

Design of Production Results Reporting Management System Case Study UD Konveksi Tangerang

Novita sari^{1*}, Bayu Ronggo Warsito², Muhammad Okky Aryansah³, Muhammad Septyan Pikri Al farez⁴

^{1,2,3,4} Information Systems Study Program, Universitas Raharja, Indonesia

*Coresspondent Author: novitasari@raharja.info

Abstract - UD. Konveksi Tangerang is a company that operates in the field of ready-to-wear production. Every day there are many requests from customers to produce clothes, jackets, almas and t-shirts. The data collection system for incoming orders, production results and current production results reports at UD Konveksi Tangerang is still carried out using conventional methods, namely using paper documents and Microsoft Excel. The current system still has shortcomings, including lack of monitoring of the production process so that the production results are not completed on time, errors occur when inputting the copy of SO and the amount of stock produced, resulting in product discrepancies, making reports takes a long time because the PPC admin has to recapitulate production data from each section one by one. This research produces a production results reporting system which functions to help the production head to record production results reports every day. The research methods used in this research are the analysis method using PIECES, the waterfall development method, creating programs using the PHP programming language and MySQL database, system testing using Blackbox Testing.

Keywords :

Convection;
Clothing;
Production;
PIECES;
PHP;
Mysql;

Article History:

Received: 05-12-2024
Revised: 10-01-2025
Accepted: 23-01-2025

Article DOI : 10.22441/collabits.v2i1.32609

1. INTRODUCTION

The rapid development of information technology has changed the way businesses operate in various sectors, including the convection industry. Effective and efficient information management is the key to success in facing increasingly competitive business competition (Pratama et al., 2019). UD Konveksi Tangerang, as one of the business actors in the convection industry, still faces challenges in managing production results reporting which is still done manually.

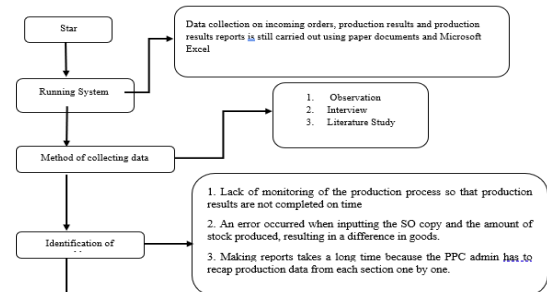
The manual recording system currently implemented has several weaknesses, such as the risk of data loss, difficulty in tracking production history, and delays in producing reports needed by management (Kusuma & Widodo, 2020). This can hinder quick and appropriate decision making by management. Apart from that, manual recording is also susceptible to human error which can affect the accuracy of production data (Nugraha et al., 2021).

Research conducted by Simargolang & Nasution (2018) shows that implementing a management information system in managing production results can increase operational efficiency by up to 45% and reduce recording errors by up to 80%. In line with this, Hartono & Setiawan (2022) emphasized that digitizing the production reporting system can help SMEs increase their competitiveness in the industrial era 4.0.

Based on these problems, a computerized production results reporting management system is

needed for UD Konveksi Tangerang. This system is expected to optimize the production data management process, increase reporting accuracy, and facilitate access to information for management in making strategic decisions.

The following is a framework for thinking or work flow starting from problems that occur, solutions to existing problems to problem solving from the design of the management system for reporting results from the production of UD case studies. Tangerang Convection



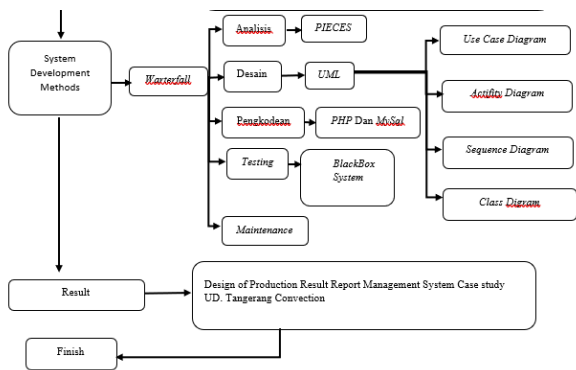


Figure 1. Framework

Conceptual Stage

1.1 Identify System Requirements

Based on the analysis carried out, the UD Konveksi Tangerang production results reporting management system requires several main components (Rahman et al., 2021):

- a. Production Data Management
 - Recording of daily production quantities
 - Monitoring production targets and realization
 - Real-time production status tracking
 - Historical production data
- b. Report Management
 - Automatic production report generation
 - Standardized report format
 - Export reports in various format
 - Digital report storage

1.2 System Architecture

Referring to research by Wijaya & Sari (2020), the proposed system architecture consists of:

- a. Front-end System
 - Intuitive user interface
 - Production monitoring dashboard
 - Structured data input form
 - Data visualization features
- b. Back-end System
 - Centralized database
 - Application servers
 - Data security system
 - API for system integration

1.3 Database Design

The database structure is designed using a relational database approach with several main tables (Pratama et al., 2023):

- a. Master Table
 - Employee data
 - Product data
 - Production machine data
 - Material data
- b. Transaction Table
 - Daily production
 - Quality control
 - Material use
 - Machine downtime

1.4 System Features

Based on user needs analysis (Hartanto & Kusuma, 2022), the system will be equipped with the following features:

- a. Operational
 - Input production data
 - Monitoring progress
 - Quality control
 - Inventory management
- b. Managerial
 - Analytics dashboards
 - Performance report
 - Production forecasting
 - Alert system

1.5 System Security

Adopt information system security standards (Nugroho et al., 2021): Authentication, Multi-level user access, Password encryption, Login history, Session management and Backup & Recovery, Automatic backup, Data versioning, Disaster recovery plan, Data encryption.

2. IDENTIFICATION OF PROBLEMS AND SYSTEM NEEDS

2.1 Running System Procedure

System procedures currently running in the production section at UD. Tangerang Convection, namely:

1. The customer provides the SO (Sales Order) document to the PPC admin.
2. After the PPC admin receives the SO, a copy of the SO is immediately made according to the customer's SO request.
3. After it has been made (tidied up), the admin gives a copy of the SO to the head of production for each division.
4. After the approval has been declared by the section production head, the production head then gives a copy of the SO to the section production employees.
5. Production employees produce goods according to the SO copy that has been previously received, and are required to provide production reports both daily and monthly per shift (Shift 1 & Shift 2).
6. PPC admin and head of production receive the results of the production report, then check the suitability again. Once completed, the item will be sent. However, if it has not been completed, coordinate as soon as possible (reminder) so that it can be completed immediately.

2.2 Proposed System

The proposed system design was created using Unified Modeling Language (UML) diagrams, while the web software was created using the PHP programming language with a database system using MySQL. This application only uses four design diagrams as follows:

- a. Use case diagrams

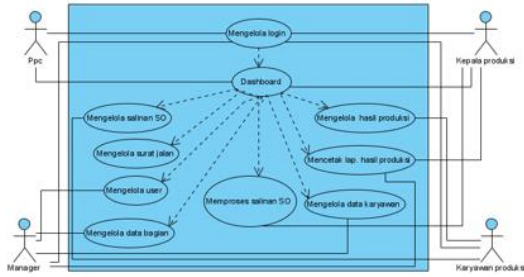


Figure 2. Use Case Diagram proposed system

Based on Figure 2. Use Case Diagram of the proposed system, there is an explanation as follows:

1. Definition of Use Case of the proposed system

a) Use Case Name: Manage login

Actor : ppc

Description: ppc and head of production manage login

b) Use Case Name: Displays the dashboard

Actors: ppc and head of production

Description: ppc and head of production can display the dashboard menu

c) Use Case Name: Managing copies of so

Actors: ppc and head of production

Description: ppc and head of production can display the menu for managing copies of so

d) Use Case Name: Managing users

Actor : manager

Description: the manager can display the user management menu

e) Use Name: manage section data

Actor : manager

Description: the manager can display the menu for managing section data

f) Name of Use Case: managing production results

Actors: ppc and head of production

Description: PPC and head of production can display a menu for managing production results

g) Use Case Name: printing production laps

Actors: ppc and head of production

Description: PPC and head of production can display meenu printing production results

h) Use Case Name: processing copy so

Actors: ppc and head of production

PPC description and production head can display the so copy menu

i) Use Case Name: managing employee data

Actor : manager

Description: the manager manages employee data

b. Activity diagrams

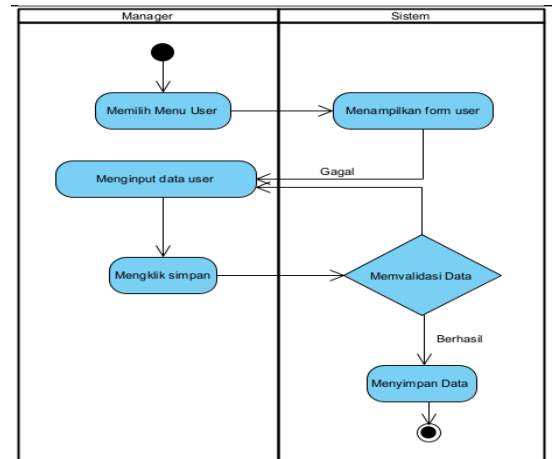


Figure 3. Activity Diagram Form Login

Based on Figure 3 there is an explanation as follows: PPC runs the program, then the system displays a login form, then PPC inputs the user name and password, then clicks save, then the system validates the data, if it is successful it will save the data and if it fails PPC will input the user name and password again.

c. Sequence diagrams

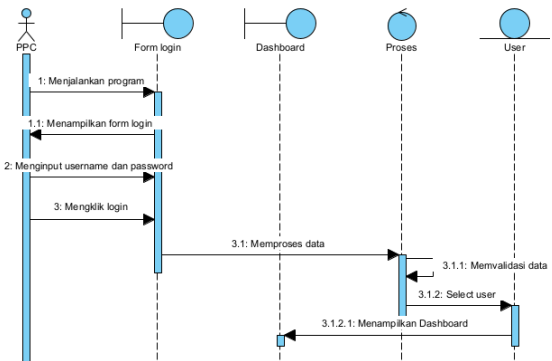


Figure 4. Sequence Diagram Menu Login

Based on Figure 4 Sequence Diagram of the login menu, there is an explanation as follows:

PPC runs the program, the system displays a login form, the input the username and password then click login, then go to the dashboard to display the dashboard then select user to validat the data.

d. Class diagrams

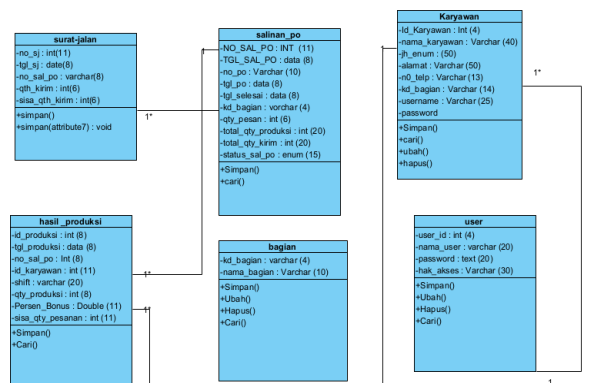


Figure 5. Class Diagram Proposed System

2.2 Screen Dialogue Design

1. Login Page Display

The login page features a logo for 'KONVEKSI TANGERANG, ID' and the title 'Laporan Hasil Produksi'. It includes input fields for 'Nama Pengguna' and 'Kata Sandi', a blue 'Masuk' button, and a 'Login Karyawan' link at the bottom.

Figure 6. Login Page Display

Figure 6 shows the login form display, the user must log in first before using the program.

2. SO Copy Data Form Display

The 'Data Salinan So' form includes a sidebar with navigation options like 'Dashboard', 'Salinan PO', and 'Surat Jalan'. The main area has a search bar and a table with columns: 'No salinan', 'Tanggal salinan', 'No po', 'Tanggal po', 'Nama bagian', 'Qty pesan', 'Total qty produksi', 'Total qty kirim', 'Status po', 'Tanggal selesai', and 'Aksi'. A sample row shows data for salinan 123, tanggal 17/06/2022, po p001, tanggal po 2022-06-17, bagian Sablon, qty pesan 2000, total qty produksi 50, total qty kirim 50, status proses, and tanggal selesai -.

Figure 7. SO Copy Data Form Display

Figure 7 is a display of the SO copy data form which functions to display SO copy data

3. Display of the Travel Letter Form

The 'Data Surat Jalan' form has a sidebar with 'Dashboard', 'Salinan PO', and 'Surat Jalan'. The main area features a search bar and a table with columns: '#', 'No sj', 'No salinan po', 'Tanggal sj', 'Qty kirim', 'Sisa qty kirim', and 'Aksi'. A sample row shows data for surat jalan 1, no sj 1, no salinan po 123, tanggal sj 17-06-2022, qty kirim 50, and sisa qty kirim 0.

Figure 8. Display of the Travel Letter Form

Figure 8 is a display of the travel document form which functions to display travel document data.

4. PO Copy Processing Form

Data Salinan So

The 'Data Salinan So' table has columns: 'No salinan', 'Tanggal salinan', 'No po', 'Tanggal po', 'Nama bagian', 'Qty pesan', 'Total qty produksi', 'Total qty kirim', 'Status po', 'Tanggal selesai', and 'Aksi'. A sample row shows data for salinan 123, tanggal 17/06/2022, po p001, tanggal po 2022-06-17, bagian Sablon, qty pesan 2000, total qty produksi 50, total qty kirim 50, status proses, and tanggal selesai -.

Figure 4. PO Copy Processing Form

Figure 4 is a display of the PO copy processing form which functions to prove the PO copy.

5. Display the Production Result Report Form

Hasil Produksi

The 'Hasil Produksi' table has columns: 'No Produksi', 'Tanggal Produksi', 'No Salinan Po', 'Nama Karyawan', 'Shift', 'Qty Produksi', and 'Sisa Qty Pesanan'. A sample row shows data for no produksi 56, tanggal produksi 17/06/2022, no salinan po 123, nama karyawan suhartono, shift satu, qty produksi 50, and sisa qty pesanan 1950.

Figure 5. Display the Production Result Report Form

Figure 5 is a display of the production results report form which functions to display production results report data.

6. Production Results Form Display

Hasil Produksi

The 'Hasil Produksi' table has columns: 'No Produksi', 'Tanggal Produksi', 'No Salinan Po', 'Nama Karyawan', 'Shift', 'Qty Produksi', and 'Sisa Qty Pesanan'. A sample row shows data for no produksi 56, tanggal produksi 17/06/2022, no salinan po 123, nama karyawan suhartono, shift satu, qty produksi 50, and sisa qty pesanan 1950.

Figure 6. Production Results Form Display

Figure 6. is a display of the production results form which functions to display the production results for each section.

7. User Data Form Display

The 'Data User' table has columns: '#', 'Nama', and 'Hak akses'. A sample row shows data for user 5, nama lama, and hak akses logistik produksi.

Figure 7. User Data Form Display

Figure 7. is a user data form display whose function is to display user data that can use the system.

8. Section Data Form Display

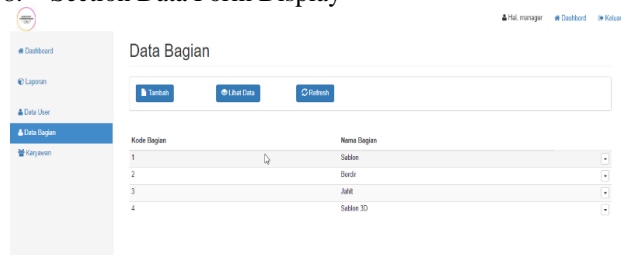


Figure 8. Section Data Form Display

Figure 8. is a display of the section data form which functions to display section data in the company.

9. Employee Data Form Display

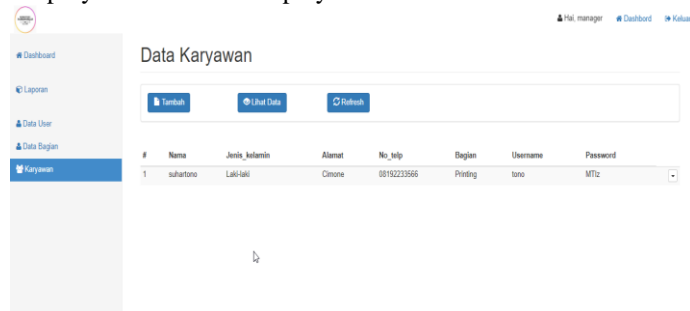


Figure 9. Employee Data Form Display

Figure 9 is a display of the employee data form which functions to display employee users who can use the system.

3 CONCLUSIONS

Based on the discussion explained previously, the following conclusions can be reached:

This production results management system is due to the presence of a production results report menu which provides data on several order quantities and how many production results are produced and this system can make it easier for PPC to make so that it can be easily approved by the head of production in the approve menu at the head of production and makes it easier production employees to input the amount of production produced in the production results menu.

4 SUGGESTION

1. Additional computer and server infrastructure is required to support the implementation of the system being created
2. There is periodic Mentenace so that the system can be controlled properly.

5 ACKNOWLEDGEMENT

Alhamdulillah, the author would like to express his gratitude to the presence of Allah SWT who has bestowed His grace and guidance so that the author can complete the research

entitled "Design of Production Results Reporting Management System Case Study UD Konveksi Tangerang" well.

The author realizes that the process of completing this research cannot be separated from the help and support of various parties.

BIBLIOGRAPHY

- [1] Hartono, B., & Setiawan, R. (2022). Implementation of Production Management Information Systems in Textile SMEs: Case Study in West Java. *Journal of Information and Industrial Technology*, 9(2), 78-92.
- [2] Kusuma, A. P., & Widodo, S. (2020). Analysis of the Effectiveness of Management Information Systems in Reporting Production Results in the Garment Industry. *Journal of Information Systems and Technology*, 5(1), 12-25.
- [3] Nugraha, D. A., Susanti, E., & Prakoso, H. (2021). Design of a Web-based Production Management Information System for the Convection Industry. *Journal of Informatics and Information Systems*, 8(3), 156-170.
- [4] Pratama, I., Sulistyowati, R., & Hartanto, A. (2019). Application of Information Technology in Increasing Production Efficiency of Convection SMEs. *Journal of Industrial and Information Engineering*, 7(4), 45-58.
- [5] Simargolang, M. Y., & Nasution, N. (2018). Analysis of the Impact of Implementing Management Information Systems on the Productivity of SMEs in the Convection Sector. *Scientific Journal of Technology and Information*, 6(2), 89-102.
- [6] Hartanto, S., & Kusuma, R. (2022). Pengembangan Sistem Informasi Manajemen Produksi Tekstil Berbasis Web. *Jurnal Teknologi Informasi dan Komunikasi*, 11(2), 45-58.
- [7] Nugroho, A., Santoso, H., & Widodo, P. (2021). Implementasi Sistem Keamanan pada Aplikasi Manajemen Produksi UKM. *Jurnal Keamanan Siber dan Teknologi Informasi*, 8(1), 12-25.
- [8] Pratama, I., Wijaya, D., & Sutanto, H. (2023). Perancangan Database Sistem Informasi Produksi untuk Industri Konveksi. *Jurnal Basis Data dan Sistem Informasi*, 10(1), 67-82.
- [9] Rahman, A., Setiadi, T., & Hartono, B. (2021). Analisis Kebutuhan Sistem Informasi Manajemen Produksi pada Industri Konveksi. *Jurnal Sistem Informasi dan Teknologi*, 9(3), 178-192.
- [10] Wijaya, R., & Sari, K. (2020). Arsitektur Sistem Informasi Manajemen Produksi untuk UKM Garmen. *Jurnal Teknik Informatika dan Sistem Informasi*, 7(2), 89-104.