Industrial Internship Report on

Expense Tracker

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 was focused on a project/problem statement provided by UCT. We had to finish the project including the report in 6 weeks' time. My project was Expense tracker This internship gave me a very good opportunity to get exposure to Industrial problems and design/implement solution for that. It was an overall great experience to have this internship.

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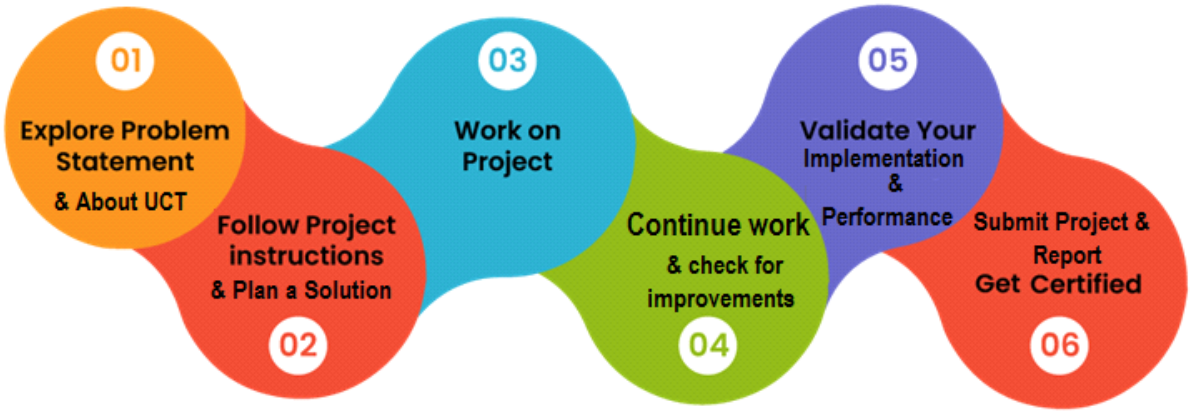
- ## Preface

The internship spanned six weeks and provided valuable exposure to industrial problems and practical solutions. The experience has been crucial for my career development and has improved my problem-solving and communication skills. I would like to express my gratitude to upskill Campus, The IoT

Academy, and UniConverge Technologies Pvt Ltd for offering this opportunity.



- ## Introduction

UniConverge Technologies Pvt Ltd (UCT) is a company established in 2013, specializing in Digital Transformation and providing industrial solutions with a focus on sustainability and ROI. UCT leverages cutting-edge technologies such as IoT, Cyber Security, Cloud computing (AWS, Azure), Machine Learning, and more to develop its products and solutions.

- ### About UniConverge Technologies Pvt Ltd

A company established in 2013 and working in Digital Transformation domain and providing Industrial solutions with prime focus on sustainability and RoI.

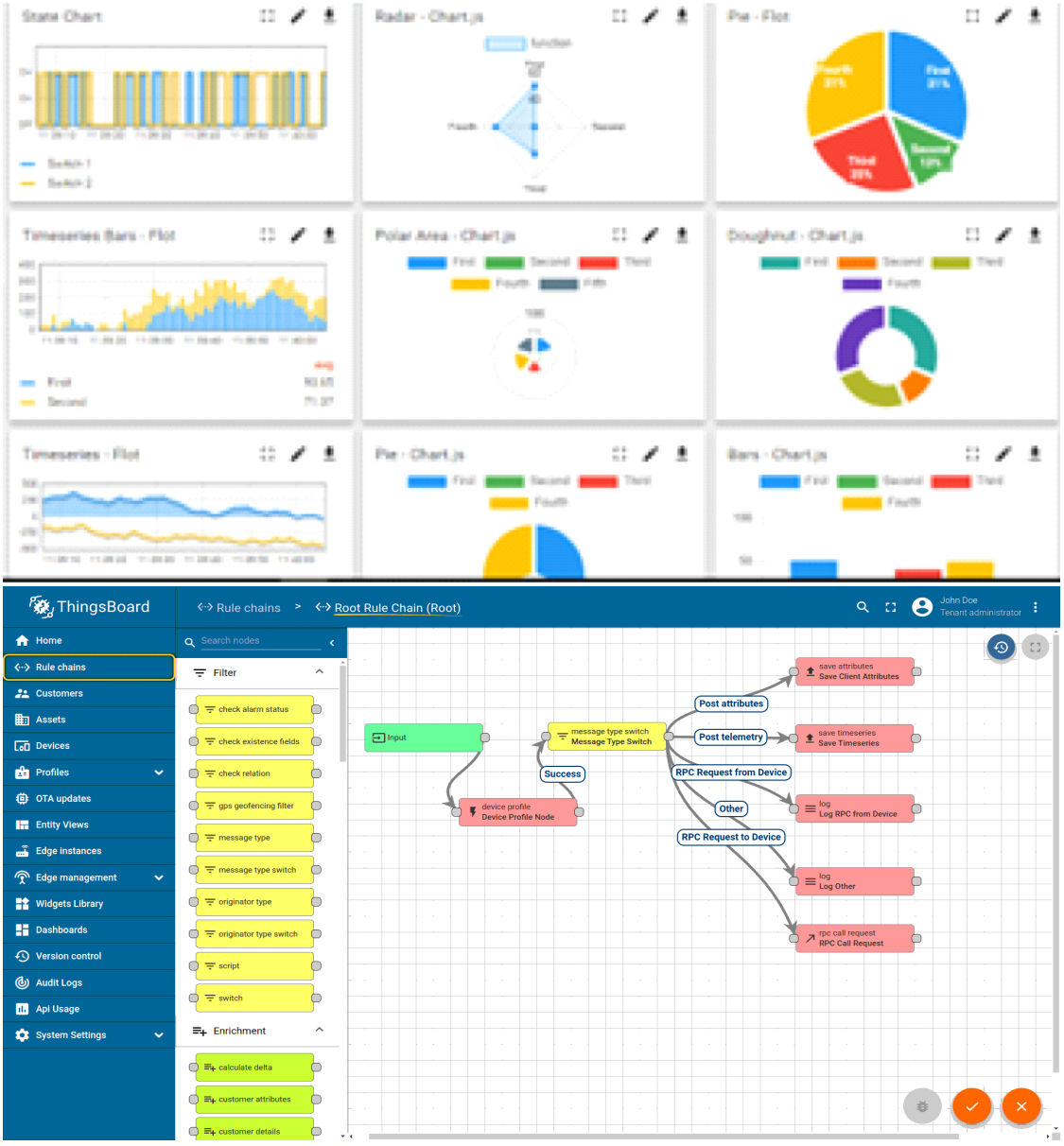
For developing its products and solutions it is leveraging various **Cutting Edge Technologies e.g. Internet of Things (IoT), Cyber Security, Cloud computing (AWS, Azure), Machine Learning, Communication Technologies (4G/5G/LoRaWAN), Java Full Stack, Python, Front end** etc.

- **UCT IoT Platform (** uct Insight **)**

UCT Insight is an IOT platform designed for quick deployment of IOT applications on the same time providing valuable “insight” for your process/business. It has been built in Java for backend and ReactJS for Front end. It has support for MySQL and various NoSql Databases.

- It enables device connectivity via industry standard IoT protocols - MQTT, CoAP, HTTP, Modbus TCP, OPC UA
- It supports both cloud and on-premises deployments.

It has features to
• Build Your own dashboard
• Analytics and Reporting
• Alert and Notification
• Integration with third party application(Power BI, SAP, ERP)
• Rule Engine



- **Smart Factory Platform (** FACTORY WATCH **)**

Factory watch is a platform for smart factory needs.

It provides Users/ Factory

- with a scalable solution for their Production and asset monitoring

- OEE and predictive maintenance solution scaling up to digital twin for your assets.
- to unleased the true potential of the data that their machines are generating and helps to identify the KPIs and also improve them.
- A modular architecture that allows users to choose the service that they what to start and then can scale to more complex solutions as per their demands.

Its unique SaaS model helps users to save time, cost and money.

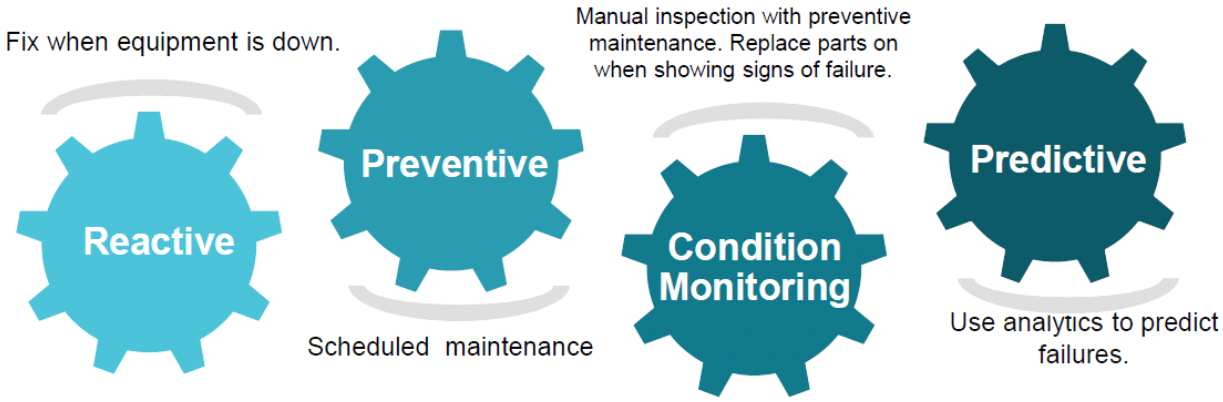
Machine	Operator	Work Order ID	Job ID	Job Performance	Job Progress		Output		Rejection	Time (mins)				Job Status	End Customer
					Start Time	End Time	Planned	Actual		Setup	Pred	Downtime	Idle		
CNC_S7_81	Operator 1	WO0405200001	4168	58%	10:30 AM		55	41	0	80	215	0	45	In Progress	i
CNC_S7_81	Operator 1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

- LoRaWAN based Solution

UCT is one of the early adopters of LoRAWAN teschnology and providing solution in Agritech, Smart cities, Industrial Monitoring, Smart Street Light, Smart Water/ Gas/ Electricity metering solutions etc.

- Predictive Maintenance

UCT is providing Industrial Machine health monitoring and Predictive maintenance solution leveraging Embedded system, Industrial IoT and Machine Learning Technologies by finding Remaining useful life time of various Machines used in production process.

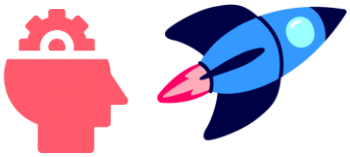


- **About upskill Campus (USC)**

upskill Campus along with The IoT Academy and in association with Uniconverge technologies has facilitated the smooth execution of the complete internship process.

USC is a career development platform that delivers **personalized executive coaching** in a more affordable, scalable and measurable way.

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



https://www.upskillcampus.com/

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

- **The IoT Academy**

The IoT Academy is the EdTech Division of UCT and runs executive certification programs in collaboration with esteemed institutes like EICT Academy, IITK, IITR, and IITG. These programs cover multiple domains, providing learners with valuable insights and skills

- **Objectives of this Internship program**

The primary objectives of this internship program were to:

☛ Gain practical experience of working in an industrial setting

☛ Solve real-world problems through project assignments.

☛ Improve job prospects and understanding of the industry.

☛ Foster personal growth, including better communication and problem-solving abilities.

• Problem Statement

The assigned problem statement for my internship was to develop an Expense Tracker application. The goal was to create a user-friendly platform for users to record their expenses, view expense summaries, and manage expense categories.

• Existing and Proposed solution

Prior to the Expense Tracker, several existing solutions were available. However, they often lacked user-friendliness and flexibility in managing expense categories. The proposed solution was to develop a responsive and intuitive Expense Tracker application that allows users to easily record and categorize their expenses.

- ### Code submission (Github link)

https://github.com/Gaurav22042003/Expense-Tracker.git

- ### Report submission (Github link)

https://github.com/Gaurav22042003/Expense-Tracker.git

• Performance Test

Constraints considered during the design included memory usage, processing speed, and power consumption. The test plan and cases were designed to evaluate the application's performance in various scenarios.

- ### Test Plan/ Test Cases

Test case 1: Record an expense and check if it reflects in the summary.

Test case 2: Add a new category and validate its inclusion in the category list.

Test case 3: Record multiple expenses and verify their correct categorization.

Test case 4: Remove an expense and ensure it is no longer displayed in the summary.

- ### Test Procedure

The application was tested using a range of sample data to simulate different user scenarios.

- ### Performance Outcome

The Expense Tracker application performed well under the identified constraints, with efficient memory utilization and minimal power consumption.The application was tested using a range of sample data to simulate different user scenarios.

- ## My learnings

The internship provided me with invaluable experiences in tackling real-world challenges and implementing practical solutions. I honed my technical skills, problem-solving abilities, and communication with team members and stakeholders.

- ## Future work scope

While the internship timeframe limited the scope of the Expense Tracker project, future enhancements could include implementing advanced analytics for expense tracking, incorporating data visualization, and expanding the platform to support multiple user accounts.