

# Gubo: iOS Based Travel Destination and Itinerary

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## Abstract

Tourism has become the essence of human life. The purpose of this research is to help people when they want to travel, especially in Indonesia, and set out in the form of an application. The research method used are questionnaire distributed to people who like to travel and a comparison of similar applications. System analysis is carried out by designing the Unified Modeling Language (UML) and testing and evaluation which is carried out in four ways, namely: Black Box Testing, User Acceptance Test, 8 Golden Rules, and 5 Measurable Human Factors. The results obtained from this study are that the recommendations provided by the application can assist users in selecting and designing itinerary, coupled with the steps to make itinerary and expense records that are easier to use while the user is on a tour.

## Keywords

Travel, itinerary, mobile applications

## 1. Introduction

Smartphone is not something foreign in human life. Even some Indonesians consider smartphones to be a part of their lives. According to the Pew Research Center, Indonesia is ranked 24th as the most smartphone users with a percentage of 42% or around 112.4 million users in 2019 (Silver, 2019).

The use of smartphones greatly facilitates human life from morning to night. The total time of smartphone use in Indonesia reaches an average of 5.5 hours per day (Kompas, 2016). Starting from waking up using an alarm provided by a smartphone, calendar, or reminder that makes every day needs and essentials easier. Ordering motorcycle taxis, shopping for daily necessities, buying food online, to ordering plane tickets can all be done in the hands of humans.

Apart from smartphones, another thing that is one of the human needs is entertainment. Entertainment can be obtained in various ways, one of which is traveling. Traveling or vacations can produce several benefits, including reducing stress, increasing happiness and satisfaction, and increasing creativity (American Psychological Association, 2006;

Buckley, 2020; Wolber, 2011). This is not something foreign in Indonesia. The development of the tourism sector in Indonesia is an opportunity to increase state income.

Since 2014, Indonesia has been trying to make the tourism sector the country's second largest source of income apart from taxes. The efforts made by the Indonesian government are not only promoting through expos or exhibitions, but the government is also promoting the tourism sector by using social media and the internet as platforms to reach a wider range of tourists (DPR RI, 2019). Plus, now everyone can order tickets, hotels, and find out tourist attractions using information technology.

Often tourists make inefficient trips, ranging from time, order of destinations, to lack of preparation so they have to find a place they want to visit when they are at their destination. Based on the author's experience, this is due to making travel plans without considering the distance and time required from one destination to another, so the time they can use to travel somewhere runs out on the road.

So far, tourists have had difficulty in finding recommendations for tourist attractions or tourist attractions they want to visit. Travelers should seek recommendations from various travel platforms or websites. In addition, for tourists who are accustomed to recording itineraries, they have to do it manually by collecting data one by one starting from the location, hours, to the duration of the trip. In addition, there is a lack of applications that can be used to record expenses that are directly connected to the itinerary, so tourists must record them separately in other applications. This takes more time both before and during the trip.

With the help of smartphones, problems such as those mentioned above can be solved with an application that makes it easier for tourists to design their travel plans by providing recommendations for tourist attractions and assisting tourists in setting schedules and recording finances that will be needed during the trip. This is expected to make tourists much more interested and make it easier for them to explore tourist sites in Indonesia.

### **3. Methods**

In the process of creating the concept of the Gubo application, we use two types of methods which include:

#### **3.1 Data Collection Method**

The data collection process is carried out to obtain information and solutions needed to support the background of the application made. There are 3 ways to support the data collection process, namely: literature study, online questionnaire distribution, and comparison of similar applications.

#### **Literature Review**

In this data collection method, the data obtained to support application development is taken from journals, books, and also the internet.

#### **Questionnaire Distribution**

The questionnaire was distributed once, and the questionnaire was filled out by people who had traveled out of town. This questionnaire is targeted at up to 40 respondents.

#### **Similar App Comparison**

Comparing similar applications with applications made aims to find information about the differences in features, appearance of the application, and the advantages and disadvantages that can be applied to the application made.

#### **3.2 System Design**

Data design is carried out to describe the processes and structures that form the basis of the application and the functions that will be implemented in the application. These processes, structures, and functions can be described using use case diagrams, class diagrams, sequence diagrams, and activity diagrams.

## 5. Results and Discussion

### 5.1 Analysis Result

From the questionnaire as described in Table 1, several conclusions can be drawn. All respondents who filled out the questionnaire made a trip at least once a year, but only a few people made an itinerary during the trip. The lack of references and recommendations is one of the main problems faced during the holidays and the lack of information about the destinations you want to visit.

On the other hand, making an itinerary also has its own problems. In making an itinerary there is some information needed, but it is quite difficult to find all the information. Many respondents also do not know how to make a correct and orderly itinerary, so it is quite difficult to make the itinerary.

Table 1 Data Gathering Result

Description	Total Answer	%
<b>Total</b>	<b>48%</b>	<b>100%</b>
<b>Age</b>		
< 18	5	10.4%
18-25	39	81.2%
26-45	4	8.3%
> 45	0	0%
<b>Gender</b>		
Male	27	56.3%
Female	21	43.8%
<b>Have travelled out of town</b>		
Yes	48	100%
No	0	0%
<b>Annual Travel count</b>		
> 5	8	16.7%
3-4	14	29.2%
< 2	26	54.2%
<b>Travel Purpose</b>		
Holiday	45	93.8%
Visiting	1	2.1%
Work	1	2.1%
Refreshing	1	2.1%
<b>Ever have issue in determining tourist site?</b>		
Yes	42	87.5%
No	6	12.5%
<b>If yes, what kind of issue faced? (Multiple answer)</b>		
Don't know where to go	34	70.8%
Don't know the price required to enter the place	25	52.1%
Too many choices of tourist attractions	18	37.5%
The distance is too far	15	31.3%
Vehicles to go to tourist attractions	1	2.1%
<b>Ever made own itinerary</b>		
Yes	41	85.4%
No	7	14.6%
<b>Where to note the itinerary</b>		
Smartphone notes	29	70.7%
Paper	7	14.6%

Verbal	2	4.9%
Others	3	9.8%
<b>Ever had problems when making itinerary? (Multiple answer)</b>		
Yes	34	70.8%
No	14	29.2%
<b>Problems faced when making itinerary</b>		
Information about tourist locations is not clear	25	52.1%
Not used to making an itinerary for traveling	14	29.2%
There is no suitable application for recording itineraries	13	27.1%
It's hard to calculate distance and time	13	27.1%
Different opinion about tourist destinations	2	4.2%

It can be concluded that the itinerary is considered quite important and is often used during tourist trips, but there are still few who know how to make the right itinerary and the tools that can be used to create an itinerary. It's good if the application made supported by suitable recommendations and financial records to support tourist trips.

#### *User Persona and Customer Journey Map*

To get a further picture of the users who will use the application, a user persona and a customer journey map are created.

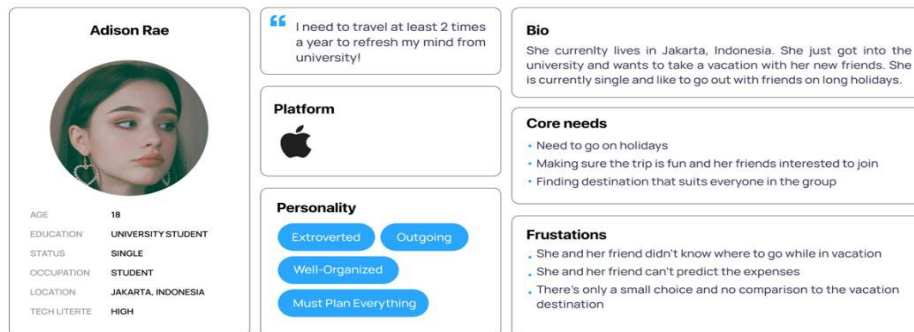


Figure 1. First User Persona (Adison Rae)

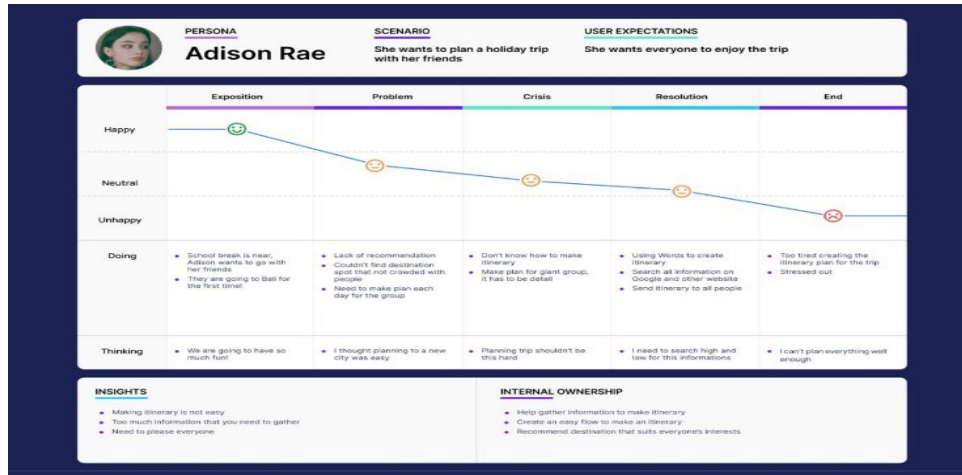


Figure 2. First Customer Journey (Adison Rae)

Based on Figure 1 and Figure 2, Adison Rae is an 18-year-old college student who wants to go on a trip with his school friends to pass the school holidays.

They are about to travel to Bali for the first time, but they have a problem which is not knowing which places to visit. Lack of recommendations for tourist attractions, not knowing which tourist attractions are crowded with visitors, and the need to make a travel plan are problems faced by Adison. The problem got bigger because he didn't know how to make an itinerary for him and his friends so that his trip in Bali was fun for all and according to what had been planned.

Finally, to solve the problem, Adison made travel notes in the form of words and searched for tourist spots from the internet, but the results were too tiring because they had to open different platforms and could not predict the time it would take.

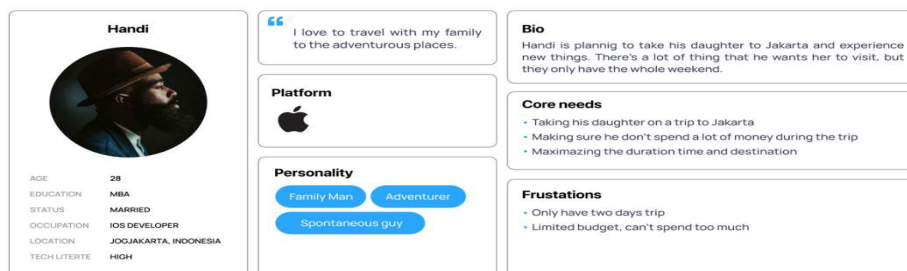


Figure 3. Second User Persona (Handi)

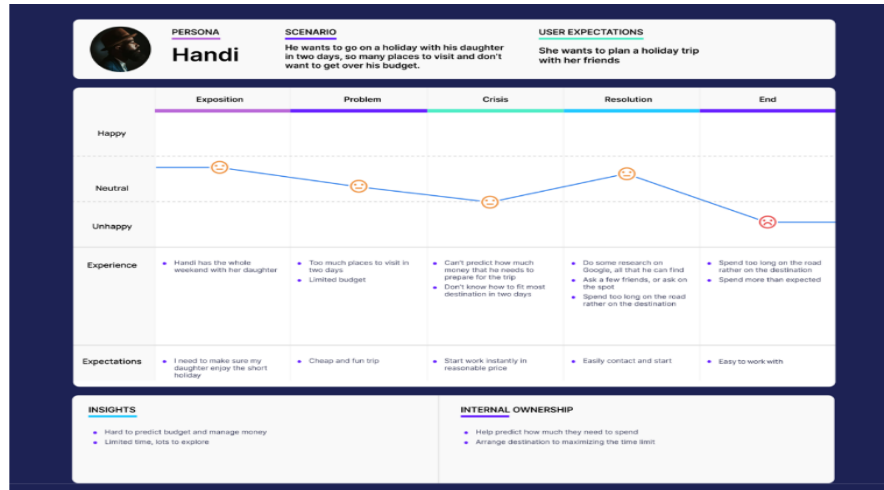


Figure 4. Second Customer Journey (Handi)

Based on Figure 3 and Figure 4, Handi is a father who is 28 years old. He wants to travel with his 4-year-old daughter. Due to work that takes time from Monday to Friday, Handi can only spend the weekend with her child. Unfortunately, there are so many tourist attractions that can be visited in Jakarta. Handi wants to maximize the time to visit tourist attractions as much as possible, but he wants the trip to be within the budget he has.

Handi cannot predict how much money he will have to provide for this tour because he does not know the ticket prices for each tourist spot in Jakarta. Finally, he did some research on google and asked some friends about tourist attractions that are suitable for children. Unfortunately, Handi forgot to calculate the travel time, which took quite a long time because of Jakarta's traffic jams, so the plans that had been previously arranged fell apart.

These two personas give writers a variety of images of the target user, ranging from age variations to needs. With these two personas, the application development process can be more in line with the targets to be achieved.

### Similar Application Analysis

To get an overview of the application to be made, a comparison of similar applications is carried out as described in Table 2. This process is carried out by looking for differences in each application, starting from the features provided, collaboration, to application flow.

Table 2. Similar Application Comparison Table

Feature	Trip Advisor	Visit a city	CityMaps2G 0	TripIt	Culture Trip
<b>Create an itinerary</b>				V	
<b>Arrange the itinerary</b>				V	
<b>Collaboration with friends</b>	V			V	
<b>Can be used offline</b>			V	V	
<b>Give recommendation</b>	V	V			V
<b>Order from the app</b>	V	V			V
<b>Provide an estimated time of visit</b>	V	V		V	V

Based on the results obtained from questionnaires that were widely distributed and filled out by 48 respondents and 5 comparisons of similar applications (Table 2), it can be concluded that several features will be offered. Following are the details of these features:

### Making an Itinerary

In accordance with the results of the questionnaire which shows that there are still few people who use the application to facilitate their travel. Therefore, one of the main features of the application that will be made is to create an itinerary. This itinerary recording is supported by viewing the itinerary per day, editing the itinerary, deleting the destinations you want to visit, setting the duration of the visit, and collaborating with friends in the same itinerary.

### Recommended tourist attractions

Based on the data obtained, many itinerary maker applications are not supported by recommendations for tourist attractions or vice versa, provide recommendations but cannot create an itinerary. Therefore, the itinerary recording application will be accompanied by recommendations for tourist attractions. This tourist spot recommendation has an explanation of the destination, starting from the description of the destination, visiting hours, to the estimated costs incurred.

### Recording expenses

One of the problems faced by respondents is not knowing how much to pay during the tour. Through these results, one of the features that support this application can be taken, namely expenses management where users can view estimated costs and add other expenses. The expense recording feature is also accompanied by a split bill that can be used by users to share expenses evenly with other members.

## 5.2 Design Result

Below in the Figure 5 is the Use Case diagram of the application. Figure 6, Figure 7, and Figure 8 is the Activity Diagram of the main features of the Application, and Figure 9 is the Class Diagram.

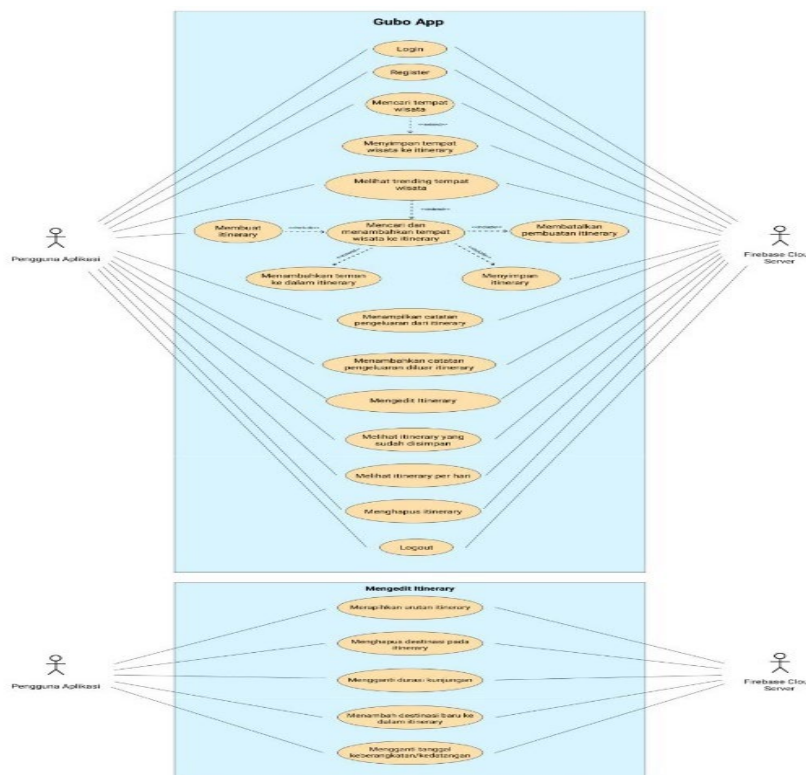


Figure 5. Use Case Diagram

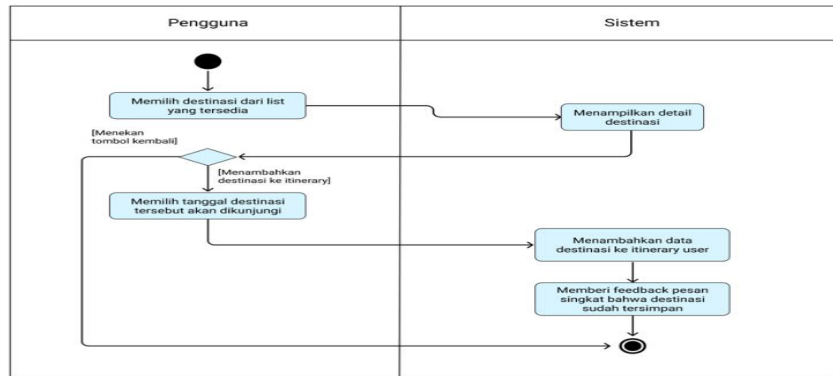


Figure 6. Activity Diagram Add Itinerary

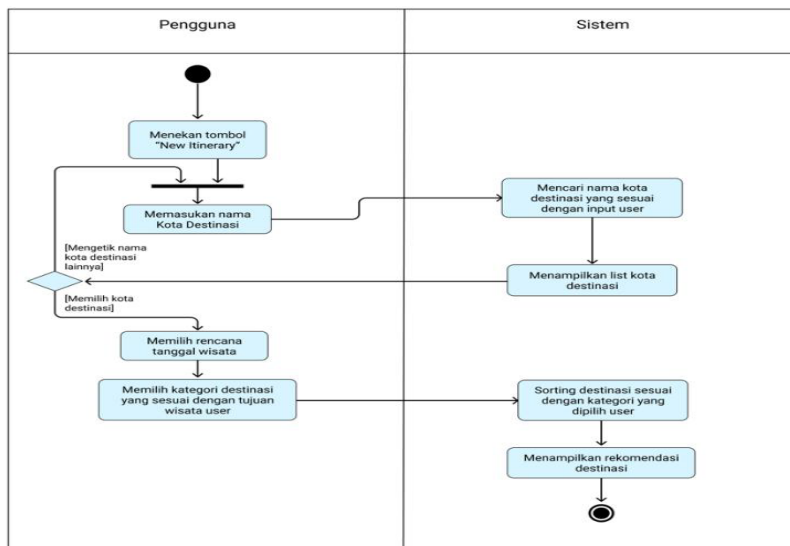


Figure 7. Activity Diagram Recommend Destination





(3) The Gubo application can help record and monitor the expenses needed during the tour so that users can predict the estimated expenses needed when traveling.

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