



**INFORMATION SYSTEM DESIGN TO HANDLE AND CONTROL
ENGINEERING DATA BASED ON MOBILE APP AT PT MITSUTOYO
INDONESIA.**

UNDERGRADUATE THESIS

Submitted as one of the requirements to obtain
Sarjana Komputer

By

Intan Rizki Radityani

012201900015

FACULTY OF COMPUTING
INFORMATION SYSTEM STUDY PROGRAM

CIKARANG
MARCH 2023

Copyright by

Intan Rizki Radityani

2023

PANEL OF EXAMINER APPROVAL

The Panel of Examiners declare that the undergraduate thesis entitled **Information System Design To Handle And Control Engineering Data Based On Mobile App At Pt Mitsutoyo Indonesia.** that was submitted by Intan Rizki Radityani majoring in Information System from the Faculty of Computing was assessed and approved to have passed the Oral Examination on 11 March 2023.

Panel of Examiner



.....
Rusdianto Roestam MSc., PhD.



.....
Abdul Ghofir, S.Kom., M.Kom.



.....
Rosalina, S.Kom., M. Kom.

STATEMENT OF ORIGINALITY

In my capacity as an active student of President University and as the author of the thesis/final project/business plan (underline that applies) stated below:

Name : Intan Rizki Radityani
Student ID number : 012201900015
Study Program : Information System
Faculty : Computer Science

I hereby declare that my thesis/final project/business plan entitled " **Information System Design To Handle And Control Engineering Data Based On Mobile App At Pt Mitsutoyo Indonesia.** " is to the best of my knowledge and belief, an original piece of work based on sound academic principles. If there is any plagiarism detected in this thesis/final project/business plan, I am willing to be personally responsible for the consequences of these acts of plagiarism, and will accept the sanctions against these acts in accordance with the rules and policies of President University.

I also declare that this work, either in whole or in part, has not been submitted to another university to obtain a degree

Cikarang, March 01, 2023



Intan Rizki Radityani

**SCIENTIFIC PUBLICATION APPROVAL
FOR ACADEMIC INTEREST**

As an academic community member of the President's University, I, the undersigned:

Name : Intan Rizki Radityani
Student ID number : 012201900015
Study program : Information System

For the purpose of development of science and technology, certify, and approve to give President University a non-exclusive royalty-free right upon my final report with the title :

**Information System Design To Handle And Control Engineering
Data Based On Mobile App At Pt Mitsutoyo Indonesia**

With this non-exclusive royalty-free right, President University is entitled to converse, to convert, to manage in a database, to maintain, and to publish my final report. There are to be done with the obligation from President University to mention my name as the copyright owner of my final report. This statement I made in truth.

Cikarang, March 01, 2023



Intan Rizki Radityani

ADVISOR APPROVAL FOR PUBLICATION

As an academic community member of the President's University, I, the undersigned:

Advisor Name : Rosalina,S.Kom.,M.Kom.

ID number :

Study program : Information System

Faculty : Computer Science

declare that following thesis :

Title of thesis : Information System Design To Handle And Control
Engineering Data Based On Mobile App At PT Mitsutoyo
Indonesia

Thesis author : Intan Rizki Radityani

Student ID number : 012201900015

will be published in **journal / institution's repository / proceeding / unpublsh**

Cikarang, March 23, 2023



Rosalina,S.Kom.,M.Kom.

SIMILARITY INDEX REPORT

Final Project Intan

ORIGINALITY REPORT

10%
SIMILARITY INDEX

10%
INTERNET SOURCES

0%
PUBLICATIONS

0%
STUDENT PAPERS

PRIMARY SOURCES

1	repository.president.ac.id Internet Source	8%
2	123dok.com Internet Source	1%
3	text-id.123dok.com Internet Source	<1%
4	apacode.com Internet Source	<1%
5	documents.mx Internet Source	<1%
6	kbldma.blogspot.com Internet Source	<1%

Exclude quotes Off

Exclude matches Off

Exclude bibliography On

GPTZero REPORT

Stats

Average Perplexity Score: 142.864



A document's perplexity is a measurement of the randomness of the text

Burstiness Score: 167.417



A document's burstiness is a measurement of the variation in perplexity

Your sentence with the highest perplexity, "*Kom.*", has a perplexity of: 731

ABSTRACT

Technology that is growing over time with usability to facilitate activities as needed, with proper monitoring to build more efficient activities. Mobile-based information system is an information system designed for Android Smartphone devices. In every manufacturing industry there must be stakeholders including the organization of the engineering department division which has a major influence on the smooth running of the manufacturing process. Without an engineering department in a manufacturing company, the results of the production process will be hampered, cannot be maximized and business income will decrease.

PT Mitsutoyo Indonesia is a manufacturing company that produces products specializing in the manufacture of finished goods and services. With insufficient technology to be able to control data in each activity from the recorded time. With this Android-based mobile application, it helps users to be able to control data as desired by using a QR code.

In this final project, the author creates a mobile application based application to make it easier for users to control data called "Control Flow", so that users can efficiently get data information with the process to be controlled.

Keywords : Technology. Mobile application, QRCode, Effective,Control Data

DEDICATION

With deep gratitude, having completed this Final Project, the author presents it to:

1. My parents and family who have always provided unwavering support until now, the prayers and love given to me so that I have been able to complete this Final Project well for the end of my university journey.
2. To my friends who have received my complaints while working on this final project and helped and provided support or motivation to complete this final project.
3. I also want to dedicate this final project to President University where I found new friends, extraordinary knowledge, and skills that gave me the opportunity to grow and develop into a better person. Hopefully this final project can be useful for readers and useful for the world of education.
4. For myself, I want to thank you for every journey you have been through because you have tried your best every day, from every storm of the journey to reaching this difficult point, I believe and support myself so that now I can complete this final project.

ACKNOWLEDGEMENT

Alhamdulillah, all praise belongs to Allah SWT. Thanks to grace and blessings the author can finish this final project. This final project can be completed well and smoothly not only because of the author's own efforts, but also the help of various parties. Therefore, on this occasion the author would like to thank:

1. Mrs. Rosalina, S.Kom. M.Kom, as my final report Adviser, who has provided all the guidance, advice, motivation, enthusiasm, and new knowledge needed for the writer to work on the final report and this study so that the writer can complete the final report. and produce a quality design.
2. My parents, Sukadi and Wemi Turniasih, for their love, prayer, concern, and sacrifice to educate and prepare for my future.
3. My sister, Lilis Nuraini and my little brother, Dhika Arjuna Ramadhan who have provided joy while I was working on this final project.
4. Mr. Ronny Juwono, S.pd.,M.T as the Head of the Study Program.
5. Engineering Department Manager Mr. Tri Wahyudi who always supports me.
6. My Best friend, Putri Meilinda, Hayyin Fatika Wardani, Rizki Amalia, Priska Dinda and Indah Permatasari are always there to provide support and happiness while working on this final report.
7. To my Fancy (Rohimah, Alloy, Yuli, Ayu) who have accompanied me during my college years and have always supported each other until the final preparation of this project.
8. All staff PT.Mitsutoyo Indonesia and his friends that I cannot mention one by one. Thank you for your help and support.
9. Eko Budi Prasetyo, thank you for your never-ending support

TABLE OF CONTENT

DEDICATION	ii
ACKNOWLEDGMENTS	iii
TABLE OF CONTENTS	iv
LIST OF TABLES	viii
LIST OF FIGURES	x
CHAPTER I INTRODUCTION.....	1
1.1 Background	1
1.2 Problem Statement	2
1.3 Research Objective.....	2
1.4 Scope and Limitation	2
1.5 Thesis Methodology	3
1.6 Thesis Outline	5
CHAPTER II LITERATURE STUDY	6
2.1 Information System.....	6
2.2 Android	6
2.3 Flutter And Dart	6
2.4 Database Firebase.....	7
2.5 Control Data	8
2.6 Related Work	9
2.6.1 Barang dan Persediaan	9
2.6.2 iStok Barang.....	10
2.6.3 Stock Control and Inventory	11
2.6.4 Feature Comparison	12
CHAPTER III SYSTEM ANALYSIS.....	30
3.1 System Overview	13

3.1.1 Overview the Current System	13
3.1.2 Overview the Current System	13
3.2 Functional Requirements	14
3.3 Software and Hardware Requirements.....	16
3.4 Use Case Diagram.....	16
3.5 Use Case Narrative.....	17
3.5.1 Use case Narrative Registration Page	18
3.5.2 Use case Narrative Login Page	18
3.5.3 Use case Narrative Input Data Request Page	19
3.5.4 Use case Narrative Print Barcode Page.....	20
3.5.5 Use case Narrative Scan Barcode Page.....	21
3.5.6 Use case Narrative Monitoring Process Page	22
3.5.7 Use case Narrative Display Data Page.....	23
3.6 Activity Diagram.....	23
3.6.1 Registration Activity Diagram	24
3.6.2 Login Activity Diagram	25
3.6.3 Input Data Request Activity Diagram.....	26
3.6.4 Scan Barcode Activity Diagram.....	27
3.6.5 Monitoring Process Automatic Activity Diagram	28
3.6.6 Monitoring Process Manual Activity Diagram.....	30
CHAPTER IV SYSTEM DESIGN.....	31
4.1 User Interface Design.....	31
4.1.1 Welcome Page.....	31
4.1.2 Register Page.....	32
4.1.3 Login Page	32
4.1.4 Home Page	33
4.1.5 Input Data Request Page	33
4.1.6 Print Barcode Page.....	34

4.1.7 Monitoring Process Page.....	35
4.1.8 Display Data Page	35
4.2 Physical Design	36
4.3 Entity Relationship Diagram	37
4.4 Database Design.....	37
CHAPTER V SYSTEM IMPLEMENTATION.....	41
5.1 User Interface Development	41
5.1.1 Welcome Page.....	41
5.1.2 Registration Page	42
5.1.3 Login Page	42
5.1.4 Homepage	43
5.1.5 Input Data Request Page	43
5.1.6 Print Barcode Page.....	44
5.1.7 Monitoring Process Page.....	44
5.1.8 Display Data Page	45
5.1.9 Show Image Customer Button	45
5.1.10 Show Image Material Button	46
5.1.11 Delete Data Action.....	46
5.2 User Source Code.....	47
5.2.1 Firebase Option Code.....	47
5.2.2 Page Author - Register and Login Page Code	47
5.2.3 Homepage Code	48
5.2.4 Add Material Code	48
5.2.5 Create Barcode Code.....	49
5.2.6 Print Barcode Code	49
5.2.7 Scan Barcode Code	50
5.2.8 Monitoring Code	50
5.2.9 Monitoring - Get Start Date Code	51

5.2.10 Monitoring - Get Duration Code.....	51
5.2.11 Monitoring - Get End Date Code	52
5.2.12 Display Page Code	52
5.2.13 View Image Code.....	52
CHAPTER VI SYSTEM TESTING	53
6.1 System Testing	53
6.2 Testing Environment.....	53
6.3 Testing Scenario.....	54
CHAPTER VII CONCLUSIONS AND FUTURE WORK.....	56
7.1 Conclusions	56
7.2 Future Work	56
REFERENCES.....	58

LIST OF TABLE

Table 2.1 Feature Comparison	12
Table 3.1 Functional Requirement	14
Table 3.2 Use Case.Narrative Registration Page	17
Table 3.3 Use Case.Narrative Login Page	18
Table 3.4 Use Case Narrative Input Data Request Page	19
Table 3.5 Use Case.Narrative Print Barcode Page.....	20
Table 3.6 Use Case.Narrative Scan Barcode Page.....	21
Table 3.7 Use Case.Narrative Monitoring Process Page	22
Table 3.8 Use Case.Narrative Display Data Page.....	23
Table 4.1 Physical Design.....	36
Table 4.2 Database Design User	37
Table 4.3 Database Design Tabel Data Request	38
Table 4.4 Database Design Monitoring	39
Table 6.1 Testing Scenario.....	53

LIST OF FIGURES

Figure 1.5 Thesis Methodology	3
Figure 2.1 Barang dan Persediaan	9
Figure 2.2 iStok Barang	10
Figure 2.3 Stock Control and Inventory.....	11
Figure 3.1 Use Case Diagram	16
Figure 3.2 Registration Activity Diagram.....	24
Figure 3.3 Login Activity Diagram.....	25
Figure 3.4 Input Data Request Activity Diagram	26
Figure 3.5 Scan Barcode Activity Diagram	27
Figure 3.6 Monitoring Process Automatic Activity Diagram	28
Figure 3.6 Monitoring Process Manual Activity Diagram	30
Figure 4.1 Welcome Page	31
Figure 4.2 Register Page	32
Figure 4.3 Login Page	32
Figure 4.4 Home Page.....	33
Figure 4.5 Input Data Request	33
Figure 4.6 Print Barcode Page	34
Figure 4.7 Monitoring Process Page	35
Figure 4.8 Display Data Page.....	36
Figure 4.9 EntityRelationship Diagram	37
Figure 5.1 Welcome Page	41
Figure 5.2 Registration Page	42
Figure 5.3 Login Page	42
Figure 5.4 Homepage	43
Figure 5.5 Input Data Request Page.....	43
Figure 5.6 Print Barcode Page	44
Figure 5.7 Monitoring Process Page	44
Figure 5.8 Display Data Page.....	45
Figure 5.9 Show Image Customer Button.....	45
Figure 5.10 Show Image Material Button.....	46
Figure 5.11 Delete Data Action	46

Figure 5.12 Firebase Option Code	47
Figure 5.13 Page Author - Register and Login Page Code	47
Figure 5.14 Homepage Code.....	48
Figure 5.15 Add Material Code	48
Figure 5.16 Create Barcode Code	49
Figure 5.17 Print Barcode Code.....	49
Figure 5.18 Scan Barcode Code.....	50
Figure 5.19 Monitoring Code.....	50
Figure 5.20 Monitoring - Get Start Date Code	51
Figure 5.21 Monitoring - Get Duration Code	51
Figure 5.22 Monitoring - Get End Date Code.....	52
Figure 5.23 Display Page Code.....	52
Figure 5.24 View Image Code	52