Industrial Internship Report on

” TaskManagerApp”

Prepared by

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Executive Summary
This report provides details of the Industrial Internship provided by upskill Campus and The IoT Academy in collaboration with Industrial Partner UniConverge Technologies Pvt Ltd (UCT). This internship focused on a project/problem statement provided by UCT and was completed within a 6-week timeframe. My project involved developing **TaskManagerApp**, a full-stack web application designed to streamline task management and tracking for organizations. This application was built with a robust backend to handle data processing and a dynamic frontend to enhance user interaction. Throughout this internship, I gained valuable exposure to real-world industrial problems and developed practical solutions, making it an enriching experience.

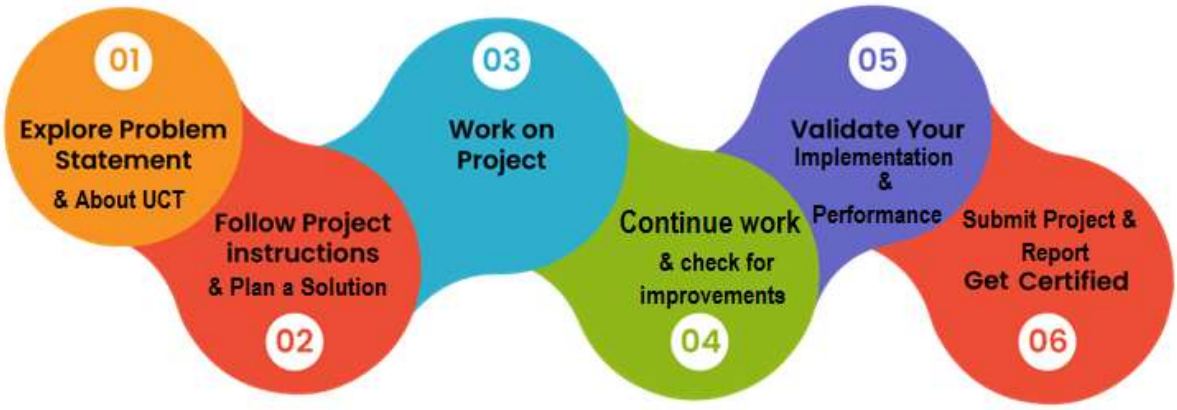
TABLE OF CONTENTS

1. Preface

This report summarizes the work done over six weeks during the industrial internship. The primary focus was on the development of the TaskManagerApp, a tool designed to manage and track tasks efficiently in a corporate environment.

The internship offered an invaluable opportunity to understand industrial problems, design effective solutions, and implement them using modern technologies. The project was a practical experience that bridged the gap between academic learning and real-world applications. I would like to extend my gratitude to UniConverge Technologies Pvt Ltd (UCT), upskill Campus, and The IoT Academy for providing this opportunity. I would also like to thank all those who supported me during this internship.

To my juniors and peers, I encourage you to actively seek such internships, as they provide practical exposure and prepare you for future challenges in your career.



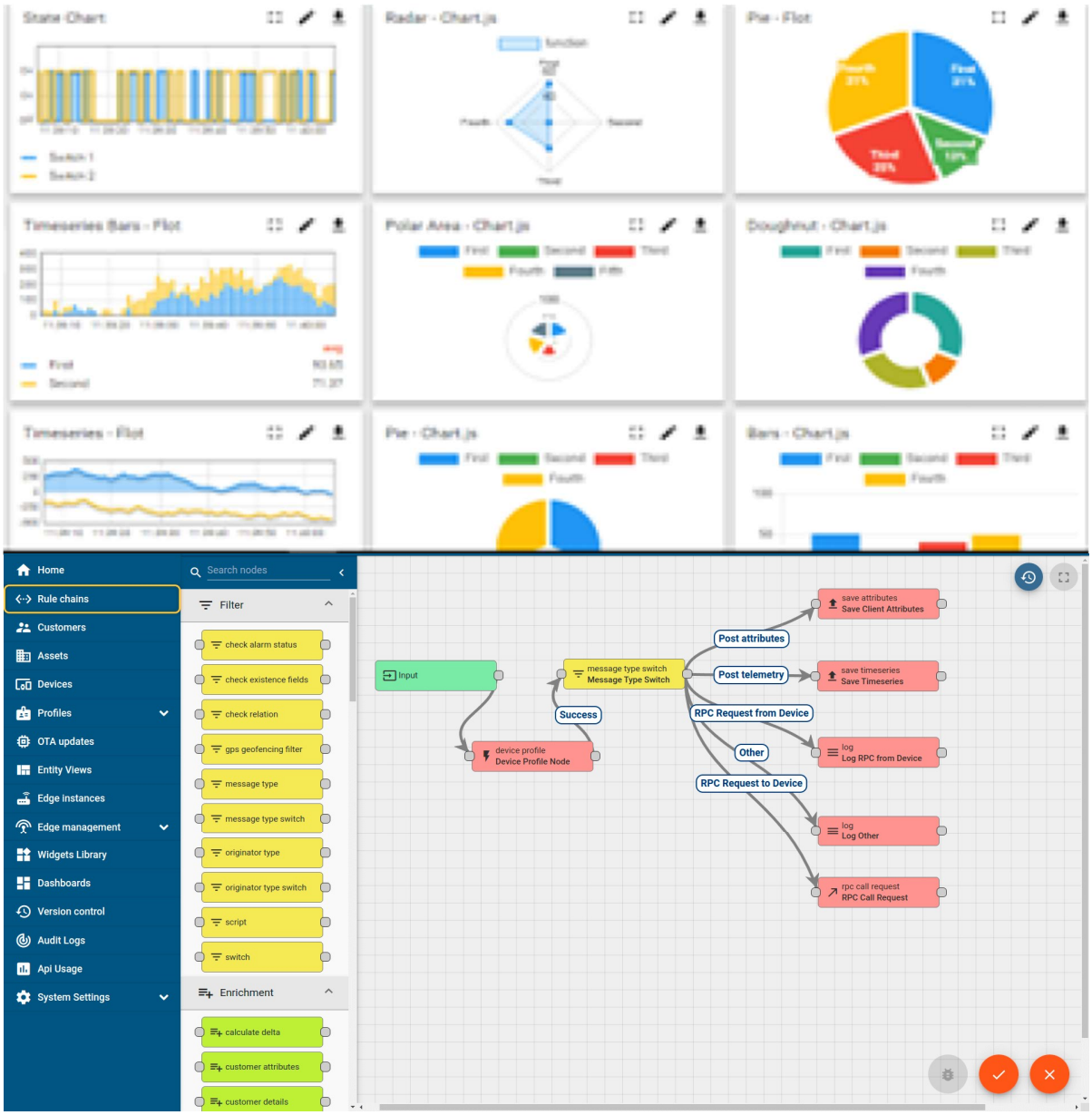
2. Introduction

2.1 About UniConverge Technologies Pvt Ltd

UniConverge Technologies Pvt Ltd (UCT), established in 2013, focuses on Digital Transformation and provides industrial solutions with an emphasis on sustainability and Return on Investment (RoI). UCT leverages cutting-edge technologies such as Internet of Things (IoT), Cyber Security, Cloud Computing, Machine Learning, and various full-stack development tools to develop its products and solutions.

i. UCT IoT Platform (UCT Insight)

UCT Insight is an IoT platform designed for quick deployment of IoT applications while providing valuable insights for business processes. It supports various IoT protocols and allows for cloud and on-premises deployments, featuring customizable dashboards, analytics, reporting, and third-party integrations.



ii. Smart Factory Platform (FACTORY WATCH)

This platform provides scalable solutions for production and asset monitoring, offering predictive maintenance and digital twin capabilities. It helps users

harness the full potential of machine-generated data to improve key performance indicators (KPIs).

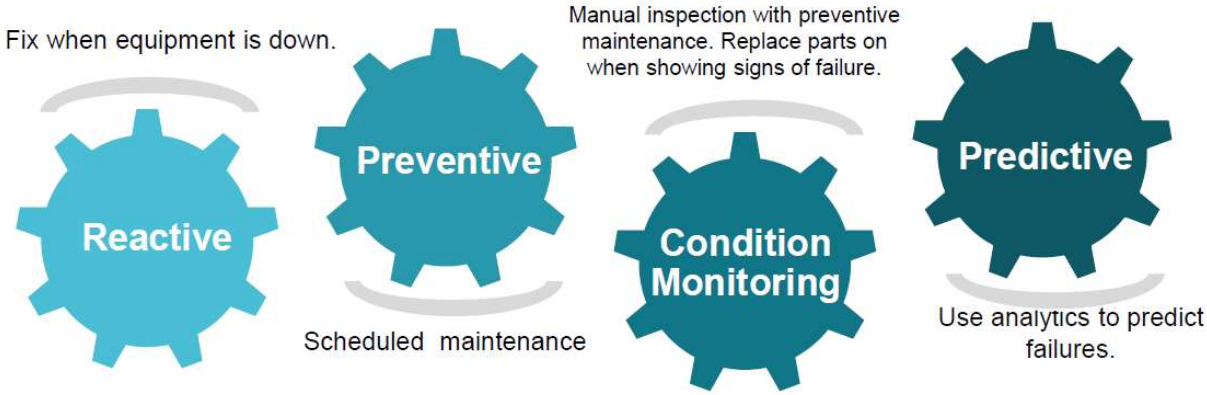
Machine	Operator	Work Order ID	Job ID	Job Performance	Job Progress		Output		Rejection	Time (mins)				Job Status	End Customer
					Start Time	End Time	Planned	Actual		Setup	Pred	Downtime	Idle		
CNC_S7_81	Operator 1	WO0405200001	4168	58%	10:30 AM		55	41	0	80	215	0	45	In Progress	i
CNC_S7_81	Operator 1	WO0405200001	4168	58%	10:30 AM		55	41	0	80	215	0	45	In Progress	i

iii. LoRaWAN *based Solution*

UCT is a pioneer in adopting LoRAWAN technology, providing solutions in areas like Agritech, Smart Cities, and Industrial Monitoring.

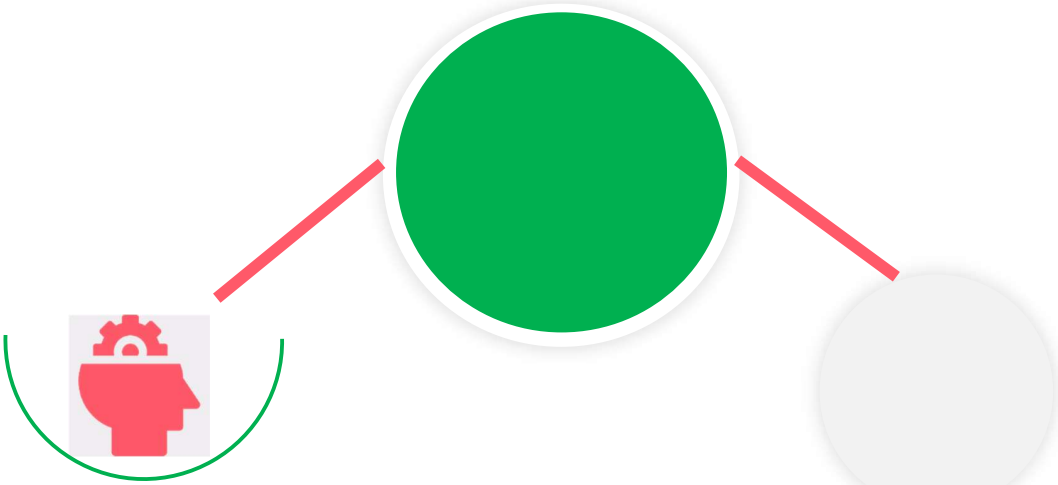
iv. Predictive Maintenance

UCT's predictive maintenance solutions involve Industrial IoT and Machine Learning to monitor machine health and estimate the remaining useful life of production equipment.



2.2 About upskill Campus (USC)

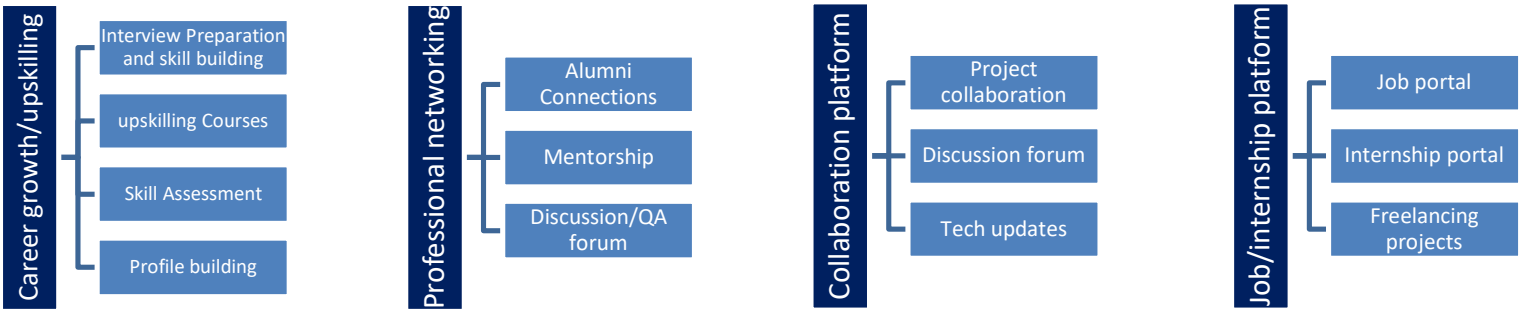
upskill Campus, along with The IoT Academy, facilitated a smooth internship process in collaboration with UniConverge Technologies. It is a career development platform that offers personalized executive coaching, making it more affordable, scalable, and measurable..



Seeing need of upskilling in self paced manner along-with additional support services e.g. Internship, projects, interaction with Industry experts, Career growth Services

upSkill Campus aiming to upskill 1 million learners in next 5 year

https://www.upskillcampus.com/



2.3 The IoT Academy

The IoT Academy, an EdTech division of UCT, offers executive certification programs in collaboration with EICT Academy, IITK, IITR, and IITG in various domains.

2.4 Objectives of this Internship program

The objectives of this internship program were to:

- Gain practical experience working in the industry.
- Solve real-world problems.
- Improve job prospects.
- Enhance understanding of the field and its applications.
- Foster personal growth, such as better communication and problem-solving skills.

2.5 Reference

a. Mozilla Developer Network (MDN). (n.d.). JavaScript Guide. Retrieved from https://developer.mozilla.org/en-US/docs/Web/JavaScript/Guide

b. Martin, R. C. (2008). Clean Code: A Handbook of Agile Software Craftsmanship. Prentice Hall.

This book covers best practices in coding, which is highly relevant to the development of a maintainable and efficient application like TaskManagerApp.

c. Sommerville, I. (2016). Software Engineering (10th ed.). Pearson Education.

This reference is useful for understanding software engineering principles, which are foundational for projects like TaskManagerApp.

2.6 Glossary

Terms	Acronym
Internet of Things	IoT
Predictive Maintenance	PM
User Interface	UI

3. *Problem Statement*

The assigned problem statement involved developing an efficient task management solution that would allow organizations to track, manage, and optimize their workflow. The solution needed to include features such as real-time notifications, task prioritization, deadline tracking, and a user-friendly interface.

4. Existing and Proposed solution

4.1 Existing Solutions

Several task management solutions exist in the market, but many are either too complex or too simplistic for specific business needs. These solutions often lack customization options, have limited scalability, or provide suboptimal performance in a corporate environment.

4.2 Proposed Solution

The TaskManagerApp addresses these limitations by offering a scalable, customizable task management system with features tailored to corporate requirements. The application was designed to be intuitive for users while providing powerful backend processing to handle complex data and workflows.

4.3 Code submission (Github link) –

https://github.com/MOUSANINANDI /TaskManagerApp.git

4.4 Report submission (Github link) :

https://github.com/MOUSANINANDI/TaskManagerApp/blob/main/Mousani_Nandi_TaskManagerApp_Project_Report.pdf

5. Proposed Design/ Model

Given more details about design flow of your solution. This is applicable for all domains. DS/ML Students can cover it after they have their algorithm

implementation. There is always a start, intermediate stages and then final outcome.

5.1 High Level Diagram (if applicable)

The TaskManagerApp was designed with a modular architecture, allowing for easy scalability and integration with other systems.

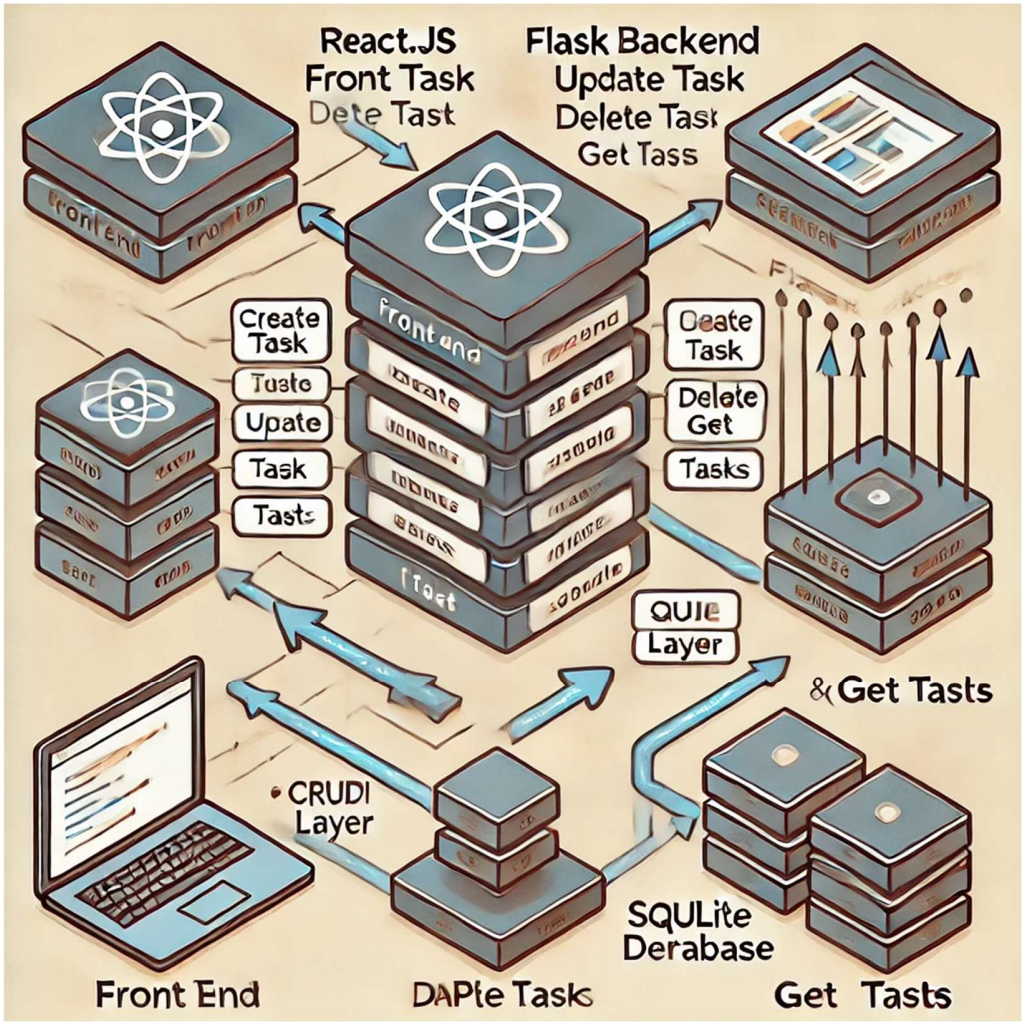


Figure 1: HIGH LEVEL DIAGRAM OF THE SYSTEM

5.2 Low Level Diagram (if applicable)

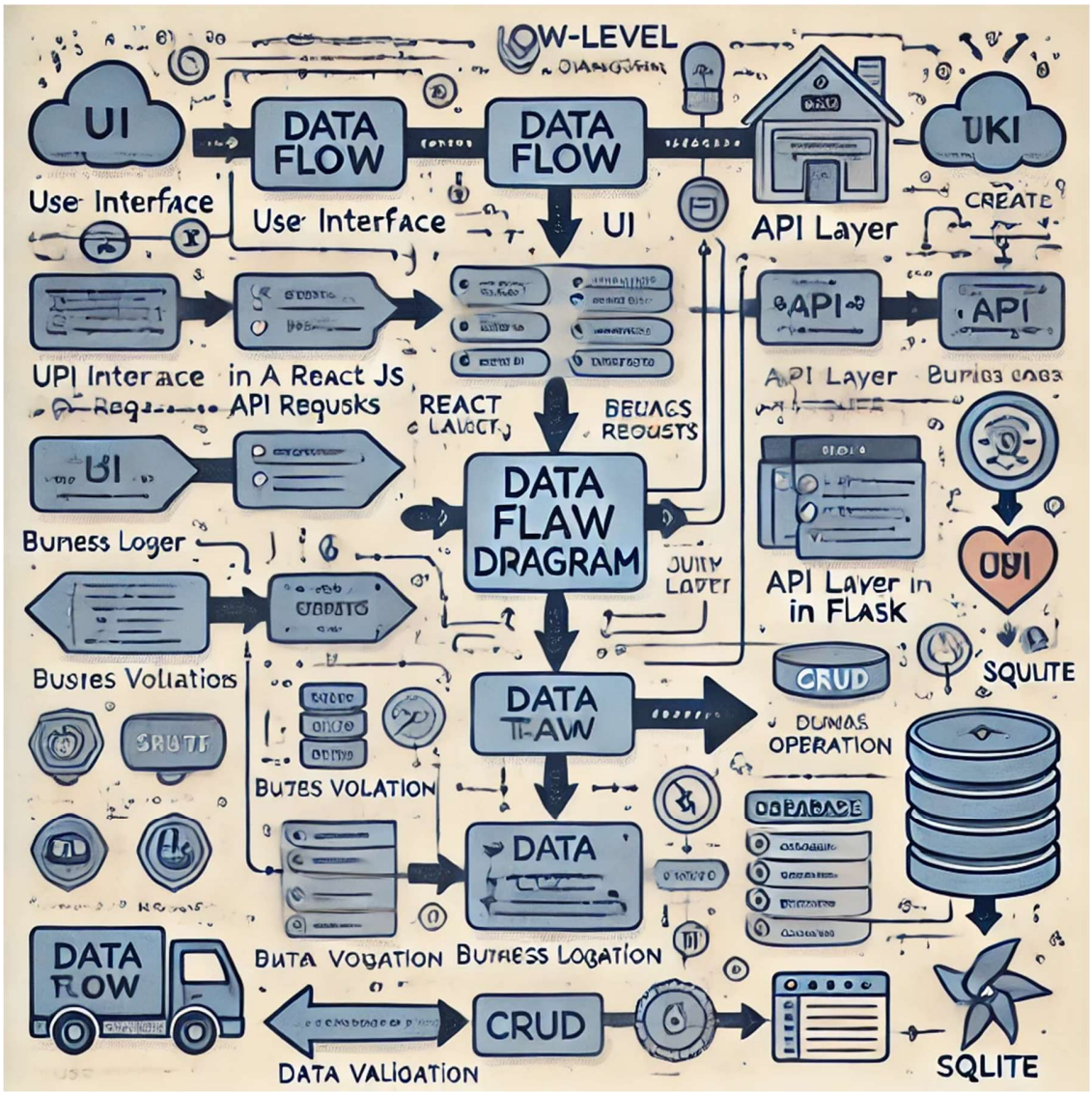


Figure 2: LOW LEVEL DIAGRAM OF THE SYSTEM

5.3 Interfaces (if applicable)

Interfaces were designed using RESTful APIs, enabling communication between the frontend, backend, and third-party integrations. The system was built to handle various protocols and data formats to ensure compatibility and flexibility.

6. Performance Test

6.1 Test Plan/Test Cases

The testing phase included unit tests, integration tests, and system tests to ensure the reliability and efficiency of the TaskManagerApp. Test cases were designed to cover all critical functionalities, including task creation, notification triggers, and data synchronization.

6.2 Test Procedure

The test procedure involved setting up a controlled environment, executing test cases, and recording the results. Automated testing tools were used to validate the functionality and performance under different scenarios.

6.3 Performance Outcome

The TaskManagerApp performed well under various load conditions, demonstrating low latency in data processing and quick response times. The application's scalability was also confirmed, ensuring it could handle increased user traffic without performance degradation.

7. My learnings

This internship provided a deep understanding of full-stack development, from frontend and backend development to system integration and performance testing. The experience improved my coding skills, problem-solving abilities, and understanding of project management. These skills will significantly contribute to my future career in software development.

8. Future work scope

While the TaskManagerApp is fully functional, future work could include:

- Implementing AI-driven task prioritization to enhance productivity.
- Expanding integration capabilities with other enterprise tools.
- Developing mobile versions of the application for better accessibility.