



LEANFORGE VISION

UNDERGRADUATE THESIS

**Submitted as one of the requirements to obtain
Sarjana Komputer (S.Kom)**

By:

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FACULTY OF COMPUTER SCIENCE

INFORMATICS STUDY PROGRAM

CIKARANG

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ABSTRACT

In the context of Manufacturing, Industry 4.0 played a crucial role in transforming operations, especially under Lean Manufacturing practices, where real-time system visibility and flexible configuration are important to eliminate waste and streamline operations. This thesis presents the development of a lean web-based dashboard to monitor and configure hardware in an OCR based automated sorting system for a manufacturing warehouse. This thesis focuses on the implementation of a real-time monitoring interface and the configuration of hardware components to support remote operations. The dashboard was developed using ASP.NET MVC, JavaScript, MQTT, and supports modular interaction with IoT connected device. The system delivers real time sorting data, error notifications, and toy number tracking, promoting lean practices through faster feedback, better traceability, and minimized human input. Findings indicate better operational oversight and consistency with Industry 4.0 and lean manufacturing principles.

Keywords: Lean, Monitoring, OCR, Hardware, Industry 4.0, Warehouse,

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