



Design a Web-Based Covid 19 Assistance Information System

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ABSTRACT

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Covid-19 assistance is a difficult challenge to solve since it is affected by various intertwined variables, including income status, health, education, and living conditions. Beneficiary data collection must be performed correctly. As a result, the Labuhanbatu Regency Social Service should have a computerized system to monitor Covid-19 recipients based on income and living conditions. Waterfall models are used in the development of Information Systems to help the study, and the UML used is PHP programming language, MySQL Database, Bootstrap, and Sublime Document. As a consequence of the study's findings, Covid-19 Beneficiary Community Data Collection Based on Income and Home Conditions was implemented. This method will provide complete and correct information based on the covid-19 beneficiary community's requirements, presented in pdf format.

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1. Introduction

Covid-19/Coronavirus was first discovered in the Chinese city of Wuhan. It spreads easily and kills people when they come into direct physical contact with them through their mouths, noses, and eyes. Efforts by government diversity agencies to break the chain of Covid-19 spread by enforcing a number of community-friendly regulations. The Covid-19 epidemic has had an effect on almost every area of people's lives. Social activities have been temporarily prohibited or suspended, the economy has collapsed, transportation services have been decreased and strictly regulated, tourism has been closed, shopping malls have been abandoned, and the informal sector has been closed. Revenue was down for Ojek Online, Angkot drivers, street vendors, mobile traders, MSMEs, and rough porters. Trade centers, such as malls, which are normally bustling with tourists, have become empty and are currently closed. The tourism industry is on the decline. Tourist attractions and entertainment venues are being shut down by the government. Work and research can also be done from home via the internet.[1]. The problem of house condition is also one of the significant issues that still need significant consideration, both in terms of the completeness of home amenities and the completeness of environmental amenities. A good home should meet the needs of its inhabitants in terms of health. The house's condition about its surroundings may define the level of welfare of the household as well as the level of welfare of the community. [2]. Because of restrictions on business activities, which dramatically reduce economic growth and result in many workers being laid off by businesses, the number of poor people is likely to increase. Indonesia's economy has been improved by the government introducing eight assistance programs across many related ministries. Essential food aid, cash social assistance (BST), direct cash assistance (BLT) in village funds, energy tariff incentives, pre-employment cards, employee wage subsidies, direct cash assistance (BLT) for micro-businesses, and free quotas are among the assistance programs in question. In a study focusing on the Covid-19-affected BLT program, researchers found that. [3].

2. Method

The waterfall method is the analysis method used in this report. The waterfall approach is a framework for creating a standardized and sequential data system.[4]. Fig 1: The waterfall approach was used in this analysis. In software creation, the waterfall approach is one of the classic life cycles (classic life cycle). Following are the stages of the Sommerville Waterfall system.[5].



- a. *System Engineering*
This model starts by defining the system's specifications, which are then converted into software. This is important since the program must interact with other components (hardware and databases).
- b. *Analysis*
The process of identifying needs has become more intensive and focused on software at this stage. Software engineers must understand the software's domain, as needed by the user interface, to make it easier to understand the application developed.[6].
- c. *Design*
This move will help to mitigate the need for a representation in a software blueprint before coding starts. The user's expectations should be addressed at this stage of the design process. As a program set up, this phase is registered.
- d. *Code*
This phase is understandable by computers, so the design must be converted into a format that the machine can understand, namely the programming language by coding. Programmers carry out this process, which is an implementation of the design stage.
- e. *Testing*
This phase ensures that all software functions are error-free and that the results meet the specified requirements.
- f. *Implementation*
It is said that the system has been completed at this stage, and that the system can be used since it was tested successfully.
- g. *Maintance*
Since the software must evolve with the users' needs, software maintenance measures, including development, are required.

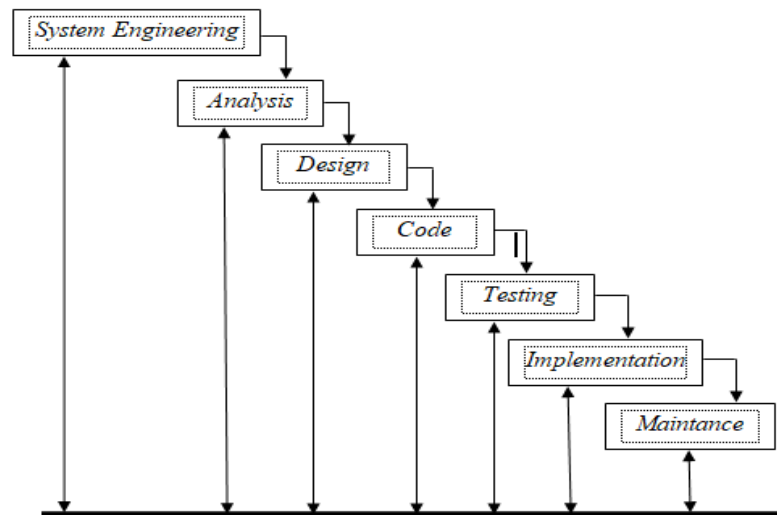


Fig 1. Model Waterfall Diagram

The waterfall method requires that system work be completed in a specific order (linearly). If step 1 is not completed, it will not be able to complete steps 2 and 3. [7].

3. Results and Discussion

3.1 Use Case Diagram

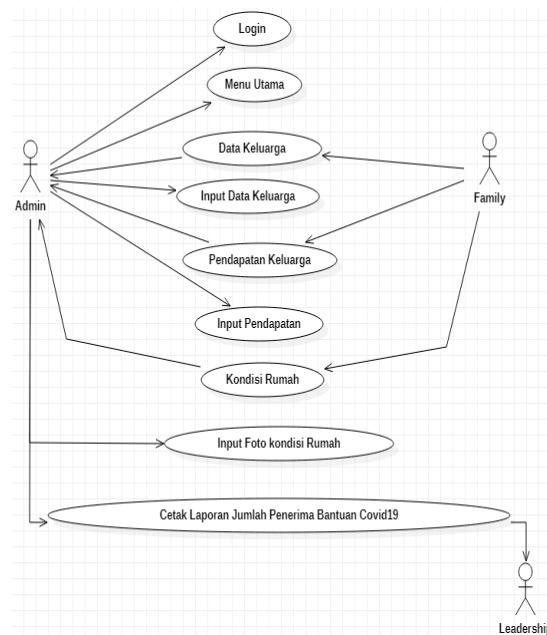


Fig 2. Use Case Diagram

Admin actors who play an essential role in the data collection of Covid19 assistance receipts by logging into the primary menu mechanism system will appear after the admin enters the username and password. The family provides all data to the admin, and the admin enters the data into the system.

3.2 Squence Diagram

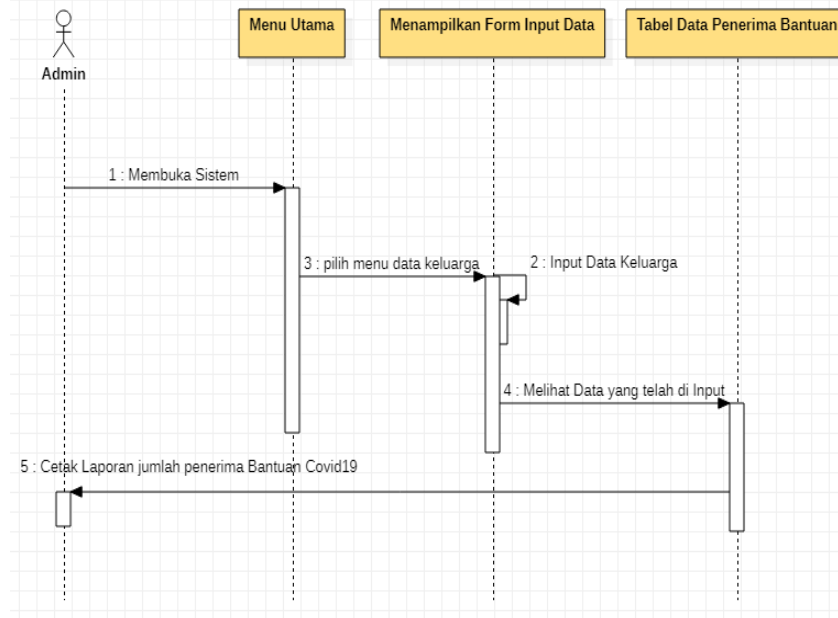


Fig 3. Squence Diagram of Family data

Fig. 3: Data input operation diagram as a processing task obtained by the administrator is to run the information system. The computer responds by showing the main menu of Covid-19 beneficiary logging if the login process was successful. The system will view the family data collection form after the administrator selects the family data menu. The administrator will fill out the form with the Covid-19 beneficiaries' family details. The admin then views the data entered into the form through the beneficiary table and prints a report on the number of Covid-19 beneficiaries to send to the Head of Service.

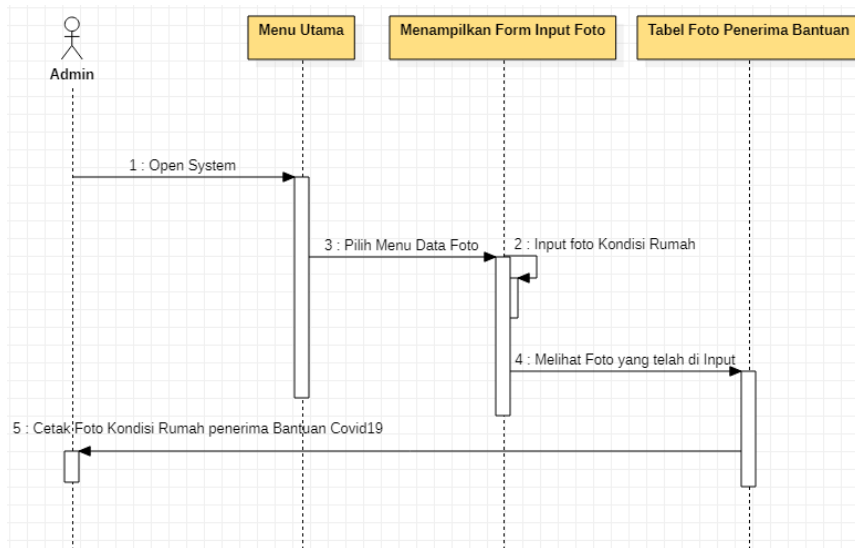


Fig 4. Sequence Diagram Photo Input Home Condition

Fig 4: Operation diagram for photo data input The admin is assigned to run the information system as a processing task. The computer would show the main menu of Covid-19 beneficiary logging if the login process were effective. The administrator will select the family photo data menu. The Home Condition picture input form will then appear on the system's screen. In the form that the device has shown, the administrator will insert a photo of the Covid-19 beneficiary's home condition. The administrator then looks at the photo entered into the form via the beneficiary's photo table. The administrator will then print a picture of the state of the beneficiaries' homes, which will be handed over to the Head of Office.

3.3 Activity Diagram

Fig. 5: Activity diagram of the login procedure as the first operating system, in which the administrator first accesses the site, to which the system responds by showing the login form. The administrator enters the system's username and password. If the username and password are correct, the device will display the admin's main menu. If the username and password are wrong, it will return to the login form.

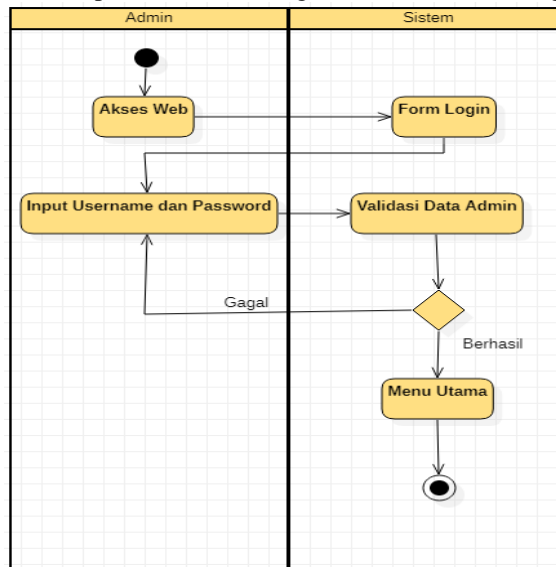


Fig 5. Login Activity Diagram

Fig 6: Operation diagram for logging data entry. The admin is assigned the responsibility of running the information system as a processing task. The computer would show the main menu of Covid-19 beneficiary logging if the login process were effective. The system will then show the family data collection form after the admin selects the data collection menu. The administrator will fill out the form that the system has given with the family information of covid-19 beneficiaries. The administrator will then save the data that has been entered. The data is successfully saved if it is incompletely filled out. It will return to the data collection form if the information is missing.

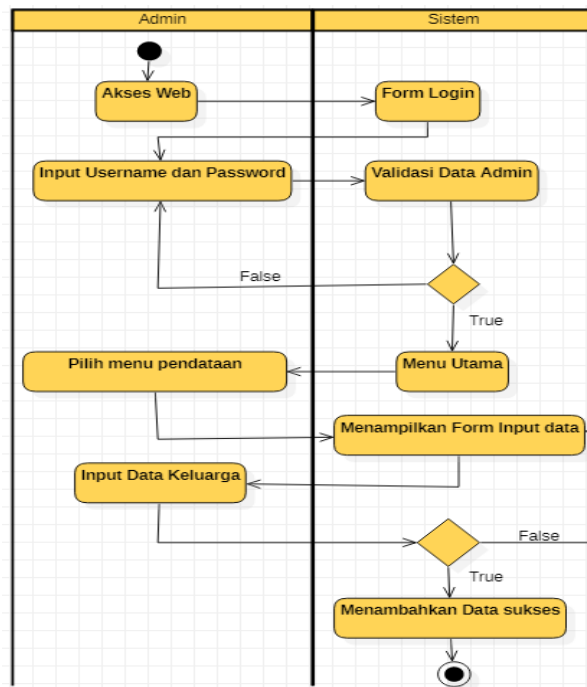


Fig 6. Input logging activity diagram

Fig 7: Operation diagram for photo data input The information must be run as a processing activity assigned to the admin. The computer shows the main menu of Covid-19 beneficiary logging if the login process was effective. The recipient's photo list will have a menu selected by the admin. The device would then show a photo of the covid-19 beneficiary's home in its current state. The administrator will upload a photo of the home condition of the covid-19 beneficiary into the system's form. The data that has been entered will then be saved by the administrator. The data is successfully saved if it has been completely filled out. It will return to the data collection form if the information is missing.

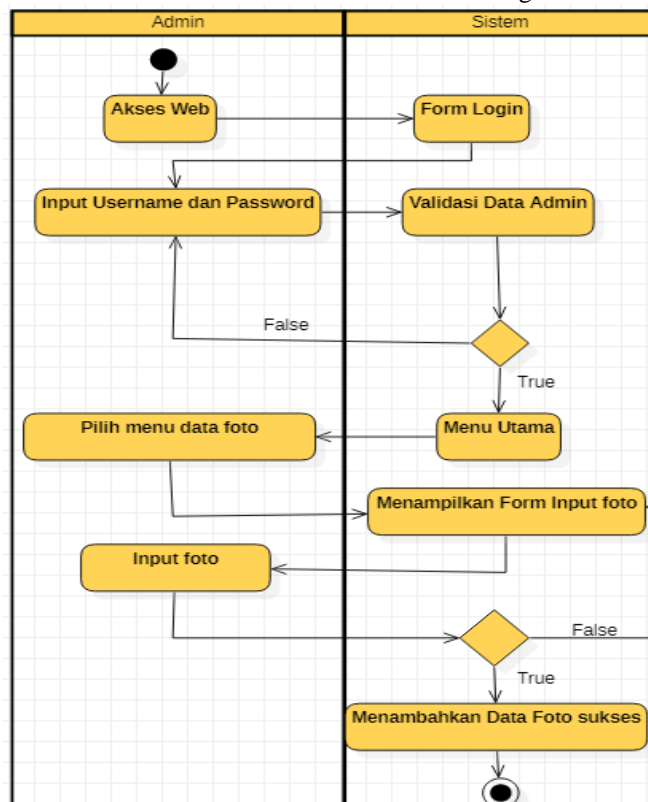


Fig 7. Input Photo Activity Diagram

3.4 Form Menu Login Admin

Admins must correctly enter their username and password in the Login form to gain access to the main menu. Fig 8 shows the operation Administrator Login

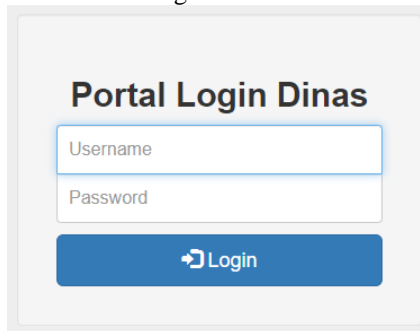


Fig 8. Admin Login Form

3.5 Covid-19 Beneficiary Community Data Input Menu

The Covid-19 beneficiary input menu is for registering Covid-19 beneficiary families based on income and living conditions. Suparno, for example, with NIK 001210146579394001, male gender, 51 years old, last education elementary school, farmer's work, and married status. Fig 9 shows this. Input Menu for Beneficiary Family Data in Covid-19

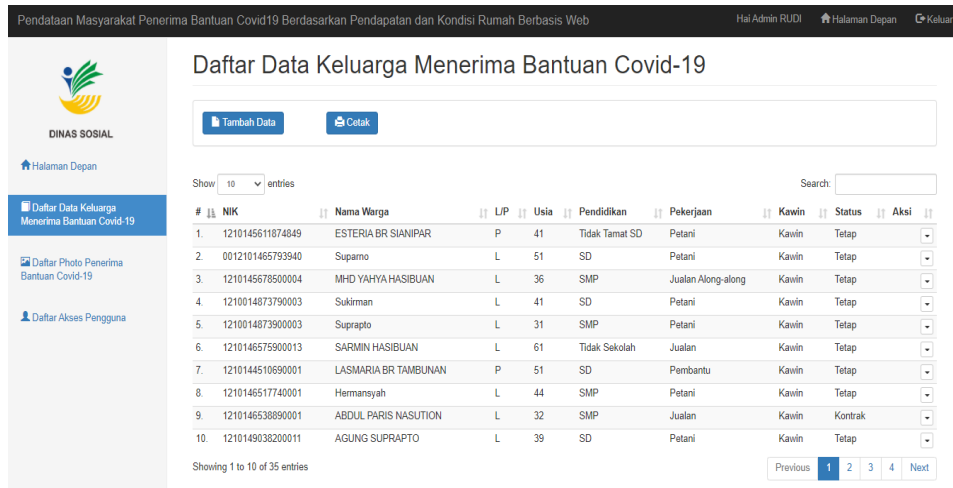


Fig 9. Covid-19 Beneficiary Family Data Input Menu

3.6 Menu Input Photo Home Condition And Description

Fig 10: Photo and Description in the Menu List The menu item input photo of home condition and description of recipients of Covid-19 assistance shows a form for filling out a photo description of the house's condition and description of the recipients of Covid-19 assistance. Upload a picture to make it easier for employees to add images, details, and the homeowner's name.

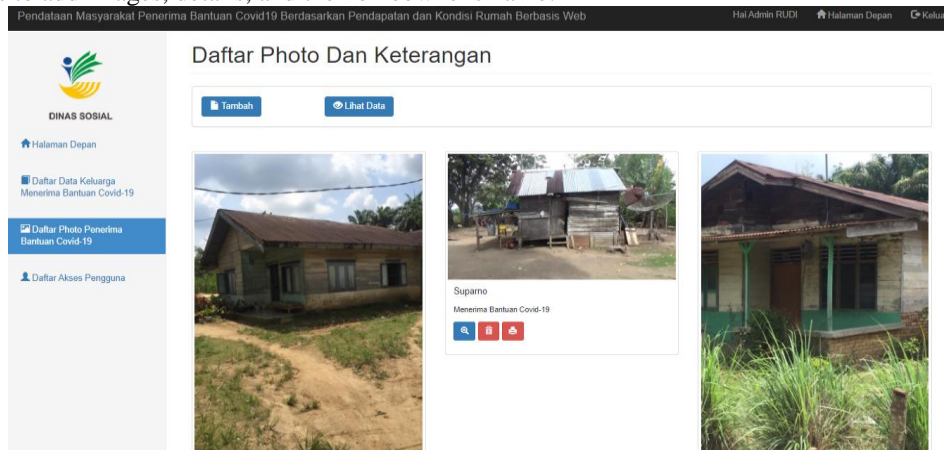


Fig 10. Photo list menu and Description

3.7 Print Community Data Report to Help Covid-19

**KANTOR DINAS SOSIAL
KEL. SIRANDORUNG, KEC. RANTAU UTARA
LABUHANBATU**

DINAS SOSIAL

LAPORAN KELUARGA YANG MENERIMA BANTUAN COVID-19

NIK : 0012101465793940
 Nama : SUPARNO
 Tanggal Lahir : LINGGA TIGA
 Tanggal Lahir : 2048-1979
 Jenis Kelamin : L
 Alamat KTP : DUSUN H LINGGA TIGA
 Alamat : DUSUN H LINGGA TIGA
 Desa Kelurahan : LINGGA TIGA
 Kecamatan : BELA HELLU
 Kabupaten/Kota : LABUHANBATU
 Provinsi : SUMATERA UTARA
 Agama : ISLAM
 Pendidikan : SD
 Pekerjaan : PETANI
 Kawin/Tidak Kawin : KAWIN
 Status Kepesebutan : TETAP
 Penghasilan Perbulan : Rp 1.000.000
 Penghasilan Perbulan : Rp 500.000
 Ateg Rumah : SENE
 Dinding Rumah : PAPAN
 Lantai Rumah : SEMEN
 Sura Tanah : PERIADI

Fig 11. Print Family Report to get Covid-19 Assistance

3.8 Print Report Description and Photo Of Home Condition

**KANTOR DINAS SOSIAL
KEL. SIRANDORUNG, KEC. RANTAU UTARA
LABUHANBATU**

DINAS SOSIAL

LAPORAN KELUARGA YANG MENERIMA BANTUAN COVID-19

Nama Pemilik Rumah : SUPARNO
 Keterangan : MENERIMA BANTUAN COVID-19
 Foto Rumah :

Fig 12. Print Home Condition Report to get Covid-19 assistance

3.9 System Testing With Black Box Testing

In the application device analysis, testing is performed to detect errors or defects. Software frameworks that meet application system design goals are evaluated during testing. Table 1. Black Box Test on Built-in Systems. Processing family data, processing departmental data, processing income data:

- home condition processing
- black-box test on built-in device Whether or not the information system wants to make errors using black box assessment
- checking takes place from password authentication Covid19 beneficiary family data collection [8].

Table 1.
Black Box Test on Built-in Systems

Feature Test	Testing Details	Types of Testing	Results Testing
Login	Verify login data	Black Blox	<input type="checkbox"/>
Processing family data	Add data, save data, edit data, Delete data	Black Blox	<input type="checkbox"/>
Processing department data	Add data, save data, edit data, Delete data	Black Blox	<input type="checkbox"/>
Manage family data	Add data, save data, edit data, Delete data	Black Blox	<input type="checkbox"/>
Manage home conditions data	Add data, save data, edit data, Delete data	Black Blox	<input type="checkbox"/>
Processing user data	Add data, save data, edit data, Delete data	Black Blox	<input type="checkbox"/>
Manage income data	Add data, save data, edit data, Delete data	Black Blox	<input type="checkbox"/>

4. Conclusion

Design and build a web-based Covid 19 Assistance information system to make it easier for Labuhanbatu District Social Service Office administrators to enter comprehensive information about eligible for Covid-19 assistance based on their income living conditions. This method can collect information with greater accuracy than the previous system, which is still manual and takes a long time to obtain. It would be simpler to report new Covid-19 beneficiaries with the implementation of data collection for beneficiaries of Covid-19. The collection of Covid-19 beneficiaries' data results in data reports indicating eligibility for Covid-19 assistance based on their income and living situation.

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