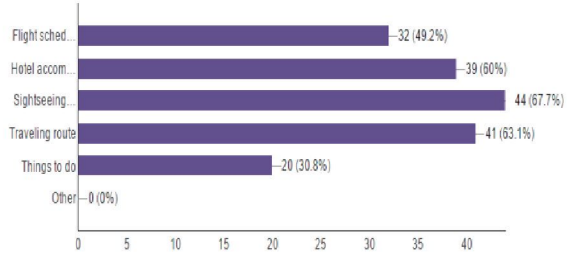
Subsequently, results in Figure 4 indicate items that the self-planning traveller searched for. From the figure, the most searched item were 'Flight ticket price' and 'Hotel price' followed by 'Sightseeing places' whereas the same vote was allocated for both 'Admission fees' and 'Things to do'. Interestingly, 'Foods' receives the lowest vote from 14 respondents.



Flight ticket price	50	76.9%
Hotel price	45	69.2%
Sightseeing places	34	52.3%
Admission fees	23	35.4%
Foods	14	21.5%
Things to do	23	35.4%
Travelling tips	19	29.2%
Other	0	0.0%

Figure 4: Information Search on the Web to Plan for a Trip

Likewise, Figure 5 illustrates different items that are needed by self-planning traveller while on the trip. Results from the figure revealed that sightseeing places receive a total of 44 votes, followed by travelling route with 41 votes. Lastly, results indicate that only one respondent disagree that the recommendation made by travel itineraries are not helpful for the Self-planning traveller.



Flight schedule	32	49.2%
Hotel accommodation	39	60.0%
Sightseeing places	44	67.7%
Travelling route	41	63.1%
Things to do	20	30.8%
Other	0	0.0%

Figure 5: Information Required in Travel Itinerary

In summary, the self-planning traveller main obstacle when planning for the trip are: the appearance of many adverts, travel itinerary not complete, lack of knowledge on how to start the search, travel content is outdated, and appearance of many redundant information on the website. The proposed system main criteria's for generating travel itinerary were flight schedule, hotel accommodation, sightseeing places, travelling route, and things to do.

PROPOSED IMPLEMENTATION

The proposed system tag eTravelPlanner, is a web-based system that provides the self-planning traveller with multiple itinerary recommendations. The proposed system uses neural network together with artificial intelligence to acquire latest and accurate information from the web. The proposed eTravelPlanner system home page is shown in Figure 6.

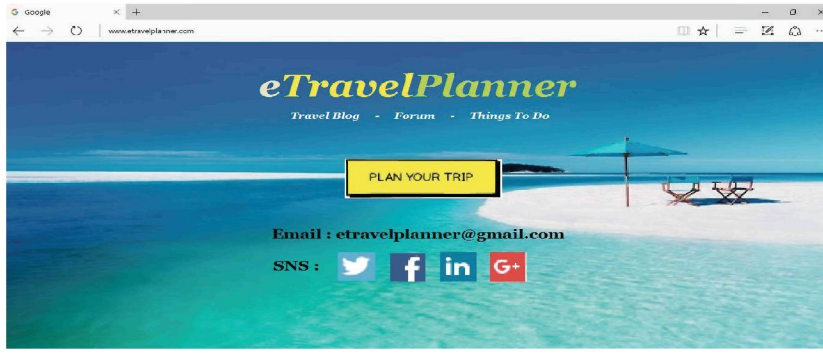


Figure 6: Homepage of eTravelPlanner

The travel itinerary recommendation function began by clicking on the 'plan your trip' button. The admin can be contacted in case the user wants to place adverts or make suggestions on the website. Upon clicking the 'plan your trip' button, the search function appears as shown in Figure 7.

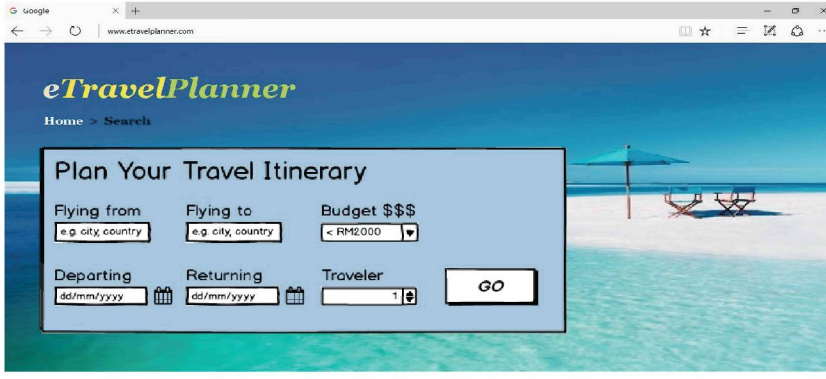


Figure 7: Search Page for Travel Packages

After the user clicks on the 'Go' button, the result of the search will appear with the total amount for the travel budget. It will display the best deals for the hotel flight that the user can select from as shown in Figure 8.

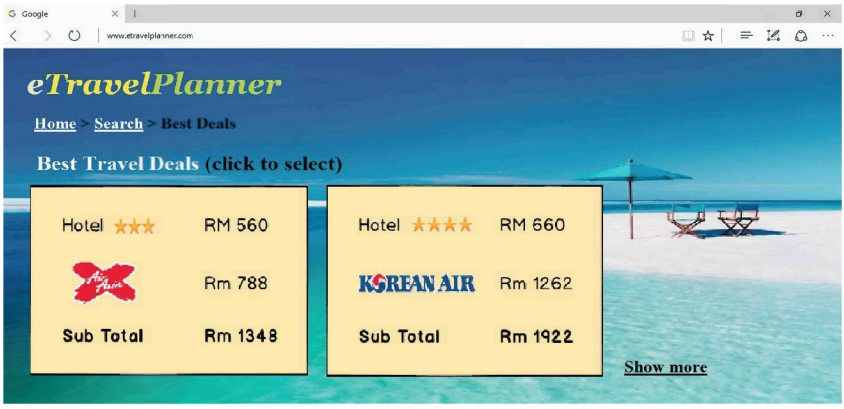


Figure 8: Examples of the Best Travel Deal

Upon selecting the best deal, the system will calculate the remaining budget as presented in Figure 9.

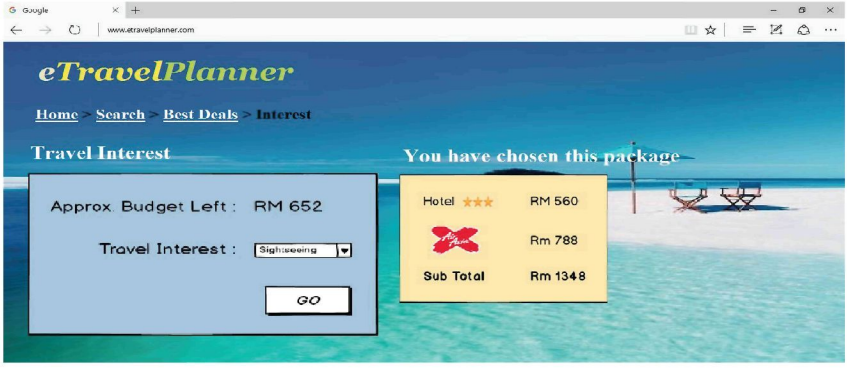


Figure 9: Travel Interest Page

The system will then generate the most affordable travel activities and place using the travel budget and travellers interest as shown in Figure 10.

Figure 10: Travel Activity Page

Then the user can select the desired travel activities that will prompt for full travel itinerary detail to be displayed as can be seen in Figure 11.

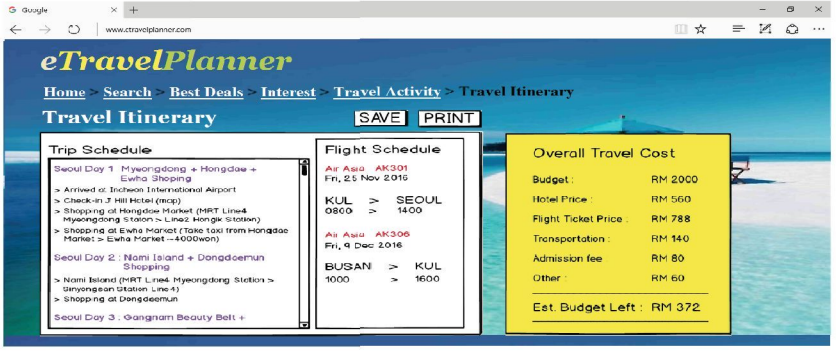


Figure 11: Travel Itinerary Recommendation for Self-Planning Traveller

The next screen containing trip schedule, flight schedule and overall travel cost are displayed in Figure 12. The trip schedule contains the user travel activities for the whole expedition, the flight schedule contains the use is used to display full information for the flight while the estimated expenditure that gives the estimated expenditure plans for shopping and eating for the duration of the trip is displayed under the 'overall travel cost'. Lastly, the travel itinerary page can be bookmarked by the user to either save or print the trip schedule.

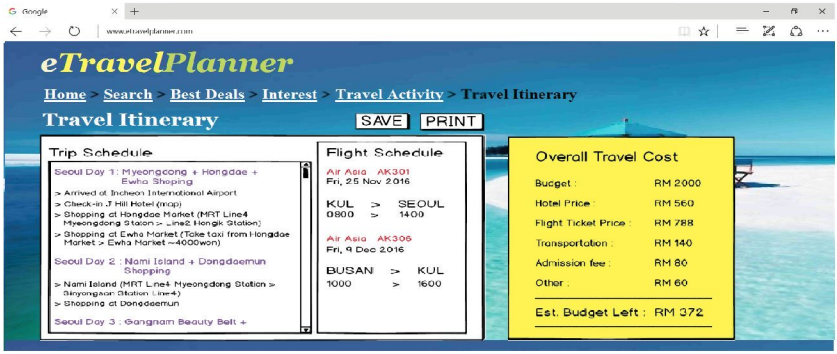


Figure 12: Travel Itinerary Recommendation for Self-Planning Traveller

The user can then view detail travel route of the trip by clicking on 'Seoul Day 1' as displayed in Figure 13.

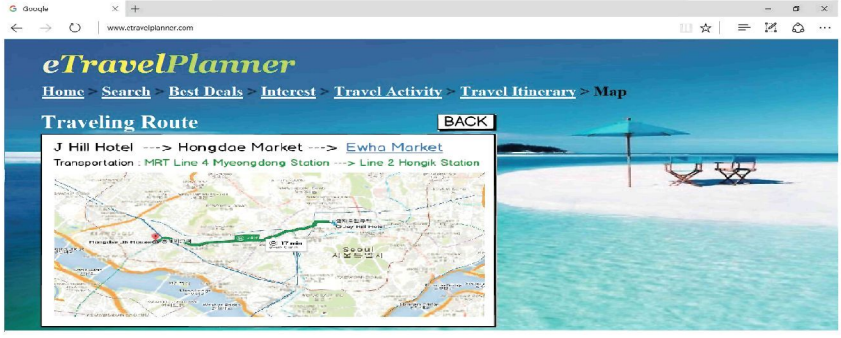


Figure 13: Recommendation of Travelling Route and Type of Transportation

The next screen tag 'travel blog' that provide a flat form for sharing their experience is displayed in Figure 14. The traveller can enter a keyword in the box to get information of their interest.

Figure 14: Travel Blog

CONCLUSION AND FUTURE WORK

Most of the self-planning traveller faced some difficulties while planning their trip through booking travel websites. Thus, the study identified the issues confronting the self-planning traveller through conducting a quantitative survey and developed a new system called eTravelPlanner to solve the identified problems. The study has some limitations though. The first being that the study uses non-probability sampling and hence it cannot generalise the result to the entire population. The second limitation is that the study did not provide a vivid discussion on the technique used to develop eTravelPlanner system. Future studies can extend this work by developing the core engine of the system using neural network and artificial intelligence. Finally, the freemium business model can be used to convert the eTravelPlanner system into a marketable e-service that will allow some function to be provided free of charge to the Self-planning traveller.

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