Industrial Internship Report on

” Banking Information System”

Prepared by

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Executive Summary:

This report presents a comprehensive overview of the Industrial Internship conducted by upskill Campus and The IoT Academy in collaboration with UniConverge Technologies Pvt Ltd (UCT). The internship aimed to provide practical experience in developing a prototype for a banking system. Over a duration of six weeks, participants engaged in various aspects of software development, including user registration, account management, transaction processing, and security implementation.

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1. Preface:

The Preface provides an overview of the internship experience, including the duration, objectives, and significance. It highlights the importance of gaining practical experience in software development and the role of the internship in career development.

2. Introduction:

This section introduces the key stakeholders involved in the internship, including UniConverge Technologies Pvt Ltd, upskill Campus, and The IoT Academy. It outlines the objectives of the internship program and provides references for further reading. Additionally, a glossary of terms is included to clarify any technical terminology used throughout the report.

2.1 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.

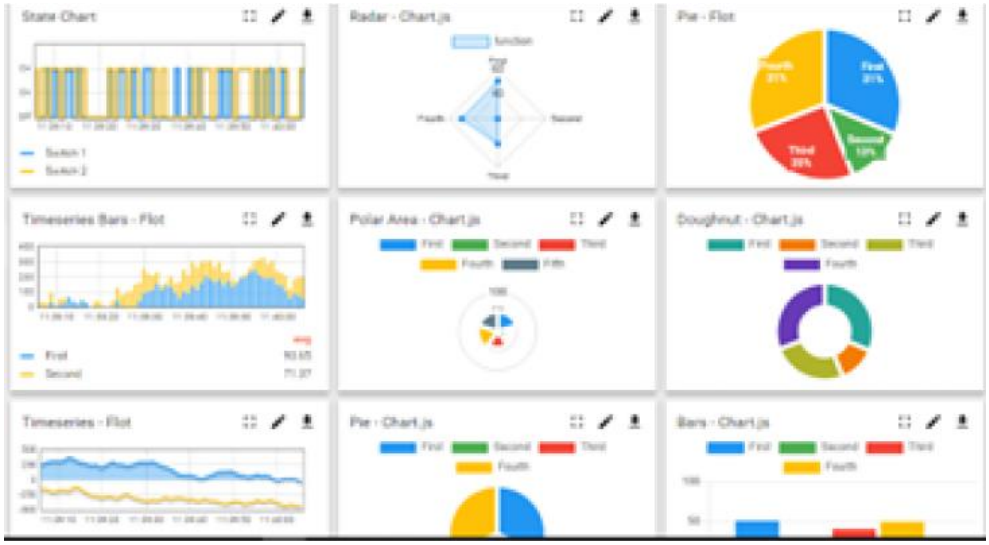
For developing its products and solutions it is leveraging various **Cutting Edge Technologies e.g. Internet of Things (IoT), Cyber Security, Cloud computing (AWS, Azure), Machine Learning, Communication Technologies (4G/5G/LoRaWAN), Java Full Stack, Python, Front end** etc.

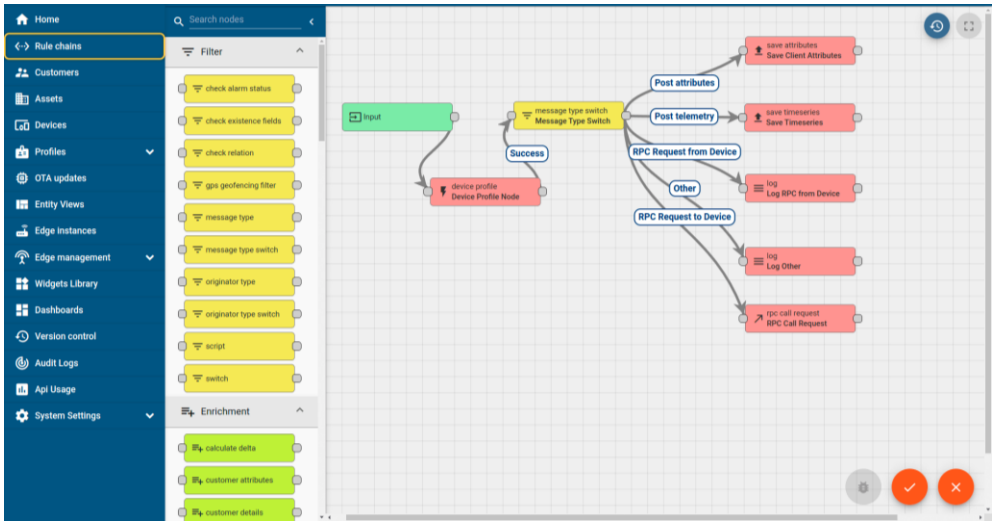
i. UCT IoT Platform (uct Insight)

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





ii. 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
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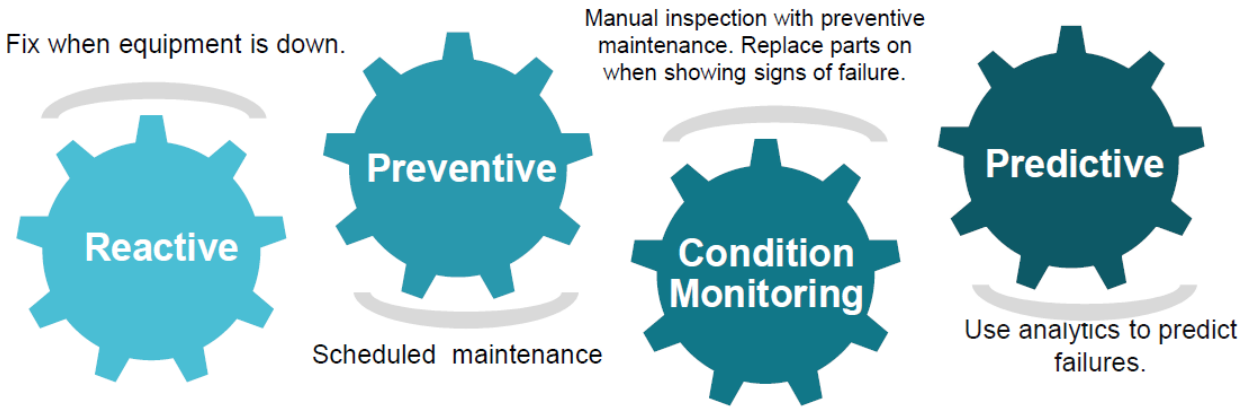
iii. LoRaWAN based Solution

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.

iv. 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.



1.1 About upskill Campus (USC)

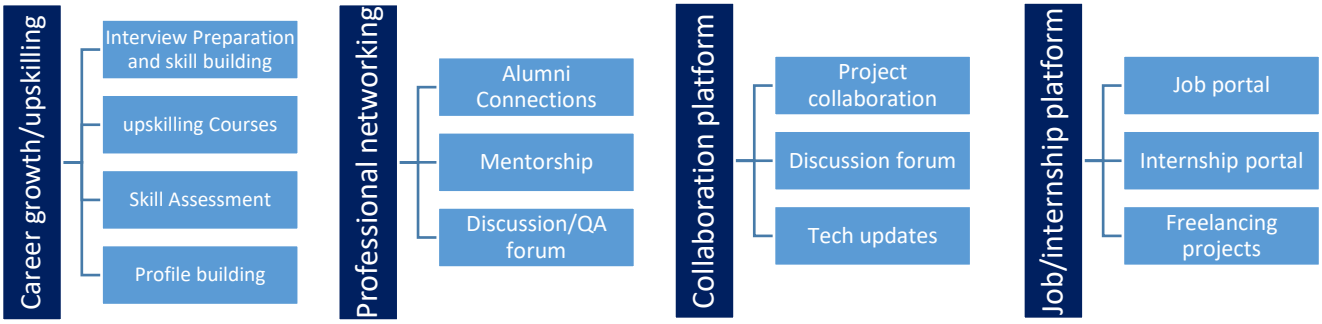
upskill Campus along with The IoT Academy and in association with Uniconverge technologies has facilitated the smooth execution of the complete internship process.

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

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

https://www.upskillcampus.com/



1.2 The IoT Academy

The IoT academy is EdTech Division of UCT that is running long executive certification programs in collaboration with EICT Academy, IITK, IITR and IITG in multiple domains.

1.3 Objectives of this Internship program

The objective for this internship program was to

- ☛ get practical experience of working in the industry.
- ☛ to solve real world problems.
- ☛ to have improved job prospects.
- ☛ to have Improved understanding of our field and its applications.
- ☛ to have Personal growth like better communication and problem solving.

3. Problem Statement:

The Problem Statement outlines the objectives and requirements of the banking system prototype. It identifies the need for a solution capable of handling user registration, account management, fund transfers, and account statements.

4. Existing System and Proposed Solution:

A comparison between the existing banking system and the proposed solution is provided in this section. The limitations of the existing system are highlighted, and the proposed solution addresses these limitations through improved functionality and usability.

1.4 Code submission (Github link):

https://github.com/abhaylokare/upskillCampus.git

5. Proposed Design/Model:

Detailed diagrams illustrating the high-level and low-level design of the banking system prototype are presented in this section. Additionally, interfaces used for communication between system components are described.

6. Implementation Details:

This section delves into the implementation of key system functionalities, including user registration, account management, transaction processing, and security measures. Code snippets and algorithms may be included to provide clarity on the implementation process.

7. Testing and Performance Evaluation:

A thorough testing methodology is outlined, including test plans, test cases, and procedures. The performance of the banking system prototype is evaluated based on predefined metrics, such as response time, reliability, and scalability.

8. Personal Learnings and Reflections:

Participants reflect on their personal learnings and experiences gained during the internship. They discuss the challenges faced, the skills acquired, and the impact of the internship on their professional development.

9. Future Work Scope:

Opportunities for future enhancements and extensions to the banking system prototype are explored in this section. Potential areas for improvement, such as additional features, optimizations, and integrations, are identified.

10. Conclusion:

A summary of the internship experience is provided, highlighting key achievements, challenges, and learnings. Recommendations for future internship programs and projects are also included.

11. References:

A list of references, including academic papers, articles, and online resources utilized during the internship, is provided for further reading and research.

12. Appendices:

Supplementary materials, such as detailed test reports, additional diagrams, and code samples, are included in the appendices for reference.

This comprehensive project report serves as a testament to the knowledge, skills, and experiences gained during the Industrial Internship, providing valuable insights into the development of a banking system prototype and its implications for future endeavors in the field of software engineering.