

IMPROVING THE TRACKING SYSTEM FOR NEW TOY PLASTIC ASSEMBLY DEPARTMENT USING OBJECT-ORIENTED ANALYSIS AND DESIGN AT ABC TOY COMPANY

UNDERGRADUATE FINAL PROJECT

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By

Mutiara Hasnadya Tasrif

ID No. 004202100036

FACULTY OF ENGINEERING

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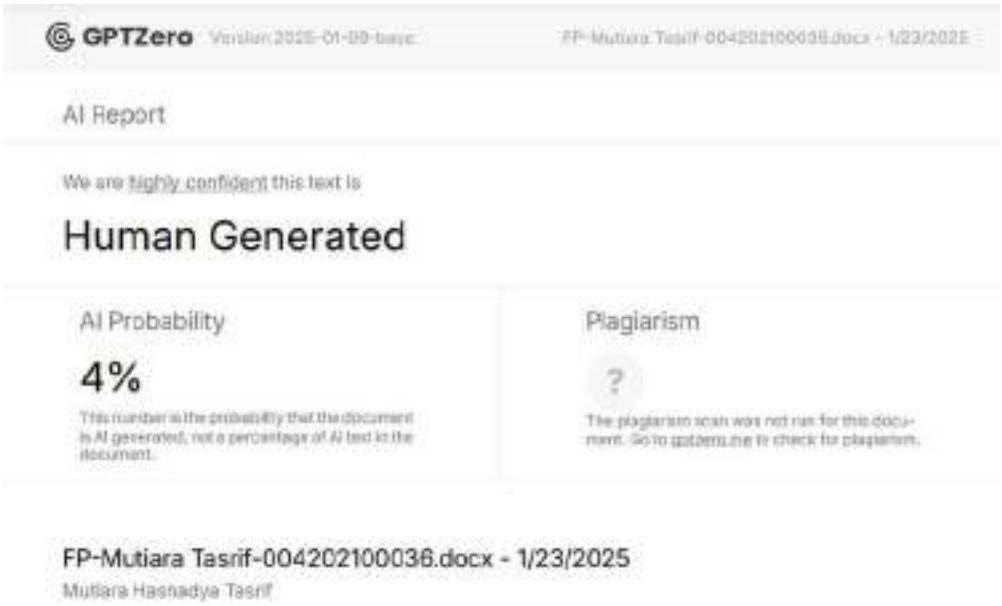
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ABSTRACT

PT ABC Toy Company is a global toy company, well-known for fashion dolls. The Plastic Assembly department at ABC Toy Company faced significant delays averaging 5-7 days per product, primarily due to an inefficient manual tracking system. This resulted in production bottlenecks, missed deadlines, which impacted the company's ability to meet market demands. To address this issue, the goal of this research was to develop and implement a web-based tracking system using Object-Oriented Analysis and Design (OOAD) to reduce delays, improve material management, and ensure timely product launches. A new system was designed to provide real-time monitoring of materials, piloting status, and production schedules, automating previously manual processes and enhancing communication and decision-making across departments. The implementation of this new tracking system resulted in a 62.36% reduction in delays, decreasing the average delay from 5-7 days to approximately 2 days. This improvement significantly increased production capacity, reduced overtime and penalty costs, and allowed for more timely product deliveries. The successful implementation of the system not only improved operational efficiency but also enhanced customer satisfaction and the company’s reputation by ensuring more on-time product launches. This research demonstrates how an optimized tracking system can lead to a more efficient and effective production process.

Keywords: *Real-time tracking, Cycle Time, Plastic Assembly, OOAD, Web-based System, Toy Company.*

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LIST OF TERMINOLOGY

Object-Oriented Analysis & Design (OOAD)	:	A software engineering methodology that models systems as collections of interacting objects, focusing on defining system functionality and translating it into a structured design.
Piloting	:	Trial manufacturing process where the design, tools, and workflows are tested and optimized before mass production to ensure everything is ready for full-scale production.
New Toy	:	A product category focusing on the development and launch of innovative toy designs, requiring specialized processes like piloting and assembly to ensure quality and timely delivery.
Work Order Tooling	:	A document or set of instructions that organizes the use of tools in the production process, often used to track the status and requirements of equipment.
Website Server	:	A server that hosts the web application, managing requests, delivering content, and storing data for the tracking system used in the Plastic Assembly Department.
Database Server		A backend server responsible for managing and storing the data used by the website, such as user interactions, task statuses, and production schedules.