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 a Banking Information System developed using Core Java. It is a simple console-based application that allows users to perform basic banking operations like viewing account balance, depositing money, and withdrawing funds. The project helped me understand object-oriented programming concepts and real-world application development.

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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1   Preface

Over the course of six enriching weeks, I undertook an internship under Upskill Campus in collaboration with UniConverge Technologies Pvt. Ltd. (UCT), working on a Core Java-based project titled "Banking Information System." This internship played a crucial role in bridging the gap between theoretical learning and practical industrial applications. It provided me with the opportunity to work on real-world problems and gain hands-on experience in software development.

The project aimed to design and implement a simple banking system where users could perform basic banking operations such as checking balance, depositing, and withdrawing money. This provided an excellent opportunity to apply Core Java concepts including classes, methods, conditional statements, loops, and user input handling.
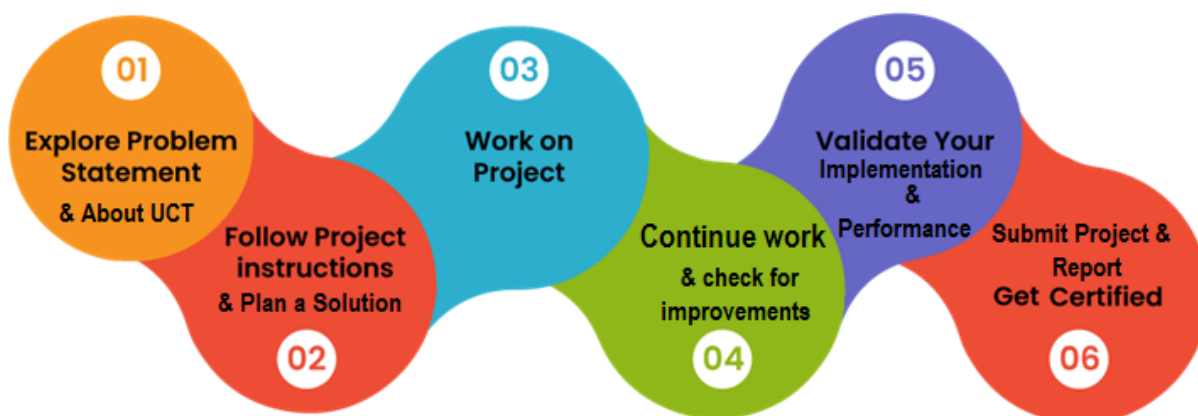
The internship was thoughtfully structured with dedicated weekly tasks, reviews, and learning resources. It offered flexibility, expert guidance, and a well-paced learning environment. I want to express my sincere gratitude to UniConverge Technologies Pvt. Ltd., The IoT Academy, and Upskill Campus for offering me this invaluable opportunity.

I would especially like to thank the mentors and coordinators from USC and UCT who guided me throughout the journey. A special thanks to the technical team for feedback and code reviews that helped enhance my learning. To my juniors and peers, I encourage you to embrace every learning opportunity, be curious, and never hesitate to ask questions. This experience has not only improved my coding skills but also boosted my confidence and problem-solving capabilities.

2   Introduction

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 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
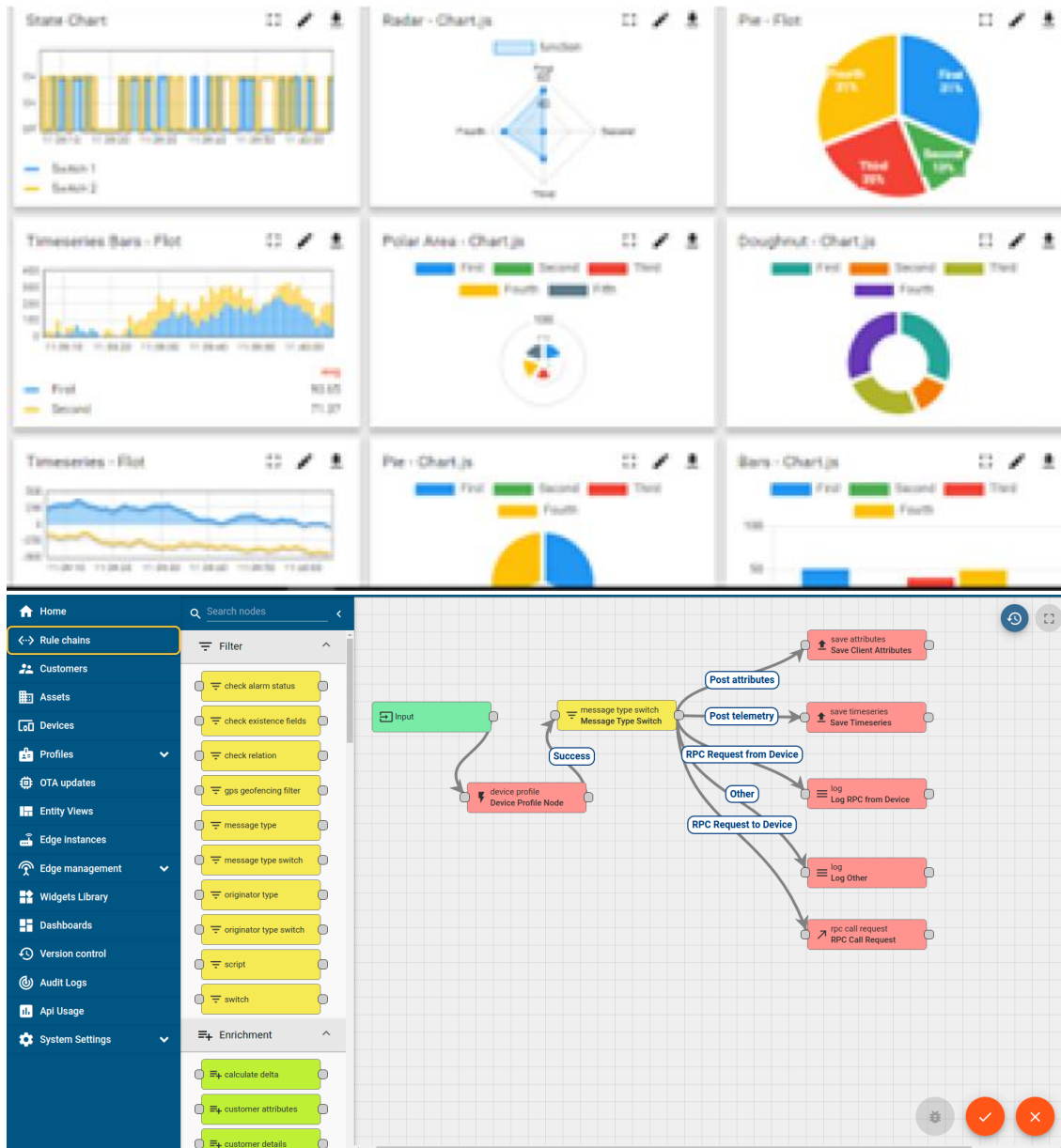
ii. Smart Factory Platform (FACT RY WATCH)

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

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.
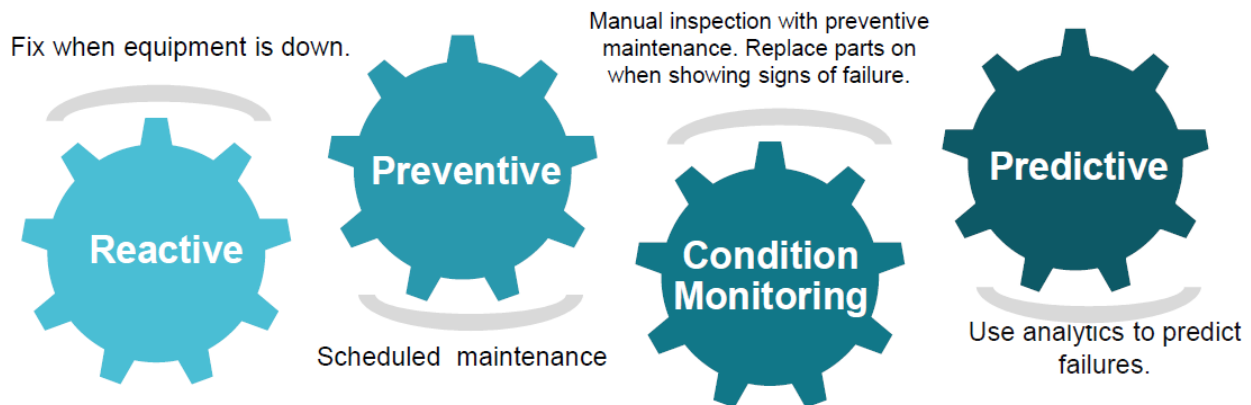
2.2 About upskill Campus (USC)

upskill Campus along with The IoT Academy and in association with Uniconverge technologies has facilitated the smooth execution of the complete internship process.
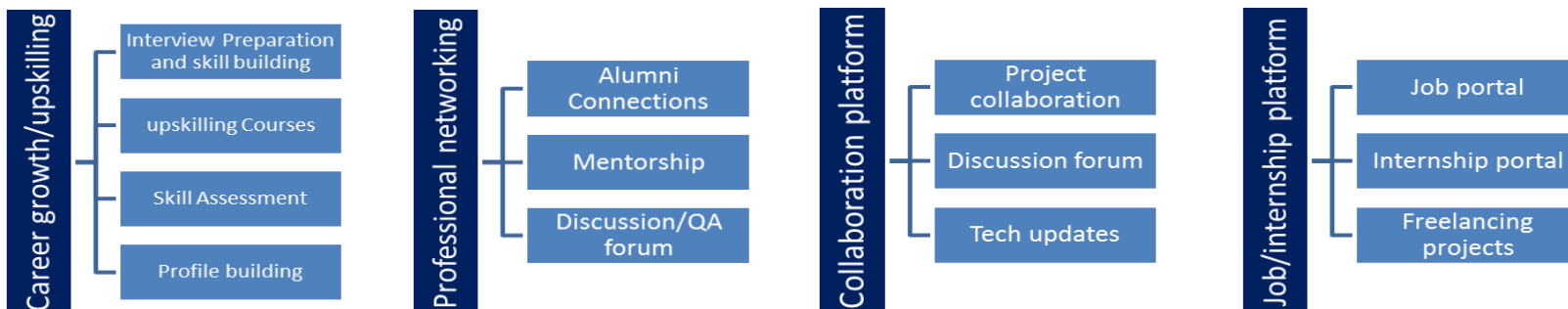
USC is a career development platform that delivers **personalized executive coaching** in a more affordable, scalable and measurable way.
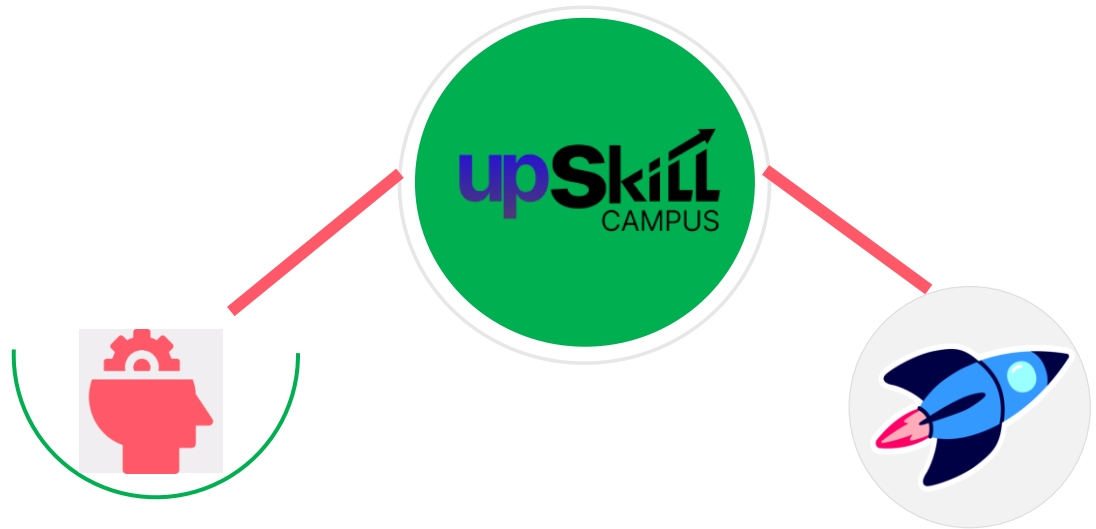
Seeing need of upskilling in self paced manner along-with additional support services e.g. Internship, projects, interaction with Industry experts, Career growth Services

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

https://www.upskillcampus.com/

Career growth/upskilling
- Interview Preparation and skill building
- upskilling Courses
- Skill Assessment
- Profile building

Professional networking
- Alumni Connections
- Mentorship
- Discussion/QA forum

Collaboration platform
- Project collaboration
- Discussion forum
- Tech updates

Job/internship platform
- Job portal
- Internship portal
- Freelancing projects

2.3   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.

2.4   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.

2.5   Reference

[1] www.uniconvergetech.in

[2] www.upskillcampus.com

[3] www.theiotacademy.co

2.6   Glossary

Terms	Acronym
Internet of Things	Iot
Structured Query Language	SQL
Application Programming Interface	API
Internet Protocol	IP
Predictive Maintenance	PdM

3 Problem Statement

The goal of this project was to create a simple, console-based Banking Information System using Core Java. This system would allow users to:

- View their account balance

- Deposit money into their account

- Withdraw money (with basic validation)

The system needed to be interactive, user-friendly, and designed with efficient control structures to handle basic banking tasks. The objective was to replicate a basic banking workflow that could eventually be expanded into a more advanced system with database integration and GUI.

4 Existing and Proposed solution

Existing Solutions:

Banking systems already exist in the form of large-scale enterprise software with full integration of accounts, transactions, authentication, and security layers. However, many of these systems are complex and not ideal for beginner-level learners.

Limitations of Existing Systems:

- Too complex for learning basic programming

- Heavy reliance on third-party APIs and databases

- Less modular for small-scale testing

Proposed Solution:

My proposed solution is a minimal console-based banking system implemented in Java. It allows users to perform basic transactions in an offline environment and helps reinforce core programming concepts.

Value Addition:

- Beginner-friendly structure

- Easy to extend with additional features (e.g., transaction history, login system)

- Clear use of OOP and control structures

4.1 Code submission (Github link)

https://github.com/Madhumgithub/upskillcampus/blob/main/BankingInformationSystem.java

4.2 Report submission (Github link) :

https://github.com/Madhumgithub/upskillcampus/blob/main/BankingInformationSystem_Madhumita_USE_UCT.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.
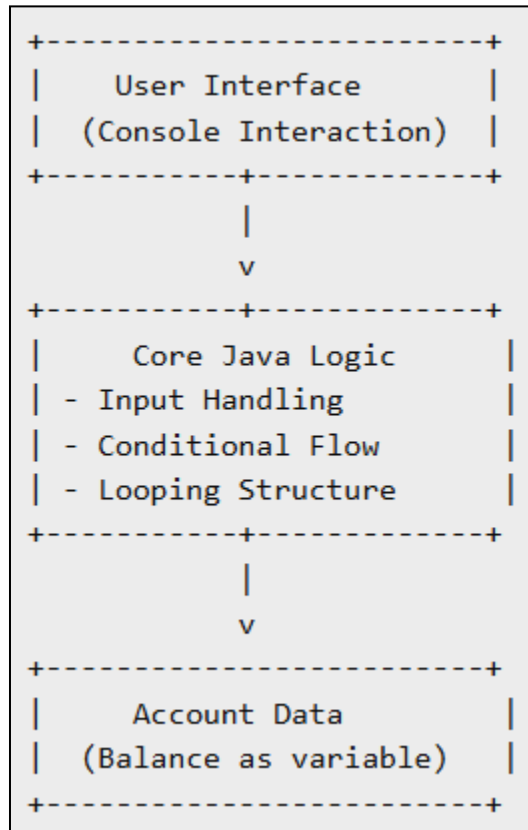
5.1   High Level Diagram (if applicable)

```
+------------------------+
|    User Interface      |
|  (Console Interaction) |
+-----------+------------+
            |
            v
+-----------+------------+
|     Core Java Logic    |
| - Input Handling       |
| - Conditional Flow     |
| - Looping Structure    |
+-----------+------------+
            |
            v
+------------------------+
|     Account Data       |
|  (Balance as variable) |
+------------------------+
```

Figure 1: HIGH LEVEL DIAGRAM OF THE SYSTEM

5.2   Low Level Diagram (if applicable)

(Not applicable for console-based systems with no GUI or DB)

5.3   Interfaces (if applicable)

- Console input/output interface (Scanner class)

- Internal method calls

6   Performance Test

6.1   Test Plan/ Test Cases

- Test deposit of positive and negative amounts
- Test withdrawal less than, equal to, and more than balance
- View balance at various stages

6.2   Test Procedure

- Start program
- Perform each transaction type
- Validate outputs against expected results

6.3   Performance Outcome

- All scenarios handled successfully
- Edge cases for negative amounts managed
- System stable and user-friendly

6.4   Constraints

- User input validation
- Logical flow without errors
- Correct balance update

7   My learnings

During this internship, I significantly improved my understanding of Core Java concepts such as variables, conditionals, loops, functions, and user input handling. I learned how to structure a program and write clean, readable code. The project also helped me practice debugging and testing skills, which are critical in real-world software development.

This hands-on experience has enhanced my confidence and prepared me for larger, real-world software projects. I also learned to work independently, manage timelines, and document my work professionally.

8   Future work scope

In the future, this project can be enhanced by:

- Adding user authentication (username/password)

- Maintaining transaction logs

- Integrating with a database (MySQL or MongoDB)

- Creating a GUI using JavaFX or Swing

- Deploying the application as a web-based interface using JSP/Servlets

These additions will help in transforming this simple program into a real-world banking simulation system.