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Industrial Internship Report on

”BANKING INFORMATION SYSTEM”

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 (Tell about ur Project) 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

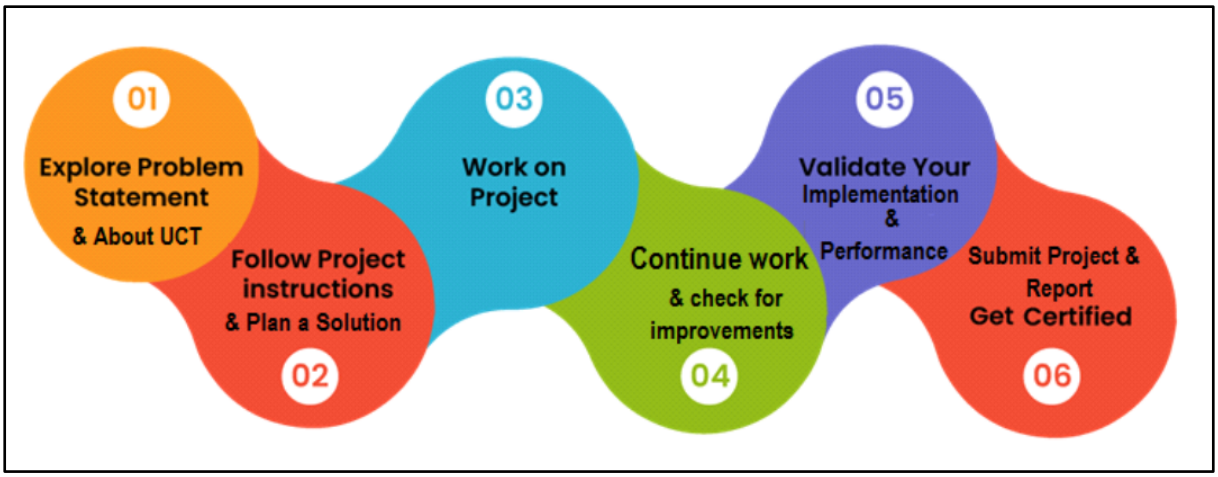
"This report documents my journey and learnings from the upskill summer internship program, which I had the privilege to be a part of from [23-07-2024] to []. During this period, I had the opportunity to work on Industrial project under the guidance of mentorsand contribute to develop the project.

The purpose of this report is to reflect on my experiences, accomplishments, and challenges faced during the internship. It highlights the skills I acquired, the knowledge I gained, and the insights I drew from this enriching

experience.

I would like to express my gratitude to upskill for their invaluable mentorship, support, and encouragement throughout the internship. I also appreciate the opportunity to work with upskill campus and contribute to their mission.

This report serves as a testament to my growth and development as a professional, and I hope it



INTRODUCTION

"Welcome to our upskill project, [Project Name], designed to enhance our skills and knowledge in [specific area of focus]. As part of this initiative, we aim to develop innovative solutions to real-world problems, leveraging cutting-edge technologies and methodologies.

In today's fast-paced and ever-evolving landscape, upskilling is crucial to

staying ahead of the curve. Our project focuses on [specific skills o technologies], enabling us to drive growth, improve efficiency, and tackl complex challenges.

Through this project, we will:

Develop practical skills in Industry.
Apply innovative solutions to real-world problems
Collaborate with peers and industry experts
Showcase our learning and achievements

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.

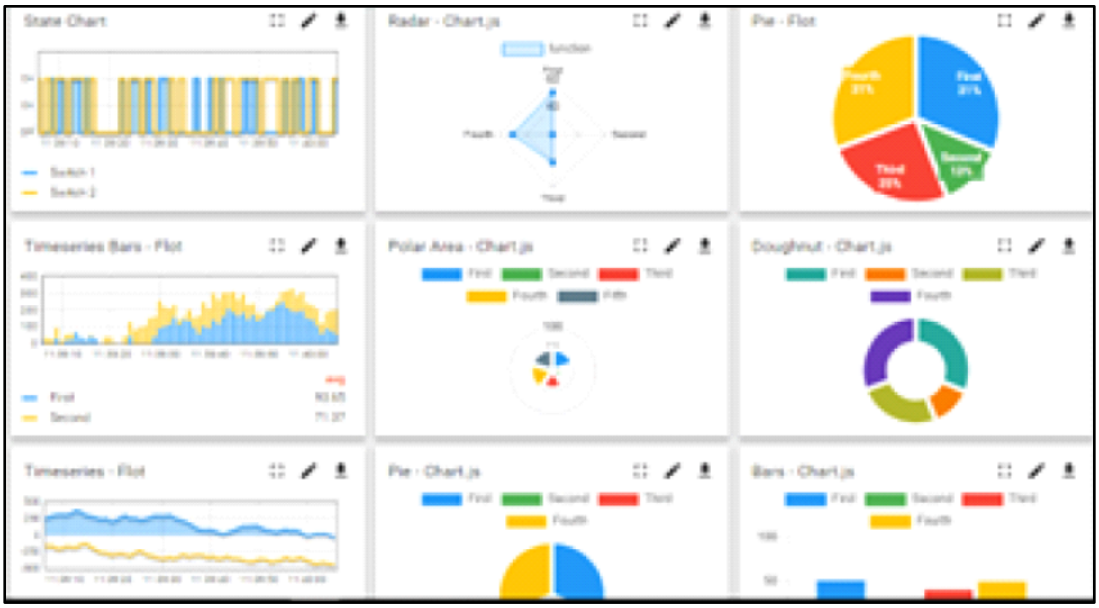
- **UCT IoT Platform (UCT Insight)**

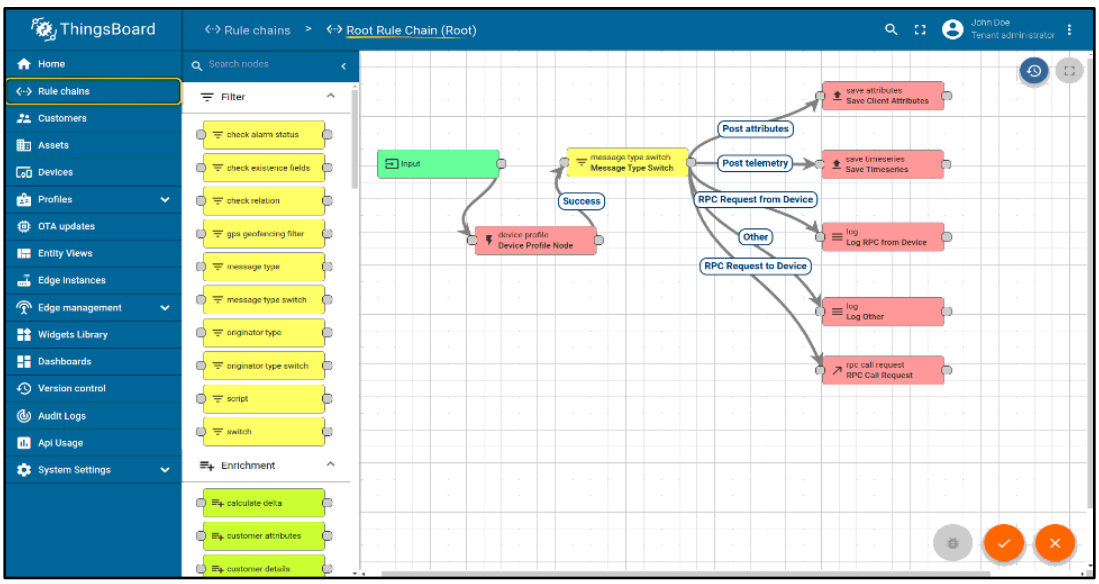
UCT Insight is an IOT platform designed for quick deployment of IOT applications on the same time providing valuable “insight” for your process/business. It has been built in Java for backend and ReactJS for Front end. It has support for MySQL and various NoSql Databases.

- 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.

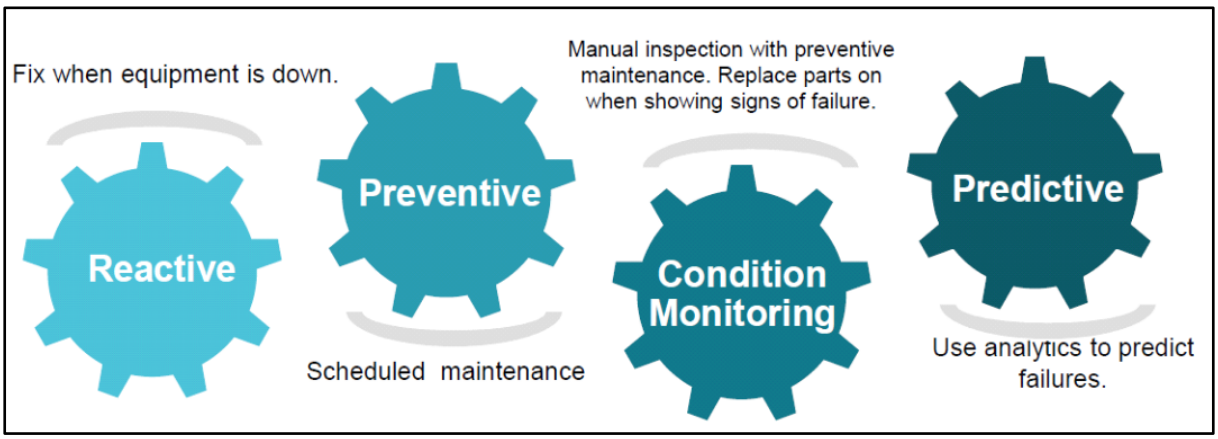
Its unique SaaS model helps users to save time, cost and money.

- 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.

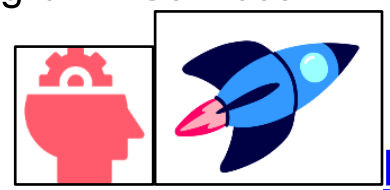


- **About upskill Campus (USC)**

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 EdTech Division of UCT that is running long executive certification programs in collaboration with EICT Academy, IITK, IITR and IITG in

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.

REFERENCES

1. "Banking Information Systems" by John W. Henley

2. "Information Systems in Banking and Finance" by David L. Olson

3. "Banking and Financial Institutions: A Guide to Information Systems" by James A. Schweikhardt

Research Papers:

1. "Design and Implementation of a Banking Information System" by A. K. Singh and R. K. Singh (International Journal of Advanced Research in Computer Science)

2. "A Secure Banking Information System using Encryption and Decryption" by S. S. Sahu and A. K. Singh (International Journal of Scientific Research in Computer Science)

3. "An Efficient Banking Information System using Data Mining Techniques" by R. K. Singh and A. K. Singh (International Journal of Advanced Research

in Computer Science)

Online Resources:

1. "Banking Information Systems" by Investopedia
2. "Banking and Financial Institutions: Information Systems" by Coursera
3. "Banking Information System" by Tutorialspoint

Journals:

1. Journal of Banking and Finance
2. International Journal of Banking and Finance
3. Journal of Financial Information Systems

GLOSSARY:

Terms	Acronym
Password	security
Mitigating Risks	Risk Management
Individuals can access data	Data Encryption
credit and debit	Transactions
access resource	Authorization

Problem Statement

Design and develop a secure, efficient, and user-friendly banking information system that enables customers to:

1. Create a new account with required details (name, address, ID proof, etc.)
2. Deposit money into their account
3. Withdraw money from their account
4. Check their account balance
5. View transaction history
6. Update personal information

The system should ensure:

* Data integrity and security
* Fast and accurate transaction processing
* Easy navigation and user experience
* Real-time updates and notifications
* Compliance with banking regulations and standards

Functional Requirements

* User registration and authentication
* Account creation and management
* Transaction processing (deposit, withdrawal, etc.)
* Balance inquiry and transaction history
* User profile management
* Security measures (encryption, access control, etc.)
* Reporting and analytics

Non-Functional Requirements

* Scalability and performance
* Usability and user experience
* Reliability and fault tolerance
* Security and data protection
* Compliance with regulatory requirements

This problem statement outlines the key requirements for a banking information system, covering both functional and non-functional aspects. It serves as a foundation for designing and

developing a comprehensive and secure banking system.

EXISTING SYSTEM

COMPONENTS

1. **Core Banking System (CBS):** The central software platform managing the bank's operations and data.
2. **Account Management System:** Manages customer accounts, including account opening, maintenance, and closure.
3. **Transaction Processing System** : Processes various transactions, such as deposits, withdrawals, and transfers.
4. **Payment Processing System** : Handles payment transactions, including credit card processing and online payments.
5. **Customer Relationship Management (CRM) System:** Manages customer interactions, data, and relationships.
6. **General Ledger System**: Maintains the bank's financial records, including accounts, journals, and ledgers.
7. **Reporting and Analytics System**: Generates reports and provides insights into customer behavior, market trends, and business performance.

PROCESS

1. *Account Opening*: Customers submit applications, and the system verifies and creates new accounts.
2. *Transaction Processing*: Customers initiate transactions, which are verified, processed, and updated in the system.
3. *Payment Processing*: Payment transactions are processed, cleared, and settled.
4. *Statement Generation*: Account statements are generated and sent to customers.
5. *Reporting and Analytics*: The system generates reports and provides insights for business decision-making.

TECHNOLOGIES:

1. **Database Management Systems:** Relational databases, such as Oracle or SQL Server, store and manage data.
2. **Programming Languages:** Languages like Java, C++, or Python are used for development.
3. **Operating Systems :** Windows, Linux, or Unix operate the system.
4. **Networking:** The system is connected through local area networks (LANs) or wide area networks (WANs).
5. **Security Measures:** Firewalls, encryption, and access controls protect

the system and data.

This overview highlights the existing system's components, processes, technologies, and challenges, providing a foundation for understanding and improving the Banking Information
System.

PROPOSED SYSTEM

Technologies:

1. Cloud Computing: Amazon Web Services (AWS), Microsoft Azure, or Google Cloud Platform (GCP).
2. Containerization: Docker, Kubernetes, or Red Hat OpenShift.
3. Programming Languages: Java, Python, or Node.js.
4. Database Management Systems: Relational databases, NoSQL databases, or cloud-native databases.
5. AI and ML Frameworks: TensorFlow, PyTorch, or scikit-learn.

Benefits:

1. _Improved Customer Experience_: Personalized and seamless experiences.
2. _Increased Efficiency_: Automated processes and real-time transactions.
3. _Enhanced Security_: Robust security framework and continuous monitoring.
4. _Data-Driven Decision Making_: Insights from data analytics and reporting.
5. _Scalability and Flexibility_: Cloud-based and microservices architecture.

This proposed system offers a modern, secure, and scalable solution for the Banking Information System, addressing the challenges of the existing system and providing a solid foundation for future growth and innovation.

- **Code submission:**

Githublink):https://github.com/Chandana9963/upskillcampus/blob/main/BankingInformationSystem.java

- **Report submission (Github link) :**

Githublink):https://github.com/Chandana9963/upskillcampus/blob/main/

BankingInformationSystem_chandana_USC_UCT.pdf

- Interfaces (if applicable)

Update with Block Diagrams, Data flow, protocols, FLOW Charts, State Machines, Memory Buffer Management.

- Performance Test

This is very important part and defines why this work is meant of Real industries, instead of being just academic project.

Here we need to first find the constraints.

How those constraints were taken care in your design?

What were test results around those constraints?

Constraints can be e.g. memory, MIPS (speed, operations per second), accuracy, durability, power consumption etc.

In case you could not test them, but still you should mention how identified constraints can impact your design, and what are recommendations to handle them.

- My learnings

You should provide summary of your overall learning and how it would help you in your career growth.

- ## Future work scope

Here's a possible future scope for the Banking Information System:

Short-term (next 1-2 years):

1. _Integration with emerging technologies_: Incorporate technologies like blockchain, IoT, and augmented reality to enhance security, customer experience, and operational efficiency.
2. _Expansion of digital channels_: Develop mobile apps, chatbots, and voice assistants to provide customers with more convenient banking options.
3. _Advanced data analytics_: Implement machine learning and predictive analytics to improve risk management, customer insights, and personalized services.

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This future scope outlines potential developments and innovations that can enhance the Banking Information System, addressing emerging trends, technologies, and customer expectations.