Design of Self-Evaluation Model for Smart City in Bandung

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Abstract

Smart City Self-Evaluation is used to measure the implementation of smart the city independently. This measurement aims to determine the level of stability of the cities application to make improvements or stimulation in achieving the desired smart city goals by utilizing Information Technology and Technology (ICT) and can be innovative potential in solving various urban challenges in all fields. This research focuses on designing self-assessment software to simplify data collection as smart city assessment entry. This study uses an object-oriented concept with development requirement analysis, software design, and design evaluation for the research stages. The result is a software design consisting of process business, use cases, and user interface tailored to the needs of the local government of Bandung in supporting the smart cities concept.

Index Terms: Design, Smart City, Self-evaluation, Bandung, Object Oriented

I. INTRODUCTION

City is the center of human civilization with various facilities and facilities provided. Its existence continues to develop into a magnet for residents to come and stay in urban areas. In 2025 Indonesia is currently around 59.35% of the population living in urban areas is estimated to be 67.66% and will reach 82% in 2045[1]. As the population grows, City continues to grow significantly and raises problems such as housing, education, health, public services, etc. And to solve the problem, various solutions have been developed, one of which is the concept of Smart City [2].

The performance of local governments to be faster, responsive, innovative, and trustworthy solutions for rapid development of cities and regencies in Indonesia requires. To bring this speed, like it or not, the Regional Government needs technological assistance. The Government of Indonesia has implemented a Smart City initiation policy that utilizes Information Technology and Technology (ICT) which is one of the technologies that has innovative potential to solve various urban challenges effectively on all sides of the Regional Government [3].

The City Regional Government has carried out various initiatives and has a Grand Design towards a Smart City that focuses on the use of ICT to ensure effective and efficient use of resources, city administration, public services and can solve various city challenges using innovative, integrated solutions, and sustainable to provide infrastructure and provide urban services that can improve the quality of life and meet the needs of the population [4]. The problem is that cities have not been able to carry out an independent evaluation of the implementation of a smart city in a measurable manner according to the

city's needs [5]. However, it requires advanced support for the development and operation of applications in a complex and dynamic environment [6].

Through this study, a software design will be developed that can assist in collecting data on the evaluation indicators for measuring the implementation of smart cities so that the city gets an initial picture and can determine strategies in increasing the value of implementing smart cities following city goals.

II. SYSTEM MODEL AND METHODS

RAD (Rapid Application Development) was chosen as a system development model because it requires a little time in its development and analysis of the requirement has been identified. Tailored with the pressman says that the application of the RAD method will run optimally if the application developer has formulated the needs and scope of application development [7].

While the system development model uses UML (Unified Modeling Language), which can help analysts define, visualize, and document software system models, including their structure and design, by meeting all software requirements and helping analyze and design appropriate solutions. [8].

The following are the stages of the research that has been carried out

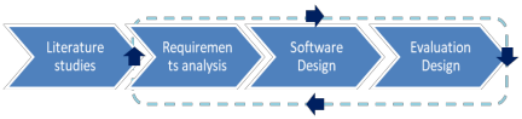

Fig. 1. Research Stages.

III. RESULTS

A. Process Business

There are 8 stages in smart city self-evaluation process business.

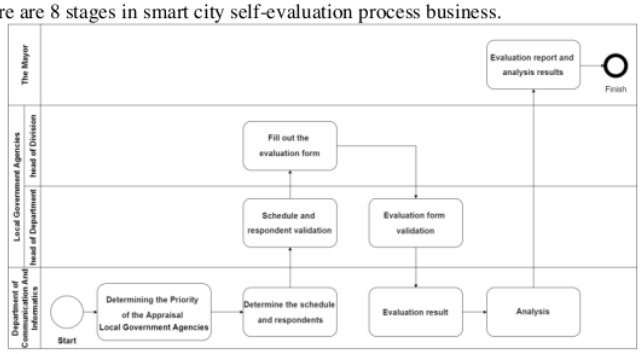

Fig. 2. Process Business for Bandung Smart City self-valuation model.

B. Use case

There are 10 use cases and 4 actors in smart city self-evaluation.

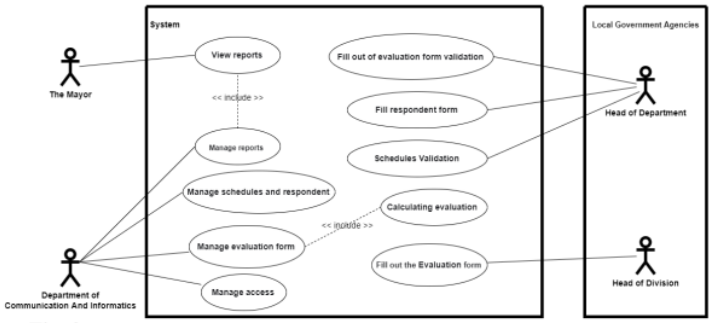

Fig. 3. Use case for Bandung Smart City self-valuation model.

C. User Interface design

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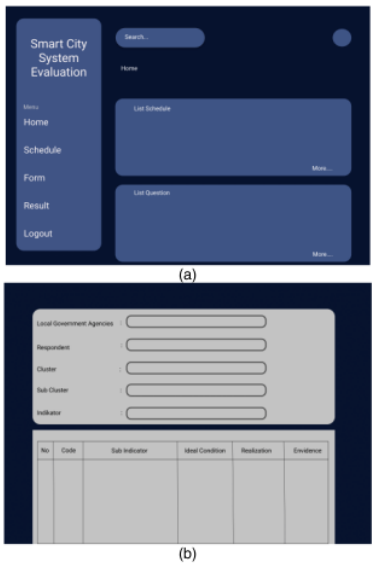

Fig. 4. User interface design for Bandung Smart City self-valuation model, dashboard (a), evaluation form(b).

IV.

Based on the research that has been done, it can be concluded that:

a. Design application following Bandung Smart City Evaluation Model.

b. Design through the stages of literature study, requirements analysis, software design and evaluation.

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REFERENCES

[1] Parasati, H. Pengembangan Kota Cerdas di Indonesia. Kementrian Perencanaan Pembangunan Nasinal. Bappenas. Konferensi e-indonesia Initiative dan Smart Indonesia Initiative. 2015.

[2] Firmansyah, Hendra & Supangkat, Suhono & Arman, Arry. (2019). Studi Tentang Model Pengembangan Kota Cerdas.

[3] Nam, Taewoo & Pardo, Theresa. (2011). Conceptualizing smart city with dimensions of technology, people, and institutions. ACM International Conference Proceeding Series. 282-291. 10.1145/2037556.2037602

[4 Ministry of communication and information, Guideline Masterplan Smart City Gerakan Menuju 100 Smart City Bimtek 2, Jakarta, Indonesia, 2017.

[5] Nuraeni, Ai[illegible]n & Firmansyah, Hendra & Pribadi, Ganjar & Munandar, Ahmad & Herdiani, Leni & Nurwathi, (2019), Smart City Evaluation Model in Bandung, West Java, Indonesia. 228-234. 10.1109/TSSA48701.2019.8985465.

[6] Esposte, Arthur & Zambom Santana, Eduardo Felipe & Kanashiro, Lucas & Costa, Fabio & Rosa Braghetto, Kelly & Lago, Nelson & Kon, Fabio. (2018). Design and evaluation of a scalable smart city software platform with large-scale simulations. Future Generation Computer Systems. 93. 10.1016/j.future.2018.10.026.

[7] UML.2005. Introduction to omg's Unified Modeling Language. https://www.uml.org/what-is-uml.htm, Acess 23 September 2021, 04.34 PM.

[8] Roger Pressman and Bruce Maxim. Software Engineering: A Practitioner's Approach 9th Edition. McGraw Hill Higher Education, 2019.

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