

# Development of the Dukcapil Application In Setia Mekar Village

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## Abstract

Technology will develop more and more every year. Many things currently use technology from various aspects, including general elections for government institutions in Indonesia. Data collection on general election participants in Indonesia is still relatively slow because data collection is still used manually and handwritten. The creation of this data collection system involved village government agencies including population administration and civil registration services (Dukcapil). This article discusses the design of the Dukcapil election application in Setiamekar Village which aims to simplify the administrative process and increase the efficiency of public services. The methods used in this design include needs analysis, system design, implementation and evaluation. The research results show that this application can help speed up the administration process, reduce manual errors, and increase public satisfaction.

**Keywords:** *Technology, dukcapil application.*

## 1. Introduction

Technological progress in society is very rapid. One thing that is striking is the data collection in various institutions. Technology refers to collecting relevant and more accurate data [1], [2]. Technology in the government domain has a very positive impact in processing various data that is needed in carrying out activities [3].

Dukcapil is an agency responsible for population management services in Indonesia. Dukcapil is tasked with collecting, recording and maintaining population data as well as issuing population documents such as Population Identity Cards. However, population management services in villages face many problems such as incomplete population data and lack of monthly updates. To overcome this problem, developing an application-based data collection system for dukcapil participants is a quite effective solution. The author uses *UML*, which includes *Use Case Diagrams*, *Diagram* activity, And design *Prototype*, For make system This. Anticipated that design This will produce information Systems service Which structured and regular [4], [5].

## 2. Research methods

This research uses a system development method which includes several stages, namely [6]:

1. Needs Analysis: Identify user needs through surveys and interviews with the community and Dukcapil officers in Setiamekar Village.
2. System Design: Designing a system based on identified needs, including user interface design and database structure.
3. Implementation: Develop applications using appropriate programming languages and carry out testing to ensure the application runs well.

The results of the needs analysis show that the people of Setiamekar Village need an application that can accommodate various Dukcapil services, such as making KTPs, KK, birth certificates and transfer letters. In addition, the application must be easy to use, have an application status checking feature, and provide notifications for document retrieval. The system is designed taking into account aspects of ease of use and data security. The user interface is made intuitive with clear navigation. The database structure is designed to store population information efficiently and securely. The terms in the system that must be known are:

- a. Information Systems; Information system aims to collect data and use it to make work more efficient. Goals are achieved through the selection and compilation of data and how to use it [7].
- b. Application; Applications are devices created with a specific purpose to facilitate a desired need [7].
- c. Figma; Figma is a program created to develop the look and feel of desktop, mobile, and other users [8].
- d. Unified Modeling Language; UML is used to specify the software being created. UML is also used as an approach in developing application-based participant data collection software.

1) Use Cases Diagram

Use Cases The diagram is a behavioral modeling representation of the information system being developed. This diagram is intended to identify the functions in a system and the parties involved in using these functions [1]. Symbols used in Use Cases Diagram is:

Gambar	Keterangan
	Use Case mengilustrasikan fungsionalitas-fungsionalitas yang diajikan oleh sistem sebagai unit-unit yang saling berkomunikasi dengan aktor-aktor, yang dinyatakan melalui kata kerja.
	Aktor, juga dikenal sebagai "Actor," merupakan representasi abstrak dari individu atau sistem lain yang memicu fungsi dalam sistem target. Untuk mengidentifikasi aktor, perlu menetapkan pembagian tanggung jawab dan tugas-tugas yang terkait dengan peran mereka dalam konteks sistem target. Individu atau sistem dapat berperan dalam beberapa peran. Penting untuk dicatat bahwa aktor berinteraksi dengan Use Case, namun tidak memiliki kendali atas use case tersebut.
	Hubungan antara aktor dan use case digambarkan dengan garis lurus tanpa panah, menunjukkan siapa atau apa yang meminta interaksi langsung, bukan mengindikasikan aliran data.
	Asosiasi antara aktor dan use case yang menggunakan panah terbuka mengindikasikan bahwa aktor berinteraksi secara pasif dengan sistem, artinya aktor tidak menginisiasi interaksi tetapi menerima informasi atau input dari sistem.
	"Include" adalah ketika suatu use case terdapat di dalam use case lain (dibutuhkan) atau suatu use case dipanggil oleh use case lain, contohnya seperti memanggil sebuah fungsi dalam sebuah program.
	"Extend" adalah ketika suatu use case meluaskan use case lain jika kondisi atau syarat tertentu terpenuhi.

Fig. 1: Use Cases Diagram

2) Activity Diagrams

Activity diagrams show the workflow or activities in a system. Activity diagrams share symbols to explain the process [1]. The following are the symbols and descriptions of the Activity Diagram:

Gambar	Keterangan
	"Start Point" ditempatkan di sudut kiri atas dan merupakan titik awal dari aktivitas.
	"Activities" menggambarkan suatu proses atau kegiatan dalam bisnis.
	"Decision Points" menggambarkan pilihan yang ada untuk pengambilan keputusan, berdasarkan kondisi yang dapat bernilai benar (true) atau salah (false).
	"Fork/percabangan" digunakan untuk menunjukkan kegiatan yang dilakukan secara paralel atau untuk menggabungkan dua kegiatan paralel menjadi satu.
	"Join" atau "penggabungan" digunakan untuk menunjukkan adanya penggabungan atau penyatuan setelah dekomposisi kegiatan-kegiatan yang sebelumnya dilakukan secara paralel.
	"Swimlane" adalah pembagian dalam diagram aktivitas yang digunakan untuk menunjukkan siapa yang melakukan aktivitas tertentu.
	"End Point" adalah titik akhir dari suatu aktivitas dalam diagram.

Fig. 2: Activity Diagram

3. Research result

To create a quality and well-organized application, the design must be in accordance with the requested needs [1].

Users:

- a) Login
- b) Account registration
- c) View registered data
- d) Registration of deed data
- e) Registration of death data
- f) Registration of KTP data

### 3.1. Use Case Diagram

Use Case Diagram for the system being developed, planning required when designing the application. Users can register, log in , register the data that needs to be registered.

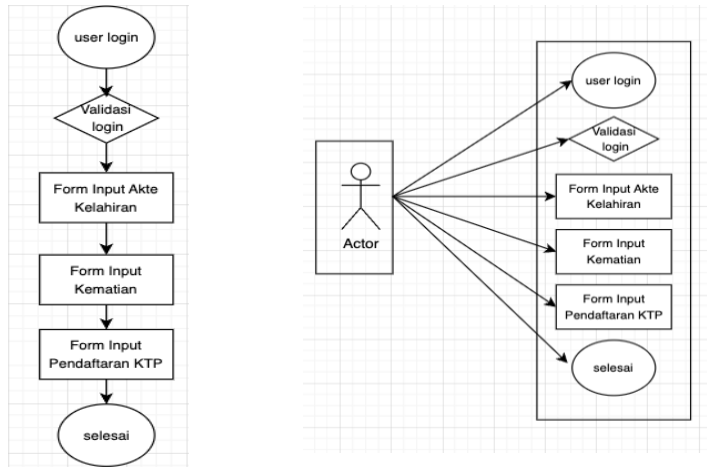


Fig. 3: Use Cases Diagram

### 3.2. Activities Diagram

(a) Activity Diagram Login

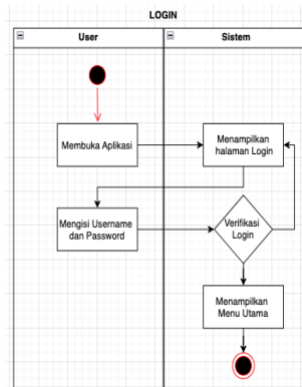


Fig. 4: Activities Diagram Login

The user opens the application and will display the Login menu. If the user already has an account, he will immediately enter the main menu page. If Users No own account Users will directed to page registration, Users requested Enter data, user name and password. After User fill in the data, User name and User password clicking knob save data, data will stored by system, And system will displays page menu main.

(b) Registration Activity Diagram

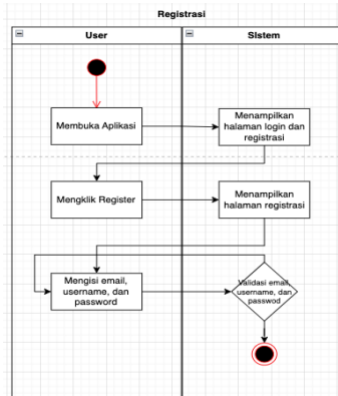


Fig. 5: Activities Registration Chart

Users will enter the registration menu if they do not have an account. Fill in the data that must be filled in, then if successful you will return to the Login menu.

(c) Birth Certificate Activity Diagram

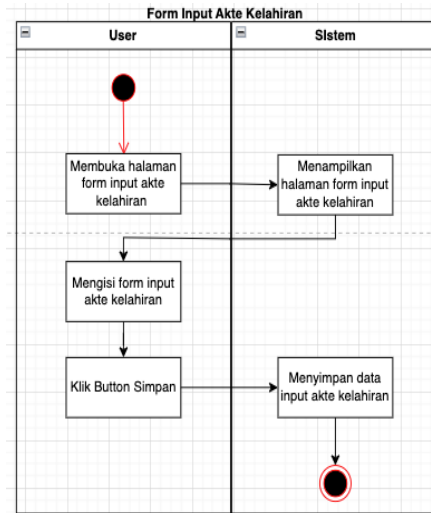


Fig. 6: Activities Deed Diagram

The user will enter the home menu which will display the data that has been registered. If the User does not have registered data. On the homepage there is a menu to enter the registration input page which displays a form page input . Then, the user fills in the birth certificate form.

(d) Death Activity Diagram

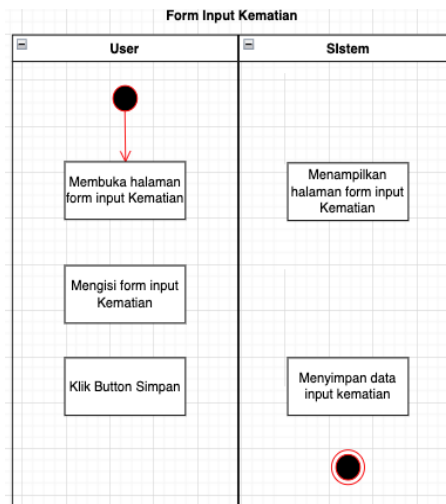


Fig. 7: Activities Death Diagram

The user will enter the home menu which will display the data that has been registered. If the User does not have registered data. On the homepage there is a menu to enter the registration input page which displays a form page input. Then, the user fills in the Death form.

(e) KTP Activity Diagram

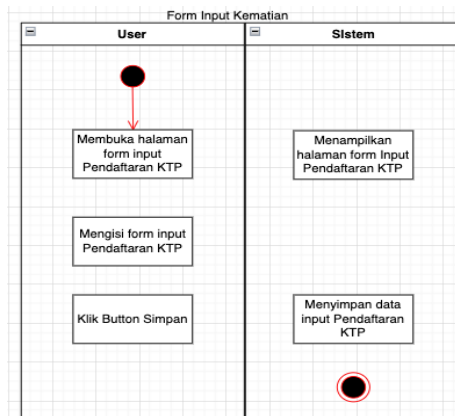


Fig. 8: Activities KTP diagram

The user will enter the home menu which will display the data that has been registered. If the User does not have registered data. On the homepage there is a menu to enter the registration input page which displays a form page input. Then, the user fills in the form.

### 3.3. Prototype Design

The design prototype stage allows users to understand how the system will be used [8]. The following is an example of an application-based prototype:

(a) Login Page

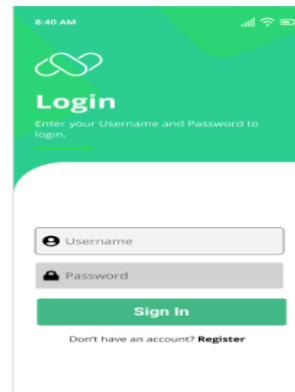


Fig. 9: Login Page

Figure 8 is the Login display

(b) Register Page

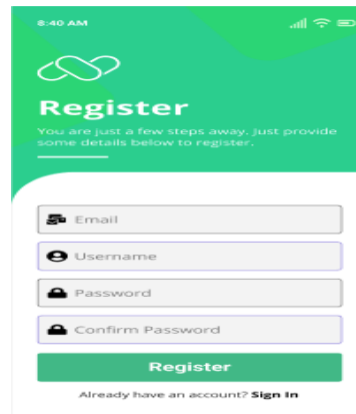


Fig. 10: Registration Page

Figure 9 is the Register display

(c) Home Page

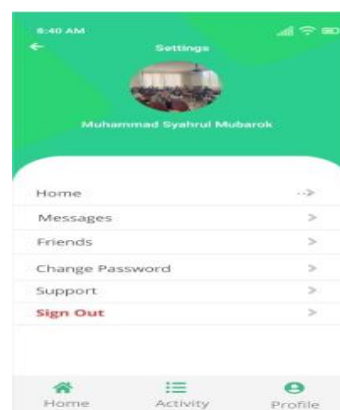


Fig. 11: Home Page

Figure 10 is the Home screen  
(d) Birth Certificate Input Page

Form Akte Kelahiran  
9:44 AM  
Form Input Akte Kelahiran  
Pastikan data bayi yang anda input sesuai.  
Nama Lengkap Bayi  
Jenis Kelamin  
Tempat Lahir  
Tanggal Lahir  
Nama Lengkap Ayah  
Nama Lengkap Ibu  
NIK Ayah  
NIK Ibu  
Alamat  
Keterangan Lain  
Submit

Fig. 12: Birth Certificate Input Page

Figure 11 is the Birth Certificate Input display when clicking on the icon.  
(e) Death Input Page

Form Kematian  
9:44 AM  
Form Input Kematian  
Pastikan data diri orang yang meninggal sesuai.  
Nama Lengkap  
Jenis Kelamin  
Tanggal Kematian  
Tempat Kematian  
Penyebab Kematian  
Nama Lengkap Pelapor  
NIK Pelapor  
Hub Orang Yang Meninggal  
Alamat Pelapor  
Keterangan Lain  
Submit

Fig. 13: Death Input Page

Figure 12 is the Death Input display when clicking the icon.  
(f) KTP Input Page

Form KTP  
9:45 AM  
Form Input Pendaftaran KTP  
Pastikan Data yang di input sesuai dengan akta kelahiran.  
Nama Lengkap  
Tempat Lahir  
Tanggal Lahir  
Jenis Kelamin  
Agama  
Pekerjaan  
Alamat Tempat Tinggal  
NIK pada Akta Kelahiran  
Keterangan Lain  
Submit

Fig. 14: KTP Input Page

Figure 13 is the KTP Input display when clicking the icon.

## 4. Conclusion

There are still many villages in Indonesia that are behind in technology, this application can reach all village communities and make things easier for village officials and residents, because technology is developing so quickly, it is the task of village officials to develop technology in their area and educate the community in the surrounding environment.

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