Design of Religious Tourism Information System in the Batam City Based on Android Smartphone

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ABSTRACT

Batam City is one of the tourist destinations that has potential such as maritime tourism, culinary tourism, nature tourism, shopping tourism, agro tourism, sports tourism, history and religious tourism. However, there are still many general public or foreign tourists having difficulty in getting information. There are many good potentials for religious tourism to visit, so it is necessary to design a religious tourism information system for the city of Batam based on an android smartphone. With this application, the existence of religious tourist attractions in Batam City quickly, precisely and accurately. This study uses the waterfall research method which has stages such as system analysis, system design consisting of use case diagram design, database relation design and interface design. The Batam city religious tourism information system that was developed is expected to optimize tourist visits to the city of Batam and benefit the development of tourism in the city of Batam. This information system makes it easier for tourists to visit religious tourist places and easily go to tourist attractions because it is supported by the tourist attraction route feature.

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1. INTRODUCTION

The rapid and modern development of technology and information has a significant effect on the development of human civilization. Utilization of information technology has covered various fields, ranging from economics, business to education [1]. The development of Android smartphone technology has now become a necessity for all people, including business people and tourists. Tourism is a very important sector for the development of a region. Tourism is also a means of promotion to introduce the natural beauty and unique culture of the area. The development of the tourism sector in a country will attract other sectors to develop as well because its products are needed to support the tourism industry, such as agriculture, animal husbandry, plantations, folk crafts, increasing job opportunities, and so on [2]. Batam City, which is one of the tourist destinations, has potential such as maritime tourism, culinary tourism, nature tourism, shopping tourism, agro tourism, sports tourism, history and religious tourism. However, there are still many general publics who do not know about the existence of religious tourism places in Batam City, even though Batam City has a lot of good religious tourism potential to visit. On the other hand, it is also possible to learn the history of the place itself. This is because there is no support for an information system based on Android smartphone technology that specifically displays information on special religious tourism objects. Android smartphone-based applications are made to be accessed quickly, accurately and can be accessed by anyone, anywhere, anytime regardless of distance and time as well as up-to-date.

With an information system about religious tourism on an Android smartphone device, it will certainly make it easier for both domestic and international tourists to get the information needed about religious tourism in the city of Batam. Moreover, if the information system in the form of an application can guide tourists to the desired location or religious tourism object. This religious tourism information system will also be useful for the development, progress of tourism in the city of Batam. It can increase the number of tourists visiting the

city of Batam so that it will become a tourism database and it is possible that it will become the big data of Batam city tourism.

2. RESEARCH METHOD

This research uses the waterfall development model. The research and development steps carried out in this study refer to the Borg and Gall research stage with adjustments [3]. The first stage is a needs analysis, and this stage is the initial stage which contains data collection which begins with observations made by researchers to see the problems that exist in the field. Activities in this stage include observation and interviews. Observation is making direct observations to the object of research to see closely the activities carried out. Interview is a data collection method used to obtain information directly from the source [4]. From interviews and observations made, it can be seen the objectives, needs, and specifications of the system needed.

The next stage is the design process, which includes a series of steps to describe all aspects of the built information system. The design consists of database relation design, interface design. Aspects generated at this stage include data representation, use case diagram design, database relation design and interface. The design uses the Unified Modeling Language (UML) notation, which includes several stages, one of which is a use case diagram, which consists of actors and the actions they can take. In the development of a religious tourism information system for the city of Batam based on Android smartphones, use case diagrams explain the relationship between the system and users, in this case administrators and tourists.

Database design is based on system requirements and how the relationship between data. The relationship is based on system requirements and information specifications. The design at this stage will be implemented in a religious tourism information system for the city of Batam based on an android smartphone. The interface design is designed based on the use case diagram design and the database relation design that has been formed previously. The interface design consists of the login menu, registration menu and main menu. The design is made to fit the function of the user type.

3. RESULTS AND ANALYSIS

3.1. Analisis dan Perancangan Sistem

In the systems analysis stage, a systematic approach is taken to identify problems, opportunities, and objectives. The flow of information systems in the organization, and designing computerized information systems can help to solve a problem. A planned systematic approach to introducing, modifying, and maintaining information systems is essential.

The system design tool used uses UML. UML is one of the tools/models for designing object-oriented software development. UML itself also provides a standard for writing a blueprint system, which includes business process concepts, writing classes in certain programming languages, database schemas, and components needed in a software system.

To perform system design, generally used tools or system development tools such as use case diagrams. Use case diagram is an activity or also continuous interaction between actors and systems. Use cases are used to obtain the functional requirements of the existing system. In this use case, it is designed to involve 2 actors, namely admin and tourists. This use case diagram illustrates the continuous interaction between actors and the system, as shown in Figure 1.

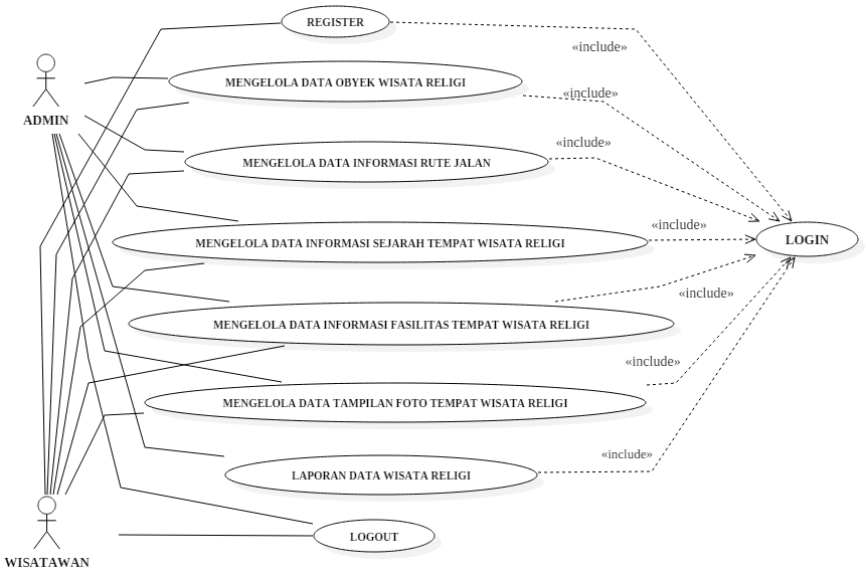


Figure 1. Use Case Diagram of Religious Tourism Information System

Admin logins the application. Then, they manage tourist attraction data, route info for tourist sites, history of tourist attractions, tourist attraction facilities, and photos of tourist attractions. When finished, the admin logs out. Furthermore, the access rights for tourists are different from administrators who have greater access rights to manage. Tourists (users) can only view and access information on religious tourism in the city of Batam. Travelers must register first and then login.

3.2. Perancangan Relasi Database

Based on the design of use case diagrams that have been made, the following is the design of database relations that researchers can design in accordance with system design. The table in the database that will be proposed consists of tables (1) Admin table with primary key ID_admin, (2) religious tourism table with primary key ID_wisata_religi (3) tourists table with primary key ID_wisatawan, (4) data table for religious tourism objects with primary key ID_object_wisata, (5) historical data with primary key ID_history, (6) photo display table with primary key ID_tampilan_photo (7) data table for road routes with primary key ID_rute_jalan, (8) managing facility data with primary key ID_facility. The relationship between the tables is clear as shown in Figure 2 below:

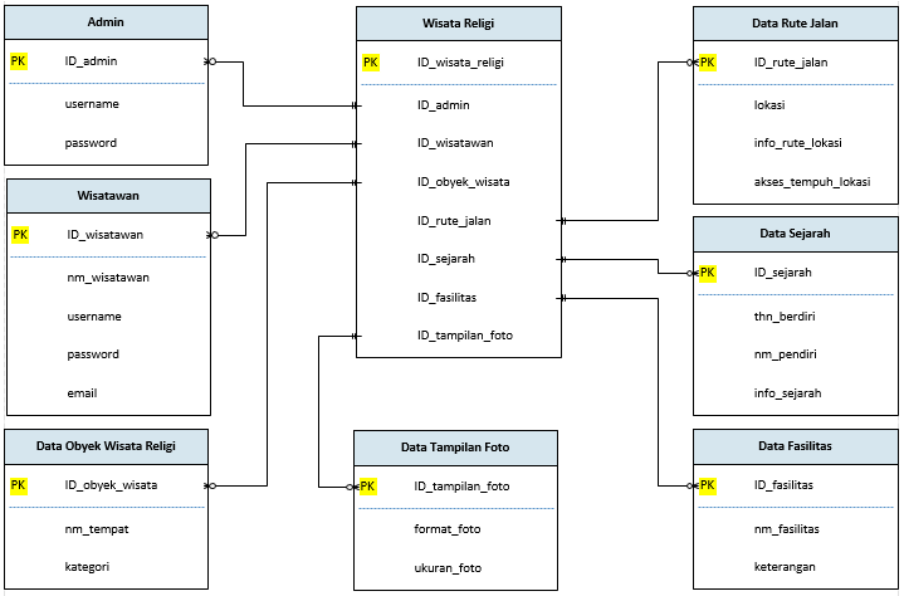
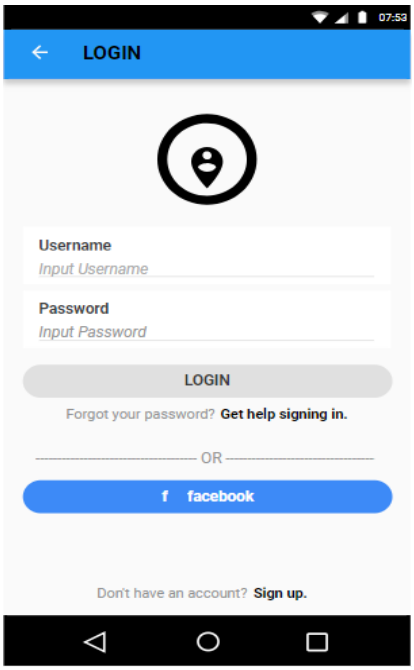


Figure 2. Database Design

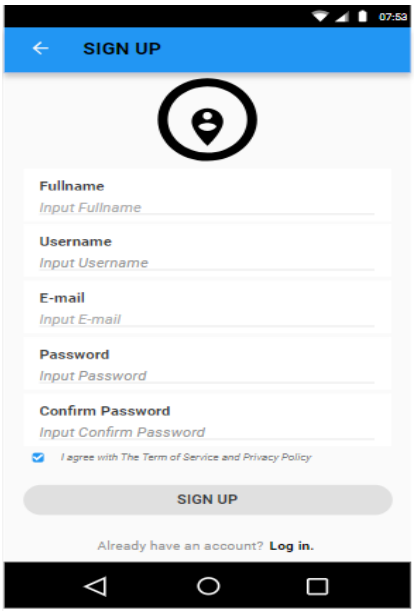
3.3. Perancangan Antarmuka

The design system of the religious tourism information system display is divided into 2 (category) levels of user categories. The level of user categories is classified based on the user function of the religious tourism information system. Those users are administrators and traveler users. The following will explain the login menu of the user as can be seen in Figure 3.



Gambar 3. Menu Login

After being able to login, tourists must first register by entering data such as full name, username, e-mail, password and confirm password. Figure 3 shows how to register. Next, the user will get an email notification from the system to verify the user and activation. Users can log in using the username and password that have been created. Finally, the user can display the main menu of the religious tourism information system which consists of tourism objects, history, facilities, road routes, photo galleries. Figure 4 shows the main menu display in the application.



Gambar 4. Registrasi Pengguna

Gambar 4. Menu Utama

4. CONCLUSION

The Batam city religious tourism information system based on Android smartphones can optimize tourist visits to the city of Batam. It is beneficial for the development of tourism in the city of Batam. The Batam city religious information system based on Android smartphones provides advantages, including making it easier for tourists to find out the existence of religious tourist attractions in the city of Batam. It also makes it easier for tourists to visit religious tourist attractions in the city of Batam. This application also has a route feature that is used to show religious tourist attractions in the city of Batam. Tourists can see the history of religious tourism objects before visiting these tourist attractions. Cooperation between the Batam city government and travel companies needs to be carried out to support the implementation of the information system that has been developed. Further development is needed so that the information system is designed to provide maximum results and features.

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