



DEPARTMENT OF COMPUTER SCIENCE

WORK INTEGRATED LEARNING PORTFOLIO OF EVIDENCE

WIL IN COMPUTER SCIENCE EXT WOC316D (WORK-INTEGRATED LEARNING)

01 Aug 2025 - 28 Jan 2026

HOLANI BALOYI

REG NO 223268846

APPROVED BY	APPROVAL DATE
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EMPLOYER STAMP	NOT uploaded yet
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SECTION 1 : REGISTRATION DETAILS

STUDENT

NAME	MR. HOLANI BALOYI
REG NUMBER	223268846
MOBILE	+27-0782469399
EMAIL	223268846@tut4life.ac.za
ADDRESS	Gawula stand 640

EMPLOYER

NAME	MAXELO BUSINESS SOLUTIONS
WORKSTATION	MAXELO BUSINESS SOLUTION
PROVINCE	LIMPOPO
CITY	MALAMULELE
SUBURB	MALAMULELE
DATE OF ACCREDITATION	

MENTOR

NAME	MR. MKHONGELO GOSPEL MADINGANI
TEL	0639688498
EMAIL	mkhongelo@maxelobs.co.za
MOBILE	0639688498
START DATE	01-Aug-2025
END DATE	29-Sep-2025

MENTOR

NAME	MR. MKHONGELO GOSPEL MADINGANI
TEL	0639688498
EMAIL	mkhongelo@maxelobs.co.za
MOBILE	0639688498
START DATE	08-Sep-2025
END DATE	29-Sep-2025

WIL COORDINATOR

NAME	MR. VUYISILE MEMANI
EMAIL	MEMANIV@TUT.AC.ZA
TEL	0123829749

QUALIFICATION

DEPARTMENT	COMPUTER SCIENCE
DEPARTMENT CODE	6606
QUALIFICATION NAME	DIPLOMA IN COMPUTER SCIENCE (EXTENDED)
QUALIFICATION CODE	DPRSF0
SUBJECT	WORK-INTEGRATED LEARNING
SUBJECT CODE	WOC316D
START DATE	01-Aug-2025
END DATE	28-Jan-2026

SECTION 2 : QUALIFICATION DETAILS

DIPLOMA IN COMPUTER SCIENCE (EXTENDED) DPRSF0

DURATION OF QUALIFICATION	48 MONTHS
NQF LEVEL OF QUALIFICATION	NQF 6
SAQA ID	109017

WIL IN COMPUTER SCIENCE EXT WOC316D

DURATION OF WIL	6 MONTHS
WIL CREDITS	60.00 CREDITS
ASSESSMENT METHODOLOGY	OUTCOMES BASED ASSESSMENT

OUTCOME 1 : INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 1 - MONTH 1

DURATION OF TRAINING GUIDELINE	1 MONTH
ACTUAL TIME SPENT COMPLETING	20 DAYS
CORE OR ELECTIVE	CORE
WEIGHT OF OUTCOME	5%
CREDIT VALUE	3

OUTCOME DETAILS

INSTRUCTIONS AND GUIDELINES TO STUDENT

Monthly Logsheet of Tasks/ Activities Completed.

The student is required to complete a monthly task/ activity report which must be submitted via the TUT MyWIL portal. The Task/ Activity report template is accessible via the TUT MyWIL portal's Documents Menu, located under the Forms and Templates section.

Monthly Log sheet templates must be downloaded from the Documents Menu>Forms & Templates section. Students can complete and submit in PDF format.

Shown below is an example of the template to be used for: Industrial Exposure (IE) - TASK & ACTIVITY REPORT MONTH 1 to REPORT MONTH 6

Industrial Exposure (IE) - TASK & ACTIVITY REPORT: LOG SHEET									
MONTH:									
FROM:									
TO:									
Summary of Tasks							Duration	Evaluation	
	Weeks	Days		Weeks	Days	Poor	Satisfactory	Good	
Subtotal:									
Number of days absent from work:			Reason:						

Mentor/Supervisor Name & Signature: _____

OUTCOME ASSESSMENT CRITERIA

ASSESSMENT RUBRIC

ASSESSMENT CRITERIA		TYPE
COMPETENCY LEVEL	Rate the student as Competent (100%) or Not Competent (0%)	COMPETENT / NOT COMPETENT
TOTAL		COMPETENT / NOT COMPETENT

LINKED TASK

INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 1 - MONTH 1 20250922

OUTCOME 2 : INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 2- MONTH 2

DURATION OF TRAINING GUIDELINE	1 MONTH
ACTUAL TIME SPENT COMPLETING	22 DAYS
CORE OR ELECTIVE	CORE
WEIGHT OF OUTCOME	5%
CREDIT VALUE	3

OUTCOME DETAILS

INSTRUCTIONS AND GUIDELINES TO STUDENT

Monthly Logsheet of Tasks/ Activities Completed.

The student is required to complete a monthly task/ activity report which must be submitted via the TUT MyWIL portal. The Task/ Activity report template is accessible via the TUT MyWIL portal's Documents Menu, located under the Forms and Templates section.

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Industrial Exposure (IE) - TASK & ACTIVITY REPORT: LOG SHEET									
MONTH:									
FROM:									
TO:									
Summary of Tasks							Duration	Evaluation	
	Weeks	Days		Weeks	Days	Poor	Satisfactory	Good	
Subtotal:									
Number of days absent from work:			Reason:						

Mentor/Supervisor Name & Signature: _____

OUTCOME ASSESSMENT CRITERIA

ASSESSMENT RUBRIC

ASSESSMENT CRITERIA		TYPE
COMPETENCY LEVEL	Rate the student as Competent (100%) or Not Competent (0%)	COMPETENT / NOT COMPETENT
TOTAL		COMPETENT / NOT COMPETENT

LINKED TASK

INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 2- MONTH 2 20251013

OUTCOME 3 : INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 3- MONTH 3

DURATION OF TRAINING GUIDELINE	1 MONTH
ACTUAL TIME SPENT COMPLETING	23 DAYS
CORE OR ELECTIVE	CORE
WEIGHT OF OUTCOME	5%
CREDIT VALUE	3

OUTCOME DETAILS

INSTRUCTIONS AND GUIDELINES TO STUDENT

Monthly Logsheet of Tasks/ Activities Completed.

The student is required to complete a monthly task/ activity report which must be submitted via the TUT MyWIL portal. The Task/ Activity report template is accessible via the TUT MyWIL portal's Documents Menu, located under the Forms and Templates section.

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Shown below is an example of the template to be used for: Industrial Exposure (IE) - TASK & ACTIVITY REPORT MONTH 1 to REPORT MONTH 6

Industrial Exposure (IE) - TASK & ACTIVITY REPORT: LOG SHEET									
MONTH:									
FROM:									
TO:									
Summary of Tasks						Duration		Evaluation	
	Weeks	Days		Weeks	Days	Poor	Satisfactory	Good	
Subtotal:			Total to date:						
Number of days absent from work:			Reason:						

Mentor/Supervisor Name & Signature: _____

OUTCOME ASSESSMENT CRITERIA

ASSESSMENT RUBRIC

ASSESSMENT CRITERIA		TYPE
COMPETENCY LEVEL	Rate the student as Competent (100%) or Not Competent (0%)	COMPETENT / NOT COMPETENT
TOTAL		COMPETENT / NOT COMPETENT

LINKED TASK

INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 3- MONTH 3 20251201

OUTCOME 4 : INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 4 - MONTH 4

DURATION OF TRAINING GUIDELINE	1 MONTH
ACTUAL TIME SPENT COMPLETING	20 DAYS
CORE OR ELECTIVE	CORE
WEIGHT OF OUTCOME	5%
CREDIT VALUE	3

OUTCOME DETAILS

INSTRUCTIONS AND GUIDELINES TO STUDENT

Monthly Logsheet of Tasks/ Activities Completed.

The student is required to complete a monthly task/ activity report which must be submitted via the TUT MyWIL portal. The Task/ Activity report template is accessible via the TUT MyWIL portal's Documents Menu, located under the Forms and Templates section.

Monthly Log sheet templates must be downloaded from the Documents Menu>Forms & Templates section. Students can complete and submit in PDF format.

Shown below is an example of the template to be used for: Industrial Exposure (IE) - TASK & ACTIVITY REPORT MONTH 1 to REPORT MONTH 6

Industrial Exposure (IE) - TASK & ACTIVITY REPORT: LOG SHEET									
MONTH:									
FROM:									
TO:									
Summary of Tasks							Duration	Evaluation	
							Weeks	Days	Poor
							Days	Satisfactory	Good
Subtotal:	Weeks	Days	Total to date:	Weeks	Days		Days		
Number of days absent from work:		Reason:							

Mentor/Supervisor Name & Signature: _____

OUTCOME ASSESSMENT CRITERIA

ASSESSMENT RUBRIC

ASSESSMENT CRITERIA		TYPE
COMPETENCY LEVEL	Rate the student as Competent (100%) or Not Competent (0%)	COMPETENT / NOT COMPETENT
TOTAL		COMPETENT / NOT COMPETENT

LINKED TASK

INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 4 - MONTH 4 20251201

OUTCOME 5 : INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 5 - MONTH 5

DURATION OF TRAINING GUIDELINE	1 MONTH
CORE OR ELECTIVE	CORE
WEIGHT OF OUTCOME	5%
CREDIT VALUE	3

OUTCOME DETAILS

INSTRUCTIONS AND GUIDELINES TO STUDENT

Monthly Logsheet of Tasks/ Activities Completed.

The student is required to complete a monthly task/ activity report which must be submitted via the TUT MyWIL portal. The Task/ Activity report template is accessible via the TUT MyWIL portal's Documents Menu, located under the Forms and Templates section.

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Shown below is an example of the template to be used for: Industrial Exposure (IE) - TASK & ACTIVITY REPORT MONTH 1 to REPORT MONTH 6

Industrial Exposure (IE) - TASK & ACTIVITY REPORT: LOG SHEET							
MONTH:							
FROM:							
TO:							
Summary of Tasks						Duration	Evaluation
	Weeks	Days	Poor	Satisfactory	Good		
Subtotal:							
Number of days absent from work:		Reason:					

Mentor/Supervisor Name & Signature: _____

OUTCOME 6 : INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 6 - MONTH 6

DURATION OF TRAINING GUIDELINE	1 MONTH
CORE OR ELECTIVE	CORE
WEIGHT OF OUTCOME	5%
CREDIT VALUE	3

OUTCOME DETAILS

INSTRUCTIONS AND GUIDELINES TO STUDENT

Monthly Logsheets of Tasks/ Activities Completed.

The student is required to complete a monthly task/ activity report which must be submitted via the TUT MyWIL portal. The Task/ Activity report template is accessible via the TUT MyWIL portal's Documents Menu, located under the Forms and Templates section.

Monthly Log sheet templates must be downloaded from the Documents Menu>Forms & Templates section. Students can complete and submit in PDF format.

Shown below is an example of the template to be used for: Industrial Exposure (IE) - TASK & ACTIVITY REPORT MONTH 1 to REPORT MONTH 6

Industrial Exposure (IE) - TASK & ACTIVITY REPORT: LOG SHEET							
MONTH:							
FROM:							
TO:							
Summary of Tasks						Duration	Evaluation
Subtotal:		Weeks	Days	Total to date:	Weeks	Days	Good
Number of days absent from work:		Reason:					

Mentor/Supervisor Name & Signature: _____

OUTCOME 7 : INDUSTRY PROJECT (IP)

DURATION OF TRAINING GUIDELINE	6 MONTHS
CORE OR ELECTIVE	CORE
WEIGHT OF OUTCOME	40%
CREDIT VALUE	24

OUTCOME DETAILS

Assessment of the IP modality of this module will include a presentation of the initial requirements phase of the project, followed by a presentation of the deployed solution and results at the end of the six (6) months WIL period.

The INDUSTRY PROJECT modality comprises of the project to be planned and executed using business analysis and project management techniques during the six months WIL period.

The project is split into two (2) phases.

The initial phase (three (3) months of the WIL period) involves a presentation of the analysed existing business processes and a proposed effective solution with the proposed project plan.

The final phase (sixth (6) month of the WIL period) involves the presentation of the implemented solution and the results thereof.

Present the final project

- The final computer science project is demonstrated.
- Relevant documentation is submitted.
- Design solution is implemented.
- Test results are demonstrated.

INDUSTRY PROJECT TEMPLATE

Software Development students are required to propose a three tier system, which is a client-server application where the user interface, processing logic and data management functions are physically separated.

You are required to follow the given template, and consult where necessary.

Phase 1 (Proposal)

Task	Description
1.Name of the Project	<ul style="list-style-type: none"> • Name the Project
2.Domain Analysis	<ul style="list-style-type: none"> • Explain the general field of business • Show understanding of terminology/glossary being used • Show the general knowledge and understanding of the business environment • Tasks and procedures currently performed • Customers and users • Competing software • Similarities to other domains
3.Define the Problem	<ul style="list-style-type: none"> • Express the Difficulty you want to solve from the domain • Or Opportunity that will result in benefit or improved productivity or sales
4.Define the Scope	<p>Narrow the scope by defining a more precise problem</p> <ul style="list-style-type: none"> • Apply knowledge of Integrated Result Based Management (IRBM) to define the Inputs, Activities, Outputs, outcomes, and the Impact that the application will have on the community • Answer the following questions: <ul style="list-style-type: none"> • Assess: What is the current situation? • Think: What caused it? Who is involved? • Envision: What are we going to achieve? • Plan: How are we going to do it? With whom? When? With what resources?
5.Vision and Objectives	<ul style="list-style-type: none"> • Write the Vision and Objectives (according to SMART principles) of the project
6.Users of the System	<ul style="list-style-type: none"> • Indicate the users of the system and their roles
7.Mandatory Functions	<ul style="list-style-type: none"> • The system should be able to Add/Register, Delete/Remove and Update data in the database



8.Functional Requirements	<ul style="list-style-type: none"> Write the aspect of what the proposed system must do, which contribute in solving the customer's problem and represents a negotiated agreement among stakeholders What inputs and outputs should the system accept What computations should the system perform The timing and synchronization of events
9.Non-functional requirements	<ul style="list-style-type: none"> Describe Authentication(login/ logout) Describe Availability
10.Use Case	<ul style="list-style-type: none"> Describe sequence of actions that a user performs in order to complete a given task as a key activity in requirements using a diagram This should cover full sequence of steps from beginning to until the end of the task Describe the user's interaction with the system and not computations performed by the system And not actions a user does manually
11.Tools and Technologies to be used	<ul style="list-style-type: none"> Indicate the tools you intend to use for the project (e.g. Java, PHP, ASP, etc.)

Phase 2 (Modelling with Classes)

Task	Description
1.Class Diagrams	
2.Sequence Diagram	<ul style="list-style-type: none"> Visualize how the system runs Built from use case and class diagram
3.State Diagrams	<ul style="list-style-type: none"> Describe the behavior of the system, activities and their transitions
4.Activity Diagrams	<ul style="list-style-type: none"> Describe the flow of objects and components Show representations of concurrent activities
5.Component Diagrams	
6.Deployment Diagram	

Phase 3 (User Interface)

Task	Description
1.Design User Interfaces	
2.Demo the Prototype	
3.Evaluate User Interface	<ul style="list-style-type: none"> Use Heuristic Evaluation and report the possible usability defects
4.Validate Fields	<ul style="list-style-type: none"> Verification and Validation

Phase 4 (Build the Database and Demonstrate Integration)

Task	Description
1.Build the database	<ul style="list-style-type: none"> Define data structures
2.Manage objects	<ul style="list-style-type: none"> Show objects, schema and integrity constraints
3.Normalization Process	<ul style="list-style-type: none"> Normalize your database
4.Manipulate your data	<ul style="list-style-type: none"> Populate your database using a script
5.Manage transaction	<ul style="list-style-type: none"> Create transactions and database queries This must correlate with functional requirements and use case

Phase 5 (Final Project Deliverance)

Task	Description
1.Application	<ul style="list-style-type: none"> Fully working system User Interface, Process Logic and Database integrated as a 3-tier system in a client server architecture
2.Document on Test cases and Test plan	<ul style="list-style-type: none"> Compile a Test Case document and Test Plan for quality assurance on the system
3.Reports	<ul style="list-style-type: none"> List reports to be generated by the system
4.Final Deliverable must include	<ul style="list-style-type: none"> Application deployment execution and manual Application archive (.war/.ear) with source code Database backup and DDL Script Complete Source code



OUTCOME 8 : REPORT

DURATION OF TRAINING GUIDELINE	1 MONTH
CORE OR ELECTIVE	CORE
WEIGHT OF OUTCOME	5%
CREDIT VALUE	3

OUTCOME DETAILS

GUIDELINE AND INSTRUCTIONS TO STUDENT

It is essential that the workbook reports should contain the detail of all tasks allocated to the student during the months of Work Integrated Learning. Reports written in "telegram style" will not be acceptable. These reports should contain enough data to place academic staff in a position to evaluate the Work Integrated Learning done as either acceptable or unsatisfactory for the specific period.

REPORT

The students are required to compile a report regarding the work he/she performs and submit it via the TUT MyWIL portal.

The report must be compiled in the following manner:

Introduction (50 words)

This section helps the reader understand your workplace and must include:

- The geographical location of your workplace;
- The name of your employing organization;
- The position occupied by you;
- The chronology-duration of your work with the organization.

Background (300 words)

This section provides the context in which you are working. It should include details such as:

- The nature of the work performed by your section/department;
- The department's objectives;
- The nature of your work area;
- A statement of your duties;

Personal Role at Workplace (1000-2000 words)

This section must describe the actual work performed by you. If you work in a team, then it is not sufficient to narrate the work performed by the team; your own role must be clearly stated. You will be evaluated based on the competencies that you claim in this section. Include details such as:

- Technical details of your work;
- How you have applied your knowledge and skills;
- The specific duties delegated to you and how you accomplished them;
- How you worked with the other team members (if applicable)?

OUTCOME 9 : MENTOR EVALAUTION

DURATION OF TRAINING GUIDELINE	6 MONTHS
CORE OR ELECTIVE	CORE
WEIGHT OF OUTCOME	25%
CREDIT VALUE	15

OUTCOME DETAILS

GUIDELINES AND INSTRUCTIONS TO STUDENT

The student is required to submit the "**MENTOR EVALUATION FORM**", This form is accessible through the TUT MyWIL portal's Documents Menu, located under the Forms and Templates section. Ensure that the Mentor evaluation form is duly completed and signed by your Industry Mentor before submission.



SECTION 3 : PROGRESS REPORTS INDEX

#	PROGRESS REPORT	DURATION IN HOURS/DAYS
1	INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 1 - MONTH 1 20250922	20 DAYS
2	INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 2- MONTH 2 20251013	22 DAYS
3	INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 3- MONTH 3 20251201	23 DAYS
4	INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 4 - MONTH 4 20251201	20 DAYS



SECTION 4 : PROGRESS REPORTS DETAILS

PROGRESS REPORT 1 : INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 1 - MONTH 1 20250922

START DATE	04-Aug-2025
END DATE	29-Aug-2025
DURATION	20 DAYS
STATUS	COMPLETED

STUDENT'S SUBMITTED REPORT

Progress Report ? August 2025

Introduction

During the month of August, I began working on the Maxelo Attendance Register Web System as part of my Work-Integrated Learning program. The main focus for this period was to set up the development environment, plan the system architecture, design the database, and implement the initial structure of the web application. These tasks laid the foundation for the system development that would continue in the following months.

Description of Progress Report

At the start of the month, I was introduced to the project requirements and oriented myself with the necessary tools and technologies. This included installing Python, PostgreSQL, Git, and Visual Studio Code. I also created a GitHub repository for version control to ensure that all progress would be properly documented and backed up. Through this process, I gained practical experience in configuring development environments and applying version control systems.

In the second week, I focused on planning the system design and defining the database schema. I created an initial database structure to store attendance records, which included tables for employee type, role, and attendance tracking. I also practiced SQL queries to prepare for system integration. This stage enhanced my skills in database design and improved my understanding of how backend structures support real-world systems.

The third week involved implementing the first version of the Flask project. I created a basic project skeleton with routes for the homepage and attendance pages. Initial HTML and CSS templates were added to design the user interface. I also worked on connecting the Flask application to a local PostgreSQL database, testing the communication between the front-end and the database. This week strengthened my skills in Flask development, frontend design, and database integration.

By the end of August, I had successfully set up the project environment, planned and designed the database, and implemented the initial structure of the web system. This progress prepared the foundation for the more advanced development and testing tasks scheduled for September.

LINKED OUTCOMES

OUTCOME	STUDENT STATUS	MENTOR ASSESSMENT	WIL COORDINATOR ASSESSMENT
INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 1 - MONTH 1	APPROVED	APPROVED	PENDING ASSESSMENT

MENTOR'S ASSESSMENT STATUS

APPROVED

WIL COORDINATOR'S ASSESSMENT STATUS

PENDING ASSESSMENT

PROGRESS REPORT 2 : INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 2- MONTH 2 20251013

START DATE	01-Sep-2025
END DATE	30-Sep-2025
DURATION	22 DAYS
STATUS	COMPLETED

STUDENT'S SUBMITTED REPORT

REPORT / PROJECT DESCRIPTION

1. Introduction

This progress report presents the development phase of the Maxelo Attendance Tracking System (MATS), a comprehensive full-stack web application designed to automate and enhance the process of employee attendance management. The development during this period focused on advancing from the planning and design stages to a fully functional, test-deployed system.

Key milestones achieved include:

The completion of core backend functionalities using Flask and PostgreSQL.

The implementation of a secure user authentication system.

The development of a responsive and interactive user interface for both administrators and employees.

The successful deployment of a prototype version to an online hosting platform for testing and evaluation.

This report provides an overview of the methodologies, tools, and processes employed to accomplish these milestones.

2. Description of Progress Report

The development of the Maxelo Attendance Tracking System followed a structured software development lifecycle to ensure alignment with the project's objectives and deliverables.

2.1 Backend System Development

The backend system was implemented using the Python Flask framework, ensuring scalability, maintainability, and efficient data management. The major tasks completed include:

Database Design and Implementation:

A robust PostgreSQL database schema was designed, consisting of key tables such as Maxeloclientable for employee records and Attendanceregister for attendance tracking.

Server-Side Logic:

Flask routes and logic were created to handle all CRUD (Create, Read, Update, Delete) operations, facilitating efficient management of employee and attendance data.

Authentication and Security:

A secure authentication system was developed, incorporating user login, logout, and session management to ensure controlled access based on user roles.

2.2 Frontend and User Interface Development

The frontend was developed to provide an intuitive, accessible, and responsive experience for both administrators and employees.

Design and Technologies Used:

The interface was developed using HTML, CSS, and JavaScript, while Bootstrap was utilized to ensure responsiveness across various devices and screen sizes.

Interactive Features:

The system integrates jQuery and AJAX to enable dynamic updates such as modifying attendance records without requiring a full page reload, improving overall user experience.

User Accessibility:

The design emphasizes simplicity and clarity, providing distinct dashboards for administrators and employees to enhance usability and navigation efficiency.

2.3 Core Feature Implementation

The system integrates all core functionalities essential to a modern attendance tracking solution, including:

Role-Based Access Control:

The login mechanism differentiates between administrators and employees, directing users to their respective dashboards.

Clock-In/Clock-Out Functionality:

Employees can record their attendance, specifying whether they are working remotely or on-site.

Administrative Tools:

Administrators have access to tools for managing employee records, viewing attendance data, and filtering reports by specific dates or users.

2.4 Testing, Debugging, and Deployment

A rigorous testing and deployment phase was conducted to ensure system stability and performance reliability.

Testing Procedures:

Functional testing was performed across all modules, focusing on data validation, workflow accuracy, and error handling.

Debugging and Refinement:

Identified issues were systematically addressed to optimize system performance and maintain data integrity.

Deployment:

A test version of MATS was successfully deployed on the Railway platform, allowing live accessibility and real-time evaluation of system functionalities.

3. Conclusion

The development of the Maxelo Attendance Tracking System (MATS) has achieved significant milestones, transitioning from initial conceptualization to a fully operational and test-deployed application. The integration of Flask and PostgreSQL ensured a reliable backend infrastructure, while the responsive frontend enhanced user interaction and accessibility.

Comprehensive testing confirmed that the system meets the requirements for accurate, automated, and secure attendance management. The successful deployment on a live platform marks an important step toward full-scale implementation.

Future development efforts will focus on performance optimization, UI/UX enhancements, and the addition of advanced analytical features such as attendance summaries and employee performance dashboards. Overall, this phase represents a solid foundation for the continued improvement and scalability of the MATS project.

LINKED OUTCOMES

OUTCOME	STUDENT STATUS	MENTOR ASSESSMENT	WIL COORDINATOR ASSESSMENT
INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 2- MONTH 2	APPROVED	APPROVED	PENDING ASSESSMENT



MENTOR'S ASSESSMENT STATUS

APPROVED

WIL COORDINATOR'S ASSESSMENT STATUS

PENDING ASSESSMENT



PROGRESS REPORT 3 : INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT

3- MONTH 3 20251201

START DATE	01-Oct-2025
END DATE	31-Oct-2025
DURATION	23 DAYS
STATUS	COMPLETED

STUDENT'S SUBMITTED REPORT

INTRODUCTION

During the month of October, the main focus of the project was to refine and update the system requirements for the Malamulele Business Connection Web System, redesign the database structure, and continue development based on new instructions provided by the supervisor. This period involved both planning and implementation tasks aimed at improving the system's overall workflow and preparing it for deployment.

DESCRIPTION OF PROGRESS REPORT

During this reporting period, several important processes and procedures were followed to complete the tasks required for the system update. I began by reviewing and understanding the full system workflow to ensure that the new requirements could be applied correctly. Based on feedback from the supervisor, I created updated system requirements and redesigned the ERD to reflect a new rule where customers would no longer log in. Instead, only admins or business owners would register businesses and add their properties. This led to the removal of customer login tables and the restructuring of database relationships so that all business properties are directly linked to the admin or business owner.

To support these changes, I improved the database design to allow businesses and their properties to be displayed publicly on the home page. I also practiced and applied SQL joins and constraints to match the new relationships between admin accounts, business details, properties, and transport services. On the development side, I created new Flask routes for admin registration, business/property creation, and the public viewing of business listings. Updated HTML and CSS templates were also developed for the home page to present business and transport information in an organized way.

Throughout the month, I continued preparing the system for deployment and performed testing to ensure the updated structure functioned as expected. Overall, the October tasks strengthened the system's design and improved its usability according to the new project direction.

LINKED OUTCOMES

OUTCOME	STUDENT STATUS	MENTOR ASSESSMENT	WIL COORDINATOR ASSESSMENT
INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 3- MONTH 3	REJECTED	PENDING ASSESSMENT	PENDING ASSESSMENT

MENTOR'S ASSESSMENT STATUS

APPROVED

WIL COORDINATOR'S ASSESSMENT STATUS

PENDING ASSESSMENT

MENTOR'S COMMENT

keep it up

PROGRESS REPORT 4 : INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 4 - MONTH 4 20251201

START DATE	03-Nov-2025
END DATE	28-Nov-2025
DURATION	20 DAYS
STATUS	COMPLETED

STUDENT'S SUBMITTED REPORT

INTRODUCTION

During the month of November, the project work for the Malamulele Business Connection Web System focused on continuing system development after the ERD changes, improving backend and frontend functionality, and preparing the system for online hosting. This period involved strengthening database connectivity, improving user-facing templates, debugging system routes, and ensuring that all new components aligned with the updated requirement that only admins or business owners manage business information.

DESCRIPTION OF PROGRESS REPORT

Throughout November, several key processes and technical procedures were completed to support the system's updated design and functionality. The month began with continued system development following the new ERD structure, ensuring that only admins and business owners can register and manage businesses and their properties. I debugged system routes and templates to ensure that all business information displays correctly on the home page without the need for a customer login.

Additional work included adding new functionality to display business offers, information, and detailed descriptions. I also improved and updated database connectivity, which was essential to support the new ERD changes. To prepare the system for hosting on Railway, I configured environment variables, updated database connection settings, and ensured the system dependencies matched the modified database structure.

A major milestone for the month was successfully connecting the updated Flask system to Railway PostgreSQL for testing. I also created improved frontend templates for public viewing of all business information, properties, and transport services. Furthermore, the GitHub repository was updated with all the new ERD changes, routes, templates, and documentation to ensure version control and clean project management.

Finally, I attended meetings with my supervisor for guidance on implementing the updated system requirements. Overall, November was a productive month that focused on refining system functionality, stabilizing database connections, and preparing the project for deployment.

LINKED OUTCOMES

OUTCOME	STUDENT STATUS	MENTOR ASSESSMENT	WIL COORDINATOR ASSESSMENT
INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 4 - MONTH 4	REJECTED	PENDING ASSESSMENT	PENDING ASSESSMENT

MENTOR'S ASSESSMENT STATUS

APPROVED

WIL COORDINATOR'S ASSESSMENT STATUS

PENDING ASSESSMENT

SECTION 5 : SUMMARY OF PROGRESS REPORTS ASSESSMENT

#	PROGRESS REPORT	DURATION	MENTOR ASSESSMENT	WIL COORDINATOR ASSESSMENT
1	INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 1 - MONTH 1 20250922	20	APPROVED	PENDING ASSESSMENT
2	INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 2- MONTH 2 20251013	22	APPROVED	PENDING ASSESSMENT
3	INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 3- MONTH 3 20251201	23	APPROVED	PENDING ASSESSMENT
4	INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 4 - MONTH 4 20251201	20	APPROVED	PENDING ASSESSMENT
	TOTAL	85	-	-

SECTION 6 : SUMMARY OF OUTCOME ASSESSMENT

#	OUTCOME	DATE APPROVED	CREDIT VALUE	WEIGHT	FINAL MARK
1	INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 1 - MONTH 1	24-Sep-2025	3	5	50 %
2	INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 2- MONTH 2	13-Oct-2025	3	5	50 %
	TOTAL		6	10	50 %

SECTION 7 : CERTIFICATION OF OUTCOME APPROVALS

OUTCOME 1 : INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 1 - MONTH 1

MENTOR NAME	MKHONGELO GOSPEL MADINGANI
MENTOR APPROVAL DATE	21-Nov-2025
WIL COORDINATOR NAME	TLOU JAMES RAMABU

LINKED TASKS

REPORT : INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 1 - MONTH 1 20250922 : ASSESSMENT

#	ASSESSMENT CRITERIA	TOTAL (AVERAGE)
1		

OUTCOME 2 : INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 2- MONTH 2

MENTOR NAME	MKHONGELO GOSPEL MADINGANI
MENTOR APPROVAL DATE	21-Nov-2025
WIL COORDINATOR NAME	TLOU JAMES RAMABU

LINKED TASKS

REPORT : INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 2- MONTH 2 20251013 : ASSESSMENT

#	ASSESSMENT CRITERIA	TOTAL (AVERAGE)
1		



OUTCOME 3 : INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 3- MONTH 3

MENTOR NAME	MKHONGELO GOSPEL MADINGANI
WIL COORDINATOR NAME	TLOU JAMES RAMABU

LINKED TASKS

REPORT : INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 3- MONTH 3 20251201 : ASSESSMENT

#	ASSESSMENT CRITERIA	TOTAL (AVERAGE)
1		



OUTCOME 4 : INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 4 - MONTH 4

MENTOR NAME	MKHONGELO GOSPEL MADINGANI
WIL COORDINATOR NAME	TLOU JAMES RAMABU

LINKED TASKS

REPORT : INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 4 - MONTH 4 20251201 : ASSESSMENT

#	ASSESSMENT CRITERIA	TOTAL (AVERAGE)
1		



OUTCOME 5 : INDUSTRY PROJECT (IP)

MENTOR NAME	MKHONGELO GOSPEL MADINGANI
WIL COORDINATOR NAME	TLOU JAMES RAMABU

LINKED TASKS

REPORT : INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 1 - MONTH 1 20250922 : ASSESSMENT

#	ASSESSMENT CRITERIA
1	
	TOTAL (AVERAGE)

REPORT : INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 1 - MONTH 1 20250922 : ASSESSMENT

#	ASSESSMENT CRITERIA
1	
	TOTAL (AVERAGE)

REPORT : INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 2- MONTH 2 20251013 : ASSESSMENT

#	ASSESSMENT CRITERIA
1	
	TOTAL (AVERAGE)

REPORT : INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 3- MONTH 3 20251201 : ASSESSMENT

#	ASSESSMENT CRITERIA
1	
	TOTAL (AVERAGE)

REPORT : INDUSTRIAL EXPOSURE (IE) - TASK & ACTIVITY REPORT 4 - MONTH 4 20251201 : ASSESSMENT

#	ASSESSMENT CRITERIA
1	
	TOTAL (AVERAGE)

* Elective Outcome

SECTION 8 : FINAL REPORT CERTIFICATE

Outcome	Credit Value	Mentor		Wil Coordinator		Avg Marks %	Final Weighted Mark
		Status	Marks	Status	Marks		
1.Industrial Exposure (IE) - TASK & ACTIVITY REPORT 1 - MONTH 1	3	APPROVED	100	PENDING ASSESSMENT	--	50%	1.50
2.Industrial Exposure (IE) - TASK & ACTIVITY REPORT 2- MONTH 2	3	APPROVED	100	PENDING ASSESSMENT	--	50%	1.50
Completed Outcomes	6						3

* Elective Outcome

SECTION 9 : ANNEXURE INDEX

#	ANNEXURE TITLE
1	ANNEXURE1
2	ANNEXURE2
3	ANNEXURE3
4	ANNEXURE4



SECTION 10 : STUDENT ATTENDANCE

DECEMBER 2025

#	DAY	DATE	SIGN IN TIME	SIGN OUT TIME	HOURS WORKED	STATUS
1	Monday	01-Dec-2025	08:30:00 AM	04:00:00 PM	7 HOURS, 30 MINUTES	PRESENT
2	Tuesday	02-Dec-2025	08:30:00 PM	04:00:00 PM	4 HOURS, 30 MINUTES	PRESENT
3	Wednesday	03-Dec-2025	08:30:00 PM	04:00:00 PM	4 HOURS, 30 MINUTES	PRESENT
4	Thursday	04-Dec-2025	-	-	-	N/A
5	Friday	05-Dec-2025	-	-	-	N/A
6	Saturday	06-Dec-2025	-	-	-	WEEKEND
7	Sunday	07-Dec-2025	-	-	-	WEEKEND
8	Monday	08-Dec-2025	-	-	-	N/A
9	Tuesday	09-Dec-2025	-	-	-	N/A
10	Wednesday	10-Dec-2025	-	-	-	N/A
11	Thursday	11-Dec-2025	-	-	-	N/A
12	Friday	12-Dec-2025	-	-	-	N/A
13	Saturday	13-Dec-2025	-	-	-	WEEKEND
14	Sunday	14-Dec-2025	-	-	-	WEEKEND
15	Monday	15-Dec-2025	-	-	-	N/A
16	Tuesday	16-Dec-2025	-	-	-	N/A
17	Wednesday	17-Dec-2025	-	-	-	N/A
18	Thursday	18-Dec-2025	-	-	-	N/A
19	Friday	19-Dec-2025	-	-	-	N/A
20	Saturday	20-Dec-2025	-	-	-	WEEKEND
21	Sunday	21-Dec-2025	-	-	-	WEEKEND
22	Monday	22-Dec-2025	-	-	-	N/A
23	Tuesday	23-Dec-2025	-	-	-	N/A
24	Wednesday	24-Dec-2025	-	-	-	N/A
25	Thursday	25-Dec-2025	-	-	-	N/A
26	Friday	26-Dec-2025	-	-	-	N/A
27	Saturday	27-Dec-2025	-	-	-	WEEKEND
28	Sunday	28-Dec-2025	-	-	-	WEEKEND
29	Monday	29-Dec-2025	-	-	-	N/A
30	Tuesday	30-Dec-2025	-	-	-	N/A
31	Wednesday	31-Dec-2025	-	-	-	N/A

NOVEMBER 2025

#	DAY	DATE	SIGN IN TIME	SIGN OUT TIME	HOURS WORKED	STATUS
1	Saturday	01-Nov-2025	-	-	-	WEEKEND
2	Sunday	02-Nov-2025	-	-	-	WEEKEND
3	Monday	03-Nov-2025	-	-	-	ABSENT
4	Tuesday	04-Nov-2025	-	-	-	ABSENT
5	Wednesday	05-Nov-2025	-	-	-	ABSENT
6	Thursday	06-Nov-2025	-	-	-	ABSENT
7	Friday	07-Nov-2025	-	-	-	ABSENT
8	Saturday	08-Nov-2025	-	-	-	WEEKEND
9	Sunday	09-Nov-2025	-	-	-	WEEKEND
10	Monday	10-Nov-2025	-	-	-	ABSENT
11	Tuesday	11-Nov-2025	-	-	-	ABSENT
12	Wednesday	12-Nov-2025	-	-	-	ABSENT
13	Thursday	13-Nov-2025	-	-	-	ABSENT
14	Friday	14-Nov-2025	-	-	-	ABSENT
15	Saturday	15-Nov-2025	-	-	-	WEEKEND
16	Sunday	16-Nov-2025	-	-	-	WEEKEND
17	Monday	17-Nov-2025	-	-	-	ABSENT
18	Tuesday	18-Nov-2025	-	-	-	ABSENT
19	Wednesday	19-Nov-2025	-	-	-	ABSENT
20	Thursday	20-Nov-2025	08:30:00 AM	04:00:00 PM	7 HOURS, 30 MINUTES	PRESENT
21	Friday	21-Nov-2025	08:30:00 AM	04:00:00 PM	7 HOURS, 30 MINUTES	PRESENT
22	Saturday	22-Nov-2025	-	-	-	WEEKEND
23	Sunday	23-Nov-2025	-	-	-	WEEKEND
24	Monday	24-Nov-2025	08:30:00 AM	04:00:00 PM	7 HOURS, 30 MINUTES	PRESENT
25	Tuesday	25-Nov-2025	08:30:00 AM	04:00:00 PM	7 HOURS, 30 MINUTES	PRESENT
26	Wednesday	26-Nov-2025	08:30:00 AM	04:00:00 PM	7 HOURS, 30 MINUTES	PRESENT
27	Thursday	27-Nov-2025	08:30:00 AM	04:00:00 PM	7 HOURS, 30 MINUTES	PRESENT
28	Friday	28-Nov-2025	08:30:00 AM	04:00:00 PM	7 HOURS, 30 MINUTES	PRESENT
29	Saturday	29-Nov-2025	-	-	-	WEEKEND
30	Sunday	30-Nov-2025	-	-	-	WEEKEND

Month 1: From 4 August 2025 to 29 August 2025

Student Name: Baloyi Holani

Student Number: 223268846

Project Title: Maxelo Attendance Register Web System

Summary of Tasks	Duration		Evaluation		
	Weeks	Days	Poor	Satisfactory	Good
Orientation and understanding WIL project requirements.		2			X
Installed required software tools (Python, PostgreSQL, Git, VS Code).		2			X
Created GitHub repository for version control.		1	X		
Designed initial system architecture for the Maxelo Attendance Register Web System.	1			X	
Defined database schema for attendance (employee type, roles, attendance records).		3		X	
Practiced writing SQL queries.		2		X	
Developed Flask project skeleton with routes for home and attendance pages.		3		X	
Implemented initial HTML/CSS templates for user interface.		1			X
Connected Flask app to PostgreSQL database (local).		1	X		

Subtotal: week Day Total to date: Weeks Days

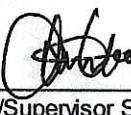
Number of days

Reason: absent from work:

MAXELO BUSINESS SOLUTIONS
STAND NO 1457 B EXTENSION,
MALAMULELE, 0982
TELL: 015 001 1972
info@maxelobs.co.za
www.maxelobs.co.za

Md Zayama Chauke

Mentor/Supervisor Name



Mentor/Supervisor Signature

13/10/2025

Date

Month 2: From 1 September 2025 to 29 September 2025

Student Name: Baloyi Holani

Student Number: 223268846

Project Title: Maxelo Attendance Register Web System

Summary of Tasks	Duration		Evaluation		
	Weeks	Days	Poor	Satisfactory	Good
Continued backend development of Maxelo Attendance Register Web System using Flask and PostgreSQL.	1				X
Implemented user authentication (login, logout, registration) with session management		2			X
Designed and developed attendance form and clock-in/clock-out functionality.		1		X	
Added routes and views for employee management and attendance register pages.		2			X
Tested database CRUD operations and validated connection stability.		3			X
Enhanced HTML/CSS templates for responsive user interface.	1				X
Deployed test version of the web system using Railway platform.		1		X	
Fixed bugs related to database queries and improved error handling.		1			X

Subtotal: week

2

Day

11

Total to date:

Weeks

3

Days

31

Number of days

0

Reason: absent
from work:

MAXELO BUSINESS SOLUTIONS
STAND NO 1457 B-EXTENSION
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www.maxelobs.co.za

Ntarema Chube

Mentor/Supervisor Name



Mentor/Supervisor Signature

13/10/2025

Date

MAXELO ATTENDANCE
TRACKING SYSTEM
ICT TEAM 2025

MAXELO ATTENDANCE TRACKING SYSTEM

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Skills Gained	Page 6
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Project Report: Employee Attendance Register System

1. Project Overview

The **Employee Attendance Register System** is a software application developed to automate the tracking of employee attendance and streamline workforce management. The system allows administrators to register employees, view record clock-in and clock-out times, and generate attendance reports. It provides a user-friendly interface and ensures accurate and organized record-keeping, replacing traditional paper-based registers.

2. Purpose of the System

The main purpose of the system is to simplify employee attendance management for businesses. By automating attendance tracking, the system:

- Reduces errors caused by manual record-keeping
- Provides quick access to employee attendance data
- Help employee to take register while working remote
- Supports decision-making through generated reports
- Enhances overall operational efficiency

3. Software Development Approach

The system was developed using a **structured software development approach**, incorporating the following stages:

1. **Requirement Analysis:** Gathering system requirements including user roles, attendance tracking features, and reporting needs.
2. **System Design:** Designing the database schema, user interface layouts, and workflow diagrams.
3. **Implementation:** Writing backend logic, creating the database, and developing the frontend interface.
4. **Testing:** Conducting unit testing and integration testing to ensure system reliability.
5. **Deployment:** Preparing the system for use with proper documentation and user guidance.

4. Technologies Used

- **Backend:** Python (Flask framework) – for handling business logic and server-side operations
- **Frontend:** HTML, CSS, JavaScript – for building an interactive user interface
- **Database:** PostgreSQL – for storing employee records, attendance data, and reports
- **Libraries:** Font Awesome (icons), jQuery (dynamic interactions), Bootstrap (responsive design)

5. System Features

The Employee Attendance Register System includes the following features:

1. **Employee Registration:** Add, edit, and view employee details.
2. **Attendance Recording:** Record clock-in and clock-out times automatically for each employee.
3. **Daily Attendance Report:** Generate reports showing employee attendance status.
4. **Dashboard Overview:** Provides administrators with an overview of employee attendance.
5. **User Roles:** Secure access through role-based login for administrators and employees.

6. Development Contributions

During the project, my main contributions included:

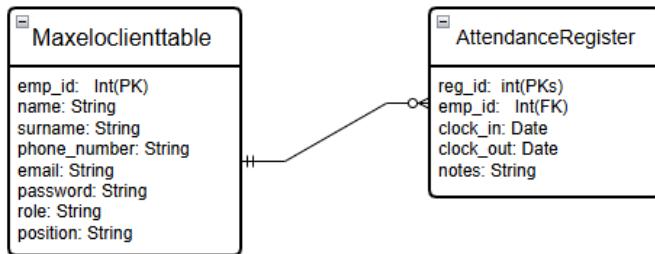
- **Database Design:** Created tables to store employee information, attendance records, and report data efficiently.
- **Backend Development:** Implemented Flask routes and logic for CRUD operations and attendance management.
- **Frontend Development:** Built forms, dashboards, and responsive layouts using HTML, CSS, and JavaScript.
- **Dynamic Interactions:** Integrated jQuery for real-time updates and smooth user experience.
- **Testing & Debugging:** Conducted extensive testing to ensure data accuracy and system stability.

7. Challenges and Solutions

- **Ensuring Accurate Time Recording:** Implemented timezone-aware datetime handling to ensure all clock-in and clock-out times are accurate.
- **Dynamic Updates Without Page Reloads:** Used AJAX and jQuery to allow attendance updates to appear instantly on the dashboard.
- **Role-Based Security:** Managed sessions and access control in Flask to restrict features based on user roles.

8. Diagrams and Database Examples

- ERD (Entity-Relationship Diagram)



- Sample Database Records

Attendanceregister table

	id [PK] bigint	employee_id bigint	clockin timestamp without time zone	clockout timestamp without time zone	notes text
1	1	1	2025-09-13 14:13:39.914505	[null]	Office
2	2	1	2025-09-14 21:40:12.965453	2025-09-14 21:40:23.457085	Remote
3	7	1	2025-09-16 09:16:56.326203	2025-09-16 09:17:02.615033	Office
4	8	1	2025-09-17 09:54:57.759452	2025-09-17 10:09:22.354101	Office
5	10	1	2025-09-18 07:30:14.34584	[null]	Office
6	12	1	2025-09-22 10:54:23.462651	2025-09-22 10:54:59.967445	Office
7	14	29	2025-09-23 06:23:02.981662	Inull	Office

Maxelclienttable table

	id [PK] big	names character varying (100)	surname character varying (100)	phononenumber character varying (20)	password character	email character varying (100)	role character varying (50)	position character varying (50)
1	1	Ndzalamoo	Chauke	0820000000	admin...	admin@maxelo.com	admin	Manager
2	25	Karabo Majape	Mametja	0769180779	Majap...	karishmamametja@gmail.com	intern	Marketing Coordinator
3	26	Rivoningo Penelope	Ngobeni	0724848930	mpfun...	penelopengobeni01@gmail.com	intern	Marketing Coordinator
4	27	Patience Tinyiko	Simangwe	0676270110	Maxel...	nyikopatience5@gmail.com	intern	Marketing Coordinator
5	28	joyful	Mathe	0713217549	RiSiMa...	mathejoyful@gmail.com	intern	Marketing Coordinator
6	29	Joy	Maluleke	0670503232	3232@...	malulekejoy08@gmail.com	intern	Marketing Coordinator

9. Skills Gained

- Full-stack development using Flask, HTML, CSS, and JavaScript
- Database design and management using PostgreSQL
- Implementing secure user authentication and role-based access
- Debugging and problem-solving in software development
- Creating responsive, user-friendly web interfaces

10. Conclusion

The Employee Attendance Register System successfully automates employee attendance tracking and report generation, replacing manual processes. It demonstrates practical skills in **software design, development, and deployment**, providing a foundation for further enhancements, such as mobile integration, notifications, and advanced analytics.

Maxelo ATS - Step-by-Step User Journey Description

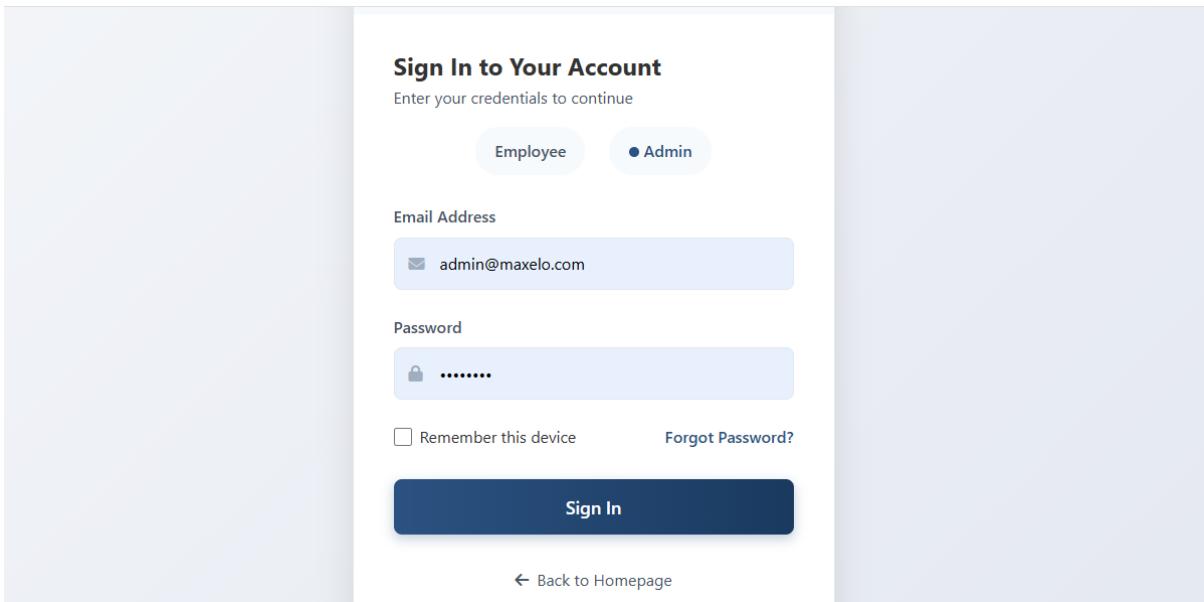
1. Homepage / Landing Page

- Description: This is the public-facing introduction to the Maxelo ATS. It explains the system's purpose to "Streamline Your Workforce Management" for both remote and in-office employees.
- User Action: The user arrives at this page and can see the system's benefits and contact information.
- Next Step: To access the system, the user clicks the "Log in" button.

The screenshot shows the homepage of the Maxelo Attendance Tracking System. At the top, there is a dark blue header with the "MAXELO ATS" logo on the left and a gear icon on the right. Below the header, the main title "MAXELO ATTENDANCE TRACKING SYSTEM" is displayed in large, bold, blue capital letters. Underneath the title, the tagline "Streamline Your Workforce Management" is shown in a smaller, dark blue font. A descriptive paragraph follows, explaining how the system helps businesses manage employee attendance efficiently. At the bottom of this section is a blue "Log in" button with a white play icon and the word "Log in". In the footer, there are two columns: "Contact Information" on the left and "Connect With Us" on the right. The "Contact Information" column includes icons for email, phone, and location, along with the corresponding details: mandlaxavi@gmail.com / info@maxelobs.co.za, +1 (15) 013-0303 / +27 72 097 9413, and Stand No. 1447, Malamulele B-Extention, Malamulele, 0982. The "Connect With Us" column lists social media links for Facebook, Twitter, TikTok, and WhatsApp. At the very bottom of the page, a copyright notice reads "© 2025 Maxelo Attendance Tracking System. All rights reserved."

2. Login Page (Initial)

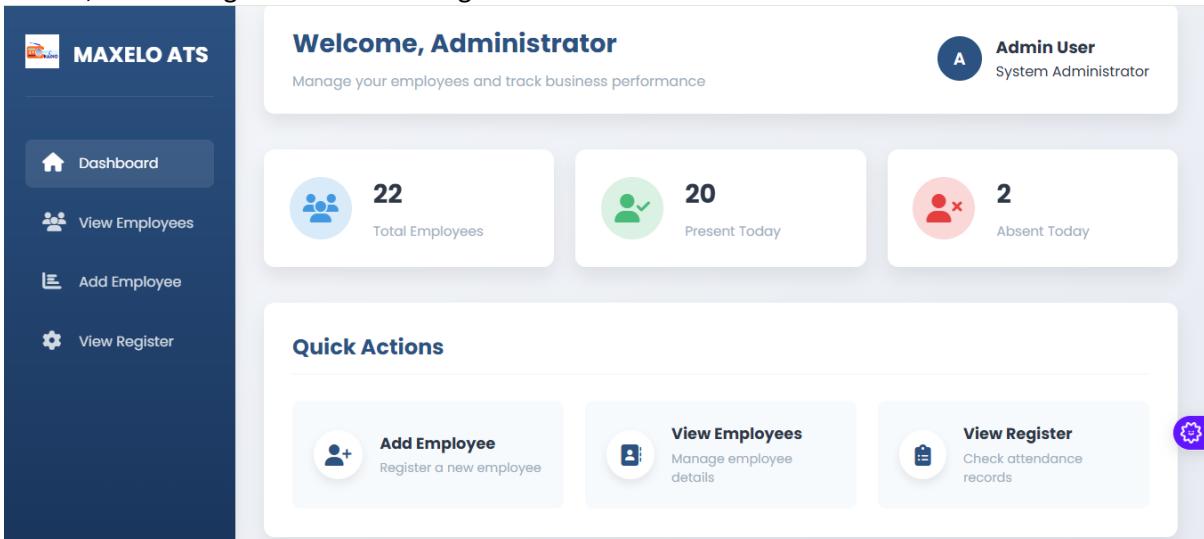
- Description: This is the gateway to the system. The user must select their role (Employee or Admin) and then enter their registered email address and password.
- User Action: The user selects their role, enters their email and password, and can choose to "Remember this device." They then click the "Sign In" button to proceed.
- Next Step: After clicking "Sign In," the system verifies the credentials and redirects the user to their respective dashboard.



The image shows a sign-in page titled "Sign In to Your Account". It instructs the user to "Enter your credentials to continue". There are two radio button options: "Employee" and "Admin", with "Admin" being selected. Below these are fields for "Email Address" containing "admin@maxelo.com" and "Password" showing a masked input. A checkbox for "Remember this device" is unchecked, and a "Forgot Password?" link is available. A large blue "Sign In" button is centered at the bottom. At the very bottom, a link to "Back to Homepage" is visible.

3. Administrator Dashboard

- Description: This is the main control panel for users with an Admin role. It provides a high-level overview with key metrics like Total Employees, Present Today, and Absent Today. It also has a welcome message and a sidebar for navigation.
- User Action: The admin can see a summary of the business status. From here, they can use the sidebar or "Quick Actions" to perform tasks like adding a new employee, viewing the employee list, or checking the attendance register.



The dashboard features a dark blue sidebar on the left with the "MAXELO ATS" logo at the top. Below it are four buttons: "Dashboard" (selected), "View Employees", "Add Employee", and "View Register". The main area has a light gray background. At the top center is a header "Welcome, Administrator" with the subtext "Manage your employees and track business performance". To the right is a profile icon with the letter "A" and the text "Admin User System Administrator". Below this are three performance metrics: "22 Total Employees" (blue circle), "20 Present Today" (green circle), and "2 Absent Today" (red circle). At the bottom is a section titled "Quick Actions" with three items: "Add Employee" (Register a new employee), "View Employees" (Manage employee details), and "View Register" (Check attendance records).

The screenshot shows the 'Admin Profile' section of a web application. At the top, it displays the name 'Ndzalamoo Chauke' and the title 'System Administrator'. Below this, there are three cards: 'ID' (1), 'Email' (admin@maxelo.com), and 'Role' (Administrator). A 'Last Login' card shows the date and time as 2025-09-29 08:50:41. At the bottom left is a 'Logout' button, and at the bottom right is a gear icon.

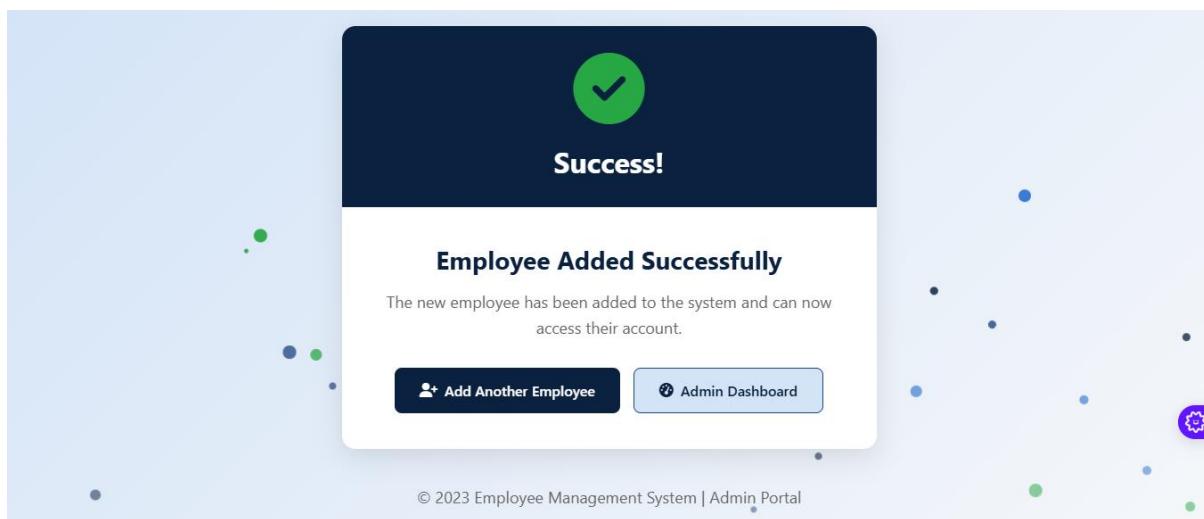
4. Admin Profile & "Add New Employee" Page

- Description: This page has two main sections. The top shows the Admin Profile (name, ID, email, role, last login). The bottom is a form to "Add New Employee."
- User Action: The admin can view their own details. To add a new employee, they fill out the form with details like First Name, Surname, Phone, Email, Password, Role, and Position. They then click the "Add Employee" button to submit.
- Next Step: After clicking "Add Employee," the system processes the information and shows a success message.

The screenshot shows the 'Add New Employee' form. It includes fields for First Name, Surname, Phone Number, Email, Password, Role, and Position. The 'Email' field contains the value admin@maxelo.com. The 'Password' field is masked. The 'Role' field is a dropdown menu set to 'Select a role'. The 'Position' field is an input field containing 'Enter job position'. At the bottom, there are 'Cancel' and 'Add Employee' buttons, with the latter being blue and highlighted.

5. Success Page & Employee List Page

- Description: This page confirms that the "Employee Added Successfully." It also displays the "Employee List" in a table format, showing all employees with their details and options to Edit or Delete each one.
- User Action: The admin sees the success confirmation. They can then choose to "Add Another Employee" or go back to the "Admin Dashboard." They can also directly manage existing employees from the list on this page



ID	First Name	Surname	Email	Phone Number	Role	Position	Actions
1	Ndzalamoo	Chauke	admin@maxelo.com	0820000000	admin	Manager	Edit Delete
25	Karabo Majape	Mametja	karishmamametja@gmail.com	0769180779	intern	Marketing Coordinator	Edit Delete
26	Rivoningo Penelope	Ngobeni	penelopengobeni01@gmail.com	0724848930	intern	Marketing Coordinator	Edit Delete
27	Patience Tinyiko	Simangwe	nyikopatience5@gmail.com	0676270110	intern	Marketing Coordinator	Edit Delete

6. Edit Employee Page & Attendance Register

- Description: This page is split into two main parts. The top section is the "Edit Employee" form, pre-filled with an existing employee's information, allowing the admin to update details. The bottom section is the "Employee Attendance Register," a filterable and exportable log of all employee clock-ins and clock-outs for a specific date.
- User Action: The admin can modify an employee's information and click "Update Employee," or they can use the register to select a date, filter by role, and download attendance records.

The screenshot shows the 'Edit Employee' page of the Employee Management System. At the top, there's a header with the system name and a sub-header 'Admin Portal - Edit Employee'. Below this is a section titled 'Edit Employee' with a profile picture placeholder 'NC' and the employee's name 'Ndzalamoo Chauke' and Employee ID '1'. The main form contains fields for First Name ('Ndzalamoo'), Surname ('Chauke'), Phone Number ('0820000000'), Email ('admin@maxelo.com'), and Role ('Admin'). There's also a Position field ('Manager'). At the bottom are buttons for 'Back to Employee List' and 'Update Employee'.

The screenshot shows the 'Employee Attendance Register' page. At the top, there's a header with the system name and a 'Dashboard' button. Below this are three filter sections: 'Select Date' (set to 2025/09/29), 'Filter by Role' (set to 'All Roles'), and 'Export Options' (with 'Download PDF' and 'Reset Filters' buttons). The main table lists four attendance entries:

NO	First Name	Surname	Role	Clock In	Clock Out	Attendance Type
1	Khaviso	Maluleke	employee	2025-09-29 08:42:00	Not yet	(Office)
2	Mbhoni	Chauke	intern	2025-09-29 08:42:00	Not yet	(Remote)
3	Holani	Baloyi	intern	2025-09-29 08:40:00	Not yet	(Office)
4	Nsuku	Mathebula	intern	2025-09-29 08:39:00	Not yet	(Office)

7. Login Page (After Logout) & Employee Dashboard

- Description: This screen appears after a user has been logged out. It is similar to the initial login page but includes the message "You have been logged out." After a successful login as an Employee, the user sees their personal dashboard.
- User Action (Employee): The employee logs in and is taken to their dashboard. Here, they see their Personal Information, a welcome message, and their "Today's Attendance" status. They can select their Attendance Type (Remote/Office) and click the "Clock In" button to start their day.
- Next Step: After clocking in, the button likely changes to allow a "Clock Out" action.

Sign In to Your Account

Enter your credentials to continue

You have been logged out.

Employee Admin

Email Address

Password

Remember this device [Forgot Password?](#)

Sign In

[Back to Homepage](#)

 **MAXELO ATS**

Welcome, Ndzalamoo Chauke

Date: 2025-09-29

Login successful!

Personal Information

Email	Phone
admin@maxelo.com	0820000000
Role	Position
admin	Manager

Today's Attendance

Clock In Clock Out

Not yet Not yet

Attendance Type

Select Attendance Type

Remote Office

Notes (optional)

Your can give the reason when you are late...

Clock In

View Attendance History

[Logout](#)

The image consists of two vertically stacked screenshots of a mobile application interface for an employee's dashboard.

Screenshot 1 (Top): Clocked in successfully!

- Personal Information:** Shows Email (admin@maxelo.com) and Phone (0820000000).
- Today's Attendance:** Shows a successful Clock In at 2025-09-29 11:06:00 and a pending Clock Out.
- Action Buttons:** Includes a red "Clock Out" button and a "View Attendance History" button.

Screenshot 2 (Bottom): Clocked out successfully!

- Personal Information:** Shows Email (admin@maxelo.com) and Phone (0820000000).
- Today's Attendance:** Shows both a successful Clock In at 2025-09-29 11:06:00 and a successful Clock Out at 2025-09-29 11:07:00.
- Message:** A green box displays a checkmark icon and the message "You have completed your attendance for today."

8. Employee Dashboard (After Clocking In/Out) & Attendance History

- **Description:** This view shows the employee's dashboard after they have performed attendance actions. It confirms their Clock In time and shows "Clock Out" as pending. After clocking out, it confirms the action with "You have completed your attendance for today." The page also includes a section for "Attendance History (Last 30 Days)" which displays a log of their past sessions.
- **User Action:** The employee can see their current status, clock out when finished work, and review their past attendance records.

This screenshot shows the employee dashboard after performing attendance actions, similar to the one above.

- Today's Attendance:** Shows a successful Clock In at 2025-09-29 11:06:00 and a successful Clock Out at 2025-09-29 11:07:00.
- Message:** A green box displays a checkmark icon and the message "You have completed your attendance for today."
- Action Buttons:** Includes a "Hide Attendance History" button.
- Attendance History (Last 30 Days):** A table showing a log of past sessions:

Date	Clock In	Clock Out	Type	Status
2025-09-29	2025-09-29 11:06:00	2025-09-29 11:07:00	(Office)	Completed
2025-09-25	2025-09-25 08:30:00	2025-09-25 16:44:00	Remote	Completed
2025-09-22	2025-09-22 10:00:00	2025-09-22 17:00:00	Office	Completed

Month 3: From 1 October 2025 to 31 October 2025

Student Name: Baloyi Holani

Student Number: 223268846

Project Title: Malamulele Business Connection Web System

Summary of Tasks	Duration		Evaluation		
	Weeks	Days	Poor	Satisfactory	Good
Started new project and continued understanding of full system workflow for Malamulele Business Connection		2			✓
Create system requirements based on supervisor feedback		1			✓
Designed improved database structure for vendors, services, customers, and bookings		2			✓
Meeting with supervisor and Updated system requirements based on new instruction that customers will no longer log in and only admin/business owners will register businesses and add properties.		2			✓
Redesigned and updated the ERD to remove customer login tables and link all business properties directly to the admin/business owner.		3		✓	
Improved database structure to support public display of businesses and properties on the home page.		2		✓	
Practiced SQL joins and constraints to match new relationships between admin, business, properties, and transport services.		2			✓
Developed new Flask routes for admin registration, business/property creation, and public viewing of business listings.		4		✓	
Created updated HTML/CSS templates for the home page to show businesses and transport details where applicable.		2			✓
Continued deployment preparation and testing of system changes after ERD updates.		3		✓	

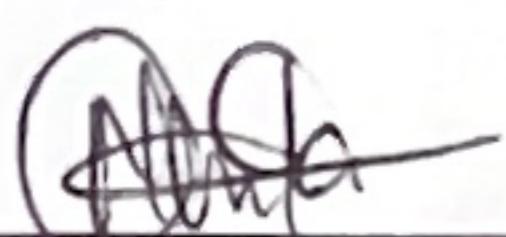
Subtotal: week Day Total to date: Weeks Days

Number of days

Reason: absent
from work:

MAXELO BUSINESS SOLUTIONS
STAND NO 1457 B-EXTENSION
MALAMULELE, 0982
TELL: 015 001 1972
info@maxelobs.co.za
www.maxelobs.co.za

Ndzalama Chaupe
Mentor/Supervisor Name



Mentor/Supervisor Signature

03/11/2025

Date

Month 4: From 3 November 2025 to 28 November 2025

Student Name: Baloyi Holani

Student Number: 223268846

Project Title: Malamulele Business Connection Web System

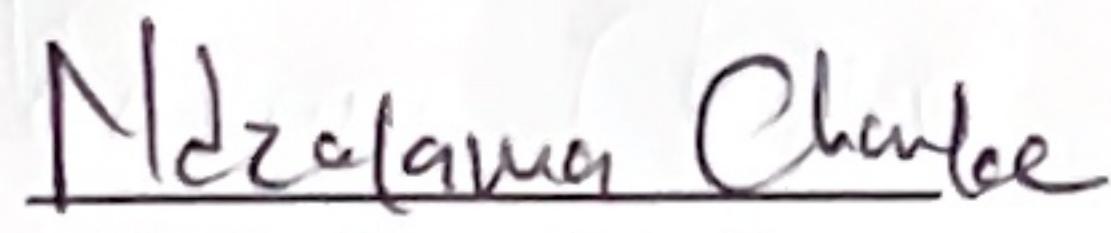
Summary of Tasks	Duration		Evaluation		
	Weeks	Days	Poor	Satisfactory	Good
Continued system development after ERD changes to ensure only admin/business owners register and manage businesses and properties.		3			✓
Debugged routes and templates to ensure businesses and properties display correctly on the home page without customer login		2		✓	
Added functionality to display businesses that offers, including offer information and details.		2			✓
Improved and updated database connectivity to support the new ERD structure.		3			✓
Prepared the system for hosting on Railway with updated environment variables and database connection settings.		2			✓
Installed and configured required project dependencies after modifying the database structure		2		✓	
Connected the updated Flask system to Railway PostgreSQL for testing.		1		✓	
Add and improved frontend templates for public viewing of business information, properties, and transport.		2		✓	
Updated GitHub repository with all new ERD changes, routes, templates, and documentation.		2			✓
Attended meetings with the supervisor for guidance on implementing the new system requirements.		1		✓	

Subtotal: week Day **Total to date:** Weeks Days

Number of days

Reason: absent
from work:

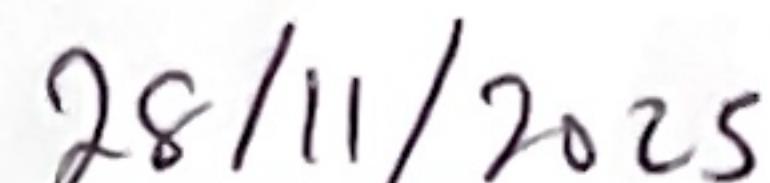
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Mentor/Supervisor Name



Mentor/Supervisor Signature



Date