

Design and Develop an Android Based Mobile Application for Omani Guide

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ABSTRACT

The tourism sector is one of the most important elements in the economic field because of what Oman is distinguished from the various tourism components, which will impact positively the rank of the Sultanate of Oman as a preferred destination to discover the field of the national and heritage and to get a unique experience. Therefore, Oman Vision 2040 underlined the importance of this sector and its development, making it one of the most significant sources of national income. Thus, the Ministry of Heritage and Tourism focused on improving the systems for planning, developing, attracting any investments, and keeping pace with programs and plans with Oman Vision 2040, also among the objectives of the Ministry is the digital transformation to keep pace with developments in the technical fields, so the ministry's focus on the technical side will enable the development of several contexts for access to services, including the creation of a mobile application to help the access of tourists to various services. So, this research paper focuses on creating a tourism mobile application that is Affiliated with the Ministry of Heritage and Tourism to extend its contribution to the tourism sector, so this study is based on qualitative data, which are press articles and case studies. Therefore, priority data was collected via the electronic questionnaire method, as it was distributed among 41 individuals of different ages and specializations. Through analysis, it indicated that most individuals are supporting the idea of creating a tourism application to develop this field because of the gap in applications of this sector. Creating an Omani Gide application will contribute to providing services that make it easier for tourists to access information reliably. This application supports will facilitate access for individuals and communities to download and use it on their devices. Therefore, this application will make the process of searching for touristic areas easier and faster, as the user can search for tourist areas and see information about them, tourism activities with the details of them with booking, provide a car rental service dedicated to trips and information About the tour guides and the events held. so, this application will fill the application gap in the tourism fields in Oman.

Introduction

Tourism is one of the most important elements of the Sultanate of Oman, as it contains many tourist attractions, events, etc., and the creation of an application that helps to highlight these elements in a better way for the tourist, easy and reliable, and contributes to increasing the rate of internal and external tourism. , The Ministry of Heritage and Tourism is one of the most important ministries in the Sultanate of Oman and is in Muscat. the geologic, and archaeological factors and Oman's culture over the centuries be highlighted to those features and protected is the role of the Ministry. Where the ministry aims to spread awareness of the tourism sector, preserve the Omani environment, its legacies and highlight this tourism sector through cooperation with other organizations and work to increase investment in the most prominent tourist areas moreover marketing them as distinctive tourist destinations at the Arab Gulf, which contributes to increasing movement Tourism, which leading to diversification of the source of income and increased employment opportunities as it came in the Oman vision 2040, also one of the states the ministry's goals is the digital transformation to keep pace with the Sultanate's trend in the technical field in providing services. It has numerous perform roles,

including discovering and maintaining any cultural monuments by documenting and establishing laws to protect them, organizing events such as festivals or exhibitions, managing and establishing museums or heritage houses, and collecting Omani manuscripts or any important cultural books, it responsible in creating plans, policies, and programs in this sector, it Responsible for exporting licenses for any tourism project, conducting research in the cultural and heritage fields, setting laws in the investment of the tourism sector in the field of, participation with other parties to increase investment in this sector, evaluating and studying investment projects, Establishing standards and controls for all tourist facilities to ensure the quality of performance, Increasing the awareness of individuals about this sector, also The Ministry represents the Sultanate Oman in this sector in any internal or external events or meetings.

Problem Statement

There are many tourist areas in Omans but because of the loose of insufficient media attention, some people still don't know about those places, as well as about recreational activities and tour guides. So, the lack of a main platform for individuals helps to find interest in tourism activities, whether diving, hiking, or mountain climbing, because some individuals do not know how to access these recreational activities. The absence of the culture of the tour guide makes it difficult to access, so some individuals do not have the knowledge to communicate with the tour guides. Moreover, some visitors need cars equipped for various types of trips in advance, so that their trip is a series to go anyplace.

Literature Review

Similar Work

They added a feature to this application, which helps to schedule the trip, which in turn shows all information about every place in the whole region and also schedules any activities that the tourist can set up in these places, such as camping or adventure, such as showing the existing caves or camping and showing the appropriate places for them or walking where the tourist can Enjoying the scenery. They used modern technologies to develop this application and set a database when the tourist enters the application, so they found that this application helps to schedule any trip in a better and easier way for the individual or tourist. (Ali et al.,2021)

A research paper talks about electronic tourism and its request to support tourists, as it shows the most important tourist areas based on what the user prefers, and also shows the weather, tourist areas, basic information, and the location of the tourist area with pictures. Also, the writer added the transportation service, which cleans the means and knowledge of the possibility of delivery to the desired tourist area. Also, one of the distinguished services is transportation with vehicle owners based on the customer's identification of the area to go to. The book used a database to add information and retrieve it, such as information on tourist areas. One of the best features they added is the ability to see other users across the map. (Kashevnik et al.,2015)

They suggested displaying historical and archaeological areas only, which in turn contribute to the dissemination of more information about the region. Therefore, one of the added features is the delivery of information in an audio-visual way with maps, and also clarify plans to visit these areas in an easier way without complications. Use digrams to clarify the implementation process. This is an application only for this region designated(Alimudin et al.,2020)

This paper includes the creation of an application for a city in Malaysia, where it contains important tourist areas, the creation of an information program for tourists in the area, its customs, its inhabitants, the developments that will occur in it, and also for some other areas in it that do not contain activity by tourists due to the lack of information about them, which in turn affected the owners interest in promoting their products. Therefore, the author used methods to help him develop this problem, and it is an application of the most important features. It is a locator that determines the user's location and shows tourist sites or places such as restaurants, etc., but the author commented

that the speed of using the application depends on the network surrounding the tourist. Tourist potential and others. (Pozi et al.,2013)

The writer proposed to create a method for some tourists who face problems with the travel budget, as he developed a program that contributes to the development of tourist destinations for the traveler's ability to determine his capabilities based on the region he will go to, and he added to the use of a locator to display the distance between the destination and the individual. Among the features that he added is the provision of a service for home accommodation, where the cost and rental information are displayed, and he also added important information that is useful to tourists in other countries, such as important numbers, and also providing a sensor to save the coordinates of the old sites. (Chandio,2018)

Focus on creating a safe and easy application by developing certain algorithms, so the idea is to design a program for individuals to plan trips by setting trips based on a budget and the specified time that has been estimated, as it shows information about places and weather conditions in that region and who are the available tourist guides and the most important measures that they set are Safe service, transportation, and communication processes. They also discussed the system's communication process with the server, database, and program. (Khan et al.,2021)

Reviewing Literature

Mobile Application Development for Tourist Guide in Pekanbaru City

this paper relied on many sources that are used in the field of tourism, such as articles, methodologies, and patents, and the results of the research that was established to know the impact of technology, especially the phone, on the tourism side appear. In an increase in the country's economy and its sustainability due to customer satisfaction, so the presence of these developments will contribute to the existence of competition in this scope, which positively affects tourism by making it more efficient.(Kim rtal.,2017)

Behavioural Impacts of Mobile Tour Guides

A paper in which the tourist experience was discussed in the difference between the behavior of individuals, first in the use of a tourist guide who conducts the tour and defines places with a specific timetable, and the other is the use of a dynamic tourist application that provides important information about the site and determining the location. To determine the results, they used illustrative charts, and the result was that both differences are equal, as well as the distances, but some of them preferred to walk and focus on the information of the guide, and others preferred to apply(Gretzel et al.,2007)

Design and Implementation of a Tourism Mobile Application in the Context of Smart Cities

They developed a plan to create an application for a smart city that contains all facilities, needs, and other aspects. Creating an application that includes all these aspects and also to be a tourist application that contributes to showing tourist places and using many technologies to clarify the program's work system, and to set the requirements for its creation, such as programs and their abundance of documents (Zaoui et al.,2019)

Design and Development of a Mobile App for Accessible Beach Tourism Information for People with Disabilities

This research paper contained the need of people with special disabilities or chronic diseases on the technical side to have an application containing tools that meet their needs on the tourism side, which in turn contributes to increasing the rate of individual well-being. To help them, as an example, the case of an individual with a motor disability was studied in the possibility of his access to a marine area, so they created an application that could be helped, so it contains pictures of the areas prepared for people with special needs and their locations, as well as the location of the

car park, and they used statistics to find the best marine areas, and emphasized the importance of the presence of citizens to use the application.(Carrilloetal.,2019)

Methodology

Iterative methodology (Incremental model) has some elements from the waterfall model and each linear of the sequence produces a deliverable increase in the software. Moreover, has a low risk of errors and is flexible in fixing bugs in the application and flexible in updating any requirements.

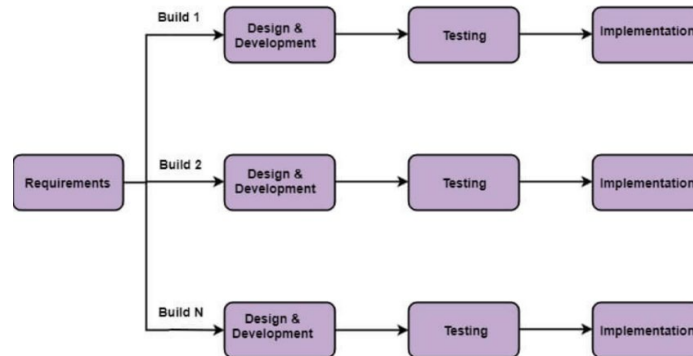


Figure 1.Iterative methodology (Incremental model)

Methods

To grasp the requirements and expectations of the stakeholders, in this research is undertaken by two methodologies were used, which are quantitative, which are related to data collection by using a questionnaire through the Internet, in order to collect the required data and easy analysis them. The other methodology used in collecting data is qualitative, which is the search for articles related to the topic to which the research relates. Therefore, the results where These methodologies are to obtain statistics about tourism, find solutions to problems, emphasize the importance of creating this type of application, and find out the types of gaps that lie in previously created applications that have similar characteristics.

Data Collection and Analysis

In research, a questionnaire method was adopted to collect data for the subject, to be analyzed and get a useful result, was published in google forms and has been answered by 41 people from different ages, as the following shows an analysis of the results obtained.

11. Do you think that the Omani Guide application will contribute to supporting the tourism aspect in Oman?

41 responses

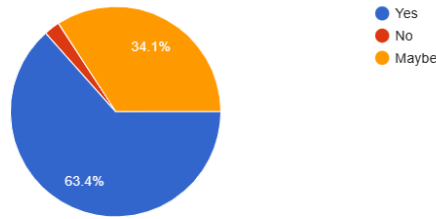


Figure 2. Omani Guide application will contribute to supporting the tourism aspect in Oman.

In figure 1 the answer about Omani Guide application will contribute to supporting the tourism aspect in Oman.

From above answers most of the respondents to the question agree that “Omani Guide application will contribute to supporting the tourism aspect in Oman”, 63,4 % says "yes" which means that will help this sector, 34.1 % of respondents says "maybe". The remaining 2.4 % of respondents say "no" and believe that application will not affect.

In sum from the results discussed above, most people agree to create this application which means there is a gap in this part of the tourism sector but on the other hand the largest segment of society is aware of the effective role of tourism applications in serving the tourism sector.

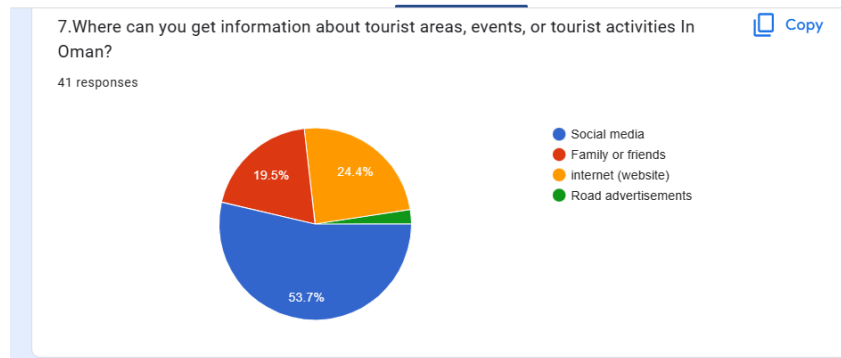


Figure 3. Get information about tourist areas, events, or tourist activities In Oman

The figure2 shows question number 7 from the questionnaire, which shows the answers of people about the places they get the information from as shown in the picture above.

From the above answers, most of the respondents to the question get information about any tourist areas, events, or tourist activities from social media with a rate of 53.7%. Whereas the others get from the internet (website) at a rate of 24.4%, but the others Family or friends’ rate 19.5%, Whereas less of people get it from Road advertisements at 2.4%.

The results discussed above show the main problem is that there is no specific place or reliable place to get the information from.

9.As a tourist, do you take the help of a tour guide when going to a touristic area or doing a recreational tourism activity (climbing, walking, diving)?
41 responses

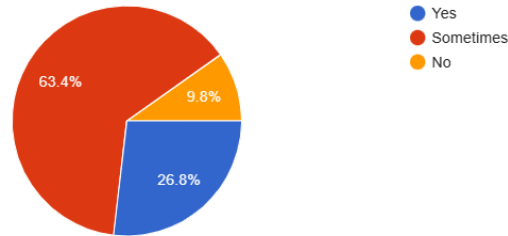


Figure 4. As a tourist, do you take the help of a tour guide when going to a touristic area or doing a recreational tourism activity (climbing, walking, diving)

As the chart shows above if people take help from a tourist guide when going to a tourist area or doing a recreational tourism activity (climbing, walking, diving) the answer is that 36.4% of people use a tourist guide sometimes, whereas 26.8% of people use a tourist guide on their trips but the 9.8% of people they don't take help from a tourist guide.

From the above results that the largest segment of society is aware of the role of the tourist guide, but the application of Omani guide will be feasible to increase the level of awareness of the importance of a tourist guide in some activities.

Implementation

To understand the process of working the application clearly and how the user interacts with it, the diagrams as use case diagrams and ERD will help to know. Moreover, for implementing the application the Android studio will be the environment for the construction of the application and Firebase is the cloud database.

Diagrams Design

Use Case Diagram

It is a diagram that contributes to clarifying the functions of the system and the relationship between the external elements with the system. Therefore, the external elements in the application of the Omani Guide are the responsible tourist guide, the tourist, or the user, whether he is a resident or a citizen. So, the user can access all the services within the application. The person in charge can control the application. As for the tour guide, they can see their reservation.

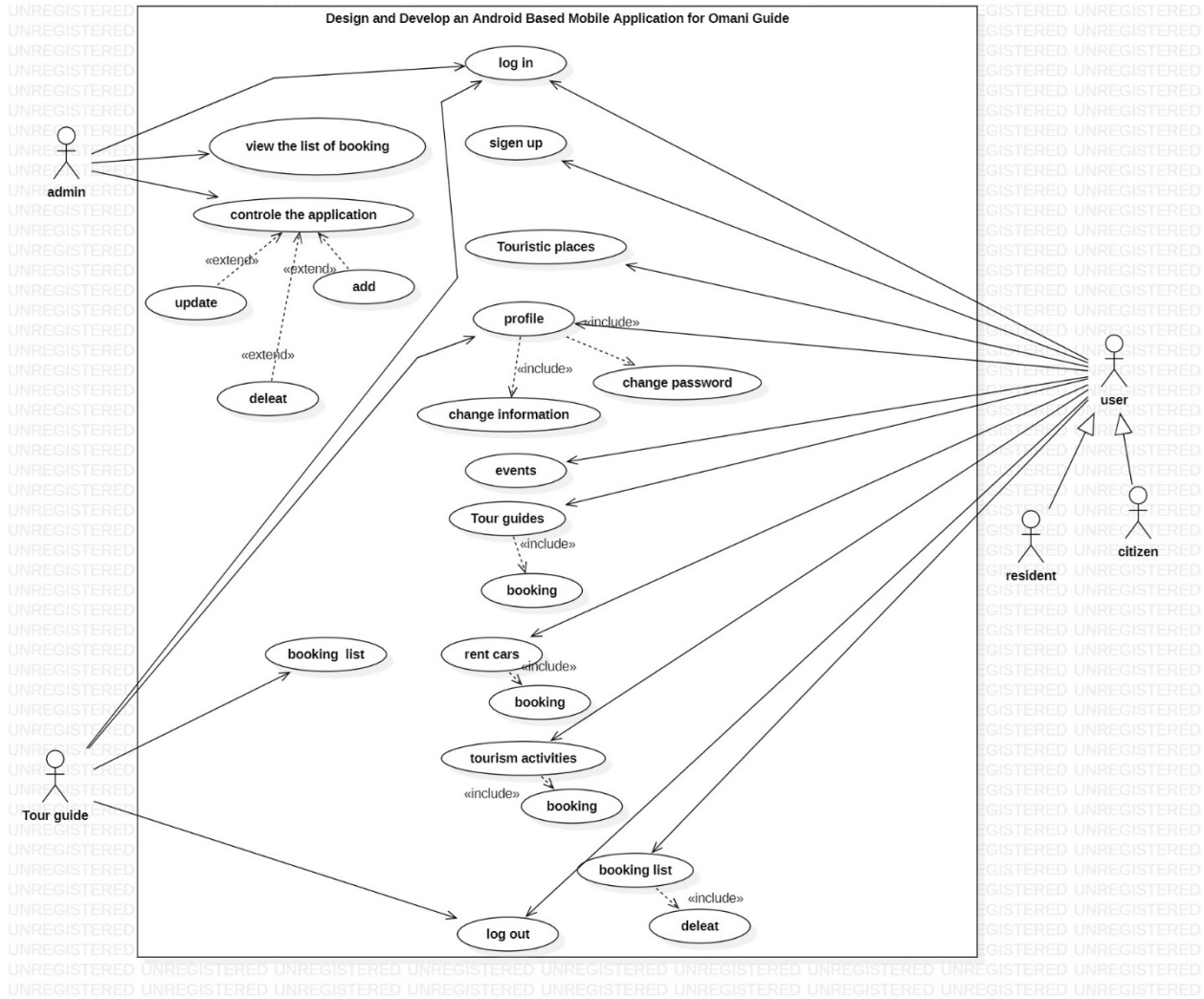


Figure 5. Use case diagram

Entity Relationship Diagram (ERD)

ERD It is an illustrative diagram of the relationship of the entities with each other within the system, as in the figure below. The entities of the system are Touristic places, registration, booking, login, tour guide, tourism activity and rent car.

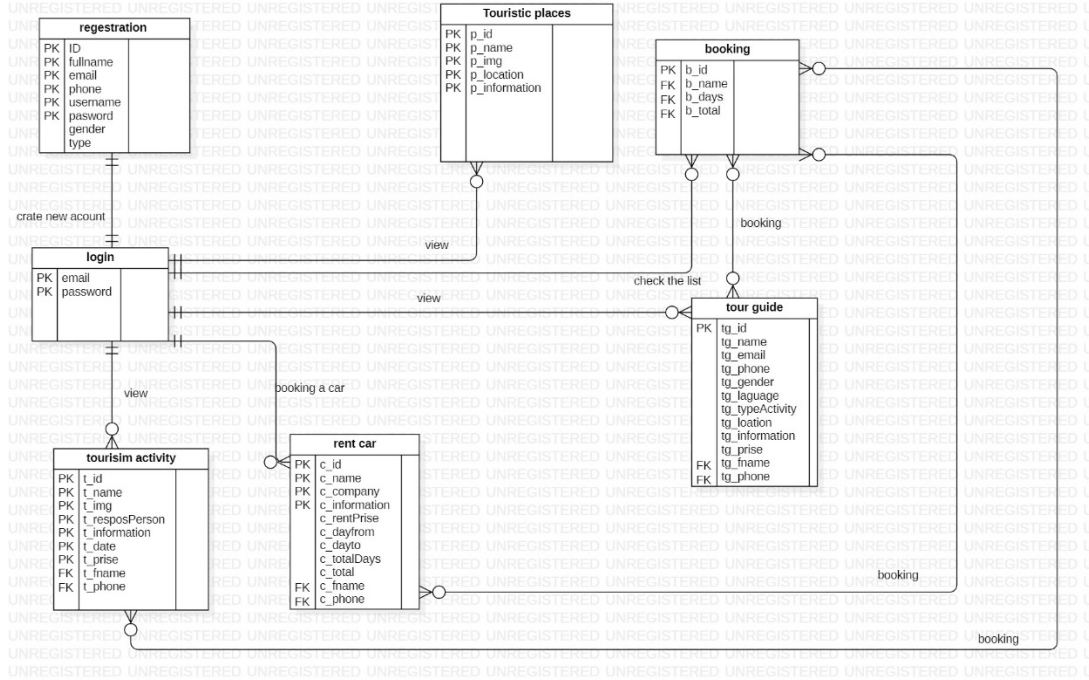


Figure 6. Entity relationship diagram (ERD)

Prototype

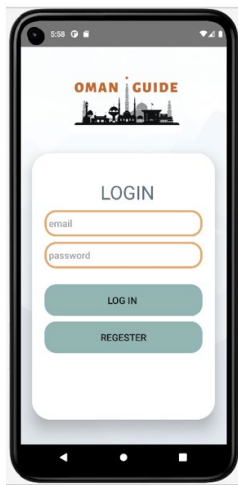


Figure 7. Login page

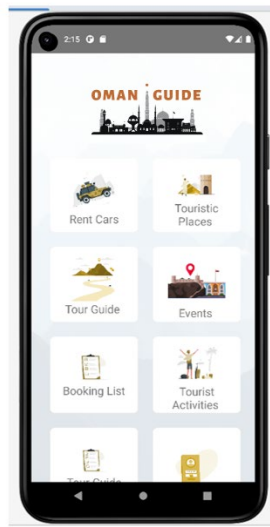


Figure 8. User main page

Results

The outcome of the work will be available after developing the application in collaboration with the Ministry of Heritage and Tourism so the development of this application by using android studio and Firebase. The data collection, literature review, and feasibility analysis all of those are helped in improving the features of the application, and once finished will be tested by the stakeholders before published.

Conclusion

In the conclusion of this research paper, this paper was keen to clarify the importance of tourism application, especially in Oman, and its role. Therefore, through research, the importance of applications, especially for the tourism sector, was emphasized, which in turn contributes to facilitating tourism services for tourists, whether they are citizens or non-citizens. Hence, this application will contribute to the provision of many varied services for tourists as well as for tour guides and will return the results to members of society and the economic sector.

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