Design of a 360 Degree Virtual Tour System: Introduction to Tanah Wuk Tourism Objects for Promotion in Digital Business

Ni Putu Linda Santiari[1], I Gede Agastya Dananjaya[2], I Gede Surya Rahayuda[3]

[1,2] Institut Teknologi dan Bisnis STIKOM Bali Puputan Highway No. 86 Renon, Denpasar, 80111, Indonesia
[3] Universitas Udayana, Unud Campus Highway, Jimbaran, Badung, Bali, 80361, Indonesia
Email: linda_santiari@stikom-bali.ac.id

ABSTRACT

Tanah Wuk offers impressive views with the beauty of green valleys, a very calm situation, and rows of hills that complement this beauty. As a place for family recreation, Tanah Wuk provides a large enough yard that can be used as a place for barbecues and playing games with the family. Therefore, with the current development of information technology, one of which is packaging information technology through multimedia, we will increase the promotional media for Tanah Wuk Tourism Objects in Sangeh Village by creating a virtual tour application that aims to introduce Tanah Wuk Tourism Objects to tourists before visiting. Information technology, through this multimedia, is a combination of data, sound, video, audio, animation, graphics, text, and sounds in which the combination of these elements can be presented via a computer. Before being developed, the design needs to be done for this information system, starting with the menu structure design, storyboards, and interface design. System design is very important to ensure that the system built can provide significant added value for the users who use it. The design is carried out starting with data collection, needs analysis, menu structure design, storyboards, and interface design. From the needs analysis, there are two users involved in making this system, namely the admin and the user. For the menu structure, there are four menus in the system: home, profile, virtual tour, and about.

Keywords: Design, Virtual tour, Tanah Wuk, Tourism, Digital Business Promotion

Introduction

In recent years, there has been significant growth in the online business sector in Indonesia. This phenomenon is undoubtedly propelled by technological advancements and a substantial increase in the number of internet users. Various business entities leverage the advancement of information technology to enhance the business landscape via information systems in virtually every routine business activity, impacting nearly all segments of global society [1]. Digital marketing encompasses a broad scope, integrating psychological, humanistic, anthropological, and technological factors through multimedia with extensive and interactive capabilities. Digital marketing activities involve utilizing information technology, websites, social media, trends, netizens, businesses, online advertising, mobile applications, and various other elements [2]. The rise in tourist numbers to Indonesia can be attributed to various factors, such as the affordability of tourism. Numerous direct flight options connect to diverse tourist destinations within Indonesia, and the Ministry of Tourism persists in enhancing its promotional strategies.

Sangeh Village is in the Abiansemal district, Badung district, Bali Province. The capital city is Mangupura. Badung Regency consists of several sub-districts and villages, including Sangeh village. Sangeh Village has an area of $\pm$ 4.50 km², with a density of $\pm$ 898.4 people/km². Based on the area above, Sangeh Village is divided into 2 Traditional Villages, namely Sangeh Traditional Village and Grana Traditional Village, and is divided into 8 (eight) official Banjars administratively. The eight service villages are Banjar Pemijian, Banjar Sibang, Banjar Brahmana, Banjar Muluk Babi, Banjar Batusari, Banjar Pacung, Banjar Grana Tegal, and Banjar Batulumbang [3]. Sangeh Village is a tourist destination because it has natural tourist attractions in the form of a nutmeg forest with

monkeys and there is a sacred area, namely the Pucak Sari temple. Apart from nutmeg, in the Sangeh Traditional Village there is also a tourist attraction in the Tanah Wuk valley. Tanah Wuk is a natural tourist attraction located in the Tukad Penet River valley, only 2 km north of the Nutmeg Forest. The majority of governments typically pursue macroeconomic objectives with the overall anticipation of benefiting the populace [4].

Tanah Wuk Valley is land owned by I GNG. Teguh W. Kepakisan. Badung Regency, especially Sangeh Village, has tourist attractions with unique natural potential because the location of the tourist attraction is quite easy to access and far from the crowds. Tanah Wuk offers stunning views with the beauty of an enchanting green valley with a very quiet location, hills and blooming flowers belonging to the local community complement this beauty [5]. To attract visitors, the management also provides a photo spot in the form of a wooden platform in the shape of a raft head with natural support from the surrounding trees, making it an interesting photo spot for Tanah Wuk to appear in another dimension. Light more beautiful and modern views behind beautiful nature can be posted on Instagram, this is of course one of the last pieces of information that nature tourism lovers need to know. As a place for family entertainment, Tanah Wuk has a fairly large yard which can be used as a place for barbeques and family games. With the above facilities, Tanah Wuk is an ideal resort to enjoy natural spaces with cool fresh air [6].

Presently, the majority of companies have embraced information technology to oversee their sales operations. Businesses are transitioning from traditional systems to incorporate digital online sales systems [7]. Media for company products and services is very important in helping promote tourist attractions. Good promotions can help attract tourists to visit these tourist attractions. In terms of effectiveness, promotional materials are now very diverse, such as advertisements in mass media, and social networks, and advertisements through physical images such as billboards, falling leaflets, etc. Websites are one of the advertising media that is currently widely used by tourist attractions to display the beauty and uniqueness of the tourist attractions they offer [8]. Therefore, with the current development of information technology, one of which is packaging information technology through multimedia, we will also increase the promotional media for the Tanah Wuk Tourist Attraction in Sangeh Village by creating a Virtual Tour application that aims to introduce the Tanah Wuk Tourist Attraction to tourists before visiting to the tourist attraction so that tourists feel as if they are at the tourist attraction they are going to and also to find out the conditions of the location they will go to when exploring the tourist attraction. Because the problem that is currently occurring is the lack of promotion and information about Tanah Wuk tourism, so by creating a Virtual Tour application it is hoped that it can solve the problems that occur and information about this tourism can be disseminated more widely. The aim of creating this Virtual Tour application is to minimize the excessive use of paper (paperless) as a promotional medium. Apart from that, a video profile will also be made introducing the Tanah Wuk tourist attraction which will be published on social media. This multimedia information technology is a combination of data, sound, video, audio, animation, graphics, text, and voice, which combination can be presented via a computer [9]. One step in developing information technology through multimedia communication is virtual tourism. A virtual tour is a simulation of a place consisting of a series of images that will be combined to create a 360-degree panorama [10]. This virtual tour, can facilitate the dissemination of information and be used as advertising media in the digital business for domestic and foreign tourists to experience the tourist target audience of Badung Regency, especially Sangeh Village.

Research by Peruzzini et al. stated that the field of research has been successfully applied in several areas, one of which is tourism-marketing, namely based on photos and videos or models [11]. Cinnamon and Jahiu's research indicates that in studies related to tourism and cultural heritage, there are two primary areas of application. Firstly, exploring its potential as a substitute for in-person experiences, potentially facilitating more extensive engagement with tourist destinations.

Ni Putu Linda Santiari[1], I Gede Agastya Dananjaya[2], I Gede Surya Rahayuda[3]

Secondly, using it as an additional tool to virtually represent destinations directly to potential tourists [12]. Palos-Sanchez et al.'s research indicates that the utilization of this approach within a digital setting is termed digital marketing, employed to enhance online recruitment, foster loyalty, and boost sales via the Internet [13]. Ingrassia et al.'s study proposes that the primary goal of a digital marketing campaign significantly influences tourists' perceptions of a destination, thereby affecting people's intentions to visit a place [14].

Before being developed, designing needs to be done. The design carried out in creating this information system starts from system design and interface design. Information system design is very important to ensure that the system being built can provide significant added value for users who use it. This scientific article will discuss designing a 360-degree virtual tour introducing tourist attractions Tanah Wuk in Sangeh Village is website-based. With this design, it is hoped that it can help the author in building a 360-degree virtual tour introducing tourist attractions Tanah Wuk in Sangeh Village is website-based to help promote the Tanah Wuk tourist attraction and improve service to customers. According to Yang et al.'s study, the design practices of developers creating 360° virtual tours often emphasize creating a sense of authenticity. However, participants in the study reported experiencing a sense of 'being there' rather than a sense of reality. Similar to Marvel filmmakers, VR developers need to focus on evoking a sense of 'being there' to captivate audiences. Individuals who have visited a tourist destination seek more than just an authentic representation of the location in their memories [15].

Method

The first step in this research is to define the problem and continue data collection. Once data collection is complete, it's time to analyze, plan and draw conclusions. The testing method is shown in Figure 1. Problems were identified at an early stage and system requirements were verified in this study. The data used in this research are primary data and secondary data. In addition, data collection was carried out through literature reviews, observations and interviews, to gather support for the design of a network identification system. This data collection is useful during the design process based on system production requirements.

The next step is requirements analysis, where all the requirements needed to build the system are analyzed based on the problems described in the problem statement. Requirements analysis is a step required by users to solve a problem from a systems perspective. The goal of this step is to gather the requirements necessary to design an online handwriting recognition system in written form. The design process is carried out based on the results of the system requirements analysis which was discussed previously. The system design must explain the information, processes and procedures of the system to be built. Meanwhile, system design includes storyboards, menu structures and interface design. A storyboard or storyboard is a combination of a visual outline and narrative (text) arranged sequentially according to the story idea, which can explain the scenario we are carrying out. The menu structure is the design of the menus that will be implemented on the website [16]. This user interface design provides an overview of the system interface to be built [17]. The final stage of design is concluding the design that will be implemented. The handwriting recognition system design method is shown in Figure 1.
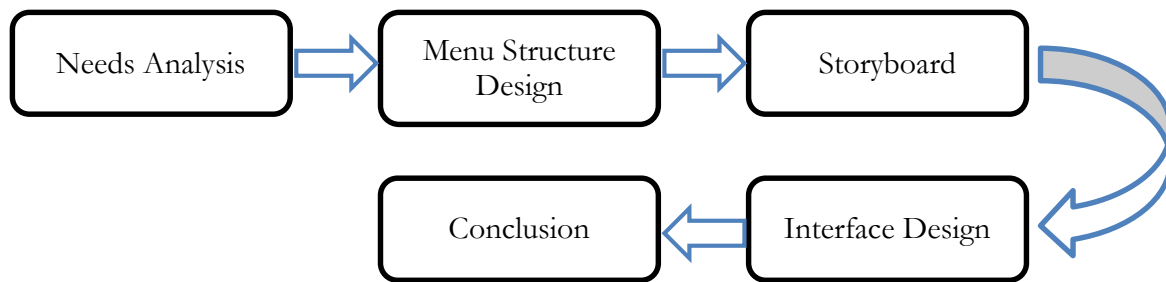
Ni Putu Linda Santiari[1], I Gede Agastya Dananjaya[2], I Gede Surya Rahayuda[3]

Figure 1. Research systematics

Results and Discussion

With large tourism potential, Tanah Wuk does not yet have a system that can help or support its tourism management and promotion. So it is necessary to design a system that can help Tanah Wuk Tourism Management, especially in its promotion. In designing this system, several steps are carried out starting from needs analysis and continuing with system design. Data flow diagrams describe the components of a system, the data flowing between these components, and the origin, destination, and storage of data.

A. Needs Analysis

Analysis of this system is a step in the system development process which aims to identify problems that exist in the system [18]. The results of this analysis include the following:

1. User analysis

In the results of this analysis, some users access this system consisting of 2 (two) types of user access rights, namely admin and user. Table 1 shows the user analysis for each user.

Table 1. User Analysis

No	User	Information
1	Admin	Data used on the website can be managed, entered, changed and deleted by users who have access.
2	User	Users who have access rights use the system by viewing the dashboard, gallery and virtual tour pages.

2. Data Analysis

Table 2 shows the analysis of data accessed by users as a result of the analysis. This data consists of gallery data, information data and virtual tour data.

Table 2. Data Analysis

No	Data	Information
1	Gallery	Data containing documentation in the form of photos and videos related to the Tanah Wuk tourist attraction
2	Information	Data containing information about the Tanah Wuk tourist attraction and the latest information regarding activities at the Tanah Wuk tourist attraction
3	Virtual tour	Data containing virtual tour data information

3. Process Analysis

Table 3 shows the process analysis carried out on this system: starting process, selecting shapes, writing shapes, viewing recognition results, and viewing the gallery.

Table 3. Menu analysis

No	Menu	Information	User
1	Home	The home menu contains information about the Tanah Wuk tourist attraction	User
2	Profile	The profile menu contains a profile about the Tanah Wuk tourist attraction	User
3	Virtual tour	The virtual tour menu contains virtual tours of Sangeh tourist attractions	User
4	About us	The about us menu contains the profile of the website creator	User

B.   System Design

In the initial stages of building a system, system design aims to create an initial system plan and design that can explain in detail how the system will work later.

1.   Structure of Program Menu

The menu structure on the 360-Degree Virtual Tour application website Introduction to the Tanah Wuk Tourist Attraction in Sangeh Village, Badung Regency is described as follows: The menu structure is a general description of the menus displayed on an application. The menus at this stage are divided into several sections to make it easier for users to use this application as in Figure 2.

Figure 2. Menu Structure

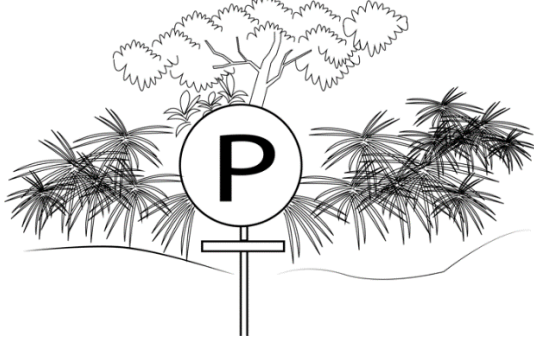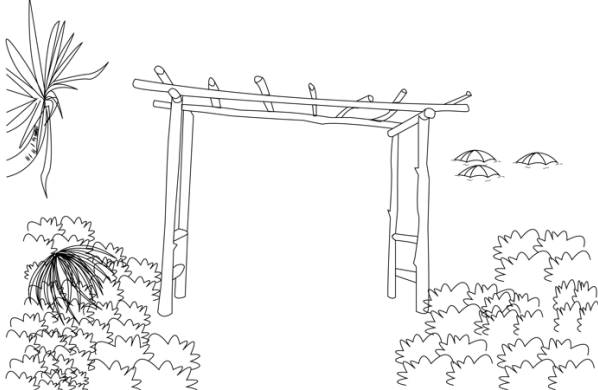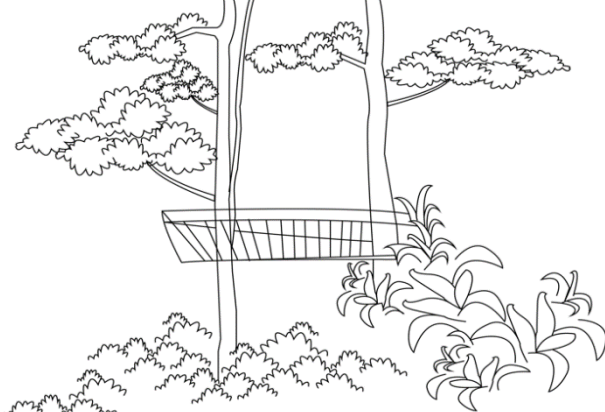Ni Putu Linda Santiari[1], I Gede Agastya Dananjaya[2], I Gede Surya Rahayuda[3]
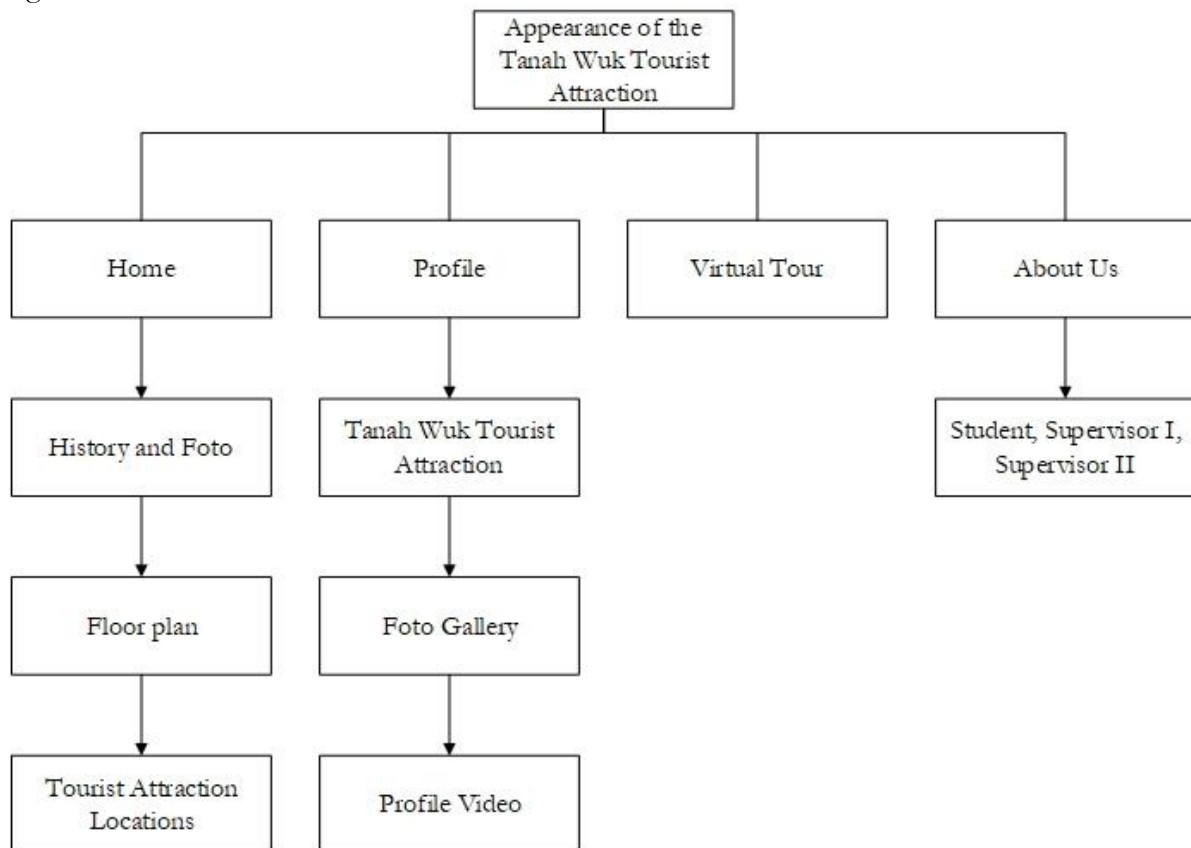
The home menu will be the initial display of this application and has several submenus which are divided into general information about the Tanah Wuk tourist attraction in Sangeh Village, along with the history of the Tanah Wuk tourist attraction in Sangeh Village, photos of views of the Tanah Wuk tourist attraction in Sangeh Village, Plan of the Tanah Wuk Tourist Attraction in Sangeh Village, and Geographical Location of the Tanah Wuk Tourist Attraction in Sangeh Village. The profile menu will have several submenus regarding the Tanah Wuk tourist attraction in Sangeh Village, including: About the Tanah Wuk tourist attraction, photo gallery and video profile. The virtual tour menu will display the main screen of the virtual tour application. If you click start, you will enter the virtual tour application. Finally, the about menu is a menu that displays the profile of the website creator.

2. Storyboard

A storyboard or storyboard is a combination of picture sketches and narrative (text) which are arranged sequentially according to the story idea, which can explain the storyline that we create to other people more easily. This video introducing the Tanah Wuk tourist attraction in Sangeh Village is 4 minutes and 15 seconds long and displays information about the Tanah Wuk tourist attraction in Sangeh Village. The video storyboard for the Tanah Wuk tourist attraction in Sangeh Village is shown in Table 4.

Table 4. Storyboard Introduction video

No	Illustration	Information
1		Scene: 1
		Description: This scene shows the title of the Video Profile of the Tanah Wuk Tourist Attraction
		Audio: Tee-Ex - Shifting Circumstances
2		Scene: 2
		Description: in this scene you can see the Tanah Wuk tourist attraction from above using a drone
		Audio: Tee-Ex - Shifting Circumstances

No	Illustration	Information
3		Scene: 3
		Description: This scene shows the parking lot at the Tanah Wuk tourist attraction in Sangeh Village
		Audio: Tee-Ex - Shifting Circumstances
4		Scene: 4
		Description: This scene shows the entrance ticket payment location at the Tanah Wuk tourist attraction
		Audio: Tee-Ex - Shifting Circumstances
5		Scene: 5
		Description: This scene shows the Camping Ground Entrance at the Tanah Wuk Tourist Attraction
		Audio: Tee-Ex - Shifting Circumstances
6		Scene: 6
		Description: In this scene there is a photo spot of a bridge shaped like the head of a raft
		Audio: Tee-Ex - Shifting Circumstances

3. Interface Design

Interface design is a design or interface design that provides an overview of the application system to be built. This interface design was created as a support to facilitate the implementation process of the Tanah Wuk Tourism Object Introduction system in Sangeh Village. The following is an overview of the interface design for the Tanah Wuk Tourist Object Introduction system in Sangeh Village in the upcoming Website-Based 360-Degree Virtual Tour Application:

a. Virtual Tour Application Interface Design

The interface design diagram is shown in the interface design of this Virtual Tour application. This Virtual Tour application has many buttons to make it easier to use. There are several buttons: a forward button to the next area, an information button that displays information about buildings on the object, a shortcut button to show the current location and to go to another area, a plan button that displays a floor plan of the object with radar to determine the direction of the user's gaze, and a location button The latest one displays the latest location information in the object area. The interface design for the 360-Degree Virtual Tour application of the Tanah Wuk Tourist Attraction in Sangeh Village is shown in Figure 3 below.

b. Home Page Interface Design

In the interface design, the home menu page is the initial display of the virtual tour website for the Tanah Wuk Tourist Attraction in Sangeh Village. This page will contain information about the history and photos of the Tanah Wuk tourist attraction in Sangeh Village, as well as the floor plan and location. In addition, as shown in Figure 4, the Home page interface design on the Tanah Wuk Tourist Attraction Virtual Tour website has a navigation bar at the top of the home page, which can also be found throughout the menu.
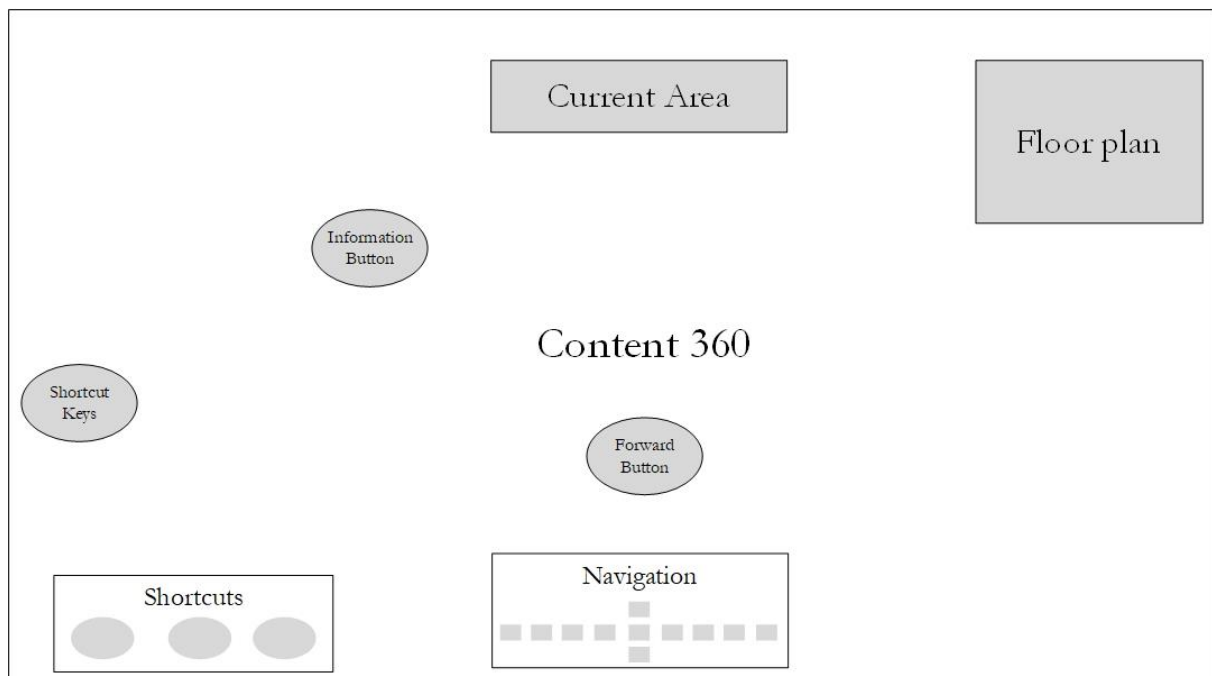

Figure 3. 360-Degree Virtual Tour Application Interface Design

Ni Putu Linda Santiari[1], I Gede Agastya Dananjaya[2], I Gede Surya Rahayuda[3]

Figure 4. Home Page Interface Design

c. Design the Profile Page interface

In the Profile Page interface design, you will see an example of the interface design of the Profile page on the Tanah Wuk Tourist Attraction Virtual Tour Website. When you select this menu, the system will display information such as About the Tanah Wuk Tourist Attraction, Introduction Video, and Gallery. If you press one of the submenus, you will see the related information.
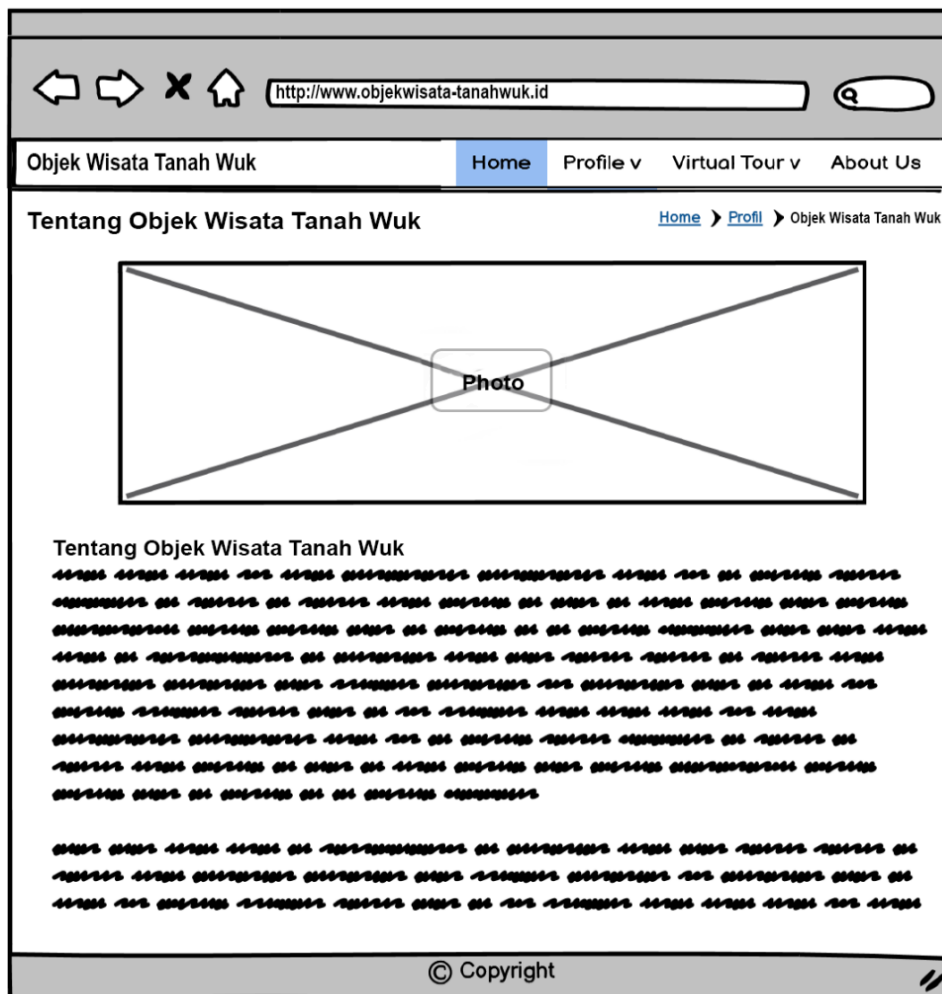
Figure 5. History Profile Page Interface Design

d.   Introduction Video Profile Page Interface Design
    In the interface design, the Introduction Video Profile Page will display a video introducing the Tanah Wuk Tourist Attraction in Sangeh Village. The interface design of the Video Profile page for Introduction to the Tanah Wuk Tourist Attraction is shown in Figure 6 below.

e.   Gallery Profile Page Interface Design
    The interface design of the Tanah Wuk Tourist Attraction Gallery Profile page will display the Photos in their location, as shown in Figure 7 below.

Volume 8 Issue 1 (2023) Pages 76-90

Attribution-ShareAlike 4.0 International. Some rights reserved   85
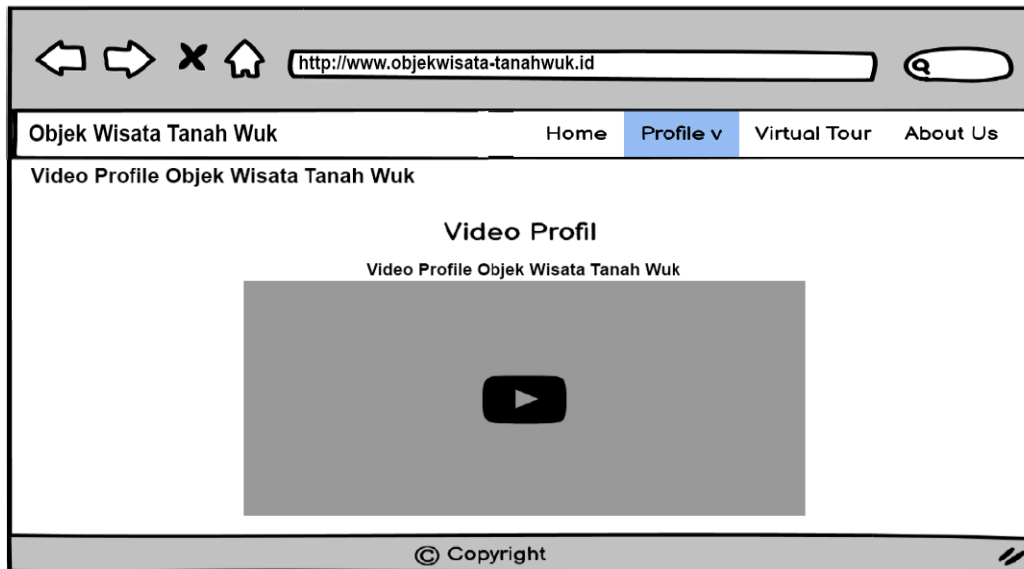
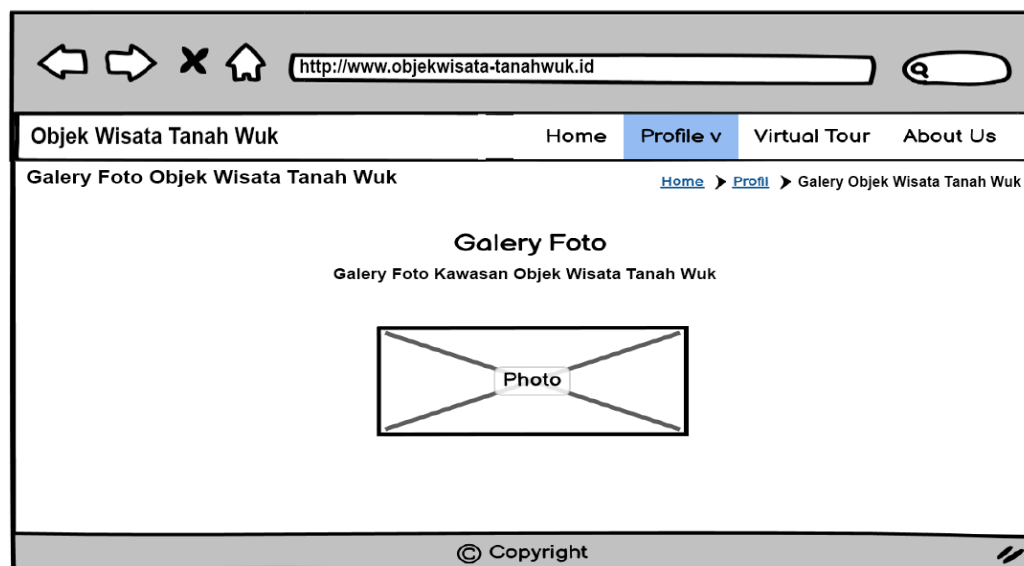Figure 6. Video Profile Interface Design

Figure 7. Photo Gallery Interface Design

f.   Virtual Tour Page Interface Design

The Virtual Tour Page interface design will display an overview of the interface design of the virtual page located on the virtual website of the Tanah Wuk Tourist Attraction in Sangeh Village. This page will display the Virtual Tour application for the Tanah Wuk Tourist Attraction in Sangeh Village, which can be accessed by users to find out the structure of the building, information about each object and the condition of the Tanah Wuk Tourist Attraction as if the user were directly at the Tanah Wuk Tourist Attraction. Information is data that has been processed to provide benefits and meaning to the recipient [19]. On this page a general explanation will also be displayed regarding the Virtual Tour application and a floor plan of the Tanah Wuk tourist attraction in Sangeh Village contained in the Virtual Tour application. The interface design of the Tanah Wuk Tourist Attraction Virtual Tour page is shown in Figure 8.
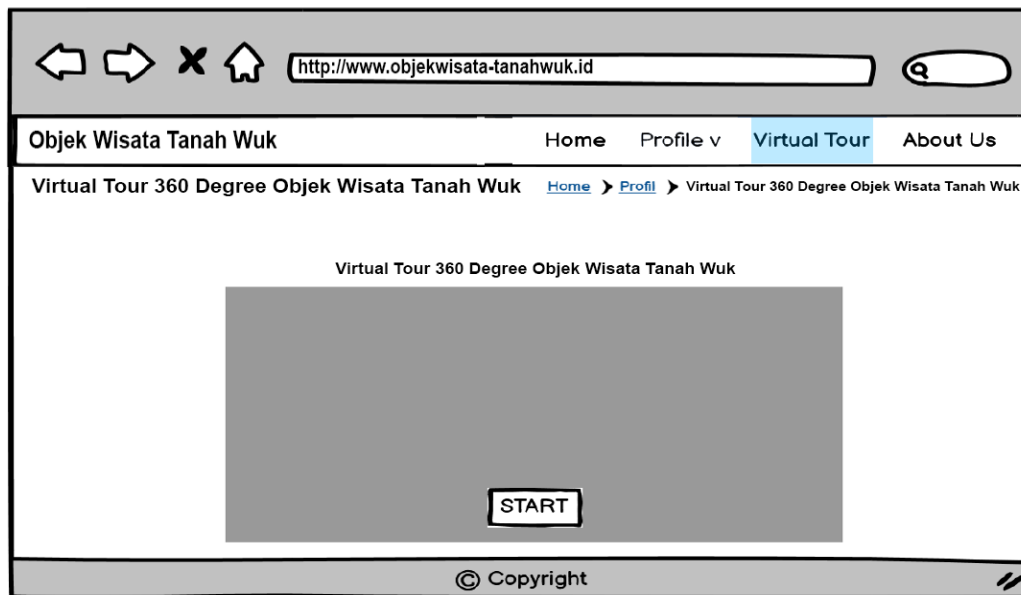
Figure 8. Virtual Tour Interface Design

g. Reservation interface design

This is the initial display of the reservation process for visiting Tanah Wuk. During the reservation process, visitors must fill in their name, email address, cellphone number, date of visit and number of visitors. If all the data above has been filled in, the total payment will be calculated automatically. Figure 9 shows the reservation interface design.

Figure 9. Reservation Page Interface Design

h. Payment interface design

After making a reservation, visitors will carry out the payment process. On this page the reservation number and total payment will appear. After that, visitors will be asked to make payment to the virtual account number within 1 x 24 hours. The payment interface design is shown in Figure 10.

Figure 10. Payment interface design

i.   Payment process interface design

This interface design shows the payment process carried out by visitors after making a reservation. There will be a waiting process for payment, successful payment, and failed payment if the reservation has not been paid within 1 x 24 hours.
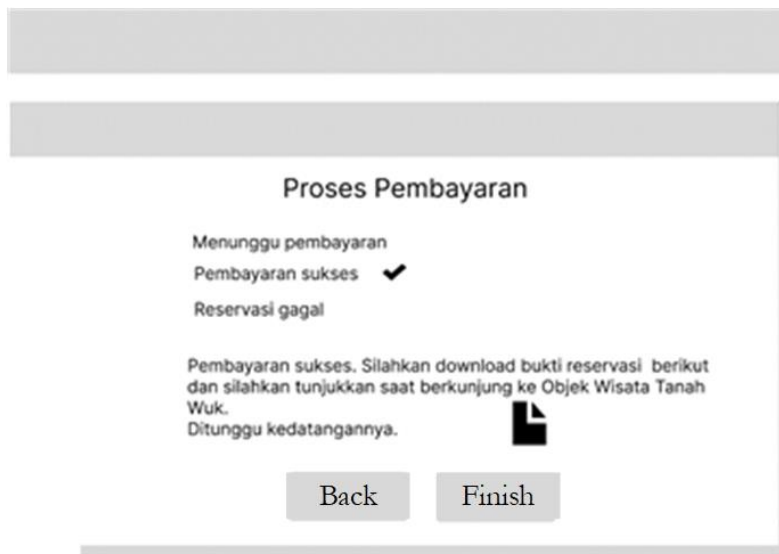

Figure 11. Payment process interface design

Conclusion

Needs analysis can be used to design a virtual tour system for introducing the Tanah Wuk tourist attraction 360-degrees. User needs analysis is carried out. In this design, administrators and users are used. The menu structure design is based on user needs. There are four menus: home, profile, virtual tour, and about in designing the menu structure. An overview of the virtual tour can be seen in the storyboard which consists of six scenes. For interface design, an overview of the virtual tour system page interface design will be built based on the user, including interface design and page design. The design of the 360-Degree Virtual Tour System Design for Introduction to the Tanah Wuk Tourist Attraction for Promotion in Digital Business to promote the Tanah Wuk

Tourist Attraction in digital business competition and can increase visits to the Tanah Wuk Tourist Attraction. It is hoped that this system design can be developed and implemented according to the needs of the system.

Acknowledgment

References

[1] S. Supriyati, S. Mulyani, H. Suharman, dan T. Supriadi, "The Influence of Business Models, Information Technology on the Quality of Accounting Information Systems Digitizing MSMEs Post-COVID-19," *Jurnal Sistem Informasi*, vol. 18, no. 2, hal. 36–49, 2022, doi: 10.21609/jsi.v18i2.1141.

[2] D. Yanti, "Pengaruh Digital Marketing Terhadap Peningkatan Kunjungan Wisata Di Danau Toba The Effect Of Digital Marketing Toward Enhancement Tourist Visit In Toba Lake," *Khasanah Ilmu: Jurnal Pariwisata Dan Budaya*, vol. 11, no. 1, hal. 16–26, 2020, doi: 10.31294/khi.v11i1.7607.

[3] D. D. Beoang dan I. A. Suryasih, "Identifikasi Potensi Desa Wisata Sangeh, Kabupaten Badung," *Jurnal Destinasi Pariwisata*, vol. 5, no. 2, Nov 2018, doi: 10.24843/JDEPAR.2017.v05.i02.p04.

[4] S. Supriyati *et al.*, *Pengantar Ilmu Ekonomi*. Eureka Media Aksara, 2022.

[5] I. P. I. W. Pratama, I. N. Sukamara, dan W. Arimbawa, "Partisipasi Masyarakat Dalam Pengembangan Desa Wisata Sangeh Di Kecamatan Abiansemal, Bali," *PRANATACARA BHUMANDALA: Jurnal Riset Planologi*, vol. 3, no. 2, hal. 136–155, 2022.

[6] I. G. A. P. S. Mahendrayani dan I. B. Suryawan, "Strategi Pemasaran Daya Tarik Wisata Untuk Meningkatkan Jumlah Kunjungan Wisatawan Ke Daya Tarik Wisata Sangeh Kabupaten Badung Provinsi Bali," *Jurnal Destinasi Pariwisata*, vol. 5, no. 2, hal. 240, 2018, doi: 10.24843/jdepar.2017.v05.i02.p09.

[7] Supriyati, H. Suharman, dan T. Supriadi, "Business strategy and use of information technology toward ASEAN MSMEs performance in the post-pandemic crisis," *Journal of Eastern European and Central Asian Research (JEECAR)*, vol. 10, no. 5, hal. 886–897, Sep 2023, doi: 10.15549/jeecar.v10i5.1438.

[8] P. S. Hasugian, "Perancangan Website Sebagai Media Promosi dan Informasi," *Journal Of Informatic Pelita Nusantara*, vol. 3, no. 1, hal. 82–86, 2018.

[9] A. Osman, N. A. Wahab, dan M. H. Ismail, "Development and Evaluation of an Interactive 360 Virtual Tour for Tourist Destinations," *Journal of Information Technology Impact*, vol. 9, no. 3, hal. 173–182, 2009.

[10] D. D. Prasetya, "Aplikasi Virtual Tour Berbasis Web Sebagai Media Promosi Pariwisata," in *Seminar on Electrical, Informatics, and Its Education*, 2011.

[11] M. Peruzzini, S. Cavallaro, F. Grandi, E. Martinelli, dan F. De Canio, "Exploring how to use virtual tours to create an interactive customer remote experience," *Journal of Industrial Information Integration*, vol. 35, hal. 100509, 2023, doi: https://doi.org/10.1016/j.jii.2023.100509.

[12] J. Cinnamon dan L. Jahiu, "360-degree video for virtual place-based research: A review and research agenda," *Computers, Environment and Urban Systems*, vol. 106, hal. 102044, 2023, doi: https://doi.org/10.1016/j.compenvurbsys.2023.102044.

[13] P. Palos-Sanchez, J. R. Saura, F. Velicia-Martin, dan G. Cepeda-Carrion, "A business model adoption based on tourism innovation: Applying a gratification theory to mobile

applications," *European Research on Management and Business Economics*, vol. 27, no. 2, hal. 100149, 2021, doi: https://doi.org/10.1016/j.iedeen.2021.100149.

[14] M. Ingrassia, C. Bellia, C. Giurdanella, P. Columba, dan S. Chironi, "Digital Influencers, Food and Tourism—A New Model of Open Innovation for Businesses in the Ho.Re.Ca. Sector," *Journal of Open Innovation: Technology, Market, and Complexity*, vol. 8, no. 1, hal. 50, 2022, doi: https://doi.org/10.3390/joitmc8010050.

[15] T. Yang, I. K. W. Lai, Z. Bin Fan, dan Q. M. Mo, "The impact of a 360° virtual tour on the reduction of psychological stress caused by COVID-19," *Technology in Society*, vol. 64, hal. 101514, 2021, doi: https://doi.org/10.1016/j.techsoc.2020.101514.

[16] E. N. S. C. P dan I. Afrianto, "Rancang Bangun Aplikasi Chatbot Informasi Objek Wisata Kota Bandung Dengan Pendekatan Natural Language Processing," *Jurnal Ilmiah Komputer dan Informatika (KOMPUTA)*, vol. 4, no. 1, hal. 49–54, 2015, doi: 10.1109/ACCESS.2020.2976530.

[17] A. Suryadi, "Perancangan Sistem Informasi Manajemen Kegiatan Sivitas Akademika Universitas Terbuka," *SISTEMASI : Jurnal Sistem Informasi*, vol. 9, no. 1, hal. 116–130, 2020, doi: 10.32520/stmsi.v9i1.604.

[18] F. J. Kaunang, "Analisis dan Perancangan Sistem Informasi Fasilitas Sekolah," *Jurnal Sistem Informasi dan Teknologi Informasi*, vol. 7, no. 2, hal. 124–130, 2018, doi: 10.36774/jusiti.v7i2.247.

[19] S. Supriyati dan D. Rizky, "Model Perancangan Sistem Informasi Akuntansi Budidaya Perikanan Berbasis SAK EMKM dan Android," *@is The Best : Accounting Information Systems and Information Technology Business Enterprise*, vol. 3, no. 2, hal. 301–315, 2018, doi: 10.34010/aisthebest.v3i2.1526.