

## CHAPTER 3

### RESEARCH METHODOLOGY

#### 3.1 Research Objects

The object of research in writing this research proposal is in Langkapura, Langkapura district, Bandar Lampung city

#### 3.2 Data Collection Methods

In collecting data this time has an important role in collecting in order to obtain information from related research . Data with the subject of discussion is an indicator of research success. Data collection must be done in a very precise and fast way. In this data collection method, researchers used several methods, namely:

##### a. Observation

In the observation method, researchers collect data by observing directly on the object of research, namely the place where the animal provider Aqiqah Berkah Aqiqah Bandar Lampung is used as the object of this research.

##### b. Interview

The interview method was carried out by asking directly to consumers and to several other objects related to the design of the Aqiqah animal ordering application as the object of research.

##### c. Literature Study

One method of collecting data is obtained from the results of research from other people in the form of documents, journals, library books, by reading various results of previous authors, regarding problems related to writing and especially research related to scientific works.

#### 3.3 Literature Study Literature study

method is carried out by collecting literature sourced from journals, books or other people's research results related to the object of this research.

### 3.4 Software Development Method

In writing this final project, the system development method used for the analysis of the software development system used for this system research supports the making of this application using the prototype method.

#### 3.4.1 QuickQuick

Planning is a stage by doing analysis and planning after getting data and information from the stages of communication or interaction with related parties, the aqiqah animal provider and the abattoir were used as the object of this research.

#### 3.4.2 Analysis of the current system

Based on the analysis of the current sales process system, MSME partners sell their products conventionally through intermediary traders with a fairly long marketing chain. search for aqiqah animals by looking directly at the aqiqah animal provider who sometimes doesn't know where the place is.

#### 3.4.3 Analysis of the proposed

system From the analysis of the running system, it can be proposed by the author to propose a system for the closest search based on the area closest to the consumer and this application is made using an android-based system. With this system, it is hoped that it will make it easier for MSMEs to carry out sales transactions by being able to expand marketing. Therefore, it can be divided into two parts, namely, functional analysis and non-functional requirements analysis.

##### a. Analysis of Functional Requirements (no need for pool)

In the analysis of functional requirements, here is an explanation of the features that will be included in the creation of an android-based Aqiqah and Qurban animal search system application.

##### b. Analysis of Non-Functional Requirements

Non-functional requirements analysis, there are two components, namely

## 1. Analysis Hardware

To run a system that created this, researchers needed hardware components (*hardware*) that is capable of supporting the operator of the program. As for this hardware system that requires minimum standard specifications of the system requirements that are applied, among others:

### a. Hardware in implementation (*Smartphone*)

1. Oppo A57 RAM 3GB
2. Operating system lollipop

### b. Hardware in Application Development

1. Laptop ASUS X441M
2. RAM 4 GB
3. Intel Coleron N4000, up to 2.6GHz
4. Harddisk 1 TB

## 2. Software analysis

In analyzing the needs of the software used to build a support system for "finding Aqiqah and Qurban animal sellers, the case study of Bandar Lampung city" to determine the closest distance to consumers, as follows:

### a. Software To Create

The following is the software that will be used when making the application, as follows:

1. Operating system, using Microsoft Windows 10 (64 bit)
2. Microsoft Word 2010, used to carry out the process of making the final project script
3. Android studio software, used in building or developing android applications.
4. Android SKD, is used to create an android application program that will be created.

### b. Software for Deployment

The software used to implement the smartphone application is using the lollipop operating system.

### 3.5 System design

#### 3.5.1 Designing Process

Designing a process this time includes process design, database design, table design, and interface design.

#### 3.5.2.Process Design

The design of this process includes several designs, namely, Usecase Diagrams, Activity Diagrams and Class Diagrams.

##### 3.5.2.1 Design of Use case diagrams

Use case diagrams describe the expected functionality of a system that is built.



Figure No.3.1 Use case Diagram system

Table No.3.1 Use case diagram

Nama Aktor	Keterangan
Buyer	Buyers are people who will make product transactions, view products and register as members.
admin	Admin as a person who can carry out processing activities for sellers' products, processing transactions, processing buying/selling, processing profiles and processing finances

##### 3.5.2.2. Sequence Diagrams

Sequence Diagram is a diagram that describes the interaction of

objects and shows (signs or hints) the communication between these objects. Sequence diagrams are used to explain behavior in a scenario and describe how entities and systems interact, including messages used during interactions.

a. Login

The use of the application is that the seller and buyer log into the system, after the data input process is complete, the system will send orders into the database which will later be validated based on the role of each user, the seller user has a role = 1 and the buyer has a role = 2, when the process After validation is complete, each user will be entered into the main menu of each user.

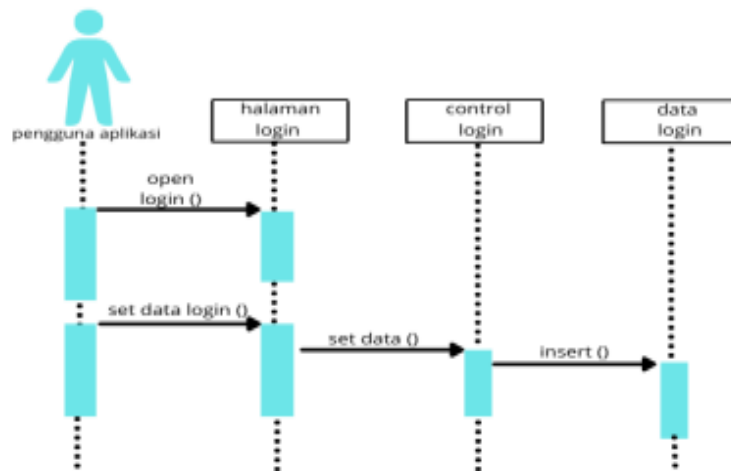


Figure 3.2 Sequence diagram login

b. Buyer Place Order

Buyers will open the main page and select the product page menu then will open the main product page. The buyer will select the product on the main page. Then it will send a message to the product control, and will display the product detail data.

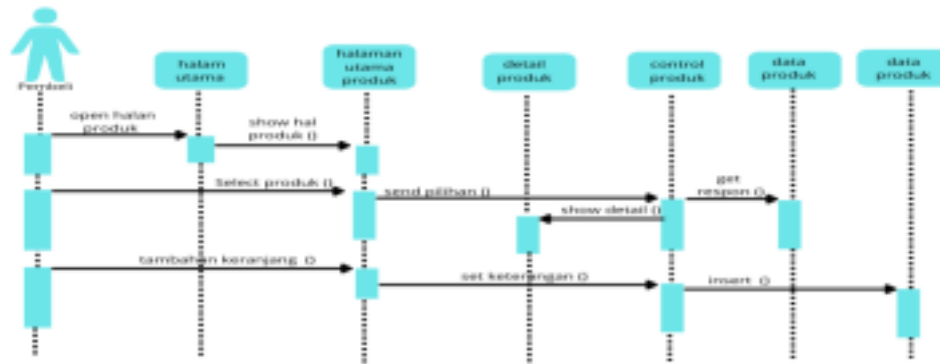


Figure 3.3 Sequence diagram pemesanan

### 3.5.2.3 Activity proposed diagram

Activity diagrams are useful to provide a visualization of the flow of actions that will be carried out by the system, branching that allows for several menu options to occur where in the menu options there are several definitions that are appropriate and displayed. Some explanations for each of these menus are shown in the activity diagram below:

a. *buyer activity diagram*

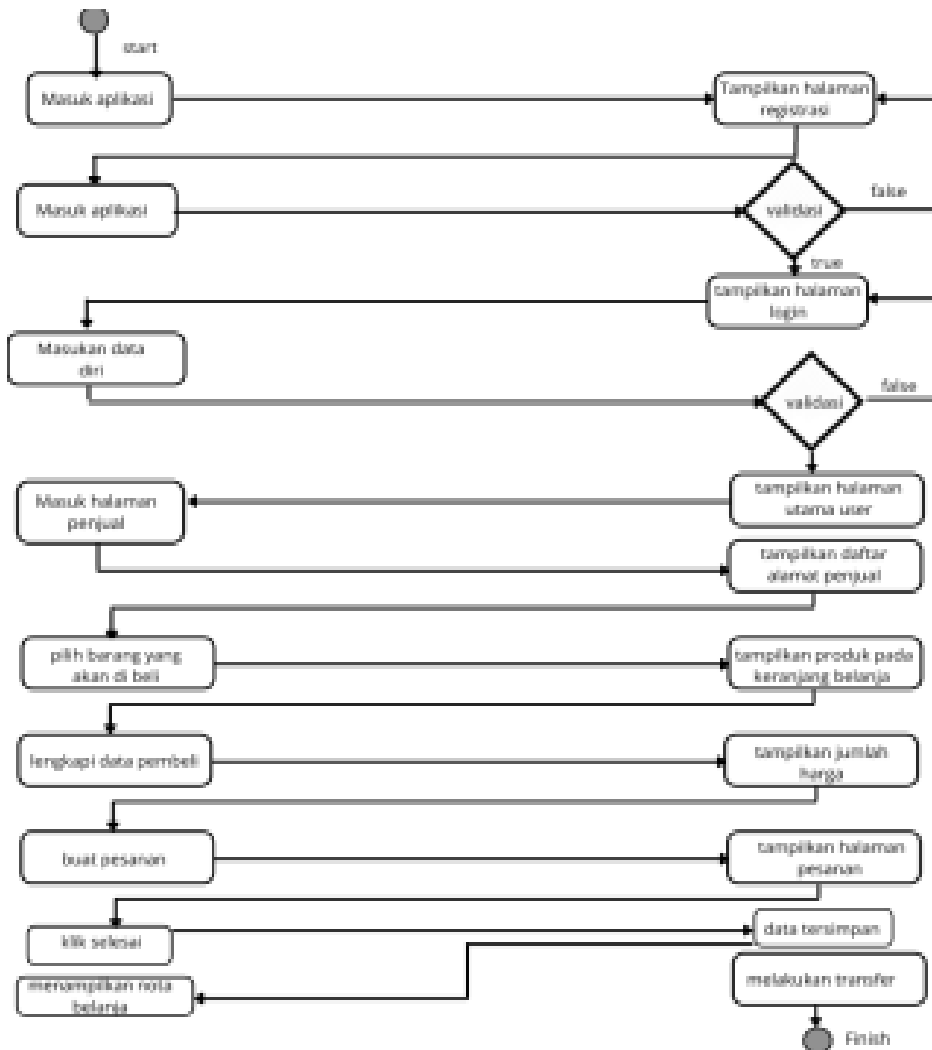


Figure 3.4 *Activity diagram customer.*

b. *Activity seller chart*

A ctivity diagram useful to provide flow visualization action will be run by the system, allowing multiple ramifications to occur menu options where in the menu options there are several existing definitions according and what is displayed. Several explanations on each menu shown in the *activity diagram* below:

b. *Actyivity seller diagram*

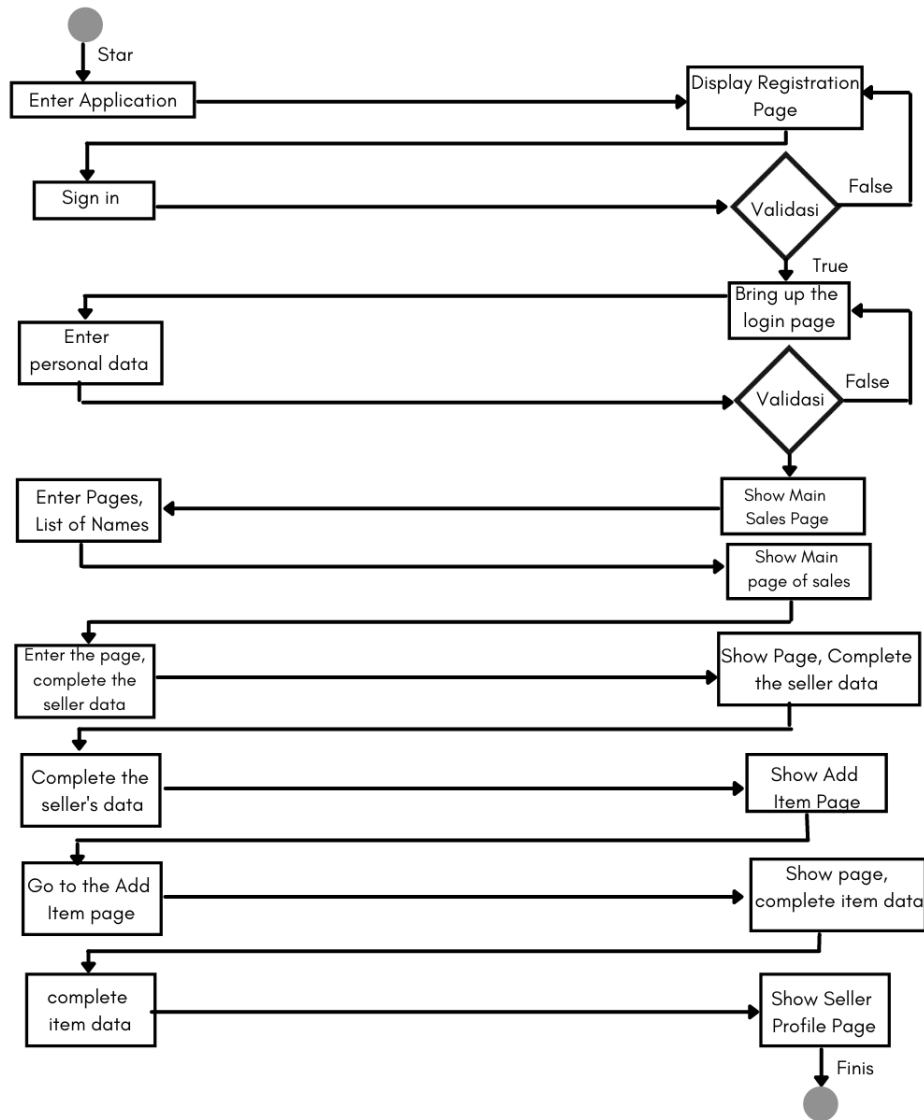


Figure 3.5 Seller activity diagram.

### 3.5.2.4 Class diagrams

Class diagrams provide an overview of the state (attributes/properties) of a system, as well as offering services to manipulate these conditions.

### 3.5.3 Database Structure Design

The structure of the database design of the ordering system in the software for SMEs is as follows:



- a. Nama database : PMH  
 Table Name : tbl\_admin  
 Function: for data storage on admin  
 Primary key : id\_admin

Table 3.2 Tabel Admin

Nama Field	Jenis	keterangan
Id_admin	Int (11)	PRIMARY KEY
Username	Varchar (100)	NULL
Password	Varchar (100)	NULL

- b. Database name : PMH  
 Table Name : place  
 Function: for data storage in place  
 Primary key : id\_place

Table 3.3 Tabel Tempat

Nama Field	Jenis	keterangan
Place ID	Int (11)	PRIMARY KEY
Place name	Varchar (100)	NULL
Email_place	Varchar (100)	NULL
Place_password	Varchar (100)	NULL
Place_address	Varchar (100)	NULL

- c. Database name : PMH  
 Table Name : animal  
 Function: for data storage on animals  
 Primary key : id\_animal

Table 3.4 Table animal

Nama Field	Jenis	keterangan
Id_animal	Int (11)	PRIMARY KEY
id_place	Varchar (100)	NULL
animal_name	Varchar (100)	NULL
Deskripsi_hewan	Varchar (100)	NULL
price_animal	Varchar (100)	NULL
Stock_animal	Varchar (100)	NULL
Image_animal	Varchar (100)	NULL

d. Database name : PMH

Table Name : Order

Function: for data storage on orders

Primary key : id\_pemesnana

Table 3.5 Tabel pemesanan

Nama Field	Jenis	keterangan
Id_booking	Int (11)	PRIMARY KEY
Id_animal	Int (11)	PRIMARY KEY
Amount	Varchar (100)	NULL

e. Database name : PMH

Table Name : Buyer

Function: for data storage on buyers

Primary key : buyer\_id

Table 3.6 Tabel pembeli

Nama Field	Jenis	keterangan
Id_buyer	Int (11)	PRIMARY KEY
Email_buyer	Varchar (100)	NULL
Password_buyer	Varchar (100)	NULL
id_place	Int (11)	PRIMARY KEY
Id_animal	Int (11)	PRIMARY KEY
Amount	Varchar (100)	NULL

f. Database name : PMH

Table Name : transaction

Function: for data storage on transactions

Primary key : id\_ transaction

Table 3.7 Tabel Transaksi

Nama Field	Jenis	keterangan
Id_transaction	Int (11)	PRIMARY KEY
id_booking	Int (11)	PRIMARY KEY
id_ the place	Int (11)	PRIMARY KEY
Id_ animal	Int (11)	PRIMARY KEY
Amount	Varchar (100)	NULL
Transaction date	Varchar (100)	NULL

### 3.5.4 Relations Between Tables

The relationship between tables is the result of the entity relationship diagram model. This relationship will show the physical design of the database and will also produce tables that can later be used in the system implementation process.

Table 3.8 Relations Between Tables

