Smart Tourism Platform for Tourist with Disabilities

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Abstract: *Most tourist attractions can only be accessed by ordinary people. Those who are excluded or neglected do not have the opportunity to access and visit tourist attractions, especially tourist attractions. Carrying out tourism-related activities has the right to be carried out by everyone, including those who are excluded, such as persons with special needs or disabilities. The European Network for Accessible Disabilities states that it is essential for people with disabilities, one of which is information about a place. In this study, the authors developed an application design to provide accessibility and mobility information for wheelchair users in hospitality objects. The Smart Tourism Platform was built using the waterfall method. This research results in the design of an information provider application and wheelchair user accessibility. The system of this platform was validated by unit testing.*

Keywords: *tourist attractions, disabilities, hospitality object, accessibility, mobility.*

Introduction

Most tourist attractions are only accessible to ordinary people. Those who are excluded or neglected do not have the opportunity to access and visit tourist places or attractions (Darcy et al., 2020). This tourism object closely relates to the accommodation industry, especially hospitality (Fitriani, 2018). carrying out activities related to tourism has the right to be carried out by everyone, including those who are excluded, such as persons with special needs or persons with disabilities (Rosdianti et al., 2018).

Persons with disabilities are people who have special needs, unlike people in general. For example, people who need assistive devices such as wheelchairs, canes, Etc. People with special needs often experience discrimination in tourism objects, more precisely in terms of accessibility and mobility, that are less supportive for people with disabilities (Hiban et al., 2020). In addition to the term disability, several other terms are used to define a person with special needs, such as disability, impairment, and handicap (Pusat Studi Individu Berkebutuhan Khusus Universitas Sanata Dharma Yogyakarta, 2018).

According to data presented by the Bandung City Data Portal, there were 1662 people with special needs or disabilities recorded in the city of Bandung in 2019. Meanwhile, in 2020 there are 1744 people with special needs or disabilities recorded in the city of Bandung (Portal Data Kota Bandung, 2019, 2020).

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Figure 1

Increase of people with disabilities in Bandung 2019-2020
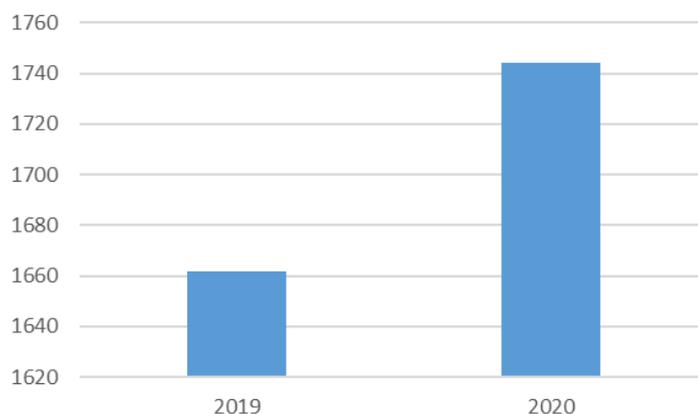
Based on these data, there is an increase of 5% of people with special needs or disabilities in the city of Bandung. When compared with the population of Bandung City in 2020 (Badan Pusat Statistik Kota Bandung, 2020), which amounted to 2,510,103 people, it can be concluded that there are around 6.9% of people with special needs or disabilities in Bandung in 2020. With an increase in the number of people with disabilities every year, more information is needed regarding the accessibility and mobility available for persons with disabilities in Bandung.

The demand for accessibility for tourists with disabilities also includes ordinary tourists because accessibility is not only for people with disabilities but also for the elderly, young children, and people with temporary or chronic illnesses (Emrouzeh et al., 2017). Therefore, this accessibility is necessary for all of us, not just people with disabilities.

Information and communication technology have played an essential role in everyday life. The European Network for Accessible Disabilities states that these significant demands for travelers with disabilities include: (a) Information and marketing: Communication; Web and Information Communication Technology; and Information of a Place; (b) Designing for all; and (c) Transportation (Emrouzeh et al., 2017). Therefore, information technology has an essential role in making it easier for people with disabilities to find information about facilities that are friendly for people with disabilities (Pasebhan Jati, 2019).

The finding of this research is the concept of smart tourism platform for tourists with disabilities. The smart itself represents the platform developed on the latest technology (Jasrotia & Ganggotia, n.d.). This platform provides information on the accessibility and mobility of hotels for people with special needs who use wheelchairs. With this platform, wheelchair users can obtain information about the accessibility and mobility of hotel objects and share information with other users.

Literature Review

According to the explanation (Hermawan et al., 2018), hospitality is defined as the word "friendly," which means "friendly" who is generous or generous in providing a service or entertainment to guests. besides, hospitality can be interpreted as an object or object. So, hospitality can be interpreted as various forms of business in the field of accommodation services, food and beverages restaurant services, tourism, recreation, health and spas, as well

as other forms of business services that adopt the nature of hospitality in terms of services in it, and the contact between business actors and guests or customers. The hospitality industry can be defined as a company involved in providing services for guests or visitors. One of the scopes of the hospitality business is the lodging business, especially in the hospitality sector.

The hospitality industry is an accommodation industry in the form of rooms located in one building or building equipped with facilities for everyone to get lodging, food, and beverage services, as well as other services that are managed commercially and professionally (Rosdianti et al., 2018).

While the word disability is defined as a condition such as illness or injury that limits the ability either physically or mentally (Ndaumanu, 2020), based on the Big Indonesian Dictionary, the meaning of the word sufferer is someone who suffers from something. Meanwhile, according to (Idil Gufron et al., 2020), disabilities are people who experience limitations in intellectual, mental, sensory, or physical terms for a long time. Therefore, people with disabilities have difficulty interacting with the environment. The Law of the Republic of Indonesia No. 8 of 2016 (Indonesia, 2016), states that persons with disabilities are anyone who experiences limitations in physical, intellectual, mental, or sensory forms for a long time, and those who interact with the environment can experience limitations. Barriers and difficulties to participating fully and effectively with other citizens based on equal rights.

To succeed in the tourism sector, one must be intelligent. From the creation of the information to its communication, intelligence is necessary at every stage. By involving several stakeholders at once to maximize group performance and competitiveness and produce solutions and value for all, smartness makes it easier to shape products, actions, processes, and services in real-time. Typically, the word "smart" conjures up images of speed and efficiency. The word "smart" refers to items using cutting-edge technology (Jasrotia & Ganggotia, n.d.).

Methodology

The research methodology is the steps that explain the stages in completing the research. This research methodology is used as a reference in implementing applications that will be built using the waterfall method until the testing stage.
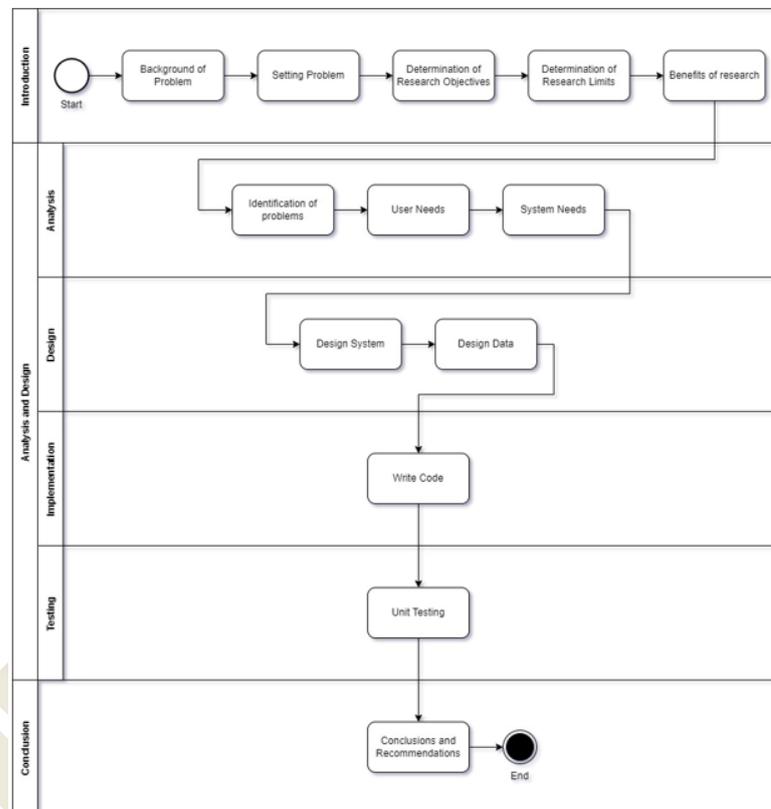
Figure 2

Research Methodology

Figure 2 shows the phases in the waterfall methodology, which consists of four stages: analysis, design, implementation, and testing. In this paper, the research methodology is only up to the testing stage.

Findings & Discussion

The author conducted interviews with relevant sources in order to obtain information on the problems that exist in the current condition. Interviews were conducted with several sources, namely, Adrianus Farai as General Manager, Finance, HR, and IT of the Jakarta Disabled Child Development Foundation; Tien Asyati Indriani as accompanying parent for wheelchair walkers; Harianto as the National Paralympic Committee and user of walking sticks; Arifin Isman as a wheelchair user.

From the results of interviews conducted by the author, people with special needs and their companions when finding it difficult to find hotels that fall into the accessible category. So far, searching for accessible hotel information is done manually through surveys in advance at the venue, asking the community, making direct contact with the hotel, or even based on their own experiences. Therefore, This Smart Tourism Platform was designed to solve existing problems. In general, Smart Tourism Platform users can find out the location of the hotel that provides accessibility and get directions, information related to the accessibility available at the hotel, and share information with other users.

User requirements that focus on people with special needs wheelchair users and their companions based on the results of interviews conducted by the author include:

Table 1

User Requirements

No.	Requirement
1.	Users can find out general information about accessibility hotels.
2.	Users can search for hotel locations that fall into the accessibility category.
3.	Users can search for information on accessibility facilities at each hotel.
4.	Users can find out the location of the hotel which is accessible.
5.	Users can discuss accessibility and share experiences with other users.
6.	Users can mark the hotel as a favorite hotel.

Functional requirements are descriptions of what processes will be carried out by the system to be developed or built (Setiyani & Gintings, 2019). Functional system requirements are obtained based on the user needs analysis conducted by interviewing related informants. The functional system requirements on the Smart Tourism Platform application are described in the following table.

Table 2

System Requirements

ID	Group	Actor	Requirements
REQ-01	*Authentication*	User	Registration
REQ-02		User, Admin, and Guest	Login
REQ-03	Hotel	Admin	Manage Hotel
REQ-04			Create Hotel
REQ-05			Update Hotel
REQ-06			Delete hotel
REQ-07		User and Guest	Search Hotel
REQ-08			Show Hotel
REQ-09			Show Hotel Maps
REQ-10		User	Add Hotel Favorites
REQ-11			Show Hotel Favorites
REQ-12	Forum	Admin	Manage Forum
REQ-13			Delete Forum
REQ-14		User	Forum Discussion
REQ-15			Show Forum
REQ-16			Create Forum
REQ-17			Update Forum
REQ-18			Comment Forum
REQ-19			Delete Forum

After the platform was built based on requirements that have been described before, the author performed testing using unit testing to validate the system of the Smart Tourism Platform as follows:

Table 3

Testing Result

ID	Test Case Name	Response Time	Status
UT.01	Login Test	<500ms	PASS
UT.02	Register Test	<500ms	PASS
UT.03	Manage Hotel Test	<500ms	PASS
UT.04	Post Hotel Test	<500ms	PASS
UT.05	Edit Hotel Test	<500ms	PASS
UT.06	Delete Hotel Test	<500ms	PASS
UT.07	Hotel Menu Test	<500ms	PASS
UT.08	Show Hotel Test	1499ms	PASS
UT.09	Map Hotel Test	1850ms	PASS
UT.10	Post Fav Test	<500ms	PASS
UT.11	Show Fav Test	<500ms	PASS
UT.12	Manage Forum Test	<500ms	PASS
UT.13	Delete Forum Test	<500ms	PASS
UT.14	Forum Menu Test	<500ms	PASS
UT.15	Show Forum Test	<500ms	PASS
UT.16	Post Forum Test	<500ms	PASS
UT.17	Edit Forum Test	<500ms	PASS
UT.18	Post Comment Test	<500ms	PASS
UT.19	User Delete Forum Test	<500ms	PASS

The following conclusions can be obtained based on the research done in designing the Smart Tourism Platform for people with special needs wheelchair users in the city of Bandung using the Laravel framework. The establishment of the Smart Tourism Platform as a provider of information regarding the accessibility and mobility of hotels in Bandung. In this platform, users can search for information on the whereabouts of accessible hotels, find out what facilities are offered, and conduct discussions with other users.

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