



**IOTENDANCE: IOT- INTEGRATED ATTENDANCE SYSTEM FOR
TRANSPARENT HR MANAGEMENT**

**UNDERGRADUATE THESIS
Submitted as one of the requirements to obtain
Sarjana Komputer**

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CIKARANG
August 13, 2025**

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ABSTRACT

This Capstone Project presents the development of IoTendance, a smart attendance system that utilizes Internet of Things (IoT) technology to improve the transparency, accuracy, and efficiency of attendance tracking. Traditional attendance systems often rely on manual input, making them vulnerable to errors, delays, and manipulation, which hinder effective human resource (HR) management.

IoTendance addresses these limitations by implementing ESP8266-based microcontrollers integrated with RFID technology (MFRC522) to automatically record attendance in real time. When an RFID card is scanned, the unique identifier (UID) is detected and sent via Wi-Fi to a centralized PHP-based server, where the data is stored in a MySQL database.

The system includes a web-based dashboard that provides real-time attendance monitoring, role-based access control (Admin, HR, Employee), auto-enrolment, daily log reports, and CSV export for reporting. Attendance data is updated dynamically upon each scan, allowing HR personnel to track attendance accurately and efficiently.

System testing confirmed that IoTendance reliably captures RFID scans, transmits data to the server, and displays attendance logs through the web interface. The project demonstrates a scalable and practical solution for modern attendance tracking, supporting the transition toward more transparent and automated HR systems.

Keywords: IoT, ESP8266, RFID, PHP, MySQL, Web Dashboard, Real-Time Attendance, Automation, HR Technology, Wi-Fi Communication.

Table of Contents

PART 1	1
A. PROBLEM FORMULATION	1
1. Background Problem	1
2. Problem Statement	2
3. Objective	2
4. Problem with Customer Perspective	3
B. PROBLEM CONSTRAINT ANALYSIS	4
1. Aspect 1: Real Time Tracking	4
2. Aspect 2: Time-Theft Prevention	4
3. Aspect 3: Security and Privacy	4
4. Aspect 4: Economics	5
5. Aspect 5: Reliability and accuracy	5
C. PROBLEM FUNCTIONAL ANALYSIS	6
1. Functionalities 1: Real-Time Tracking	6
2. Functionalities 2: Time Theft Detection and Prevention	6
3. Functionalities 3: Security and Data Privacy Protection	7
4. Functionalities 4: User-Friendly Interface for Employees and Administrators	7
5. Functionalities 5: Scalability and Flexibility	7
6. Functionalities 6: Compliance with Labor Laws and Regulations	7
D. SOLUTION SELECTION	8
1. Alternative Solution 1	8
2. Alternative Solution 2	8
3. Alternative Solution 3	9
4. Solution Selection	9
E. SOLUTION USAGE SCENARIOS	12
1. Employee Scanning Attendance with RFID	12
2. HR Staff Viewing Daily Attendance Report	12
3. Admin Managing RFID Devices and Users	12
4. System Notifications for Missing or Late Attendance	12
5. Employees Checking Their Attendance	13
6. Real-Time Dashboard for HR	13
7. System Analytics for Attendance Patterns	13
8. Employee Leave and Absence Request Integration	13
PART 2	14

A. EXISTING SYSTEM AND PROPOSED SYSTEM.....	14
1. Existing Business Processes	14
2. Proposed Business Process	17
B. GLOBAL DESCRIPTION OF THE PRODUCT.....	19
1. Main Functionality	19
2. User Characteristics	19
3. Constraints	22
4. Product Development Environment.....	25
5. Product Operational Environment	27
C. REQUIREMENT ANALYSIS.....	29
1. External Interface	29
2. Functional Description.....	32
3. Data Requirement from the user's perspective	36
1. Functional Requirement from user's perspective.....	44
1.1. Context Diagram	44
1.2. Activity Diagram	46
1.3. Data Flow Diagram.....	47
1.4. Process Flow	47
2. Non-Fucntional Requirement	50
2.1. Performance Requirements	50
2.2. Security Requirements	50
2.3. Availability & Reliability	51
2.4. Scalability Requirements	51
2.5. Usability Requirements.....	51
2.6. Compliance Requirements	52
2.7. Maintainability & Support	52
<i>SPECIFICATION TESTING.....</i>	53
<i>PART 3</i>	55
A. ALTERNATIVE SOLUTION DESIGN.....	55
Alternative Solution 1	55
□ Alternative Solution 2	60
□ Alternative Solution 3	65
B. RATIONAL/SYSTEMATIC DESIGN	70
1. Comparison Table.....	70
2. Quantitative Solution Selection	72
□ Solution Selection	74
C. HIERARCHICAL/ITERATIVE DESIGN.....	75
Data Flow Diagram Level 1 for Attendance Management System	75
1.1. Add, Remove, and Edit Employee.....	76

1.2.	Add, Remove, Edit Attendance	80
1.3.	Data Flow Diagram Generate Attendance Summary.....	84
1.4.	Data Flow Diagram Set Up Schedule	88
1.5.	Data Flow Diagram Monitoring Attendance Compliance	91
1.6.	Data Flow Diagram Monitoring Working Hours.....	94
2.	Interface Information Between Block Diagrams	102
3.	Scrum Methodology to Implement Steps in Software Engineering Design 103	
4.	Detail of Components and Libraries Used.....	108
5.	Unified Modeling Language 2.0	111
6.	VERIFICATION DEMONSTRATION AND PROOF OF DESIGN PROCESS	123
6.	STANDARDS USED	125
7.	IMPLEMENTATION AND TESTING PLANS.....	127
PART 4		129
A.	DESIGN IMPLEMENTATION	129
1.	Functions/Procedure/Class implementation.....	129
1.2.	Generate Attendance Summary (Visualization data employee record). 144	
1.3.	Set Up Work Schedule.....	146
1.4.	Monitor Attendance Compliance	168
1.5.	Monitoring Working Hours.	180
1.6.	Database implementation.....	181
1.7.	User Interface implementation.....	182
B.	PRODUCT DISPLAY	193
1.	SOFTWARE PRODUCT DISPLAY	193
2.	MANUAL GUIDE.....	198
3.	System Installation.....	208
4.	User guide per role.....	217
PART 5		228
A.	IMPLEMENTATION	228
1.	List of specification testing from user perspective.	228
2.	Present qualitative testing	229
B.	CONCLUSION	234
C.	REFERENCES.....	235

List of Tables

Table 2.6 Use-Case Scenario	33
Table 2.7 Data Dictinonary	37
Table 2.8 Admin Table	39
Table 2.9 Users Table	39
Table 2.10 Users Logs Table	40
Table 2.11 Devices Table	42
Table 2.12 Leave Requests Table	42
Table 2.13 Correction Requests Table	43
Table 2.14 Specification testing.....	53
Table 3.1 Comparison Table.....	70
Table 3.2 Alternative Solution 1: RFID-Based Attendance System.....	72
Table 3.3 Alternative Solution 2: Face Recognition Based Attendance System	73
Table 3.4 Alternative Solution 3: Geofence & QR Code Attendance System	73
Table 3.5 Interface Information between Block Diagrams.....	102
Table 3.6 VERIFICATION DEMONSTRATION AND PROOF OF DESIGN PROCESS	123
Table 3.7 Standards use	125
Table 3.8 S-Chart	127
Figure 4.41 Monitor Attendance Compliance	169
Figure 4.43 Monitor Attendance Compliance	172
Figure 4.45 Monitor Attendance Compliance	176
Figure 4.46 Monitor working hours.....	177

List Of Figure

Table 1.1 Solution Selection 1	10
Figure 2.1 business process flow	15
FIGURE 2.2 PROPOSED BUSINESS PROCESS	18
Table 2.1 User & responsibilities.....	20
Table 2.2 Access right.....	20
Table 2.3 Education Levels & Skill requirements	21
Table 2.4 Education levels.....	21
Table 2.5 Type of Training required.....	21
Figure 2.3 Use-Case Diagram.....	32
Figure 2.4 ERD	36
Figure 2.6 Activity diagram.....	46
Figure 2.7 Data Flow Diagram	47
Figure 3.1 Alternatif solution 1.....	55
Figure 3.2 Alternative solution 2	60
Figure 3.3 Alternative solution 3	65
Figure 3.4 DFD Level 1 Attendance Management System	75
Figure 3.5 DFD Level 2 Add, Remove, Edit Attendance	76
Figure 3.6 DFD Level 3 Add, Remove, Edit Employee.....	77
Figure 3.7 Adding, deleting and removing employeee.....	78
Figure 3.8 Add, delete, removing Employee	79
Figure 3.9 DFD Level 2 Add, edit, removing attendance.....	80
Figure 3.10 DFD Level 3 Add, edit, removing attendance.....	81
Figure 3.11 DFD Level 3 Add, edit, removing attendance.....	82
Figure 3.12 DFD Level 3 Add, edit, removing attendance.....	83
Figure 3.13 DFD Level 2 Generate Attendance summary	84
Figure 3.14 Generate Attendance summary.....	85
Figure 3.28 DFD Level 3 Monitoring working hours.....	86
Figure 3.16 DFD Level 3 Generate Attendance summary	87
Figure 3.17 DFD Level 2 Set Up Schedule	88
Figure 3.18 DFD Level 3 Set Up Schedule	89
Figure 3.19 DFD Level 3 Set Up Schedule	90
Figure 3.20 DFD Level 3 Set Up Schedule	90
Figure 3.21 Monitoring Attendance Compliance	91
Figure 3.22 DFD Level 3 Monitoring Attendance Compliance	91
Figure 3.23 DFD Level 3 Monitoring Attendance Compliance	92
Figure 3.24 DFD Level 3 Monitoring Attendance Compliance	93
Figure 3.25 Monitoring working hours.....	94
Figure 3.26 DFD Level 3 Monitoring working hours.....	95
Figure 3.27 DFD Level 3 Monitoring working hours.....	95
Figure 3.28 DFD Level 3 Monitoring working hours.....	96
Figure 3.29 Leave, sick, time off	97
Figure 3.30 DFD Level 1 Leave, sick, time off.....	97

Figure 3.31 DFD Level 1 Leave, sick, time off	98
Figure 3.32 DFD Level 2 Leave, sick, time off	98
Figure 3.33 DFD Level 3 Leave, sick, time off	99
Figure 3.34 DFD Level 3 Leave, sick, time off	100
Figure 3.35 DFD Level 3 Leave, sick, time off	101
Figure 3.35 Use Case Diagram	111
Figure 3.37 login & redirect.....	113
Figure 3.38 create new device	113
Figure 3.39 set device mode	114
Figure 3.40 enrollment mode	114
Figure 3.41 complete user data (HR/Admin).....	115
Figure 3.42 Attendance mode	115
Figure 3.43 Request for permission/ leave/ sick.....	116
Figure 3.44 approval for permission/ leave by HR/Admin.....	116
Figure 3.45 Generate & export work summary	117
Figure 3.46 scan RFID- enrolment mode	118
Figure 3.48 Submit & Approve Leave Request.....	119
Figure 3.49 Export Attendance	119
Figure 3.50 generate & export work summary	120
Figure 3.51 Class diagram	120
Figure 3.52 Gantt chart	127
Figure 4.1 Add, remove, and edit Employee	129
Figure 4.1 Add employee code	130
Figure 4.2 Add employee code	131
Figure 4.3 Add employee code	132
Figure 4.4 Add employee code	133
Figure 4.6 Add employee code	134
Figure 4.7 Add employee code	135
Figure 4.8 Add employee code	136
Figure 4.9 Edit employee code	137
Figure 4.10 Edit employee code	138
Figure 4.11 Edit employee code	139
Figure 4.12 Edit employee code	139
Figure 4.13 Edit employee code	140
Figure 4.14 remove employee code	142
Figure 4.15 Generate attendance summary.....	144
Figure 4.16 Generate attendance summary code	145
Figure 4.17 Set up Work Schedule	146
Figure 4.18 Set up Work Schedule code.....	146
Figure 4.19 Set up Work Schedule	148
Figure 4.20 Set up Work Schedule	149
Figure 4.21 Set up Work Schedule	150
Figure 4.23 Set up Work Schedule	151

Figure 4.25 Set up Work Schedule	152
Figure 4.26 Set up Work Schedule	153
Figure 4.27 Set up Work Schedule	154
Figure 4.28 Set up Work Schedule	155
Figure 4.29 Set up Work Schedule	156
Figure 4.30 Set up Work Schedule	157
Figure 4.31 Set up Work Schedule	158
Figure 4.32 Set up Work Schedule	159
Figure 4.34 Set up Work Schedule	161
Figure 4.35 Set up Work Schedule	162
Figure 4.36 Set up Work Schedule	164
Figure 4.37 Set up Work Schedule	166
Figure 4.38 Set up Work Schedule	167
Figure 4.41 Monitor Attendance Compliance	169
Figure 4.42 Monitor Attendance Compliance	170
Figure 4.43 Monitor Attendance Compliance	172
Figure 4.44 Monitor Attendance Compliance	174
Figure 4.45 Monitor Attendance Compliance	176
Figure 4.46 Monitor working hours.....	177
Figure 4.47 Monitor working hours.....	179
Figure 4.48 monitor working hours	180
Figure 4.49 database	181
Figure 4.50 UI implementation.....	182
Figure 4.51 HR & Admin Dashboard.....	183
Figure 4.52 Employee Dashboard.....	183
Figure 4.53 Manage users page	185
Figure 4.54 user log	186
Figure 4.55 devices	187
Figure 4.56 Work summary	189
Figure 4.57 Manage request (HR& Admin Dashboard).....	190
Figure 4.57 Leave request (employee dashbaord)	191
Design display 1 - IoTendance logo	193
Design display 2 - Login & register page	193
Design display 3 - Home page / users page	194
Design display 4 - Manage user page	195
Design display 5 - User log page	195
Design display 6 - Devices page.....	196
Design display 7 - Work summary page.....	196
Design display 8 - Leave request form	197