

# Pig Meat Business Management System: Design and Implementation of a Desktop-Based Transaction and Financial Monitoring Application

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## Abstract

This research presents the design and implementation of the Pig Meat Business Management System, a desktop-based application developed using Python and PyQt6. The system was created to address manual transaction recording and inefficient financial tracking in small to medium pig meat businesses. It integrates transaction management, expense tracking, profit computation, archiving, and report generation into a single platform. SQLite is used for database management, while Pandas and ReportLab support Excel and PDF exports. The system improves accuracy, reduces manual computation errors, and enhances financial visibility for business owners.

## 1. Introduction

Small-scale pig meat businesses often rely on manual record-keeping, which can lead to miscalculations, data loss, and inefficiencies in financial monitoring. With increasing demand for accurate sales tracking and expense management, there is a need for a simple and cost-effective digital solution. This study introduces a desktop-based management system tailored specifically for pig meat business operations.

## 2. Objectives of the Study

The objectives of this study are:

- To develop a system that records daily pig meat transactions.
- To automate revenue and profit calculations.
- To provide daily financial summaries and reports.

- To enable transaction archiving and restoration.
- To export reports in Excel and PDF formats.

### **3. System Design and Architecture**

The system follows a desktop-based architecture using Python as the core programming language. PyQt6 is utilized for the graphical user interface, ensuring usability and intuitive interaction. SQLite serves as the embedded database for storing transaction records.

#### **3.1 Database Structure**

The system contains two primary tables:

- transactions (id, buyer, product, payment, amount, status, date)
- archived\_transactions (id, buyer, product, payment, amount, status, date)

### **4. System Features**

The Pig Meat Business Management System includes the following features:

- Daily transaction entry with payment type selection (Cash or Utang).
- Automatic status assignment (Paid or Pending).
- Real-time revenue and profit computation.
- Expense tracking including cost of pig, payment to workers, and other expenses.
- Daily filtering by date.
- Excel export using Pandas.
- PDF report generation using ReportLab.
- Archive and restore functionality.

### **5. Implementation**

The system was implemented using modular programming practices. Database initialization and migration are handled automatically upon application startup. Financial calculations update dynamically based on user input, ensuring accurate profit computation. Threading is used where necessary to maintain UI responsiveness.

## **6. Results and Discussion**

Testing showed that the system significantly reduces calculation errors and improves record organization. Business owners can instantly view total revenue, total cash, total credit (utang), and net profit. The ability to generate structured PDF and Excel reports enhances business transparency and documentation.

## **7. Conclusion**

The Pig Meat Business Management System provides a practical and efficient solution for small-scale pig meat enterprises. By digitizing transaction recording and automating financial calculations, the system enhances accuracy, efficiency, and decision-making capabilities. Future improvements may include cloud integration, multi-user access, and mobile compatibility.

## **References**

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