Software Requirements for Smart Tourism GSE

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Preface

This document introduces a software requirement specification for a smart-tourism application dedicated to the promotion of tourism locales within Malang. Our objective is to augment the exposure of Malang's tourist attractions, to supply local enterprises with robust analytic on tourist trends, and to provide the municipal authorities with structured and labeled user-generated feedbacks and suggestions concerning tourism sites.

In an era where digital interfaces are important in shaping tourism trends, this application is engineered to serve as an authoritative digital catalog for Malang's diverse array of historical, natural, and gastronomical attractions. Utilizing sophisticated data collection and analysis tools, the application offers local businesses a granular view of tourist demographics and behavior, thus enabling informed decision-making that aligns with evolving market dynamics.

Furthermore, the platform acts as a strategic instrument for the local government, providing a systematic aggregation of tourist feedback. This feedback is essential for ongoing enhancement of the tourist experience and for informed policy-making that underpins sustainable tourism development.

This application is more than a mere guide; it is an integrative tool for tourists, a business intelligence system for local vendors, and a decision support system for governance. It is through this multifaceted utility that the application stands as a testament to the symbiotic relationship between technology, commerce, and governance in the realm of tourism.

The rest of this requirement document will be structured as follows. Chapter 1 introduces the background and problem formulation about the condition of tourism in Malang. The chapter also discuss about the overview of the system, the users or actors who used the system, the usability of the system, and the possible constraints in terms of operational. Chapter 3 describes the requirements of several users including the tourist, government, and local business. Chapter 2 details the requirements of the proposed system that entails to the functional requirements, non-functional requirements, and the system constraints. Lastly, requirements about the security and privacy issue are outlined in Chapter 4.

Contents

1 Introduction

The Department of Tourism and Culture of Malang (Disparbud) authority wishes to improve the publicity of tourism spot in Malang. The overall goals of the system are as follows:

1. To provide tourist with information regarding the desired tourist destination, including its operating hours, available routes, and transportation options.
2. To provide government with user input and feedback data such as ratings, yes or no, responses, and comments. to share with the government for the purpose of gaining insights and enhancing the quality of the tourist experience in Malang.
3. To provide information regarding the tourist density and common preferences to the local business owner.

The system is however not intended to obstruct the other information platforms such as tourist website, government website, or information placard. This system is solely designed with the purpose of facilitating access to information and providing guidance to tourists.

This document outlines the high-level software requirements for this proposed system, known as the XXXXX system. In some areas, these requirements are incomplete and more detailed requirements must be derived after consultation with Malang government agents.

1.1 System overview

In the context of Malang, East Java, a region where a quarter of the tourism is concentrated, there's a substantial opportunity to impact the local economy positively through technological advancements. This is particularly relevant considering the tourism sector's backbone is formed by Micro Small Medium Enterprises (MSME), with micro enterprises, those with assets under $317, accounting for a staggering 98% of all businesses in Indonesia.

The current challenge faced by these vital tourism stakeholders in Malang is the absence of a centralized information system. This gap not only hinders their operational efficiency but also leaves a void in data collection tools essential for government and policymakers to evaluate tourist destinations' quality and visitor experiences.

Additionally, from a tourist perspective, there is a noticeable deficit in accessible information regarding the plethora of tourist attractions Malang offers, such as its culinary delights, scenic spots, and rich cultural heritage.

The proposed system is designed to serve the dual purpose of empowering local MSME with a platform to manage and disseminate tourism-related data effectively, and enhancing the tourists' experience by providing them with comprehensive, up-to-date information about Malang's tourist attractions. Through this initiative, we aim to foster growth in the tourism sector of East Java, bolstering the local economy and enriching the tourist experience.

The key features of the system are:

1. *Tourist planning system* This feature is designed to enhance the experience of tourists to Malang that include a pre-visit planning and on-site navigation. This feature should cater to the requirement of diverse tourists, from those who meticulously plan their trips to spontaneous adventurers who make decisions on the go.

2. *Virtual tourist assistant* The virtual assistant is designed to provide information regarding the tourism attractions to the tourists. It is expected that the response given by the system should closely resemble the real tourist guide.

3. *Feedback data collection* This feature is operated to collect the feedback or input from the users regarding the quality and experience when visiting the tourism places.

The overall design of the system has to take into account both safety and privacy concerns.

1. The safety implications comes from the fact that

1.2 System users

There are 3 types of user that make use of XXXX system:

1. *Tourist* Tourist interact directly with the system, including using the tourism features and giving feedback to the system.

2. *Government* Government do not interact with the system directly. Instead, the government make use of reports including tourist information, preferences, and feedback data. The reports are generated automatically by the system and do not contain personal information regarding specific tourists. Government agents do not have access to the tourism features of the system or to individual tourist records.

3. *Local businesses*

1.3 System usability

The XXXX system will be used by a range of people from different backgrounds including tourists, government agents, and local business owners. For acceptance of the system by the tourists, it is essential to pay close attention to the system usability so that users (a) can learn to use the system quickly; (b) can use the system intuitively and (c) make as few unnecessary interactions as possible when using the system.

1.4 Operational constraints

The following operational constraints shall apply to the XXXX system:

1. The XXXX system shall make use of the Firebase single sign-on authentication system. This system is an authentication system that requires a login and password to access the system features.

2 System requirements

The XXXX system is a smart-tourism application that 1. provide necessary information and guide to the tourists 2. help the local business owner to get information about tourist trends and density 3. provide government with the tourist feedback and input regarding the experience when visiting the tourism attractions.

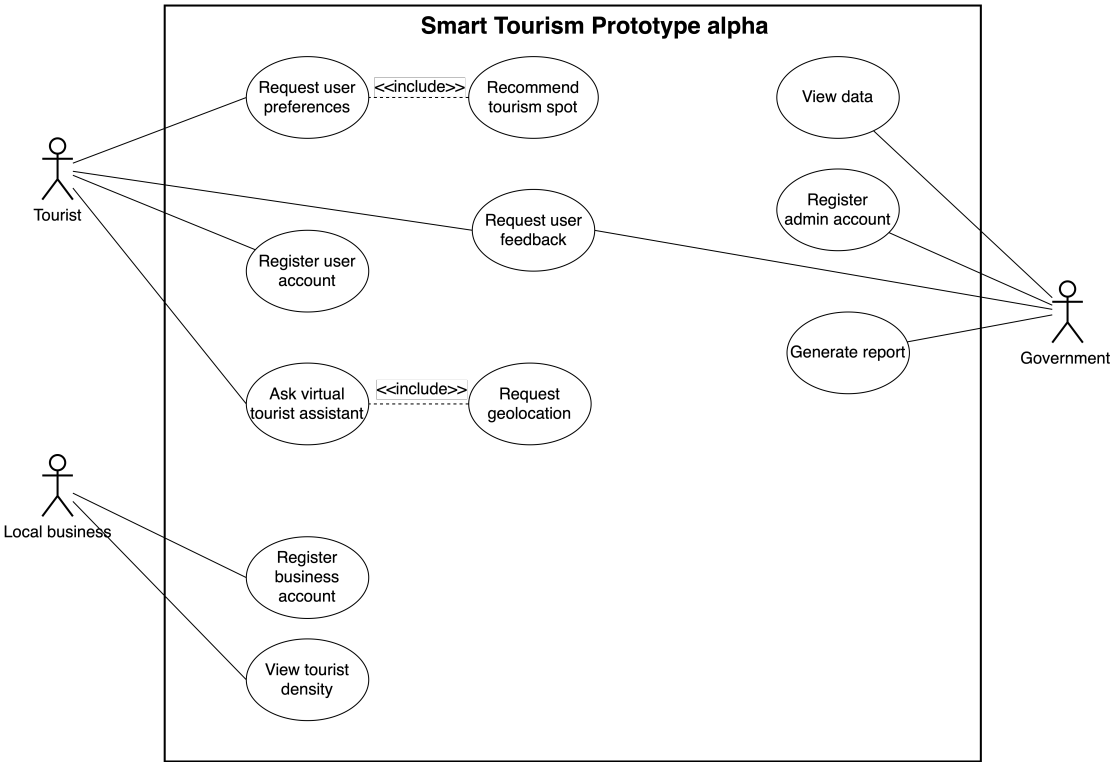

Figure 2.1: Use case diagram of XXXX system

Figure 2.1 is the usecase diagram of the proposed system. In the proposed system, there three main actors such as tourists, local business owners, and the government. The proposed system is designed so that each of the actors has different and also overlapping functionalities. This functionalities are described in the Section 2.1.

2.1 Functional requirements

2.1.1 Request user preferences

Actor: Tourist

Function: To request user preferences

Description:

Inputs: User input preferences

Outputs: Chosen preferences by the user in forms of array-like

2.1.2 Register user account

Actor: Tourist

Function: To register the user account

Description:

Inputs: Username and password

Outputs:

2.1.3 Ask virtual tourist assistant

Actor: Tourist

Function: To ask the chatbot

Description:

Inputs:

Source:

Outputs:

2.1.4 Register business account

Actor: Local business owner

Function: Request tourist preferences: tourist preference to the tourism spots

Description:

Inputs:

Source:

Outputs:

2.1.5 Register user feedback

Actor: Tourist and government

Function: Request tourist preferences: tourist preference to the tourism spots

Description:

Inputs:

Source:

Outputs:

2.1.6 Register admin account

Actor: Government

Function: Request tourist preferences: tourist preference to the tourism spots

Description:

Inputs:

Source:

Outputs:

2.1.7 Generate reports

Actor: Government

Function: Request tourist preferences: tourist preference to the tourism spots

Description:

Inputs:

Source:

Outputs:

2.1.8 View data

Actor: Government

Function: Request tourist preferences: tourist preference to the tourism spots

Description:

Inputs:

Source:

Outputs:

2.2 Non-functional requirements

2.3 Constraints

3 User requirements

3.1 Tourist requirements

3.2 Governmental requirements

3.3 Business management requirements

4 Security and privacy requirements

4.1 Security requirements

4.2 Privacy requirements

Glossaries

Disparbud

is a governmental body that represents the department of tourism and culture in Malang, Indonesia. 3

MSME

is the abbreviation of the term "Micro Small Medium Enterprises". 3, 4