Database Design for Website Service Guide “Waterfall Tour South Sumatera”

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Abstract. The purpose of this research was to design a database system scheme for the “Waterfall Tour South Sumatra” website service guide. The database design method on this Website used Database Life Cycle (DBLC). The variable in this research was the database design service guide “Waterfall Tour South Sumatra” with a relational data model consisting of 4 (four) tables namely admin table, waterfall table, news table, testimony tables using conceptual schemes, logical schemes, and physical schemes.

Keywords: Database design, website, waterfall tour

1. Introduction

Every Indonesian region has its own natural beauty and tourist attractions. Indonesia's natural condition can be said to be very perfect as a tropical country, it has long coastlines with many islands. It makes Indonesia has extraordinary natural beauty. Until now, the natural resources owned by Indonesia have been managed to become natural tourism. Indonesia also has a lot of waterfalls with its beauty spread across thousands of islands. Most of these waterfalls are still not found by the community and are still hidden and many of them not yet widely known but only for the local community.

Several waterfall tourist attractions have also been widely known by other countries through the internet, news on television, or because of direct information from tourists who have visited Indonesia, especially in the Province of South Sumatra, among waterfalls known as natural tourist attraction are: Bidadari, Perigi, Kerinjing, Lawang Agung, Tebat Sekedi, Cughub Maung, Cughub Lumbin (Lahat District), Tujuh Kenangan, Cughub Embun, Cughub Mangkok, Cughub Air Melintang, Lematang Indah (Pagar Alam Regency), Mesat, Pelegan, Temam (Lubuk Linggau) Cughub Tenang (Muara Enim Regency), Tembulun (OKU Regency), Subik Tuha (South OKU Regency), Tujuh Panggung (Empat Lawang Regency), and many others in all parts of Indonesia that have not been widely exposed. Based on the description above, an idea emerged that was manifested in the form of a database design consisting of 4 (four) tables namely admin table, waterfall table, news table, testimony table using conceptual schemes, logical schemes and physical schemes.

A research was conducted by Abidi and Nugrahardi Ramadhani [1], regarding the Design of the East Java Tourism Promotion Website with the Concept of the Guide to the Bold Diversity. A good tourism website does not have to have complete and many information but must have the certainty and correctness of the information presented. The results of the study indicate that the tourism website
must be able to meet the needs of users from different locations, cultures, and habits so that the websites that appear can serve their needs.

Another study has also been conducted by Nurul Azwanti [2], regarding the Design of Tourism Promotion Websites and Car Rental in Bintan Internal Rental, with the use of this website is expected to provide information and promotion to website visitors to get to know about Bintan Island, moreover the tourism objects and provide convenience to connect directly with Bintan Internal Rental if they need a rental car.

2. Methodology
In this research, the system design method used the Database Life Cycle (DBLC) method, this research design method has been conducted by Handayani [3]. The steps needed in the DBLC method[4], which are also used to design this website database as follows:
1. Conceptual database design.
2. Perform a logical database design (data model mapping).
3. Performing a physical database design.

3. Results and discussion
The design scheme used in the database design of the "Waterfall Tour South Sumatra" service guide website is to use conceptual design, logical design and physical design [5, 6].

3.1. Conceptual design
According to Abdillah [7], conceptual design is tested for data requirements from an application database to produce Conceptual Database Schema (CDS) on high-level independent model data DBMS, for example, the Enhanced Entity Relationship (EER).

The conceptual database design phase begins with creating a conceptual data model from the company with implementation details such as the target DBMS, application programs, programming languages, hardware, platforms, performance and all other physical considerations [8].

The conceptual stages of the database website "Waterfall Tour South Sumatra" service guide began with creating a conceptual data model based on information from the Culture and Tourism Office of South Sumatra Province regarding the location and point of waterfall tourism locations with implementation details such as DBMS targets, application programs, programming language and other
physical adjustments to the user's needs. In the database design website "Waterfall Tour South Sumatra" service guide, there are 4 (four) tables, namely admin table, waterfalls table, news table and testimony table the explanation as follows:

a. The admin table is used to store admin data.
b. The waterfalls table is used to collect waterfall data after input by the admin.
c. The news table is used to accommodate the waterfall news data after input by the admin.
d. The Testimony table is used to collect testimonial data from users after input by users.

3.2. Logical design

According to Gat Logical database design is a process of building a model of information used in a company based on a specific data model[9]. The purpose of this step is to build local logical model data from the conceptual model data by describing specific views of the company and then to validate this model to ensure that the model is correct and the model supports the required transactions. Similar to the logical database design website "Waterfall Tour South Sumatra" service guide to explain the description of the implementation of the database on storage, relations, file organization, and indexes. At this stage, it is intended to make a relation to the data model and determine the relationships between entities and their foreign keys.

![ERD (Entity Relationship Diagram)](image)

3.3. Physical design

According to Gat, the physical design process is a transformation from logical design to the type of DBMS used so that it can be stored physically on storage media[9]. My Structured Query Language (MySQL) is the right DBMS choice to support database applications that can be done at any time before going to the logical design provided, so there is enough information about the system requirements. At the physical database designs stage, each entity is determined by its attributes and its completeness such as data type, character length, index, type of relation. From this physical design, it can calculate the database storage capacity needed to build a website service guide for "Waterfall Tour South Sumatra".

a. The admin table
   The admin table is used to store admin data
   Name file: Tourwate_admin
   Primary Key: id

Figure 2. ERD (Entity Relationship Diagram).
a. The table admin

| No. | Field Name      | Type     | Width | Information                      |
|-----|-----------------|----------|-------|----------------------------------|
| 1.  | Id (Primary Key)| Integer  | 11    | Id from admin table              |
| 2.  | Username        | Varchar  | 225   | Contains admin name              |
| 3.  | Password        | Varchar  | 225   | Password admin                   |

b. The waterfall table

The waterfall table is used to collect waterfall data after input by admin

Namefile : Tourwate_waterfall

Primary Key : id

| No. | Field Name | Type     | Width | Information                                    |
|-----|------------|----------|-------|-----------------------------------------------|
| 1.  | Id_waterfall | Integer  | 11    | Id from the waterfall table                   |
| 2.  | Name       | Varchar  | 225   | Contains the name waterfall                   |
| 3.  | Address    | Text     |       | fill in the latest news about the location of the falls |
| 4.  | Information | Text     |       | fill in the latest news about the location of the falls |
| 5.  | Photo      | Text     |       | Photo of the location of the waterfall        |
| 6.  | Video      | Text     |       | Video waterfall                               |

c. The news table

The news table is used to accommodate the waterfall news data from the admin after inputting from the admin.

Namefile : Tourwate_news

Primary Key : id_News

| No. | Field Name    | Type     | Width | Information                                    |
|-----|---------------|----------|-------|-----------------------------------------------|
| 1.  | Id_News       | Integer  | 11    | Id from table identities                      |
| 2.  | Name          | Varchar  | 225   | Contains the name of the waterfall            |
| 3.  | News content  | text     |       | fill in the latest news about the location of the falls |
| 4.  | Photo         | text     |       | Photo of the waterfall                        |

d. The testimonial table

The testimonial table is used to collect testimonial data from users after testimony input by users.

Namefile : Tourwate_testimonial

Primary Key : id_testimonial
### Table 4. Table testimonial.

| No. | Field Name      | Type    | Width | Information                                      |
|-----|-----------------|---------|-------|-------------------------------------------------|
| 1.  | Id_testimonial  | Integer | 11    | Id from table identities                        |
| 2.  | Id_waterfall    | Integer | 11    | Id from the waterfall                           |
| 3.  | Name            | Varchar | 225   | Contains the name of the waterfall              |
| 4.  | Comment         | Text    |       | Fill in the latest news about the location of the waterfall |
| 5.  | Photo           | Text    |       | Photo of the waterfall                          |

#### 4. Conclusion

The need to produce a good application is inseparable from how a model from the database is used, then the website service guide "Waterfall Tour South Sumatra" needs to be built a relational data model. Based on the results of the database design website "Waterfall Tour South Sumatra" service guide with a relational data model, it can be concluded that the database designed using DBLC database design method (Data Base Life Cycle) has produced a relational database form to guarantee and maintaining data integrity from each table related. The details of the scheme as follows:

1. Conceptual database design produces 4 (four) tables, each table provides domain attributes and produces table relationship diagrams.
2. Logical database design produces relationships for local logical data models that present the entities, relationships, and attributes that have been identified previously.
3. Physical database design database design uses a MySQL database with Data Definition Language is the language used to define data definition. The number of tables in the database website service guide "Waterfall Tour South Sumatra" there are 4 tables, namely admin, waterfall, news and testimony.

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