UTM
UNIVERSITI TEKNOLOGI MALAYSIA

SECJ 2203 SOFTWARE ENGINEERING

SELF REFLECTION VIDEO: LEADERSHIP

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Section :02
Team ID & name: Team 5 (Tech TiTan)

Innovating Solutions

INTRODUCTION: WHO AM I?

Name: Abdurrafiq Bin Zakaria
Matric Number: A24CS0031
Role: Project Manager
Team: Tech TiTan
Course: Software Engineering
Section: 02
Lecturer: Muhammad Alif Ridzuan

PROJECT OVERVIEW

QMS-Flow - Integrated Quality Management System for Avialite Sdn. Bhd.

Client:

AVIALITE SDN. BHD

21 Jalan PBS 14/3, Taman Perindustrian Bukit Serdang, 43300, Seri Kembangan, Selangor, Malaysia.

www.avialite.com

Context: The company adheres to strictly regulated manufacturing standards but relied on manual, fragmented processes.

Compliance Risk: Manual tracking of CAPA (Corrective Action) and Training records led to missing audit evidence.

SOP Control: High risk of engineers using outdated Standard Operating Procedures (SOPs) due to poor version control.

System Type: A centralized, web-based Integrated Quality Management System.

Core Capabilities:

1. **Closed-Loop Compliance:** Unifies Document Control, Audit Management, and CAPA into a single workflow.
2. **Real-Time Traceability:** Links every "Non-Conformance“ report directly to Equipment, Training, and Risk records.

Key Stakeholders:

1. Manager
2. Engineers
3. Auditors
4. Admins

Target Users:

1. Top Management
2. QA Engineers
3. Internal Auditors

TECHNICAL CONTRIBUTION: ARCHITECTURE & IMPLEMENTATION

Agile Architecture (The "Brain")

Focus: How I engineered the project roadmap

• **Strategic Launch Phase:** Designed a **6-Sprint Roadmap**, prioritizing foundational modules (Document Control) to support dependent features (Training & Audits).

• **Constraint Engineering:** Defined **ISO 9001 Design Constraints** (Page 75), enforcing **Role-Based Access Control (RBAC)** and **AES-256 Encryption** for data security.

Full-Stack Development (The "Hands")

Focus: The specific complex modules I coded.

• **Sprint 3 (Training Module):** Developed logic to track employee competency expiry dates (Critical for ISO Compliance).

• **Sprint 6 (KPI Dashboard):** Built the **Real-Time Executive Dashboard**, integrating data from Audit and CAPA modules into live charts.

EVIDENCES: STRATEGIC PLANNER (PRODUCT)

Sprint	User Story	Team Member Assigned
Sprint #1 UC01 (Register Document), UC02 (Approve Document) & UC09 (Manage Change) [Document Control Change Management Module]	As an engineer, I want to upload documents with version control so that SOPs are traceable.	Rasyid, Afiq Shahir
	As a manager, I want to approve and reject documents so that only valid SOPs are published.	
	As a manager, I want to manage change requests so that updates are controlled and documented.	
Sprint #2 UC03 (Schedule Audit), UC04 (Record Audit Findings) [Audit Management Module]	As an auditor, I want to schedule internal and external audits so that compliance checks are planned and resources are allocated.	Afiq Irfan, Hazim
	As an auditor, I want to record audit findings and non-conformances so that CAPAs can be officially initiated.	
Sprint #3 UC06 (Manage Competency & Training) and UC07 (Manage Equipment & Inventory) [Training & Equipment Management Module]	As a manager, I want to assign training to employees so that competency gaps are addressed.	Rafiq, Hazim
	As an engineer, I want to manage equipment calibration schedules so that compliance is maintained.	
	As an admin, I want to manage training records so that employee competencies are documented and updated.	
Sprint #4 UC10 (Provide System Support) and UC11 (Maintain System Logs) [Admin & System Support Module]	As an admin, I want to monitor CAPA progress so that corrective actions are completed and traceable.	Rasyid, Afiq Shahir
	As an admin, I want to maintain system logs so that activities are traceable and audit-ready.	
Sprint #5 UC12 (Manage Risks) & UC13 (Manage Incident & Feedback) [Risk & Incident Management Module]	As an engineer, I want to log incidents so that corrective actions are traceable.	Afiq Irfan, Afiq Shahir
	As a manager, I want to assess risks so that mitigation plans can be implemented.	
Sprint #6 UC05 (Initiate CAPA) & UC08 (Monitor KPIs) [Initiate CAPA & KPI Monitoring Module]	As an Engineer, I want to initiate CAPA linked to complaints so that corrective actions are properly tracked.	Rasyid, Rafiq
	As a manager, I want to generate KPI reports so that I can evaluate departmental performance.	

EVIDENCES: TECHNICAL LEAD (PRODUCT)

2.6 Design Constraints

This section outlines the limitations and standards that strictly govern the design and development of QMS-Flow.

2.6.1 Regulatory and Compliance Constraints

- ISO Compliance:
  - The system workflow must strictly adhere to ISO 9001:2015 clauses regarding "Documented Information" (Clause 7.5) and "Performance Evaluation" (Clause 9).
- Auditability:
  - The system architecture must prevent the deletion of any finalized audit records or approved CAPA reports to satisfy external regulatory audits.

2.6.2 Hardware and Software Constraints

- Browser Compatibility:
  - The web interface must be fully functional on the latest stable versions of Google Chrome and Microsoft Edge, as these are the standard browsers used at Avialite Sdn. Bhd.
- Legacy Integration:
  - The system must be able to export reports in .CSV and .PDF formats to ensure compatibility with legacy reporting tools used by upper management.
- Hosting:
  - The system must be deployable on the existing Avialite on-premise Windows Server environment (or specified Cloud Provider) with limited internet bandwidth for external access.

2.6.3 User Interface Constraints

- Mobile Accessibility:
  - The "Approve Document" and "Record Audit Findings" modules must be responsive and usable on tablet devices (iPad/Android) to facilitate on-site factory audits.
- Language:
  - The user interface must be provided in English, as it is the operational language of Avialite Sdn. Bhd

LEADERSHIP QUALITIES

LEAD THE FORMATING

I give a full concentration to my team members of using the right format before submitting to e-learning to ensure the document looks professional and obey the document formatting standard.

GUIDE WITH VISUAL

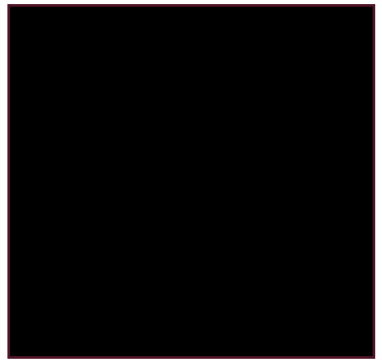
I also guide my team members using visual presentative to make them easy to understand their task and how to use the template that I made.

LEAD THE PROGRESS

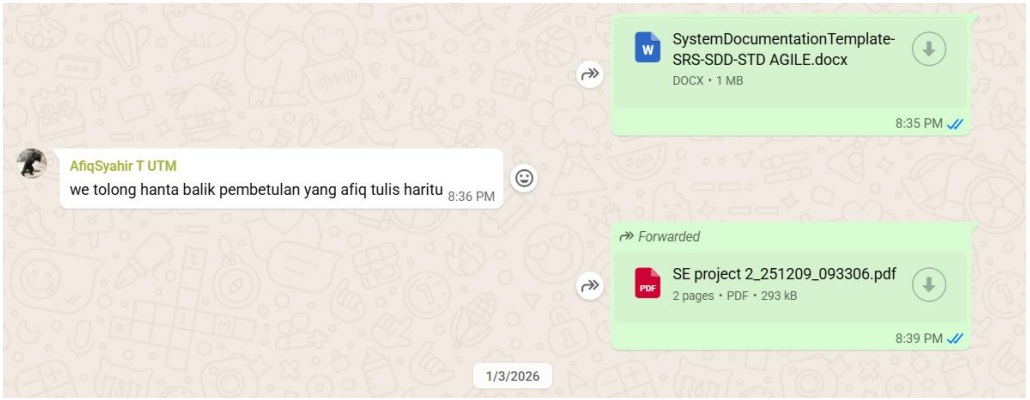
I have been reminded all my team members to do their tasks.

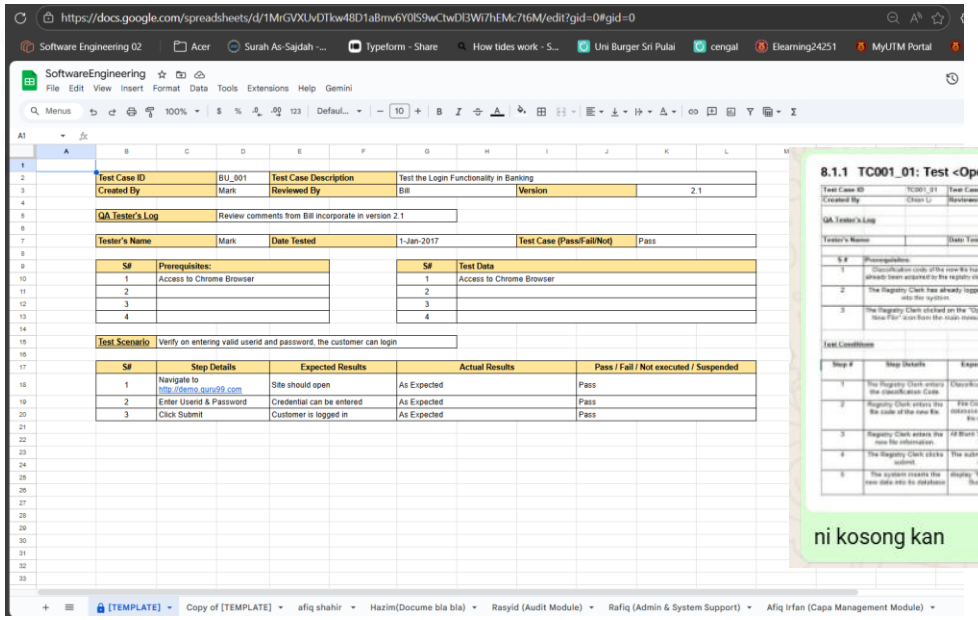
TEMPLATING

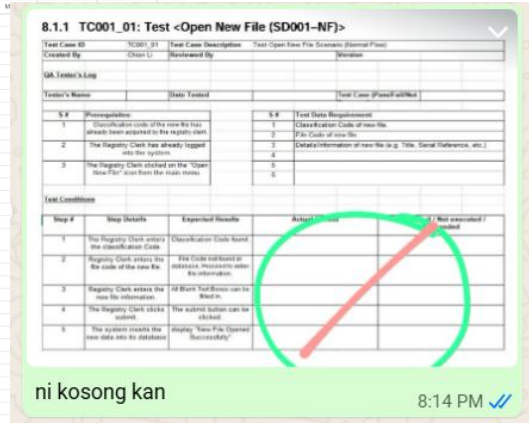
I also lead the members by doing the template first before the task begin. This is for consistence formatting presentative.

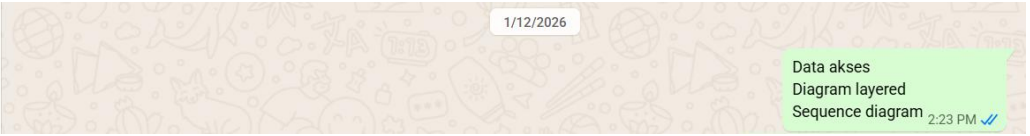


EVIDENCES: MAKING TEMPLATE & GUIDES









REFLECTION VIDEO AND CONCLUSION

To lead the development of QMS-Flow effectively, I honed two essential skills: **Strategic Agile Planning** and **Compliance Engineering**. As the Project Manager, I architected the **6-Sprint Launch Phase**, where I critically analyzed dependencies to sequence foundational modules, like Document Control in Sprint 1, before advanced features like the KPI Dashboard in Sprint 6, preventing development bottlenecks. Simultaneously, I applied requirements engineering to define strict **Design Constraints**, translating the client's ISO 9001:2015 standards into technical realities such as Role-Based Access Control and AES-256 encryption, ensuring the final system was both secure and audit-ready.

THANK YOU

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