

Design an Application Programming Interface for a Population Social Welfare Survey Application in the Context of System Integration

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ABSTRACT

In order to realize the population welfare program, the Sumbermulyo village government, Jogoroto District, Jombang Regency, East Java Province made efforts to overcome various poverty cases that occurred in the Sumbermulyo village community. One of them is applying for DKTS (Social Welfare Integrated Data) assistance for the poor to the Social Service. The amount of wealth owned is a benchmark in determining whether to receive government assistance. People who are at a minimum level of wealth will be included in the category of underprivileged people and can apply for DKTS to the local government. The DKTS submission process is carried out starting from collecting data on the poor by the survey officer then the survey officer comes to the poor community to validate the data using the android application. The system development is built with integrated website and android technology to facilitate data processing. The system integration process uses an Application Programming Interface (API) that connects applications with one another across platforms. The application of the API will make it easier for the system to access data so that it does not take long to obtain data information.

Keywords: DKTS; API; Data Mapping.

INTRODUCTION

In order to realize the population welfare program, the Sumbermulyo village government, Jogoroto District, Jombang Regency, East Java Province made efforts to overcome various poverty cases that occurred in the Sumbermulyo village community. One of them is applying for DKTS (Social Welfare Integrated Data) assistance for the poor to the Social Service (Sujono & Nugroho, 2019). The amount of wealth owned is a benchmark in determining whether to receive government assistance. People who are at a minimum level of wealth will be included in the category of underprivileged people and can apply for DKTS to the local government (Komsari & Airlangga, 2021). The DKTS submission process is carried out starting from collecting data on the poor by the survey officer then the survey officer comes to the poor community to validate the data using the android application (Mushthofa et al, 2021). Then the village government inputs the SIKS-NG Desa application (Next Generation Social Welfare Information System) for data that has been validated and verified (Indonesia, 2020).

The system development is built with integrated website and android technology to facilitate data processing. The system integration process uses an Application Programming Interface (API) that connects applications with one another across platforms (Wijaya, 2019). The API has a collection of functions that are able to develop applications in an effective and responsive manner. The way the API works starts when the API is accessed by an application, then the API requests the requested data from the server, and the server will respond in the form of information to the application (Fakhrun & Gumilang, 2018).

METHOD

In this study using the waterfall method, the stages in this method must complete the previous stages before proceeding to the next stage. The waterfall method is used because in each stage of the

research it is able to accept changes and developments in concepts from the previous stage, this supports the research objective to build a system that is able to adapt to the development of a system (Nur, 2019). The following are the stages in the waterfall method.



Figure 1. Waterfall Method

- **System Analysis**
System analysis is a data collection process that is carried out by surveying and interviewing one of the village operator staff. This is done to obtain data and information needed by the system.
- **System Design**
This stage is a system flow design that describes how the system runs, and how the system executes the commands given.
- **Coding**
After the system design, the next stage is coding. Coding is a computer program that is built following the system design.
- **Testing**
At this stage the completed system will be tested, the system that passes the test is determined based on the predetermined eligibility standards.

RESULT AND DISCUSSION

From the research that has been done, the results are in the form of system integration (android and website) using the API, so that the data from each system will be interconnected. Test the system using Potsman software to find out the results of the API request (et al., 2018). Here are the results of the research.

- API data check

```
// Cek Data III
public function cekDataIII(){
    $ks = trim($this->input->post("kode"));
    $operasi = $this->Mapi004->cekDataIII($ks);
    echo json_encode($operasi);
}

// Cek Data V
public function cekDataV(){
    $ks = trim($this->input->post("kode"));
    $operasi = $this->Mapi004->cekDataV($ks);
    echo json_encode($operasi);
}

// Get Data III
public function getDataIII(){
    $ks = trim($this->uri->segment(3));
    $operasi = $this->Mapi004->getDataIII($ks);
    echo json_encode($operasi);
}

// Get Data V
public function getDataV(){
    $ks = trim($this->uri->segment(3));
    $operasi = $this->Mapi004->getDataV($ks);
    echo json_encode($operasi);
}
```

Figure 2. API Data Check

- API data add

```
public function tambahKK(){
    $kode = trim($this->input->post("kode"));
    $surveyor = trim($this->input->post("surveyor"));
    $kk = trim($this->input->post("kk"));
    $operasi = $this->Mapi004->tambahKK($kode, $kk, $surveyor);
    echo $operasi;
}
```

Figure 3. API Data Add

- API data update

```
// Update Data III
public function updatedataIII()
{
    $ks = trim($this->input->post("kode_survey"));
    $III1A = trim($this->input->post("III1A"));
    $III1B = trim($this->input->post("III1B"));
    $III2 = trim($this->input->post("III2"));
    $III3 = trim($this->input->post("III3"));
    $III4A = trim($this->input->post("III4A"));
    $III4B = trim($this->input->post("III4B"));
    $III5A = trim($this->input->post("III5A"));
    $III5B = trim($this->input->post("III5B"));
    $III6 = trim($this->input->post("III6"));
    $III7A = trim($this->input->post("III7A"));
    $III7B = trim($this->input->post("III7B"));
    $III8 = trim($this->input->post("III8"));
    $III9A = trim($this->input->post("III9A"));
    $III9B = trim($this->input->post("III9B"));
    $III9C = trim($this->input->post("III9C"));
    $III10A = trim($this->input->post("III10A"));
    $III10B = trim($this->input->post("III10B"));
    $III11A = trim($this->input->post("III11A"));
    $III11B = trim($this->input->post("III11B"));
    $III12 = trim($this->input->post("III12"));
    $operasi = $this->Mapi004->updatedataIII($ks, $III1A, $III1B, $III2, $III3, $III4A,
    $III4B, $III5A, $III5B, $III6, $III7A, $III7B, $III8, $III9A, $III9B, $III9C, $III10A, $III10B, $III11A, $III11B, $III11B, $III12);
    echo $operasi;
}
```

Figure 4. API Data Update

- API data delete

```
public function hapusdata()
{
    $ks = trim($this->input->post("kode"));
    $operasi = $this->Mapi004->hapusdata($ks);
    echo $operasi;
}
```

Figure 5. API Delete Data

- API search data

```
public function cariDataSurvey(){
    $key = trim($this->input->post("ikey"));
    $operasi = $this->Mapi004->cariDataSurvey($key);
    echo json_encode($operasi);
}
```

Figure 6. API Search Data

- API history

```
public function cariRiwayatSurvey(){
    $dari = trim($this->input->post("dari"));
    $sampai = trim($this->input->post("sampai"));
    $operasi = $this->Mapi004->cariRiwayatSurvey($dari, $sampai);
    echo json_encode($operasi);
}
```

Figure 7. API History

- Test result postman

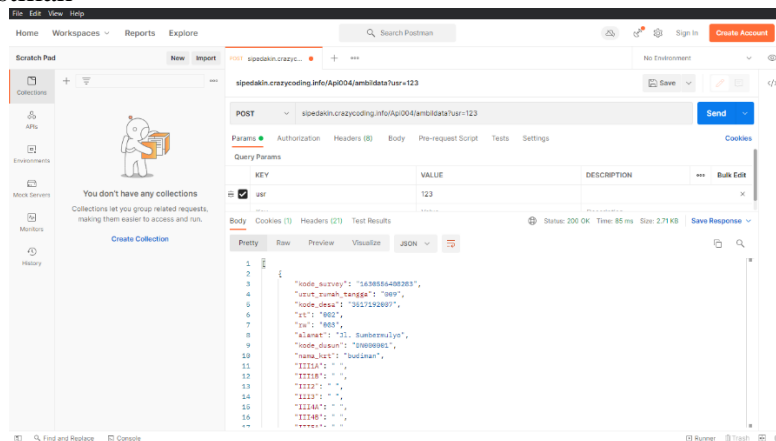


Figure 8. Test Results Postman

From the trials carried out, each process carried out runs according to the system design. The following are the results of the trial using the Postman software.

Tabel 1. Test Result

Name Process	Description	Test Result
Login	Log in to the system with the created account	Succeed
Check profile	View profile details	Succeed
Change password	Change password	Succeed
Add data	Add population data	Succeed
Update data	Update population data	Succeed
Delete data	Delete population data	Succeed
Search data	Search data more easily by using the search data feature	Succeed
Check history	View activity history details	Succeed

CONCLUSION

From the results of the research and discussion that have been submitted, the following conclusions can be drawn:

- One of the efforts of the Sumbermulyo village government in overcoming poverty is through the DTKS program. The DTKS submission process is carried out using the Android platform and an integrated website so that the data obtained are connected to each other.
- The integration process uses the Application Programming Interface (API) to make it easier to process population data.

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