

**DEVELOPMENT OF SMART LOCKER SYSTEM WITH
SIMULTANEOUS USER ACCESS CAPABILITIES
FOR WAREHOUSE HANDOVER PURPOSES**

By

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22252011

MASTER'S DEGREE
in

MECHANICAL ENGINEERING – MECHATRONICS
FACULTY OF ENGINEERING AND INFORMATION OF TECHNOLOGY



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Revision after the Thesis Defense on 22 January 2024

STATEMENT BY THE AUTHOR

I hereby declare that this submission is my work and to the best of my knowledge, it contains no material previously published or written by another person, nor material that to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgment is made in the thesis.

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ABSTRACT

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The burgeoning of e-commerce industry especially instant delivery services provides new opportunities for warehousing companies such as PT. XYZ. However, pressures come in short time window given to the warehouses especially in the handover process. Piling carryover order from previous day in combination with large incoming orders with uncontrollable user arrival time creates queues especially in the early opening hours that wastes significant amount of the overall handover time. This research aims to develop a smart locker solution tailor made for the handover purposes with fast access by the warehouse worker and simultaneous user access by scanning a dynamically generated QR Codes on each locker door. The Organic Light Emitting Diode (OLED) display could accurately show the QR Code and the locker doors could successfully open when the user scan the QR Code using the web apps. At the end, the smart locker system could reduce the handover time with average of the package claiming time of 18.18 seconds reducing the overall handover time to below the desired 5 minutes by PT. XYZ warehouse management team. To sum up, the result of this thesis could be implemented at PT. XYZ warehouses to reduce the handover time.

Keywords: Logistic, Warehouse, Smart Locker, MQTT, Internet of Things (IoT).

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DEDICATION

I dedicate this works to the e-commerce warehousing worlds,
and the advancement of the Mechatronics field.

ACKNOWLEDGEMENTS

First of all, I want to thank the almighty God. Only by his grace, I could finish this thesis work despite having to go through countless problems, obstacles, and challenges. Furthermore, I want to thank Dena Hendriana, B.Sc., S.M., Sc.D. and Dr. Ir. Henry Nasution, M.T, IPP as an amazing advisor and co-advisor in this thesis. Because of their guidance and countless discussion, I could survive my master thesis journey while working fulltime.

I would like to thank Ms. Ayu as the Faculty Administrative Officer for the help in the administrative matters. Moreover, I would like also to thank all the other SGU lecturers for their guidance starting from my first semester at Swiss German University for both of my Bachelor and Master degrees.

I would like to thank my family for their support and chances to be able to attend Swiss German University. They prepare everything at home so that I could focus on my thesis works.

I would like to thank my partner Lina for her tremendous support during my Master studies at SGU. I would like also to thank all my friends at SGU MME batch 16 especially Axel, and high school friends (JI, Fabio, Alys, Wendy, Josi, Anthony, Albert, Maxson), seniors, and juniors.

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