

**Designing and Implementing Web Application
For Tourists and Service Areas**

Case Study: Red Sea State

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Abstract

Tourism is one of the fastest growing sectors in the world today. With this in mind, we are pleased to present a research project that aims to develop an android application designed to serve as a comprehensive tourist guide for the Red Sea State. It aims to help tourists navigate this area effortlessly and at the lowest cost and to provide tourists with information about all the main tourist attractions and basic services, which contributes to solving the problem of searching for tourist areas in the traditional way and the lack of a clear path to reach them, in addition to the difficulty of updating the traditional tourist guide.

The analysis was done using the UML language using the descriptive application approach, and we developed this application using the Flutter language in visual studio code, along with the firebase database, while the website was created using HTML and CSS in the same environment and the Firebase database.

The application was created to help overcome any challenges that tourists may face during their travel. The application also allows tourists to explore all the tourist attractions at their own pace, while providing descriptions and geographical locations on a convenient map. In addition, tourists can easily save their favorite places and search for any specific area they want to visit, while enjoying the flexibility of updating their personal information. Most importantly, for the safety of the tourist, the application will save the tourist's last location and the last time he used it, ensuring that he never gets lost during his trip. In addition, a dedicated website has been created for administrators, allowing them to manage the application effectively, where they can add or remove tourist and service sites, and track users' locations and times. Ultimately, our mission is to provide you with all the information you need to enjoy the red sea state safely and easily, making your trip unforgettable.

المستخلص

يعد قطاع السياحة من أسرع القطاعات نموًا في العالم ، ونحن ندرك مدى أهمية ازدهار مناطقه مثل ولاية البحر الأحمر.

يهدف البحث إلى تصميم تطبيق أندرويد ليكون بمثابة دليل سياحي شامل لولاية البحر الأحمر بالإضافة إلى تصميم موقع الكتروني يسمح بإدارة التطبيق بكل سهولة ، كما يهدف هذا البحث إلى مساعدة السائحين على التنقل في هذه المنطقة دون عناء وبأقل تكلفة وتزويد السائحين بمعلومات كافة عن المعالم السياحية والخدمية ، مما يساهم في حل مشكلة البحث عن المناطق السياحية بالطريقة التقليدية وعدم توفر موقع جغرافي واضح على الدليل للوصول إليها بالإضافة إلى صعوبة تحديث الدليل السياحي التقليدي وقلت المعلومات المتوفرة فيه .

تم التحليل باستخدام لغة uml باستخدام المنهج التطبيقي الوصفي وتم تطوير هذا التطبيق باستخدام لغة flutter في بيئة visual studio code ، إلى جانب قاعدة بيانات firebase ، بينما تم إنشاء الموقع باستخدام html و css في نفس البيئة وقاعدة بيانات firebase.

تم إنشاء التطبيق للمساعدة في التغلب على أي تحديات قد يواجهها السائحون أثناء سفرهم. كما يتيح التطبيق للسائحين استكشاف كافة المعالم السياحية بالسرعة التي تناسبهم، مع توفير وصف وتحديد الموقع الجغرافي على خريطة ملائمة. بالإضافة إلى ذلك، يمكن للسائحين حفظ أماكنهم المفضلة والبحث عن أي منطقة يرغبون في زيارتها، مع التمتع بمرونة تحديث معلوماتهم الشخصية. والأهم من ذلك، من أجل سلامة السائح سيحتفظ التطبيق بآخر موقع للسائح وآخر زمن استخدمه فيه، مما يضمن عدم ضياعه أبدًا أثناء رحلته . بالإضافة إلى ذلك، تم إنشاء موقع الكتروني مخصص للمسؤولين، مما يسمح لهم بإدارة التطبيق بشكل فعال، حيث يمكنهم من إضافة أو إزالة المواقع السياحية والخدمية، وتتبع مواقع المستخدمين.

في النهاية، مهمتنا هي تزويدك بكل المعلومات التي تحتاجها للاستمتاع بولاية البحر الأحمر بأمان وسهولة، مما يجعل رحلتك لا تُنسى.

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4.4. Conclusion :

The research explained how to use information and communication technology in the tourism sector and reduce the problems facing this sector. In this research, a tourist guide application was designed for the Red Sea State that works on Android mobile phones and is easy to use.

It allows the tourist to view all the tourist and service areas in the state and provides him with information and pictures about them and determines the way to reach it and the time required to reach it, in addition to saving his last geographical location and the last time he used the application, which provides protection and security for the tourist, in addition to designing a website that works in an integrated manner with the application dedicated to its management and the management of its users.

Tourism is one of the most prominent economic and vital sectors and we hope that we have provided something useful that everyone can benefit from.

The importance of the project lies in providing several benefits to the tourism sector, including providing tourism services to tourists, raising the level of tourism promotion, activating domestic and foreign tourism, and reaching a large number of visitors through technology and mobile phone applications.

4.5. Recommendations:

1- Design a hotel reservation system to work in an integrated manner with the tourist guide application.

2- Design a restaurant delivery application to work in an integrated manner with the application.

3- Design a ticket reservation system for agencies to work in an integrated manner with the application.

4- Include all tourist and service areas outside Port Sudan to include the entire Red Sea State.

5- Adopt the application by a government agency to provide financial support, which allows expanding the cloud space allocated for storing database data, which allows including the largest amount of tourist and service areas and the largest number of users.