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# Spatial Information System Development in Bintan Regency

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**Abstract**. This study aims to develop a mapping-based application (Geographic Information System) that can be used for agencies to control spatial use in accordance with spatial planning, as well as to facilitate the public, business actors, investors or interested parties of the spatial data. The design of this study used a descriptive method, using an object-oriented approach, while for its development using a prototype model. This research resulted in a spatial information system application, so it can be concluded through this application the agency can control spatial use in accordance with the spatial plan, and the public can find out land use information in Bintan district.

## 1. Introduction

Spatial Information System Development in Bintan Regency is a web-based application that combines information systems with spatial data, which was developed as a portal in the context of spreading information about spatial planning to the wider community [1]. Along with the progress of information technology that is very rapid, it will affect the mindset and way of working of humans, in particular, to get information precisely and accurately [2], one such information is the Bintan Regency Regional Spatial Plan (RTRW). To answer this, in 2015 the Bintan District Government created a Geographic Information System (GIS) called the Spatial Information System (SIMTARU) that can display the web-based Bintan Regency RTRW [3].

One Data One Map is an implementation of national policy, namely one map policy. The program is an effort to become a center of excellence in the field of data management and development analysis through synergy between the Central Government and Regional Governments [4]. Therefore, to support the one map policy, in this case, One Data One Map, it is necessary to develop GIS for SIMTARU by utilizing existing data so that it is particularly useful in planning, implementing, monitoring and evaluating development in Bintan Regency [5].

## 2. Method

The approach method used is the object approach method. The development method used is the prototype method. Starting with the stages of literature study, data collection, application design and design, application testing, and application presentation.

- Literature study, the study of literature studies is carried out with the aim of obtaining data and information related to the Development of the Spatial Information System of Bintan Regency [6].
- Data collection, to facilitate the process of getting the data needed, it is necessary to prepare a comprehensive and structured data collection method so that it can utilize the time provided [7].

- Design design, design activities of Spatial Information System Development (SIMTARU) design include: application design concept design, application database architecture design, and implementation of SIMTARU Development database model [8].
- Software testing, SIMTARU application trial that has been designed is done by entering official profile data, base maps and space patterns result from previous data collection into the software/application that has been done, as well as processing until the presentation of data and views that will appear in the application this [9].

## 3. Results and Discussion

### *3.1. Application Design*

The home page, on the home page displayed a slider in the form of images and important links that are easily accessed in the footer section. Map page, on the map page will be displayed administrative areas, spatial patterns and existing spatial structure in the form of digital maps [10] (See Figure 1).

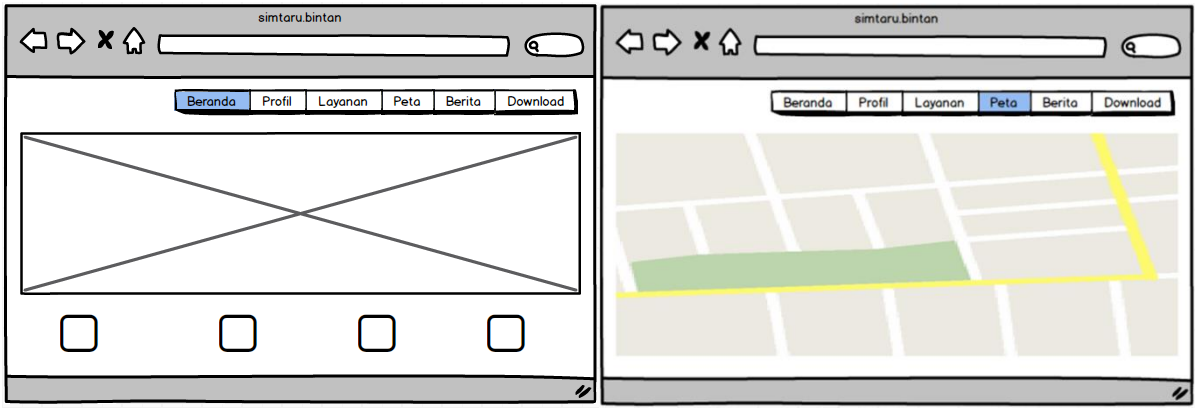


**Figure 1.** Home Page Design and Map Page Design

### *3.2. Architectural Design*

Network architecture is a description of the network topology and the appropriate protocol so that the performance of the software runs optimally. Network that is built is to separate the Server and Client where there are different access rights. The design of network architecture in the development of SIMTARU uses the internet. The following is an illustration of the network architecture of this system [11] (See Figure 2).

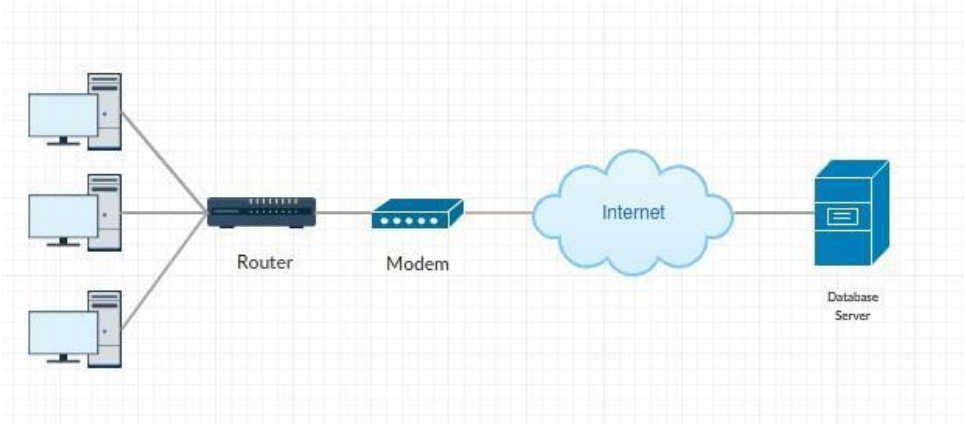


**Figure 2.** Architecture of Bintan SIMTARU Development Network

### *3.3. Application Implementation*

SIMTARU is implemented using a javascript leafleat, YII2 framework, with a MySQL database, and uploaded to the Bintan district official website at http://simtaru.bintankab.go.id. To facilitate the use of this application, the steps for using each menu in the application are described. Accessing this application requires a connection to the internet network. Display on this homepage will show photos related to the SIMTARU district of Bintan, on the right, there is a photo of the Regent of Bintan Regency who is currently serving [12] (See Figures 3 and 4).

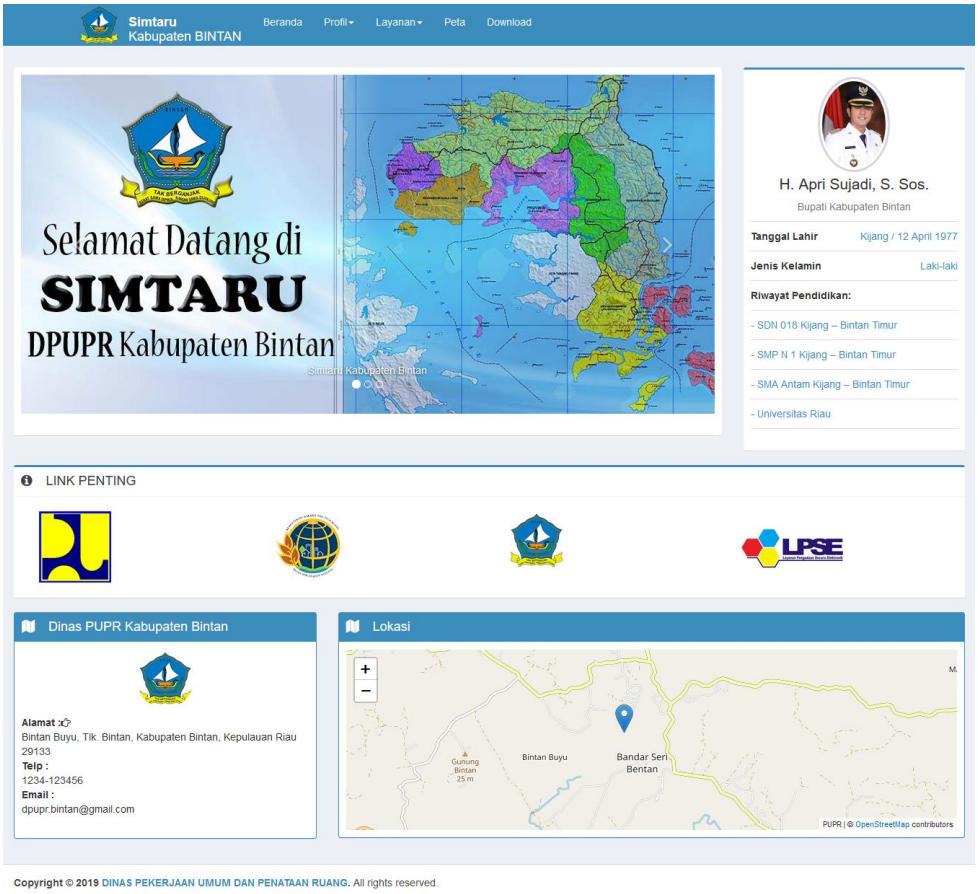


**Figure 3.** The homepage of SIMTARU, Bintan Regency

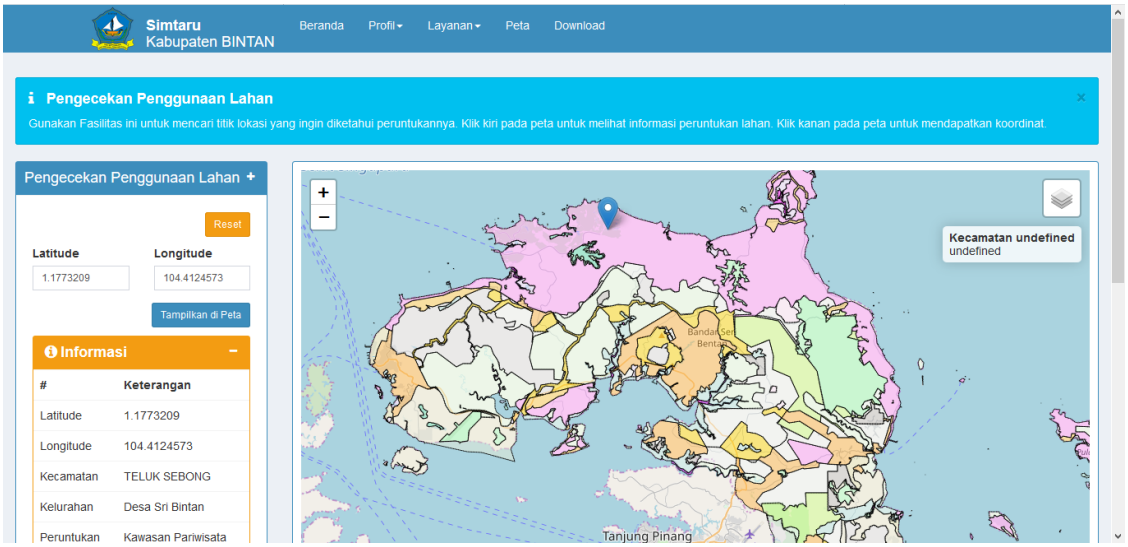


**Figure 4.** Community Service Page

## 4. Conclusion

Based on the results of the analysis and discussion that have been compiled, it can be concluded that: with the development of a spatial information system in Bintan district, the local government can monitor various activities that utilize space and are directed to conform to the spatial plan that has been prepared; can make it easier for people to get information about land use.

## Acknowledgement

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