

## TKHomeSys: Expert Evaluation for Homestay Booking System using UID Theory



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### ABSTRACT

Nowadays, User Interface Design (UID) is one of the important elements that must be applied in the booking system. Usually, Teratak Kayu Homestay uses the manual system to handle and manage the reservation record and report in a logbook. The current process leads to many problems which are difficult to search customer booking details, difficult for the staff to reach all customer at one time and profit loss due to booking cancellation. Development of IT in terms of processing and distribution of knowledge promises of changing business process of organization from traditional methods to new modern advance form [1]. Homestay Booking System (TKHomeSys) is a project that is developed for Teratak Kayu Homestay to improve the old system which is manual system. The system would manage and handle all processes related to customer, booking, and payment in computerized. Thus, Adapted Waterfall Model is used as guidance in developing process. The expert evaluation has been conducted by two (2) experts who have well knowledge in computer and IT field. The result from evaluation would be used for enhancement and upgrading the system. In conclusion, Teratak Kayu Homestay Booking System (TKHomeSys) can give more advantages to users and can contribute more in revolution of better homestay reservation system.

**Keywords:** *homestay, online booking system, Adapted Waterfall Model, User Interface Design*

### 1. INTRODUCTION

In this new era of globalization, people are mostly using the Internet in order to gain more income. Through Internet, people can generate income not only through sell product but servicing also can help people to gain profit. In other hand, booking services are one of the businesses that have been pretentious by the quick growth of the system.

A homestay is a place where the owner rents their place for a tourist to stay during their vacation. Teratak Kayu Homestay (TKH) is located at Sungai Berembang, Kuala Perlis. Teratak Kayu Homestay provides 3 types of house and each type of

house has 3 rooms. Currently, the customers make their booking via the call or WhatsApp. After that, they need to give their booking date for staff to check for availability. If the staff tells the customer that the selected date is not available, the customer needs to change date or cannot make a booking. Otherwise, it will proceed with customer to give details such as name, id and others to staff. The customer will make payment at the homestay to check-in.

#### 1.1 Problem Statement

Teratak Kayu Homestay uses a manual paper-based system to record the booking information. They record all of customer and booking detail in a logbook and customer make payment when doing the check-in process. Current manual paper-based system leads to a few problems and the problems need to be resolved in order to make management efficiency.

One of the problems is, the staff difficult to search and retrieve customer details as all data about customer details are recorded in a logbook. By recording the customer details in a logbook, the staff difficult to search the details and evidently overlapping of data would happen.

The second problem, the staff also finds that it is difficult to reach all customers at one time. Sometimes, the staff can be late in reply all customer bookings as they only receive the booking from customers through message and call only. For example, staff A missed a customer message to book the homestay for a long time, thus it makes customer feel frustrated and cancel the booking.

Lastly, the homestay needs to bear the profit loss when the customer canceled the booking at last minute. They loss profit when customers canceled the booking because Teratak Kayu Homestay management only received the payment once the customer check-in at the homestay. Other than that, the homestay also lose the other customer that wanted to stay for the same day

### 2. RELATED WORKS

This section will explain the overview of related works based on research study. The data collected through various resources such as journals, and own observations from the

current existing website and review of the published and unpublished work from a secondary source of information. The online booking system is the domain of the project. Next, literature about similar existing website will help to modify and create good features for this project. User Interface Design (UID) theory has been used to help in implementing the booking system.

**2.1 Online Booking System**

The online booking system can be defined as booking activities that use internet as medium to conduct booking activities from customers as mentioned in [2]. Customer can book date and time for a service by using internet. Customers can make booking without any time limit and can access from anywhere compared to manual booking. Whereas before mostly all a manual booking is through phone booking process where customer will call the organization, staff will jot down the reserved date and staff will check calendar for availability date, then inform customer if its available they may proceed whereas if it is not available they may choose another date.

A customer also can simply visit the organization's business site or social media account such as Facebook page. Through social media account, it will direct to the booking website page for user to make reservation. Online booking and reservation systems is system that can be integrated or embedded into organization website, or even into the organization social media page without any complicated installation as stated in [3].

Online booking software is equipped to handle and secured safe online payment processing and all information like transaction details and by using cloud content management system customer data are securely stored and protected by encryption and SSL security protocol, that can be accessed only through login and password as in [4]. For first time booking, the whole process may take just a few minutes, and for the next booking less time is needed due to information required has already been entered, recorded and stored.

**2.2 User Interface Design**

Refer to [5], User Interface Design (UID) is one of the field studies in Human Computer Interaction (HCI). The user interface has two-component which are input and output. For input, the person communicated to the computer through their needs and desires. Some of common input components are keyboard, mouse, and touch-sensitive screens or pads. The output is how the computer interprets the result of user requirements. The most common output mechanism is the displays screen.

User interface (UI) design can be defined as the process of making design interfaces in software or computerized devices

with a focus on looks or style as in [6]. In order to create designs for users will find easy to use and pleasurable is every designer aimed. UI design also includes such as voice-controlled rather than focusing on graphical user interfaces only. [7] stated User Interface Design is the design focus on maximizing efficiency, responsiveness and aesthetics to foster a good user experience of discipline of designing software interfaces for devices.

There are 10 features that must have included in a booking system interface [7] but TKHomeSys only implemented five (5) of the elements. The elements that included in TKHomeSys are shown in Table 1:

**Table 1:** Element of UID

Element	Description
Beautiful Image Gallery	The beautiful image gallery is important to show a good visual with no doubt to place a reservation; a high-resolution image is needed. In image gallery, developer put the best image that could capture user attention to place a booking
Appealing “Book Now” Button	“book now” button is one of the important features in developing the good user interface and it should be simple and user-friendly navigation button. “book now” button must have appealed more than another button. The button must be simple and easy for customer to find the button
Real-Time Booking	For real-time booking, customer is given an opportunity to choose the available date with this feature. It helps them to book quickly and get information about the booking immediately
Social Media Integration	Through social media, customers can find booking services more easily. Moreover, it is easier for customer to find and easier for them to link into the website
Paypal Payment Option	Paypal payment option is the element can help increase customer trust since all the transaction is secure and safe. At the same time, customer can have guaranteed that their payment is secured

Hence, Table 2 shows the reflection and implementation of UID elements with features of TKHomeSys.

**Table 2:** Reflection and Implementation of UID Theory and Features of System

Features	User Interface Design Theory				
	Beautiful Image Gallery	Appealing “Book Now Button”	Social Media Integration	Payal Payment Option	Online Support And Phone
Photo Gallery	/				
Booking Form		/			
Social Media			/		
Payment				/	
Email					/
Phone Number					/

**3. METHODOLOGY**

Adapted Waterfall Model is one of the methods to develop the TKHomeSys. The system used the model as guideline of programmatic design to develop the system. Based on the model, the process of each phase is to ensure the objectives have been completed before proceeding to the next phase. There are five phases which are requirement analysis, design, implementation, testing and documentation.

The first phase in Adapted Waterfall Model is the requirement analysis phase. In this phase, all the data and information were gathered to identify the problem of the current business process. Furthermore, determination user of this system, project scope, project significance and project framework also been identified.

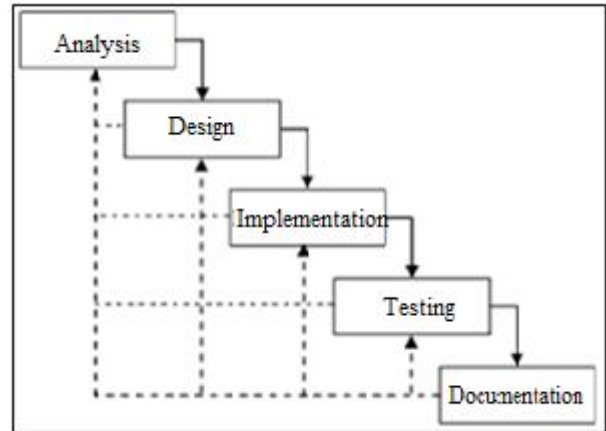
From requirement specifications in the first phase, design phase been prepared. Through the system design, the hardware and software requirements have been specified and defined overall system architecture. This phase produced the design of related diagram that represents the requirement of homestay booking system. The related diagram is Context Diagram, Data Flow Diagram, Entity Relationship Diagram and Test plan.

The third phase in this methodology is the implementation phase. In this phase, the entire related requirements were involved in implementing TKHomeSys. The requirements are divided into two which are hardware and software requirements. The system developed using all the requirements involved.

The next phase in this methodology is the testing phase. After testing each unit, all the units are integrated into a system. The aim of this phase is that any faults and failures are tested in this entire system. System developer detected an error that occurs when test the TKHomeSys. Besides that, through the system testing process, user feedbacks from experts improved

the system weaknesses. So, the testing phase used the test plan to ensure the system meets user requirements. There are two types of testing which are functionality and usability testing

Finally, the last phase of the Adapted Waterfall Model is documentation. The documentation phase is a part of processing given data and information. The documentation phase completed when all the process and results were presented during previous phase. To generate report of project development, all the data and information were compiled together. Figure 1 shows the Adapted Waterfall model.



**Figure 1:** Adapted Waterfall Model

**4. FINDING AND DISCUSSION**

This section will have discussed the evaluation done by experts. Expert evaluation is the process to improve more about the development of the system. The evaluation process involves some expert that have experience in IT field. The main reason for experts evaluation is to judge and give comments from expert’s perspective. Then, two (2) experts amongst UiTM’s lecturer were selected.

All the results will be discussed in detail based on the questionnaire given. Six (6) construct regarding on functionality and usability of the system were evaluated by the experts. The six constructs are user experience, interface, satisfaction, consistency, usability and ease of use. According to [8] the most important construct is satisfaction because it evaluates satisfaction of the system amongst users. Based on the experts' comments and suggestions, the system could be improved and enhanced for the future improvement. Table 3 shows expert evaluation result.

**Table 3:** Expert Evaluation Result

CONSTRUCT	EXPERT	COMMENTS	SUGGESTIONS
<b>SECTION A: USER EXPERIENCE</b>  Does it look professionally designed? Does it was simple to use this system?	Expert 1	Improve on check availability, edit booking before proceeding, payment, and history of booking	
	Expert 2	The system works well but some features (the payment part) still under development.	Complete that part so the user can see the whole system.
<b>SECTION B: INTERFACE</b>  Is it the interface is good? Do you think the design of this site is suitable for the user to use?	Expert 1	Some features do not support. The developer needs to explore more about the interface.	
	Expert 2	The interface is ok and consistent color and font.	
<b>SECTION C: SATISFACTION</b>  Is it fun to use? Would I recommend it to a friend?	Expert 1	It does not have many scenarios to support the product.	
	Expert 2	Simple to use and recommend to others.	
<b>SECTION D: CONSISTENCY</b>  Do you think the color code is conventional? Do you think the wording consistent with user guidance?	Expert 1	Support function does not support	
	Expert 2	Color and words use suitable to the user.	
<b>SECTION E: USABILITY</b>  Does the navigating of this system is in control? It is a consistency in this system?	Expert 1	Careful on system flow	
	Expert 2	The system is consistent and easy to navigate	
<b>SECTION F: EASE OF USE</b>  Is it easy to use? Is it simple to use?	Expert 1	The developer needs to complete the system flow.	
	Expert 2	The system is easy and simple	

the system with an element of user interaction. Adapted Waterfall Model is used to guide in system development and the system also been evaluated by experts in order to get better perspective in term of functionality and usability. The comments and suggestion also been used for future enhancement. There are enhancements and upgrading should be done for examples, customers are free to pay either through cash, online payment or credit card. In this time, the system only covers the payment through online payment. Besides that, the system should be more user-friendly by providing chat or Q&A session. It is more appreciated if the system could change the language based on different backgrounds of the customer.

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## 5. CONCLUSION

In conclusion, web-based become popular trend among internet users nowadays. So the booking manual should be replaced by computerized so that the process will become more user-friendly and indirectly would increase organization profit. The implementation of UID in TKHomeSys provides