

# Design and Develop a mobile application for smart tourism in Oman

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## Abstract

The tourism sector is one of the most important areas to generate revenue for the government. The ministry of tourism and heritage in Sultanate of Oman is emphasizing on the need of promoting the tourism to contribute to the GDP of the Sultanate, open more employment opportunities for the nationals, career prospects for the youth with improve, SMEs and other related local businesses will also get lucrative opportunities. Considering the current COVID -19 pandemic situation, the tourism industry is facing a setback. Oman aims to maximize the investment in a way of developing social and economic benefits. Smart tourism became one of the most dependent applications and a trending smart way for visiting several tourism places all over the world these days. Oman is one of the most popular tourism targeted because of its attractive cities, waterfalls, wadis, caves and deserts. Therefore, having an appropriate framework of smart tourism application especially for the tourists will support the Oman tourism sector. This research paper analyses the features of having smart tourist information services through an extensive literature review conducted on the existing applications in this domain all over the world, identifying the existing gaps, and addressing the same in this application. The most popular places to visit and places of heritage in Oman are captured in this application. Besides, this application tells users about the most reliable services available. The application will be available for IOS and Android phones. It will be freely downloadable from Play Store or can be accessed using any browser. This application will be developed using Android Studio. The app will also analyse the customer satisfaction. Real time information will be available on the app for the selected location and will be reliable. It will save the time of the tourists and will enable them to get more guidance on the nearby surroundings, services available and also avail offers.

**Keywords** –Smart tourism, Mobile application, Tourist information services, Tourism, Tourists.

## Introduction

Nowadays, tourism is amongst the prime commercial areas backing the state progression. It is also amongst the main cradles of income in the countries. The application developed would offer tourism services like bookings to the hotels and suggesting Omani tourist attractions. This application would improve the tourist influx. Mobile applications can aid to reduce the hunt and booking struggles for the tourism drives in the Sultanate of Oman (Ibrahim, 2009).The perception of smart tourism came into picture a couple of years before, and numerous worldwide organizations talked about its countless applications and its influence on growing tourism industry, particularly in the underdeveloped countries, in which tourism revenues set up a large proportion of the gross domestic product. Several factors contributed to the upsurge in the extent of this idea and its various applications, the most important of which is the increase in the percentage of smart tourism's contribution to the entire universal e-commerce, and the resultant incorporation of this idea into the institutional structures of the tourism-related bodies in terms of reducing the costs of the tourism services provided and thus prices, developing the presented tourism product and creating new tourism activities consistent with diverse sections of tourists, in addition to growing competitiveness of tourism institutions, and the resulting upsurge in the additional value of the tourism sector in the national economy. We must endeavor to progress tourism by all means. Moreover, it also facilitates the process of changing the itinerary and comparing the prices of services between them.

## Project Scope:

This project focuses mainly on developing an intelligent tourism application that offers hotels and the best places to visit in Oman. Smart tourism application planned for visitors local or foreign as well as tourism organizations in the Oman Sultanate. Tourist resources and monuments in our country are important, so it needs to consider it and used and tourist's attraction. Tourists and foreigners will depend on this application by applying this application and are satisfied with both conditions and their needs.

## Project Objectives:

Create a non-existent application that will enhance the forum on tourism in Oman.

- Enhancing consumer and customer fulfilment.
- To gain an understanding of developing communities in the Oman tourism area through operating ways of inquiry in the tourist segment.
- To assess customer understanding of the smartphone application designed for tourism.

## Project Goal:

The goal of this project is to create an intelligent Oman tourism app that fills the tourist gap in Oman's tourism applications and promotes the maintenance of various touristic and resident activities. In addition, tourism can improve the enjoyment and happiness of tourists.

## Methodology:

The investigators in this research work have used diverse research methodologies. The quantitative and qualitative approaches are used to acquire data related to the work. Using the quantitative method, data was collected using online questionnaire. Data collected using this method was used for the study of objectives and analysis of the problem under study. The qualitative research method was utilized for article reviews. This means helped to get supplementary statistics on the use of technology for this problem solution and ascertaining the gaps in the previously prevailing applications of the similar nature.

## Literature Review:

In the first stage of the Oman Tourism Plan 2040, the Sultanate has managed to focus on 5 towns, including Salalah, where people can invest in tourism. Furthermore, the proposal covers the development of fourteen tourist complexes across the provinces and a wide variety of touristic items for the target market, locally and internationally, to enhance and increase the tourism capacity of the provinces, thus boosting industry (Abdul Redha, 2018).

"The tourism industry of Oman has been one of the most desirable tourism places in comparison to the Gulf region, according to Srikumar (2013). Every year there are more and more tourists. It's a good time to plan a luxury holiday in Oman with exclusive amenities and resorts."

In addition to that, Geneva (2018) said "Tourism is a strategic area for Oman's economic diversification activities. This is because of its projection to draw a total of 1.6 trillion Omani Rials in public and private investment in the five priority areas identified under the Oman Ninth Five-Year Plan, along with engineering, transport, and logistic equipment and mining facilities."

To get investment from the tourism side, every country is now trying to boost its economy. The study is highly recommended for the tourism sector since Oman has many foreign investment facilities. The only thing is that Oman's sultanate has a smartphone tourism app that can help the customer get fast services and very easy access to all needs.

"The mobile users today are more than laptop users!" Deshdeep (2020) says. As a result, a need to include mobile channels effectively to attract customers has been recognized by tourist firms. They will need to tailor the mobile apps to improve their customers' experiences and optimize their conversions."

"The Oman Sultanate has a large number of natural resources in agriculture, tourism, business and industry, as stated by Rahman Khan (2016). Tourism is one of the main sources of economic growth in the world."

Key aims to be achieved for smartphone app tourism;

- 1) identification of resource-related strategies by tourism production in Oman.
- 2) Improve the advantages of tourism sector growth
- 3) To attract customers to Oman with so many visitors

Makhija stated "there are several benefits lists for developing a smartphone tourism application that is beneficial for all consumers, and also he listed benefits depending on the mobile application. An application, for instance, that allows users to efficiently understand tourism or travel agencies. Moreover, it is advantageous to provide individual services to platform customers. In addition, agents can effectively communicate with customers through travel applications. In addition, immediate reimbursement from the tourism industry to various locations can be provided. Finally, but not least, travel agencies will use a mobile app for all types of appointments simultaneously (2020)."

Henderson (2015) believes that 'the country has strong tourism potential and requires only private and government investment so that it is a lucrative company to reduce the pressures of the oil industry,' says the authority. Oman's Sea, Scenery, and Sun are three major tourist fields in Oman.

This application includes the visitation and all the materials needed for a tour, such as photos, weather, and locality information. Visitors with no experience of the location are also useful. Users will get direct suggestions on the areas they want to visit by using the map tool offered in the program. All users either visitors or residents can access various tour and driving destinations (Rosario, 2017).

## Questionnaire

The questionnaire is composed of several researchers' questions. It seeks to obtain the answers and opinions of the target people who fund this initiative.

1. The smart application for tourism in Oman will contribute to the development of the tourism sector?
2. This application is useful for our society?
3. Smart tourism application will benefit to promote tourism organization?
4. Smart tourism application can improve the economy of the country?
5. Smart tourism application will save time for getting detailed tourism information in Oman?
6. This feature helps users to create a complete travel plan by just adding the location they want to visit?
7. What kind of tourism services do you expect from this application?

### Analysis:

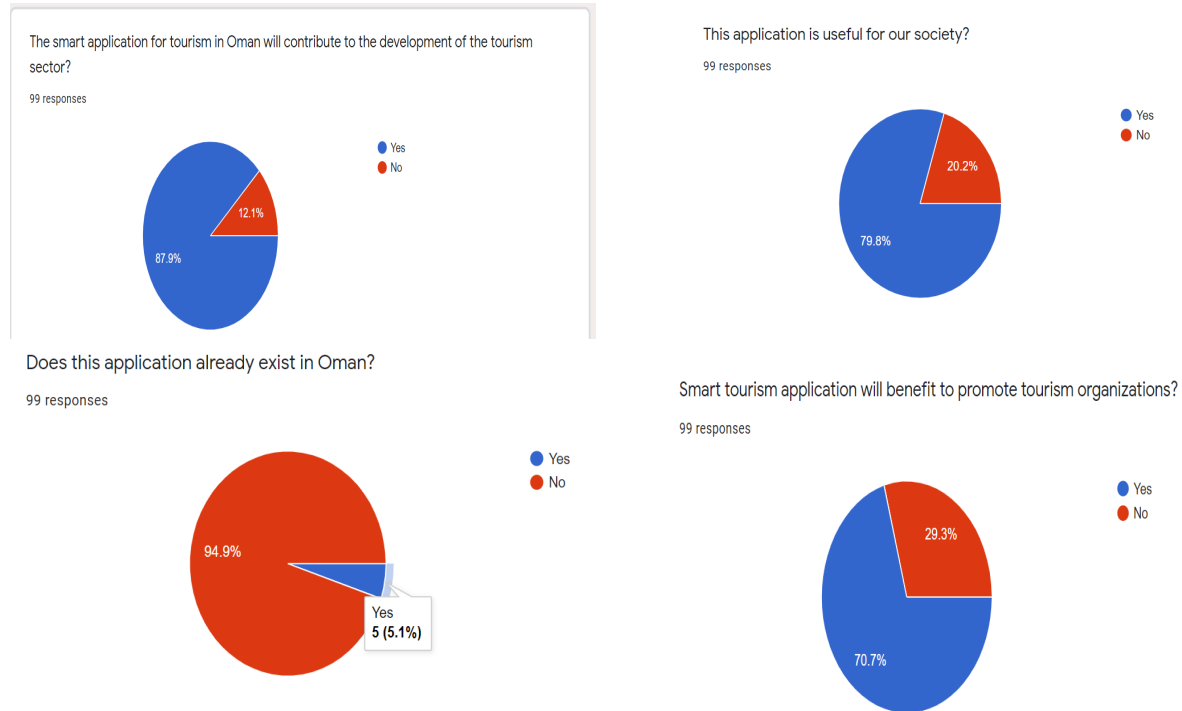


Figure 1 Questionnaire analysis

- 87.9% of respondents believed that smart mobile applications for tourism sector will add to the development of this sector.
- 79.8% of the respondents agree to the idea of the mobile application being useful for tourism sector.
- 94.9% of the respondents agree to the fact that a similar application does not exist for the tourism sector in Oman.
- 70.7% of respondents believe that an application of this kind will be helpful for promoting the industry amongst the tourists.
- 74.5% of respondents believe that this kind of application would aid in boosting the economy of the state.
- 85.9% of respondents says that this application will save the time of tourists and give detailed information about the places.
- 87.9% of respondents says that this application feature will help the user to get a complete travel plan.

### Feasibility Analysis:

Based on analysis, it's clearly stated that tourists emphasized the need for an application that provides all tourism services. Several people believe that mobile applications saved time and effort for making reservations instead of visiting the office.

#### SWOT analysis

The most important aspect of this analysis is to recognize the strength of the project to see if this project will succeed in the future. It helps an organization to identify and take the appropriate steps to address potential risks. Companies should develop new strategies and create expansion plans to eliminate potential risks.

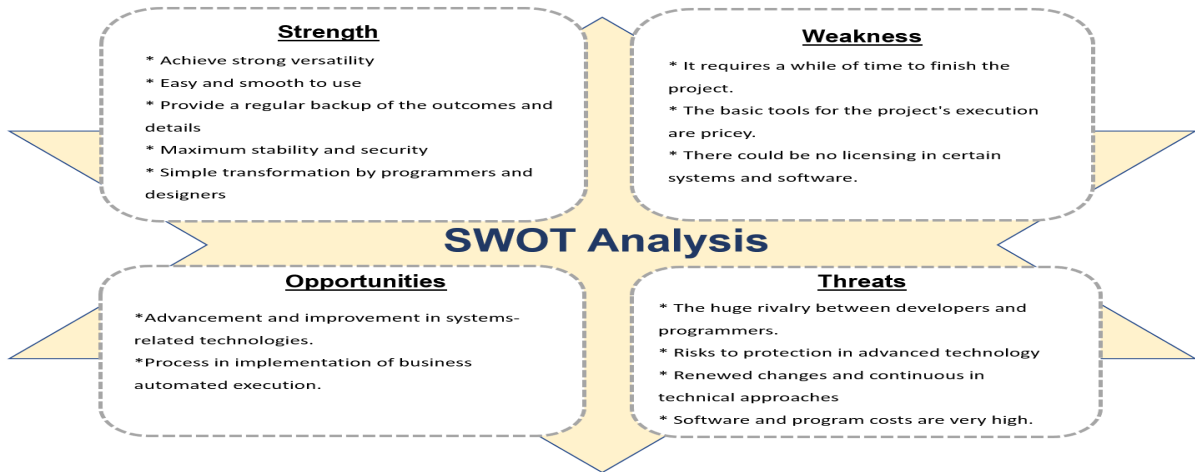


Figure 2 SWOT Analysis

**Methodology:**

For this project, the waterfall model is suitable. Budgets are rather set because of the scope and specifications. I may estimate the achievement accurately. For instance, I know about technology and what I did in the past. However, the proposal may be exposed to very low risk.

**Design diagrams:**

**Context diagram:**

The following diagram illustrates the application's initial spectrum. This consists of input and output processes for the relationship between the manager and the user of the device, the app system inside the circle, and the square characters.

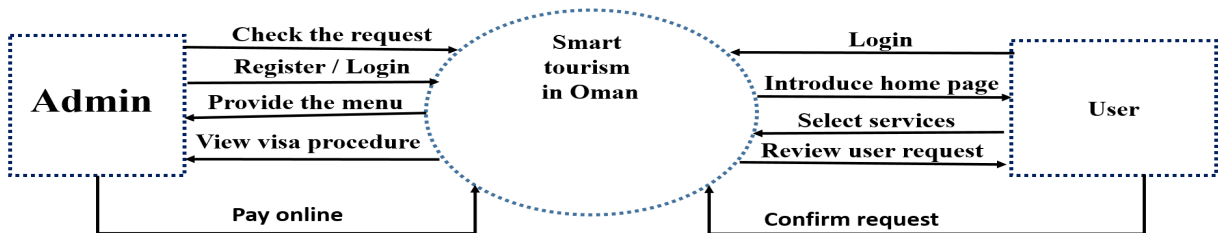
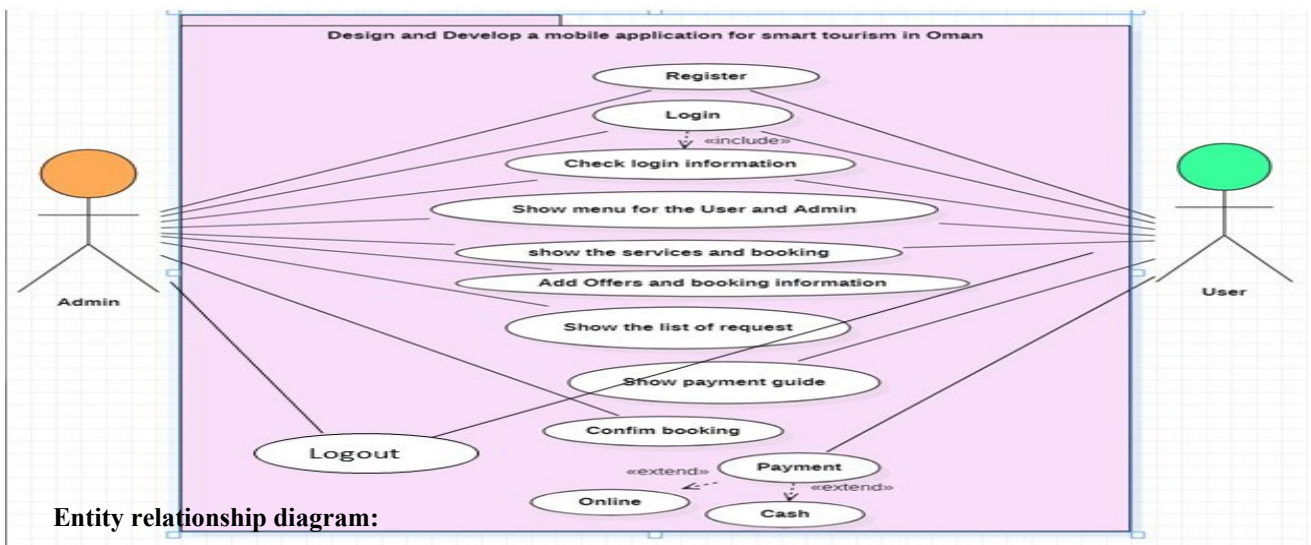


Figure 31 Context Diagram

**Use case diagram:**

The following diagram explains how the system procedure works between the administrator and the user in the software system. From registration to login and payment end.



**Entity relationship diagram:**

Figure 4 Use Case diagram

The diagram gives the reader a clear idea of how the application process interacts with each other. In addition, the customer must register or log in to select the resources they need. The administrator will see which facilities have been selected.

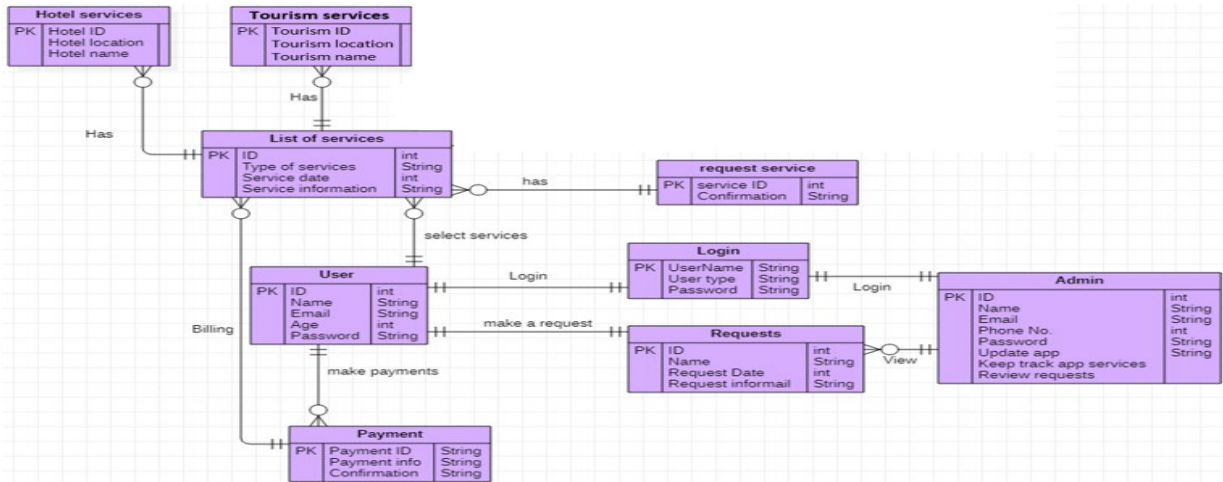


Figure 5 Entity Relationship Diagram

**Flow chart diagram:**

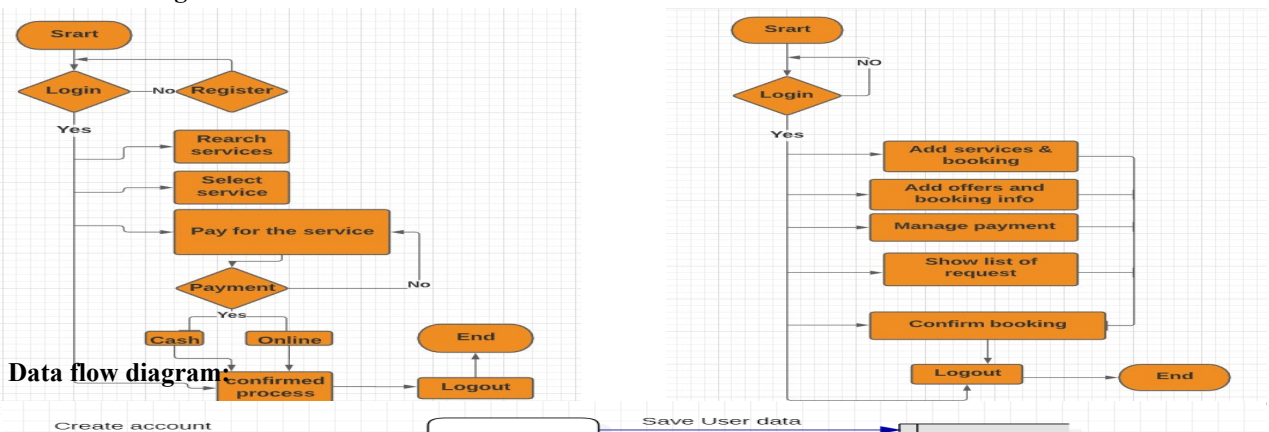


Figure 6 Flowchart for user and Admin

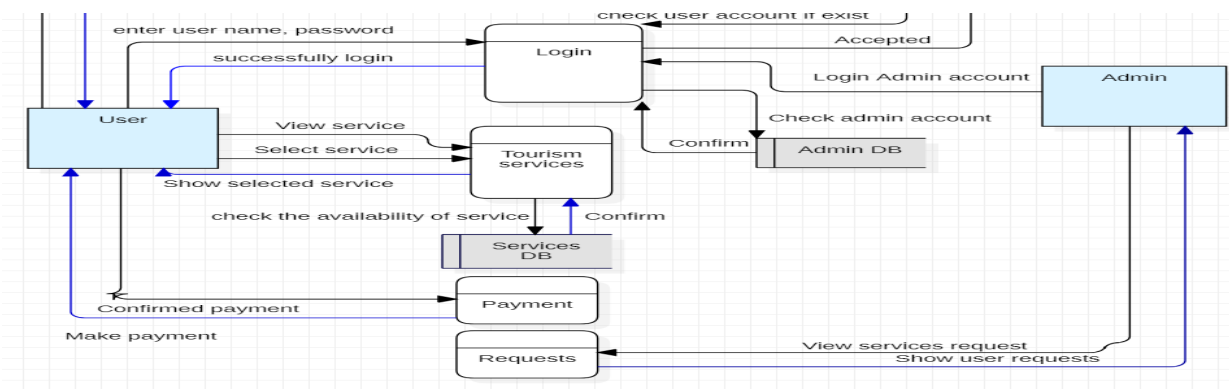


Figure 7 Data Flow diagram

**Results and observations:**

This application will be developed using Android studio and the Firebase program. The literature review, data collected and analysed from the users, feasibility analysis have all helped in strengthening the requirements and finalizing the features of the mobile application. Once the application is ready, it will be tested by the stakeholders before being made available to the market.



## Conclusion & Recommendations:

This project has been conducted with the intention that could benefit the tourists. Several tourists and citizens don't know about the best places to visit in Oman and the best hotels to reserve due to limited application. This application will save time and effort for the users and will provide all needed services.

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