

## Design And Development of Population Service Administration System With Pieces Method In Kemiri Village Head Office Banten



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### Abstract

The public service administration system at the government offices of the Kemiri village office in the Kemiri District currently does not have a computerized and integrated system. Because the system runs, residents who submit letters for administrative completeness, still use the Ms.Word / Ms.Excel application. of course has many weaknesses including human error, not neat in file storage, resulting in the lengthy process of searching and making a cover letter and required reports. The analytical method used in this study is to use PIECES (Performance, Informance, Economy, Control, Efficiency, Service) analysis, the design of the model uses UML (Unified Modeling Language). The results of this study are web-based letter information systems at the Office of the Village Chief of Kemiri that can accessed using a local computer browser. Thus the information letter needed by the Kemiri Village community and more effective and efficient in making the letter.

Keywords: Administrative System, Human error, Cover letter, Report

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## I. INTRODUCTION

Integrated Community Service is one part of the Office of the Village Chief of Kemiri which has the activity of serving letters of introduction used by the community as a condition for completing the administration of the population. Currently in the service of preparing a cover letter, officers still use the Microsoft Office Word application and generate reports that are written manually so that data input errors often occur and information cannot be known about many residents who submit completeness of administration every day.

Population Administration as a system, is expected to provide residents with the fulfillment of administrative rights of the population in public services and provide protection in connection with the issuance of Population Documents without any discriminatory treatment through the active role of the Government and regional government [1]. Service is the provision of services (serving) the needs of people or people who have an interest in the organization in accordance with the basic rules and procedures that have been determined. Referring to the opinion, the service provided to the community is an embodiment of the duties and functions of the state apparatus as public servants who are obliged to provide maximum services to their people [2]

The function of the Letter is as a means of delivering messages in writing, the letter plays a role in achieving the goals of an agency or organization in establishing cooperation between organizations / agencies. As a notification, as a warrant, as a warning letter, as a request or request, as a letter of introduction, as a letter of agreement, as a letter of report, as a letter of decision, as a summons, as a follow-up letter [3]

The design of the system can be referred to as a stage of depiction, planning and sketching of a collection of system elements that become a unified whole and have a function and meaning [8].

## II. METHODE

The method used in this study are:

### **Observation Method (Observation Research)**

The author makes observations in the Government Section, to obtain information needed by the author.

#### a. Interview Method (Interview Research)

Interviews were conducted to dig up information relating to the administrative services system of residents at the Kemiri Village Office in Tangerang District and interviews were conducted with related parties namely, the Section Head of Government and the Administrative Manager of the population at the Kemiri Village Office in Kemiri District.

#### b. Literature Study Method (Literature Study)

In addition to observing the author also conducts data by means of literature study in this method the author seeks to complete the data obtained by reading and studying from books and relevant data [4]. At this stage the authors study the literature relating to information systems and information systems development

### **Data analysis methods**

In this study, the analysis method is carried out by steps of observing and analyzing the current system, and determining UML (Unified Modeling Language) which includes use case diagrams, activity diagrams, sequence diagrams [5].

### **System analysis method**

This is a research phase of an ongoing system aimed at designing a new system. System analysis is carried out using the PIECES Analysis method (Performance, Information, Economy, Control, Efficiency, and Service). The PIECES Analysis Method is:

1. Performance  
Performance is an analysis of the ability of the system to complete the task properly.
2. Information  
Information is the most important thing for an end user in a system in making decisions.
3. Economic  
Economics deals with the least amount of resources used so as to produce a profit.
4. Control  
Control in the system is needed, in order to improve system performance, prevent or detect misuse or system errors.
5. Efficiency  
Efficiency is related to how the available resources can be used as well as possible and as economically as possible with the minimum waste or cost.
6. Service  
Improvement of services provided by the system.

Based on the above definition, it can be concluded that the PIECES method is (Performance, information, Economy, Control, Efficiency, Service) that is identified and produces advantages and disadvantages of the current system, so it can be concluded for improvement [6].

### Analysis of pieces

PIECES analysis is used to take photos of current systems. By using PIECES analysis, the advantages and disadvantages of the current system will be obtained, so it can be concluded for improvement [7].

In the system analysis method, a table is presented to identify the current system, to see the whole system so that improvements can be proposed to the table as below:

|   |                    | <i>Previously</i>   | <i>Proposed</i>   |
|---|--------------------|---|---|
| 1 | <i>Performance</i> | <i>The previous system performance requires a lot of time searching for mail files, errors in population data input</i>   | <i>In the proposed system all population data has been stored in a database so as to minimize input errors and loss of population data</i>  |
| 2 | <i>Informance</i>  | <i>In the previous system the information received was still inaccurate because of frequent recording errors during the process of making letters and also errors in making reports</i> | <i>In the proposed system the service staff can directly make a letter from the population data that has been inputted first in the resident master. Reports can be generated Up to date and real time.</i> |
| 3 | <i>Economy</i>     | <i>In this system the related report data is still stored in printed form, so that it requires no small cost to provide paper, ink, storage and other stationery.</i>                   | <i>In the proposed system all related letter reports are stored in databases so that they can save costs in purchasing paper, ink, storage, and stationery.</i>   |
| 4 | <i>Control</i>     | <i>The old system is still anticipating data security, so anyone can access or change data.</i>   | <i>The proposed system will facilitate control so we can find out who accessed and changed the data</i>   |
| 5 | <i>Efficiency</i>  | <i>In the old system the staff had to write a letter registration number manually, and record it in the relevant letter report book</i>   | <i>In the proposed system the number of registered letters with automatic numbering and make reports more accurate to the letters made</i>  |
| 6 | <i>Service</i>     | <i>In the old system the service to the population was still not optimal, there was still a delay in handling the preparation of letters from the applicant</i>                         | <i>In the proposed system the applicant can submit a letter to the service staff, the letter is printed more quickly and signed by the Village Head or secretariat</i>                                      |

III. RESULT AND DISCUSSION

**Use Case Proposed Diagram**

Use Case Diagrams are diagrams used to show a graphical display of the functionality provided by the system in terms of actors, destination actors, and matters related to existing use cases.

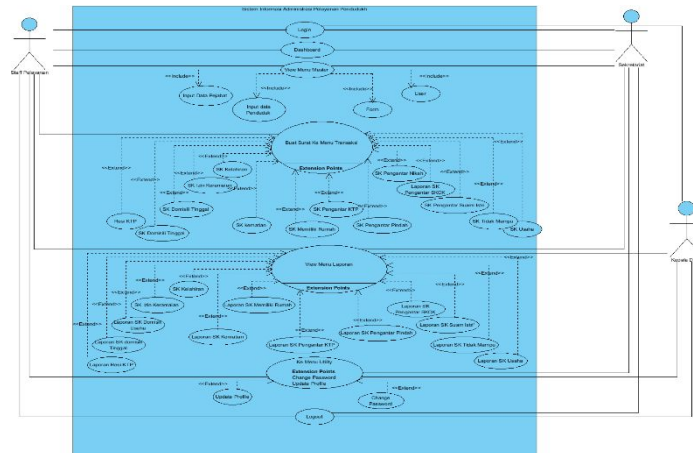


Figure I. Use Case Diagrams

Based on the use case diagram of the proposed diagram (Figure I) it is clear that there are 37 (thirty seven) use cases consisting of 7 (seven) main use cases namely login, board, transaction, master, report, utility, and logout. Use case login to connect with an actor user, staff pelayanan, sekretariat, dan Kepala desa. Use case Master has 4 (four) consisting of pejabat, penduduk, user, dan form, everything is connected to actor staff pelayanan Use case transactions have 14 (fourteen) consisting of resi ktp, sk domisili tinggal, sk domisili\_usaha, sk\_izin keramaian, sk kelahiran, sk kematian, sk memiliki rumah, sk pengantar ktp, sk pengantar nikah, sk pengantar pindah, sk pengantar skck, sk suami istri, sk tidak mampu, sk usaha. everything is connected with the actor staff pelayanan. Use case report has 14 (fourteen) consisting of laporan resi ktp, lampiran sk domisili\_tinggal, laporan sk domisili\_usaha, laporan sk\_izin keramaian, laporan sk kelahiran, laporan sk kematian, laporan sk memiliki rumah, laporan sk pengantar ktp, laporan sk pengantar nikah, laporan sk pengantar pindah, laporan sk pengantar skck, laporan sk suami istri, laporan sk tidak mampu, laporan sk usaha everything is connected to staff pelayanan, sekretariat, and kepala Desa. Use case utility has 2 (two) consisting of profiles, and change passwords are all connected to staff pelayanan, sekretariat, dan kepala Desa.

Use diagram as a form of system design that will be created (Figure 3) is the design of the main display model which is oriented to the menu needs of the application prepared, in addition to the need for storing data information so that it can be used historically it is also illustrated in the form of class diagrams (Figure 2) complete with information fields and data types according to data storage needs.

#### IV. IMPLEMENTATION

##### Database Design

To be able to depict the form of a complete database, researchers use the Microsoft Access application as a form of basic description, and in the end the form of this database design can be adjusted using anything as needed.

##### a. Table Master: User

Primary Key : no user  
Foreign Key : -  
table structure : { no\_user, user\_login, name, password, access, profile }

| # | Name       | Type         | Collation         | Attributes | Null | Default | Comments | Extra          |
|---|------------|--------------|-------------------|------------|------|---------|----------|----------------|
| 1 | no_user    | int(3)       |                   |            | No   | None    |          | AUTO_INCREMENT |
| 2 | user_login | varchar(50)  | latin1_swedish_ci |            | Yes  | NULL    |          |                |
| 3 | nama       | varchar(150) | latin1_swedish_ci |            | Yes  | NULL    |          |                |
| 4 | password   | varchar(50)  | latin1_swedish_ci |            | Yes  | NULL    |          |                |
| 5 | akses      | varchar(50)  | latin1_swedish_ci |            | Yes  | NULL    |          |                |
| 6 | profile    | varchar(150) | latin1_swedish_ci |            | Yes  | NULL    |          |                |

Table II. table User

##### b. Table Master: Pejabat

Primary Key : nip  
Foreign Key : -  
table structure : { nip, name, address, rt, rw, phone\_number }

| # | Name    | Type        | Collation         | Attributes | Null | Default | Comments | Extra |
|---|---------|-------------|-------------------|------------|------|---------|----------|-------|
| 1 | nip     | varchar(16) | latin1_swedish_ci |            | No   | None    |          |       |
| 2 | nama    | varchar(50) | latin1_swedish_ci |            | No   | None    |          |       |
| 3 | alamat  | varchar(50) | latin1_swedish_ci |            | No   | None    |          |       |
| 4 | rt      | varchar(3)  | latin1_swedish_ci |            | No   | None    |          |       |
| 5 | rw      | varchar(3)  | latin1_swedish_ci |            | No   | None    |          |       |
| 6 | no_telp | varchar(13) | latin1_swedish_ci |            | No   | None    |          |       |
| 7 | jabatan | varchar(50) | latin1_swedish_ci |            | No   | None    |          |       |
| 8 | status  | varchar(20) | latin1_swedish_ci |            | No   | None    |          |       |

Table III. table Pejabat

##### c. Table Master: Penduduk

Primary Key : nik  
Foreign Key : -  
table structure : { nik, nama\_lengkap, jenis\_kelamin, tempat\_lahir, tanggal\_lahir, work, kp, rt, rw, desa, kec, kab, pekerjaan, agama, kewarganegaraan, gol\_dar }

| #  | Name            | Type         | Collation         | Attributes | Null | Default | Comments | Extra |
|----|-----------------|--------------|-------------------|------------|------|---------|----------|-------|
| 1  | nik             | varchar(16)  | latin1_swedish_ci |            | No   | None    |          |       |
| 2  | nama_lengkap    | char(50)     | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 3  | jenis_kelamin   | char(10)     | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 4  | agama           | varchar(50)  | latin1_swedish_ci |            | No   | None    |          |       |
| 5  | tempat_lahir    | char(30)     | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 6  | tanggal_lahir   | date         |                   |            | Yes  | NULL    |          |       |
| 7  | kewarganegaraan | varchar(100) | latin1_swedish_ci |            | No   | None    |          |       |
| 8  | gol_dar         | varchar(5)   | latin1_swedish_ci |            | No   | None    |          |       |
| 9  | pekerjaan       | varchar(50)  | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 10 | kp              | varchar(50)  | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 11 | rt              | varchar(3)   | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 12 | rw              | varchar(3)   | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 13 | desa            | char(30)     | latin1_swedish_ci |            | No   | None    |          |       |
| 14 | kec             | char(30)     | latin1_swedish_ci |            | No   | None    |          |       |
| 15 | kab             | char(30)     | latin1_swedish_ci |            | No   | None    |          |       |

Tabel IV. table Penduduk

d. Tabel Transaction : Resi KTP

Primary Key : nomor\_surat  
Foreign Key : nik, nip  
table structure : { nomor\_surat, nik, nomor\_kk, tanggal\_surat, berlaku\_sampai, nip, user\_create, create\_date, user\_update, update\_date }

| #  | Name           | Type        | Collation         | Attributes | Null | Default | Comments | Extra |
|----|----------------|-------------|-------------------|------------|------|---------|----------|-------|
| 1  | nomor_surat    | varchar(30) | latin1_swedish_ci |            | No   | None    |          |       |
| 2  | tanggal_surat  | date        |                   |            | Yes  | NULL    |          |       |
| 3  | nik            | varchar(16) | latin1_swedish_ci |            | No   | None    |          |       |
| 4  | nomor_kk       | varchar(16) | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 5  | berlaku_sampai | date        |                   |            | Yes  | NULL    |          |       |
| 6  | nip            | varchar(16) | latin1_swedish_ci |            | No   | None    |          |       |
| 7  | user_create    | varchar(50) | latin1_swedish_ci |            | No   | None    |          |       |
| 8  | create_date    | datetime    |                   |            | No   | None    |          |       |
| 9  | user_update    | varchar(50) | latin1_swedish_ci |            | No   | None    |          |       |
| 10 | update_date    | datetime    |                   |            | No   | None    |          |       |

Tabel V. table Resi KTP

e. Table Transaction : SK Domisili Tinggal

Primary Key : nomor\_surat  
Foreign Key : nik, nip  
table structure : { nomor\_surat, tanggal\_surat, nik, nomor\_kk, berlaku\_sampai, keperluan, nip, user\_create, create\_date, user\_update, update\_date }

| #  | Name               | Type        | Collation         | Attributes | Null | Default | Comments | Extra |
|----|--------------------|-------------|-------------------|------------|------|---------|----------|-------|
| 1  | nomor_surat        | varchar(30) | latin1_swedish_ci |            | No   | None    |          |       |
| 2  | nik                | varchar(16) | latin1_swedish_ci |            | No   | None    |          |       |
| 3  | keperluan_domisili | text        | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 4  | tanggal_surat      | date        |                   |            | Yes  | NULL    |          |       |
| 5  | berlaku_sampai     | date        |                   |            | No   | None    |          |       |
| 6  | nip                | varchar(16) | latin1_swedish_ci |            | No   | None    |          |       |
| 7  | user_create        | varchar(50) | latin1_swedish_ci |            | No   | None    |          |       |
| 8  | create_date        | datetime    |                   |            | No   | None    |          |       |
| 9  | user_update        | varchar(50) | latin1_swedish_ci |            | No   | None    |          |       |
| 10 | update_date        | datetime    |                   |            | No   | None    |          |       |

Table VI. table SK Domisili Tinggal

f. Table Transaction : SK Domisili Usaha

Primary Key : nomor\_surat  
Foreign Key : nik, nip  
table structure : { nomor\_surat, tanggal\_surat, nik, nama, nomor\_bapl, nama\_perusahaan, jenis\_perusahaan, notaris, no\_akte, tgl\_akte, alamat\_perusahaan, stat\_bangunan, luas\_tanah, luas\_bangunan, jml\_kar, keterangan, nip, user\_create, create\_date, user\_update, update\_date }

| #  | Name              | Type         | Collation         | Attributes | Null | Default | Comments | Extra |
|----|-------------------|--------------|-------------------|------------|------|---------|----------|-------|
| 1  | nomor_surat       | varchar(30)  | latin1_swedish_ci |            | No   | None    |          |       |
| 2  | tanggal_surat     | date         |                   |            | Yes  | NULL    |          |       |
| 3  | nik               | varchar(16)  | latin1_swedish_ci |            | No   | None    |          |       |
| 4  | nomor_bapl        | varchar(30)  | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 5  | nama_perusahaan   | varchar(150) | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 6  | jenis_perusahaan  | varchar(150) | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 7  | notaris           | varchar(100) | latin1_swedish_ci |            | No   | None    |          |       |
| 8  | no_akte           | varchar(20)  | latin1_swedish_ci |            | No   | None    |          |       |
| 9  | tgl_akte          | date         |                   |            | No   | None    |          |       |
| 10 | alamat_perusahaan | varchar(500) | latin1_swedish_ci |            | No   | None    |          |       |
| 11 | stat_bangunan     | varchar(50)  | latin1_swedish_ci |            | No   | None    |          |       |
| 12 | luas_tanah        | varchar(10)  | latin1_swedish_ci |            | No   | None    |          |       |
| 13 | luas_bangunan     | varchar(10)  | latin1_swedish_ci |            | No   | None    |          |       |
| 14 | jml_kar           | varchar(6)   | latin1_swedish_ci |            | No   | None    |          |       |
| 15 | keterangan        | text         | latin1_swedish_ci |            | No   | None    |          |       |
| 16 | nip               | varchar(16)  | latin1_swedish_ci |            | No   | None    |          |       |
| 17 | user_create       | varchar(50)  | latin1_swedish_ci |            | No   | None    |          |       |
| 18 | create_date       | datetime     |                   |            | No   | None    |          |       |
| 19 | user_update       | varchar(50)  | latin1_swedish_ci |            | No   | None    |          |       |
| 20 | update_date       | datetime     |                   |            | No   | None    |          |       |

Tabel VII. table SK Domisili Usaha

g. Table Transaction: SK Izin Keramaian

Primary Key : nomor\_surat

Foreign Key : nik, nip

table structure : {nomor\_surat, tanggal\_surat, nik, tanggal\_mulai, tanggal\_selesai, kegiatan\_keramaian, hiburan, keterangan, nip, user\_create, create\_date, user\_update, update\_date}

| #  | Name               | Type        | Collation         | Attributes | Null | Default | Comments | Extra |
|----|--------------------|-------------|-------------------|------------|------|---------|----------|-------|
| 1  | nomor_surat        | varchar(30) | latin1_swedish_ci |            | No   | None    |          |       |
| 2  | nik                | varchar(16) | latin1_swedish_ci |            | No   | None    |          |       |
| 3  | tanggal_mulai      | date        |                   |            | Yes  | NULL    |          |       |
| 4  | tanggal_selesai    | date        |                   |            | Yes  | NULL    |          |       |
| 5  | kegiatan_keramaian | text        | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 6  | hiburan            | text        | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 7  | tanggal_surat      | date        |                   |            | Yes  | NULL    |          |       |
| 8  | keterangan         | text        | latin1_swedish_ci |            | No   | None    |          |       |
| 9  | nip                | varchar(16) | latin1_swedish_ci |            | No   | None    |          |       |
| 10 | user_create        | varchar(50) | latin1_swedish_ci |            | No   | None    |          |       |
| 11 | create_date        | datetime    |                   |            | No   | None    |          |       |
| 12 | user_update        | varchar(50) | latin1_swedish_ci |            | No   | None    |          |       |
| 13 | update_date        | datetime    |                   |            | No   | None    |          |       |

Tabel VII. table SK Izin Keramaian

h. Table Transaction: SK Kematian

Primary Key : nomor\_surat

Foreign Key : nik, nip

table structure : {nomor\_surat, tanggal\_surat, nik, tanggal\_kematian, nama\_pelapor, hubungan, sebab\_kematian, keterangan, nip, user\_create, create\_date, user\_update, update\_date }

| #  | Name             | Type         | Collation         | Attributes | Null | Default | Comments | Extra |
|----|------------------|--------------|-------------------|------------|------|---------|----------|-------|
| 1  | nomor_surat      | varchar(30)  | latin1_swedish_ci |            | No   | None    |          |       |
| 2  | nik              | varchar(16)  | latin1_swedish_ci |            | No   | None    |          |       |
| 3  | tanggal_kematian | date         |                   |            | Yes  | NULL    |          |       |
| 4  | nama_pelapor     | varchar(30)  | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 5  | hubungan         | text         | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 6  | tanggal_surat    | date         |                   |            | Yes  | NULL    |          |       |
| 7  | keterangan       | text         | latin1_swedish_ci |            | No   | None    |          |       |
| 8  | sebab_kematian   | varchar(100) | latin1_swedish_ci |            | No   | None    |          |       |
| 9  | nip              | varchar(16)  | latin1_swedish_ci |            | No   | None    |          |       |
| 10 | user_create      | varchar(50)  | latin1_swedish_ci |            | No   | None    |          |       |
| 11 | create_date      | datetime     |                   |            | No   | None    |          |       |
| 12 | user_update      | varchar(50)  | latin1_swedish_ci |            | No   | None    |          |       |
| 13 | update_date      | datetime     |                   |            | No   | None    |          |       |

table IX. Tabel SK Kematian

i. Table Transaction: SK Kelahiran

Primary Key : nomor\_surat

Foreign Key : nik, nip

table structure :{nomor\_surat, tanggal\_surat, nik, nama\_lahir, jk\_lahir, tanggal\_lahir, tempat\_lahir, no\_kk, nama\_ibu, nama\_ayah, keterangan, nip, user\_create, create\_date, user\_update, update\_date }

| #  | Name          | Type        | Collation         | Attributes | Null | Default | Comments | Extra |
|----|---------------|-------------|-------------------|------------|------|---------|----------|-------|
| 1  | nomor_surat   | varchar(30) | latin1_swedish_ci |            | No   | None    |          |       |
| 2  | tanggal_surat | date        |                   |            | No   | None    |          |       |
| 3  | nik           | varchar(16) | latin1_swedish_ci |            | No   | None    |          |       |
| 4  | tanggal_lahir | date        |                   |            | Yes  | NULL    |          |       |
| 5  | tempat_lahir  | varchar(30) | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 6  | nama_lahir    | varchar(30) | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 7  | jk_lahir      | varchar(10) | latin1_swedish_ci |            | No   | None    |          |       |
| 8  | no_kk         | varchar(16) | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 9  | nama_ibu      | varchar(30) | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 10 | nama_ayah     | varchar(30) | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 11 | keterangan    | text        | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 12 | nip           | varchar(16) | latin1_swedish_ci |            | No   | None    |          |       |
| 13 | user_create   | varchar(50) | latin1_swedish_ci |            | No   | None    |          |       |
| 14 | create_date   | datetime    |                   |            | No   | None    |          |       |
| 15 | user_update   | varchar(50) | latin1_swedish_ci |            | No   | None    |          |       |
| 16 | update_date   | datetime    |                   |            | No   | None    |          |       |

table X. table SK Kelahiran

j. Table Transaction: SK Memiliki Rumah

Primary Key : nomor\_surat

Foreign Key : nik, nip

table structure :{nomor\_surat, tanggal\_surat, nik, berlaku\_sampai, keperluan\_surat, nip, user\_create, create\_date, user\_update, update\_date }

| #  | Name            | Type         | Collation         | Attributes | Null | Default | Comments | Extra |
|----|-----------------|--------------|-------------------|------------|------|---------|----------|-------|
| 1  | nomor_surat     | varchar(30)  | latin1_swedish_ci |            | No   | None    |          |       |
| 2  | nik             | varchar(16)  | latin1_swedish_ci |            | No   | None    |          |       |
| 3  | tanggal_surat   | date         |                   |            | Yes  | NULL    |          |       |
| 4  | berlaku_sampai  | date         |                   |            | Yes  | NULL    |          |       |
| 5  | keperluan_surat | varchar(200) | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 6  | keterangan      | text         | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 7  | nip             | varchar(16)  | latin1_swedish_ci |            | No   | None    |          |       |
| 8  | user_create     | varchar(50)  | latin1_swedish_ci |            | No   | None    |          |       |
| 9  | create_date     | datetime     |                   |            | No   | None    |          |       |
| 10 | user_update     | varchar(50)  | latin1_swedish_ci |            | No   | None    |          |       |
| 11 | update_date     | datetime     |                   |            | No   | None    |          |       |

Table XI. table SK Memiliki Rumah

k. Table Transaction: SK Pengantar KTP

Primary Key : nomor\_surat

Foreign Key : nik, nip

table structure :{nomor\_surat, tanggal\_surat, nik, berlaku\_sampai, nomor\_kk, permohonan\_ktp, keterangan, nip, user\_create, create\_date, user\_update, update\_date }

| #  | Name           | Type        | Collation         | Attributes | Null | Default | Comments | Extra |
|----|----------------|-------------|-------------------|------------|------|---------|----------|-------|
| 1  | nomor_surat    | varchar(30) | latin1_swedish_ci |            | No   | None    |          |       |
| 2  | nik            | varchar(16) | latin1_swedish_ci |            | No   | None    |          |       |
| 3  | nomor_kk       | varchar(16) | latin1_swedish_ci |            | No   | None    |          |       |
| 4  | tanggal_surat  | date        |                   |            | Yes  | NULL    |          |       |
| 5  | berlaku_sampai | date        |                   |            | No   | None    |          |       |
| 6  | permohonan_ktp | varchar(20) | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 7  | nip            | varchar(16) | latin1_swedish_ci |            | No   | None    |          |       |
| 8  | keterangan     | text        | latin1_swedish_ci |            | No   | None    |          |       |
| 9  | user_create    | varchar(50) | latin1_swedish_ci |            | No   | None    |          |       |
| 10 | create_date    | datetime    |                   |            | No   | None    |          |       |
| 11 | user_update    | varchar(50) | latin1_swedish_ci |            | No   | None    |          |       |
| 12 | update_date    | datetime    |                   |            | No   | None    |          |       |

Table XII. table SK Pengantar KTP

l. Table Transaction: SK Pengantar Nikah

Primary Key : nomor\_surat

Foreign Key : nik, nip

Structure Tabel :{nomor\_surat, tanggal\_surat, nik, berlaku\_sampai, binti\_bin, istri\_suami\_dahulu, nip, user\_create, create\_date, user\_update, update\_date }

| #  | Name               | Type         | Collation         | Attributes | Null | Default | Comments | Extra |
|----|--------------------|--------------|-------------------|------------|------|---------|----------|-------|
| 1  | nomor_surat        | varchar(30)  | latin1_swedish_ci |            | No   | None    |          |       |
| 2  | nik                | varchar(16)  | latin1_swedish_ci |            | No   | None    |          |       |
| 3  | tanggal_surat      | date         |                   |            | Yes  | NULL    |          |       |
| 4  | berlaku_sampai     | date         |                   |            | No   | None    |          |       |
| 5  | binti_bin          | varchar(30)  | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 6  | status_kawin       | varchar(50)  | latin1_swedish_ci |            | No   | None    |          |       |
| 7  | istri_suami_dahulu | varchar(100) | latin1_swedish_ci |            | No   | None    |          |       |
| 8  | keterangan         | text         | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 9  | nip                | varchar(16)  | latin1_swedish_ci |            | No   | None    |          |       |
| 10 | user_create        | varchar(50)  | latin1_swedish_ci |            | No   | None    |          |       |
| 11 | create_date        | datetime     |                   |            | No   | None    |          |       |
| 12 | user_update        | varchar(50)  | latin1_swedish_ci |            | No   | None    |          |       |
| 13 | update_date        | datetime     |                   |            | No   | None    |          |       |

Table XIII. table SK Pengantar Nikah

m. Table Transaction: SK Pengantar Pindah

Primary Key : nomor\_surat

Foreign Key : nik, nip

table structure :{nomor\_surat, tanggal\_surat, nik, nama\_kepala\_keluarga, nomor\_kk, alamat\_tujuan\_pindah, jml\_keluarga, alasan, keterangan, nip, user\_create, create\_date, user\_update, update\_date }

| #  | Name                 | Type          | Collation         | Attributes | Null | Default | Comments | Extra |
|----|----------------------|---------------|-------------------|------------|------|---------|----------|-------|
| 1  | nomor_surat          | varchar(30)   | latin1_swedish_ci |            | No   | None    |          |       |
| 2  | nik                  | varchar(16)   | latin1_swedish_ci |            | No   | None    |          |       |
| 3  | nama_kepala_keluarga | varchar(30)   | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 4  | nomor_kk             | varchar(16)   | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 5  | alamat_tujuan_pindah | text          | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 6  | jml_keluarga         | decimal(11,0) |                   |            | Yes  | NULL    |          |       |
| 7  | alasan               | text          | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 8  | tanggal_surat        | date          |                   |            | Yes  | NULL    |          |       |
| 9  | berlaku_sampai       | date          |                   |            | No   | None    |          |       |
| 10 | keterangan           | text          | latin1_swedish_ci |            | No   | None    |          |       |
| 11 | nip                  | varchar(16)   | latin1_swedish_ci |            | No   | None    |          |       |
| 12 | user_create          | varchar(50)   | latin1_swedish_ci |            | No   | None    |          |       |
| 13 | create_date          | datetime      |                   |            | No   | None    |          |       |
| 14 | user_update          | varchar(50)   | latin1_swedish_ci |            | No   | None    |          |       |
| 15 | update_date          | datetime      |                   |            | No   | None    |          |       |

Table XIV. table SK Pengantar Pindah

n. Table Transaction: SK Pengantar SKCK

Primary Key : nomor\_surat

Foreign Key : nik, nip

table structure :{nomor\_surat, tanggal\_surat, nik, berlaku\_sampai, keperluan\_skck, keterangan, nip, user\_create, create\_date, user\_update, update\_date }

| #  | Name           | Type        | Collation         | Attributes | Null | Default | Comments | Extra |
|----|----------------|-------------|-------------------|------------|------|---------|----------|-------|
| 1  | nomor_surat    | varchar(30) | latin1_swedish_ci |            | No   | None    |          |       |
| 2  | tanggal_surat  | date        |                   |            | Yes  | NULL    |          |       |
| 3  | nik            | varchar(16) | latin1_swedish_ci |            | No   | None    |          |       |
| 4  | berlaku_sampai | date        |                   |            | No   | None    |          |       |
| 5  | keperluan_skck | text        | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 6  | keterangan     | text        | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 7  | nip            | varchar(16) | latin1_swedish_ci |            | No   | None    |          |       |
| 8  | user_create    | varchar(50) | latin1_swedish_ci |            | No   | None    |          |       |
| 9  | create_date    | datetime    |                   |            | No   | None    |          |       |
| 10 | user_update    | varchar(50) | latin1_swedish_ci |            | No   | None    |          |       |
| 11 | update_date    | datetime    |                   |            | No   | None    |          |       |

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Table XV. table SK Pengantar SKCK

o. Table Transaction: SK Suami Istri

Primary Key : nomor\_surat

Foreign Key : nik, nip

table structure :{nomor\_surat, tanggal\_surat, nik\_suami, nama\_suami, nik\_istri, nama\_istri, erlaku\_sampai, keperluan\_skck keterangan, nip, user\_create, create\_date, user\_update, update\_date }

| #  | Name          | Type        | Collation         | Attributes | Null | Default | Comments | Extra |
|----|---------------|-------------|-------------------|------------|------|---------|----------|-------|
| 1  | nomor_surat   | varchar(30) | latin1_swedish_ci |            | No   | None    |          |       |
| 2  | tanggal_surat | date        |                   |            | Yes  | NULL    |          |       |
| 3  | nik_suami     | varchar(16) | latin1_swedish_ci |            | No   | None    |          |       |
| 4  | nama_suami    | varchar(50) | latin1_swedish_ci |            | No   | None    |          |       |
| 5  | nik_istri     | varchar(16) | latin1_swedish_ci |            | No   | None    |          |       |
| 6  | nama_istri    | varchar(50) | latin1_swedish_ci |            | No   | None    |          |       |
| 7  | keterangan    | text        | latin1_swedish_ci |            | No   | None    |          |       |
| 8  | nip           | varchar(16) | latin1_swedish_ci |            | No   | None    |          |       |
| 9  | user_create   | varchar(50) | latin1_swedish_ci |            | No   | None    |          |       |
| 10 | create_date   | datetime    |                   |            | No   | None    |          |       |
| 11 | user_update   | varchar(50) | latin1_swedish_ci |            | No   | None    |          |       |
| 12 | update_date   | datetime    |                   |            | No   | None    |          |       |

Table XVI. table SK Suami Istri

p. Table Transaction: SK Tidak Mampu

Primary Key : nomor\_surat

Foreign Key : nik, nip

table structure :{nomor\_surat, tanggal\_surat, nik berlaku\_sampai, keperluan\_sktm keterangan, nip, user\_create, create\_date, user\_update, update\_date }

| #  | Name           | Type         | Collation         | Attributes | Null | Default | Comments | Extra |
|----|----------------|--------------|-------------------|------------|------|---------|----------|-------|
| 1  | nomor_surat    | varchar(30)  | latin1_swedish_ci |            | No   | None    |          |       |
| 2  | nik            | varchar(16)  | latin1_swedish_ci |            | No   | None    |          |       |
| 3  | keperluan_sktm | varchar(200) | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 4  | tanggal_surat  | date         |                   |            | Yes  | NULL    |          |       |
| 5  | berlaku_sampai | date         |                   |            | No   | None    |          |       |
| 6  | keterangan     | text         | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 7  | nip            | varchar(16)  | latin1_swedish_ci |            | No   | None    |          |       |
| 8  | user_create    | varchar(50)  | latin1_swedish_ci |            | No   | None    |          |       |
| 9  | create_date    | datetime     |                   |            | No   | None    |          |       |
| 10 | user_update    | varchar(50)  | latin1_swedish_ci |            | No   | None    |          |       |
| 11 | update_date    | datetime     |                   |            | No   | None    |          |       |

Table XVII. table SK Tidak Mampu

q. Table Transaction: SK Usaha

Primary Key : nomor\_surat

Foreign Key : nik, nip

table structure :{nomor\_surat, tanggal\_surat, nik jenis\_usaha, penghasilan\_perbulan, alamat\_tempat\_usaha keterangan, nip, user\_create, create\_date, user\_update, update\_date }

| #  | Name                 | Type          | Collation         | Attributes | Null | Default | Comments | Extra |
|----|----------------------|---------------|-------------------|------------|------|---------|----------|-------|
| 1  | nomor_surat          | varchar(30)   | latin1_swedish_ci |            | No   | None    |          |       |
| 2  | nik                  | varchar(16)   | latin1_swedish_ci |            | No   | None    |          |       |
| 3  | jenis_usaha          | varchar(100)  | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 4  | penghasilan_perbulan | decimal(10,0) |                   |            | Yes  | NULL    |          |       |
| 5  | alamat_tempat_usaha  | text          | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 6  | tanggal_surat        | date          |                   |            | Yes  | NULL    |          |       |
| 7  | berlaku_sampai       | date          |                   |            | No   | None    |          |       |
| 8  | keterangan           | text          | latin1_swedish_ci |            | Yes  | NULL    |          |       |
| 9  | nip                  | varchar(16)   | latin1_swedish_ci |            | No   | None    |          |       |
| 10 | user_create          | varchar(50)   | latin1_swedish_ci |            | No   | None    |          |       |
| 11 | create_date          | datetime      |                   |            | No   | None    |          |       |
| 12 | user_update          | varchar(50)   | latin1_swedish_ci |            | No   | None    |          |       |
| 13 | update_date          | datetime      |                   |            | No   | None    |          |       |

Table XVIII. table SK Usaha

Display design

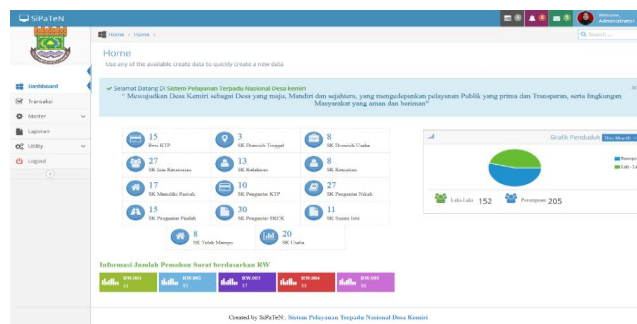


Figure.II Display the dashboard

Seen on the screen above (figure II) is the main screen that contains information about the population, the number of applicants based on RW, and the number of letters that have been made. There are also several menu options such as Transaction, Master, Laporan, Utility and Logout home menu, master menu, transaction report menu menu, utility menu and logout.

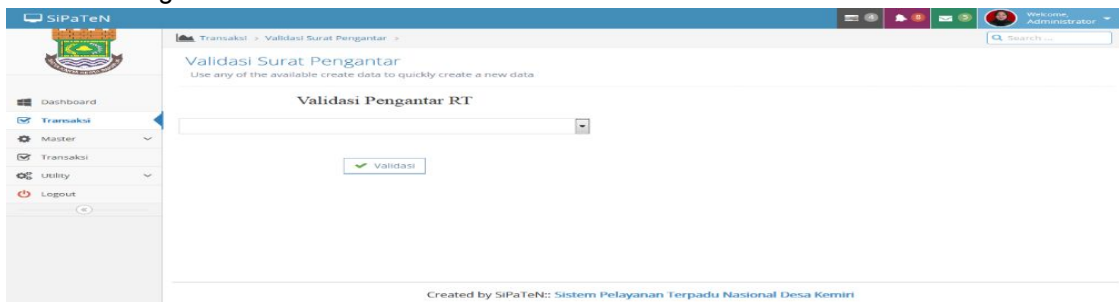


Figure.III Display Introductory RT Validation on Transaction Menu

Seen in the display screen above (figure III) is a display for the user to validate the cover letter RT. So that the user can access the transaction then validate the introductory RT first.

The screenshot shows the SIPaTeN web application interface. The main content area displays a table titled 'Domisili Tinggal' with the following data:

| Nomor Surat            | Tanggal Surat | NIK              | Nama             | Keperluan               | Berlaku Sampai | Pilihan                 |
|------------------------|---------------|------------------|------------------|-------------------------|----------------|-------------------------|
| 470/001/Ds.Kmr/08/2019 | 2019-08-02    | 3603096655390001 | Mumun Alawiyah   | Membuat E-KTP           | 2019-08-16     | [Print] [Edit] [Delete] |
| 470/003/Ds.Kmr/08/2019 | 2019-08-06    | 3603096655390005 | Rika Ayu Ningsih | Mengajukan Kredit Mobil | 2019-02-05     | [Print] [Edit] [Delete] |
| 470/002/Ds.Kmr/08/2019 | 2019-08-06    | 3603096655390007 | Muhammad Reza    | Melamar Kerja           | 2020-02-05     | [Print] [Edit] [Delete] |

Showing 1 to 3 of 3 entries

Figure.IV Display Menu Data letter that has been inputted

Seen on the screen above (figure IV) can display the data - letter data that has been inputted and can be printed, edited, deleted letter data

**PEMERINTAH KABUPATEN TANGERANG**  
**KECAMATAN KEMIRI**  
**DESA KEMIRI**  
Jl. Raya Kemiri Kec. Kemiri Kab. Tangerang 15530

**SURAT KETERANGAN TEMPAT TINGGAL/DOMISILI**

Nomor : 470/001/Ds.Kmr/08/2019

Yang bertanda tangan di bawah ini, Kepala Desa Kemiri Kecamatan Kemiri Kabupaten Tangerang, berdasarkan surat pengantar / keterangan dari Ketua RT/Rw setempat, dengan ini menerangkan bahwa :

|                        |   |
|------------------------|---|
| Nama                   | : Mumun Alawiyah  |
| Tempat Tgl. lahir/umur | : Tangerang, 1970-03-02   |
| Jenis Kelamin          | : Perempuan   |
| Pekerjaan              | : Ibu Rumah Tangga  |
| Alamat                 | : kemiri RT.004/RW.001 Desa.Kemiri Kecamatan.Kemiri Kabupaten.Tangerang |

Benar nama tersebut di atas pada saat ini berdomisili di wilayah RT.004/ RW.001 Desa Kemiri Kecamatan Kemiri Kabupaten Tangerang.

Surat keterangan ini dibuat untuk keperluan : **Membuat E-KTP**  
Berlaku Sampai Dengan : 2019-08-16.

Demikian surat keterangan ini dibuat dengan sebenarnya, untuk diketahui dan dipergunakan sebagaimana mestinya, kepada yang berkepentingan mohon maklum adanya

Kemiri, 2019-08-02  
An. KEPALA DESA KEMIRI  
Sekdes

HAERUDIN S.IP  
Nip.1973020820090610

Figure.V Display Letter Print

Seen on the screen above (figure V) can display the letter that has been made and will be printed.

**1.1 Query of Information Creation**  
**Query function simpan\_penduduk:**  
function simpan\_penduduk()  
{ \$sql="insert into tbl\_penduduk

---

```
set
nik=".$this->nik.",
nama_lengkap=".$this->nama_lengkap.",
jenis_kelamin=".$this->jenis_kelamin.",
agama=".$this->agama.",
kewarganegaraan=".$this->kewarganegaraan.",
tempat_lahir=".$this->tempat_lahir.",
tanggal_lahir=".$this->tanggal_lahir.",
pekerjaan=".$this->pekerjaan.",
gol_dar=".$this->gol_dar.",
kp=".$this->kp.",
rt=".$this->rt.",
rw=".$this->rw.",
desa=".$this->desa.",
kec=".$this->kec.",
kab=".$this->kab.""";
$query=$this->mysqli->query($sql) or die ($this->mysqli->error());
return true;
$this->mysqli->close();          }

Query function List_penduduk:
function list_penduduk()
{   $sql="select * from tbl_penduduk";
    $this->sql=$sql;
    $i=0;
        $query=$this->mysqli->query($sql) or die ($this->mysqli->error());
    while ($result=$query->fetch_assoc())
    {   $this->nik[$i]=$result['nik'];
        $this->nama_lengkap[$i]=$result['nama_lengkap'];
        $this->jenis_kelamin[$i]=$result['jenis_kelamin'];
        $this->agama[$i]=$result['agama'];
        $this->kewarganegaraan[$i]=$result['kewarganegaraan'];
        $this->tempat_lahir[$i]=$result['tempat_lahir'];
        $this->tanggal_lahir[$i]=$result['tanggal_lahir'];
        $this->pekerjaan[$i]=$result['pekerjaan'];
        $this->gol_dar[$i]=$result['gol_dar'];
        $this->kp[$i]=$result['kp'];
        $this->rt[$i]=$result['rt'];
        $this->rw[$i]=$result['rw'];
        $this->desa[$i]=$result['desa'];
        $this->kec[$i]=$result['kec'];
        $this->kab[$i]=$result['kab'];
            $i++;
    }
    return true;
    $this->mysqli->close();          }

Query function edit_penduduk:
function edit_penduduk()
{$sql="update tbl_penduduk
set
nik=".$this->nik.",
    nama_lengkap=".$this->nama_lengkap.",
jenis_kelamin=".$this->jenis_kelamin.",
agama=".$this->agama.",
```

```
kewarganegaraan=".$this->kewarganegaraan.",  
gol_dar=".$this->gol_dar.",  
tempat_lahir=".$this->tempat_lahir.",  
tanggal_lahir=".$this->tanggal_lahir.",  
pekerjaan=".$this->pekerjaan.",  
kp=".$this->kp.",  
rt=".$this->rt.",  
rw=".$this->rw.",  
desa=".$this->desa.",  
kec=".$this->kec.",  
kab=".$this->kab."  
where nik=".$this->nik.""";  
$query=$this->mysqli->query($sql) or die ($this->mysqli->error());  
return true;  
$this->mysqli->close();          }
```

## V. CONCLUSION

The letter making system that is running is still less effective and efficient, because there is no regularity in the files stored, so it takes a long time in the process of searching for letters and making letters. There is no accurate information to find out the number of residents applying for a letter. Because the data collection is still manual with different registers. The system is designed using object-oriented methods using UML (Unified Modeling Language) diagrams, such as Use Case Diagrams, Activity Diagrams, Sequence Diagrams and Class Diagrams. The programming language used to build this system is PHP with Bootstrap as its framework, MYSQL as a database server, XAMPP as a web server and text editor using Notepad ++. It is expected that the system can be developed and integrated with data or systems on an online-based government, so as to avoid errors in population data.

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