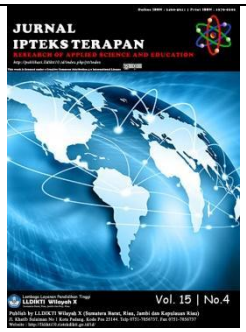


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# IT-DASHBOARD APPLICATION TO DETERMINE THE TYPE OF SUBSIDIZED ASSISTANCE

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**Abstract**

IT-Dashboard is a user interface that shows information that can be read easily by users. The IT-Dashboar application of the subsidized assistance type decision support system was built to help and facilitate the community to find information on the type of subsidized assistance, as well as to help sub-district officials to determine which residents are eligible to receive assistance according to the criteria set by the central government so that assistance can be distributed on target. The case study will be conducted on poor families in the Lubuk Begalung sub-district of Padang city. This decision support system uses the AHP (Analytical Hierarchy Process) method to determine the type of subsidy for poor families. The AHP method is basically a comprehensive decision-making model by considering qualitative and quantitative aspects. The AHP method was chosen because it is conceptually simple, easy to understand, computationally efficient, and can measure the relative performance of decision-making alternatives.

**Keywords:** Assistance, Subsidized, Support, Decision, Poor

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## INTRODUCTION

The pandemic, which began in March 2020, has caused the economy to plummet that year. This can be seen from the growth of Gross Domestic Product (GDP) which was recorded at -2.07% in 2020. The previous year GDP still grew up to 5.02%[1]. The number of labor force in August 2021 was 140.15 million people, an increase of 1.93 million people compared to August 2020. The Labor Force Participation Rate (TPAK) increased by 0.03 percentage points. There are 21.32 million people (10.32 percent of the working-age population) affected by COVID-19. Consisting of unemployment due to COVID-19 (1.82 million people), not in the labor force due to COVID-19 (700 thousand people), temporarily not working due to COVID-19 (1.39 million people), and working population who experienced a reduction in working hours due to COVID-19 (17.41 million people)[2].

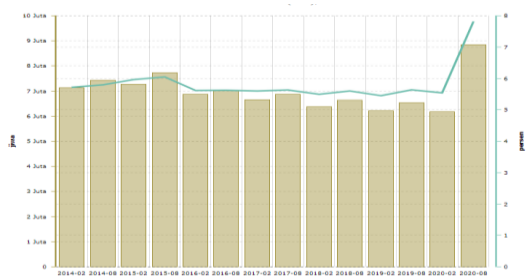

Figure 1: Number and Level of Open Unemployment in Indonesia in 2020
Source: Central Bureau of Statistics

As the fourth largest sub-district in Padang City, Lubuk Begalung has a population of 122,593[3]. In order to improve the standard of living of Lubuk Begalung sub-district residents, especially during the Covid-19 pandemic, the government distributed several assistance or subsidies for residents[4].

Based on the type of subsidized assistance, there are several criteria that have been determined. There are also several types of subsidized assistance such as Non-Cash Food Assistance (BPNT), Family Hope Program (PKH), National Health Insurance Contribution (PBIJKN), and Joint Business Groups (KUBE)[5]. The unevenness of receiving subsidized assistance based on these criteria is a problem experienced by the poor, because many poor people have not received assistance based on predetermined criteria. In the process of determining subsidized assistance recipients, the number of applicants is greater than the quota of subsidized assistance recipients, so a selection process is needed by the Lubuk Begalung Sub-District Office. There are several problems including assistance not falling on the right party, causing a sense of injustice to other poor families, where so far the system that is running is less effective because of the lack of thoroughness of the sub-district office employees in selecting the community in receiving subsidized assistance with existing criteria if processed using a system that is still manual.

In order for the calculations on this decision support system to be more accurate, a method is used, namely, the Analytical Hierarchy Process (AHP) method. AHP is a support model whose main equipment is a functional hierarchy whose main input is human perception[6]–[8] . AHP is a comprehensive decision-

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making model that takes into account qualitative and quantitative matters.

In this method the criteria used in acceptance are limited based on the criteria for the type of assistance. With this method, calculations will be obtained in accordance with the appropriate criteria in the distribution of subsidized types of assistance, so that the assistance provided is appropriate and not misdirected[9].

## RESEARCH METHODS

In this research activity, the ADDIE development research model (Analysis, Design, Development, Implementation and Evaluation) was used. ADDIE is one methodology that is widely utilized by system developers in their activities[10]. As the name implies, it is a model that involves the stages of model development with five steps/phases of development including: Analysis, Design, Development or Production, Implementation or Delivery and Evaluations). The following research method used will be described in the figure below:

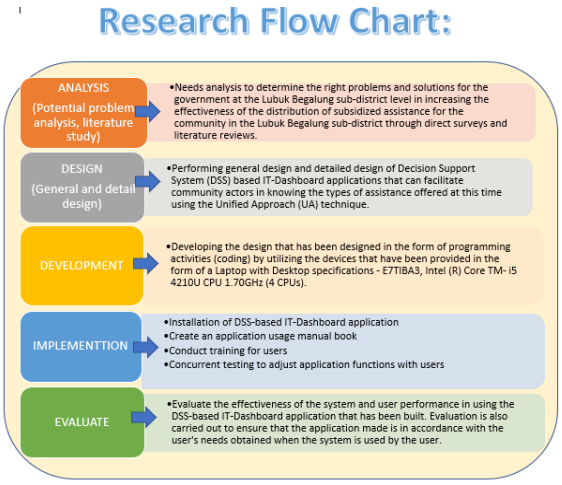


Figure 2. Research Flow Chart

The research stages carried out include 5 activities, namely Analysis, Design, Develop, Implementation and Evaluation (ADDIE). Through these research stages, the output that will be produced is a Decision Support System-based IT-Dasboard application that will be used by the community to find out the types of assistance offered by the government at this time and assist Lubuk Begalung sub-district officers in selecting people who are entitled to receive subsidized assistance in accordance with the criteria set by the central government. The research stages carried out include 5 activities, namely Analysis, Design, Develop, Implementation and Evaluation (ADDIE). Through these research stages, the output that will be produced is a Decision Support System-based IT-Dasboard application that will be used by the community to find out the types of assistance offered by the government at this time and help Lubuk Begalung sub-district officers in selecting people who are entitled to receive subsidized assistance in accordance with the criteria set by the central government.

## RESULT AND DISCUSSION

### Ongoing System Analysis

In analyzing a system, obstacles will be found that become system deficiencies[11]. The problems that occur in the current information system for subsidized assistance are among others:

The system that runs in Lubuk Begalung Subdistrict is still less effective, less efficient, and timely because it is only limited to using Microsoft Excel so that data for subsidized assistance is not well

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organized and there is no decision support system that can provide information about data on subsidized aid recipients that will be processed based on the recipient's criteria optimally, up to date effectively and efficiently. The data processing system for subsidized assistance in Lubuk Begalung Subdistrict that is currently running is still not optimal, because people who want to know the type of subsidized assistance must first come to the Head of Subdistrict office. For this reason, it is necessary to build a system with the help of UML diagrams that will be able to provide a clear and complete picture of the new system to be built so that it will help system developers produce a more accurate system[12].

## Design

### Use Case Diagram

Use case diagrams show the sequence of activities in the system. Able to describe business processes, even displaying the sequence of activities in a process[13].

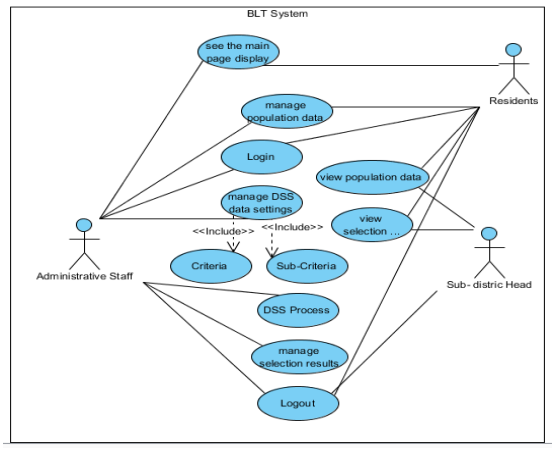


Figure 3: Use Case Diagram of BLT

There is a system that covers all subsidized assistance data processing application activities. There are 3 actors who carry out activities including: admin, residents, and sub-district heads. there are 13 use cases carried out by actors, including: Login, home, resident data, spk setting, spk ahp ranking, selection results, reports and logout.

### Class Diagram

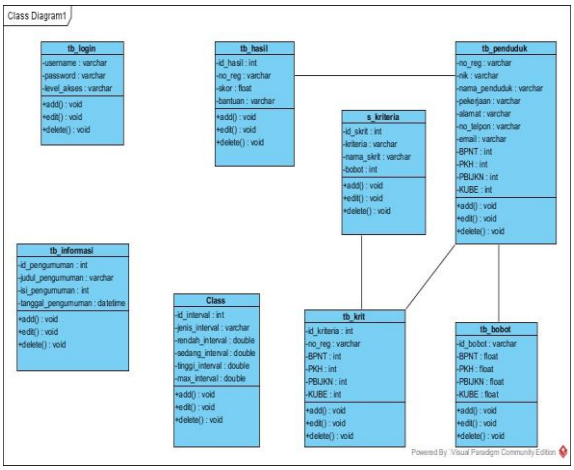


Figure 4 : Class Diagram

### Output Design

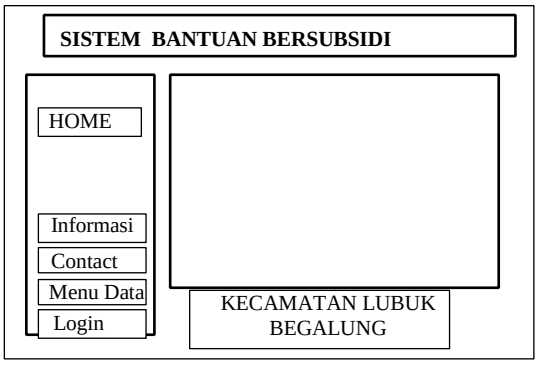


Figure 5 : Home Menu

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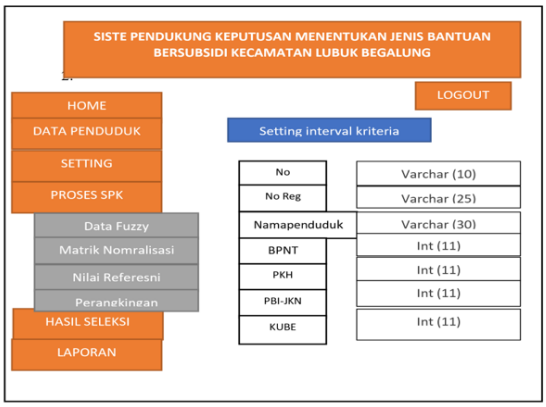


Figure 6 : Process Menu

## Result

Figure 7 : Process Menu

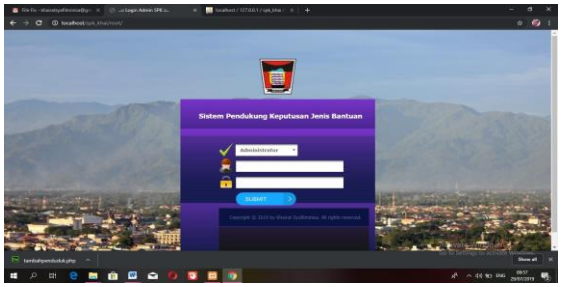


Figure 8 : Login Menu

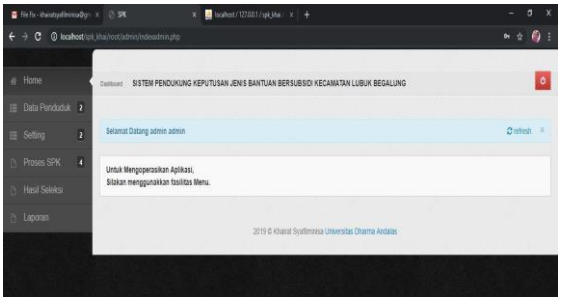

Figure 9 : DSS Page

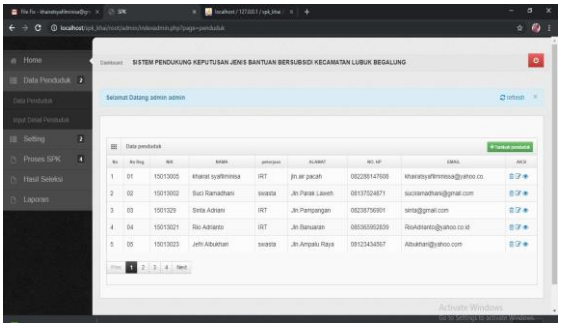

Figure 10 : Population Data

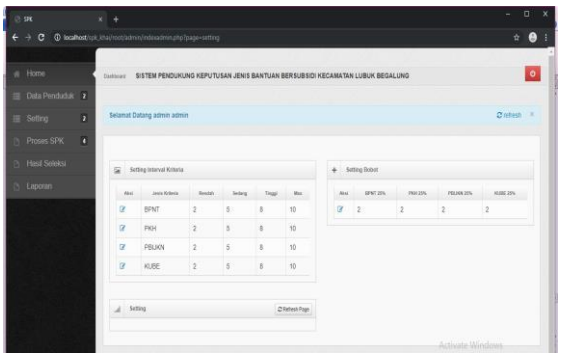

Figure 11 : Setting Page

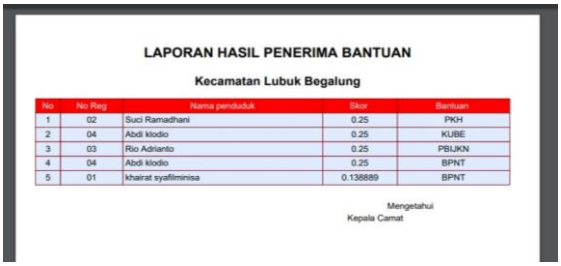


Figure 12 : Ranking Result

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## CONCLUSION

From the results of the analysis and design of the decision support system to determine the type of subsidized assistance for poor families, namely:

1. With this system, it can make it easier for users or District officers to determine the type of assistance that is suitable for residents.

2. With the decision support system determining the type of subsidized assistance for poor families will help residents find out assistance information.

3. With the running of the decision support system determining the type of subsidized assistance will make it easier for users or District officers to obtain information on the results of the calculation of subsidized assistance recipients.

## ACKNOWLEDGEMENTS

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