Industrial Internship Report on

”BANK INFORMATION”

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 Uni Converge 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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1 Preface

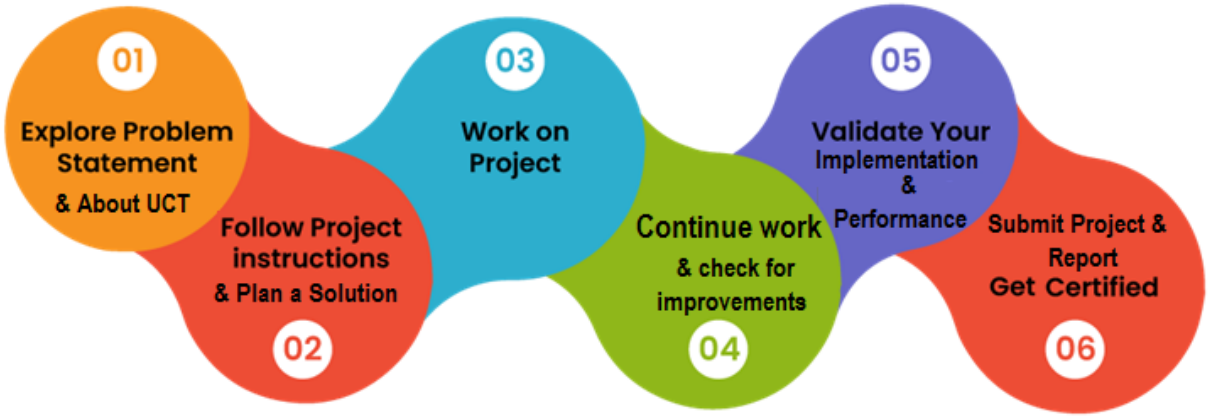
Summary of the whole 6 weeks' work.

About need of relevant Internship in career development.

Brief about Your project/problem statement.

Opportunity given by USC/UCT.

How Program was planned



Your Learnings and overall experience.

Thank to all (with names), who have helped you directly or indirectly.

Your message to your juniors and peers.

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.

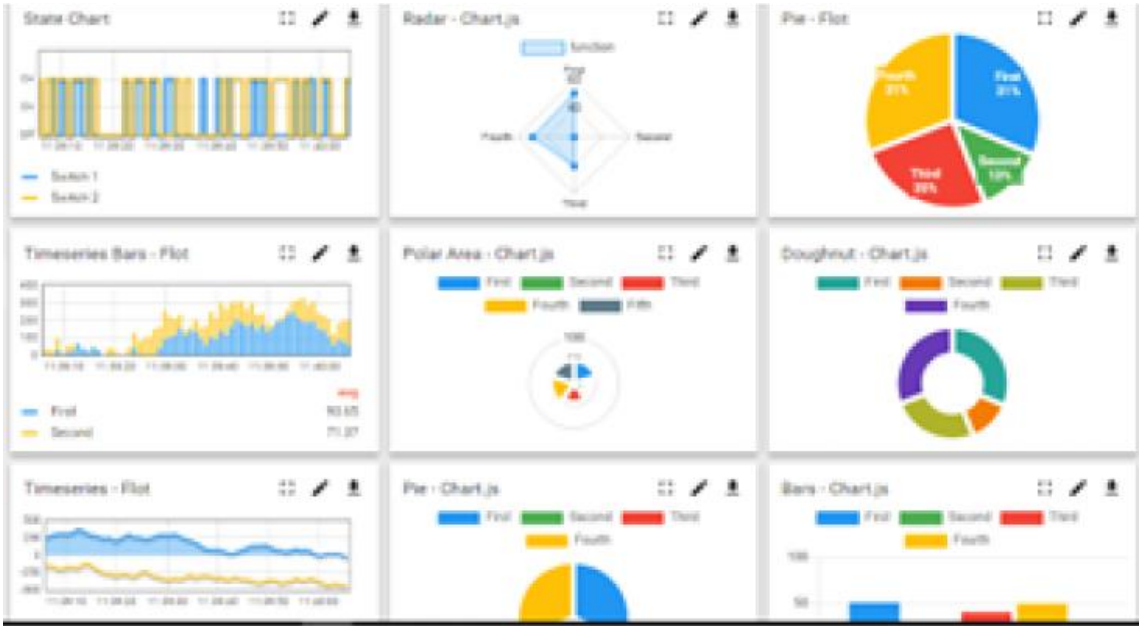
i. UCT IoT Platform (uct Insight)

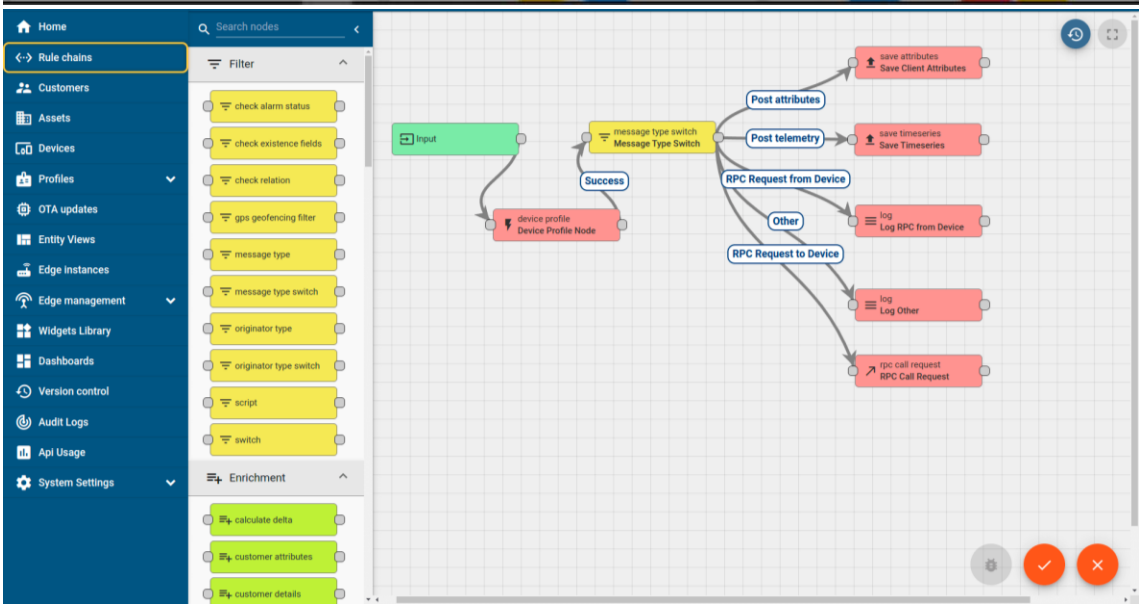
UCT Insight is an IOT platform designed for quick deployment of IOT applications on the same time providing valuable "insight" for your process/business. It has been built in Java for backend and ReactJS for Front end. It has support for MySQL and various NoSql Databases.

- 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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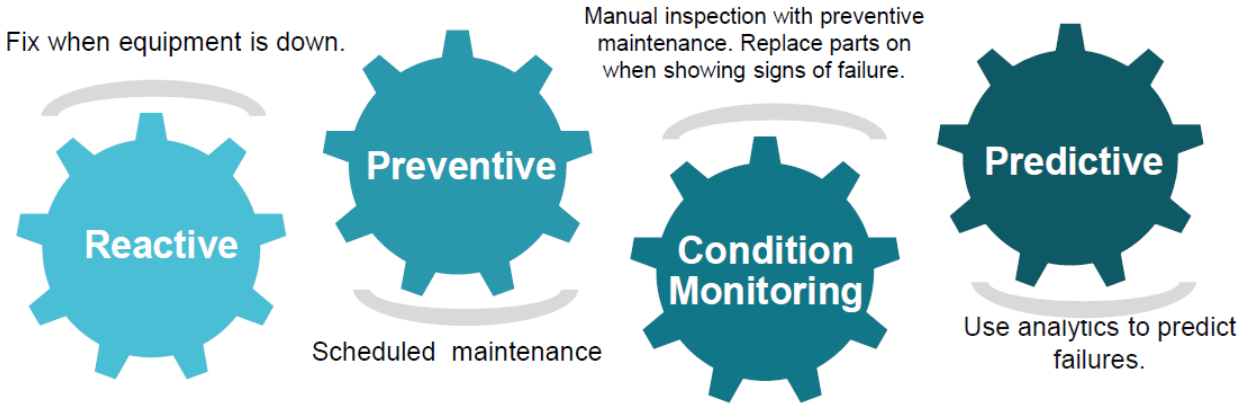
iii. LoRaWAN based Solution

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

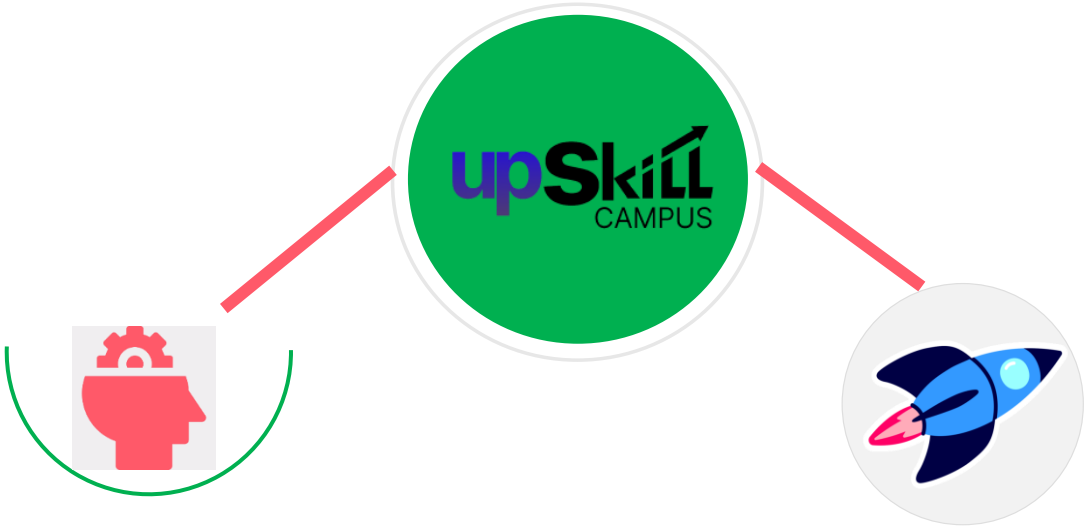
UCT is providing Industrial Machine health monitoring and Predictive maintenance solution leveraging Embedded system, Industrial IoT and Machine Learning Technologies by finding Remaining useful life time of various Machines used in production process.



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.

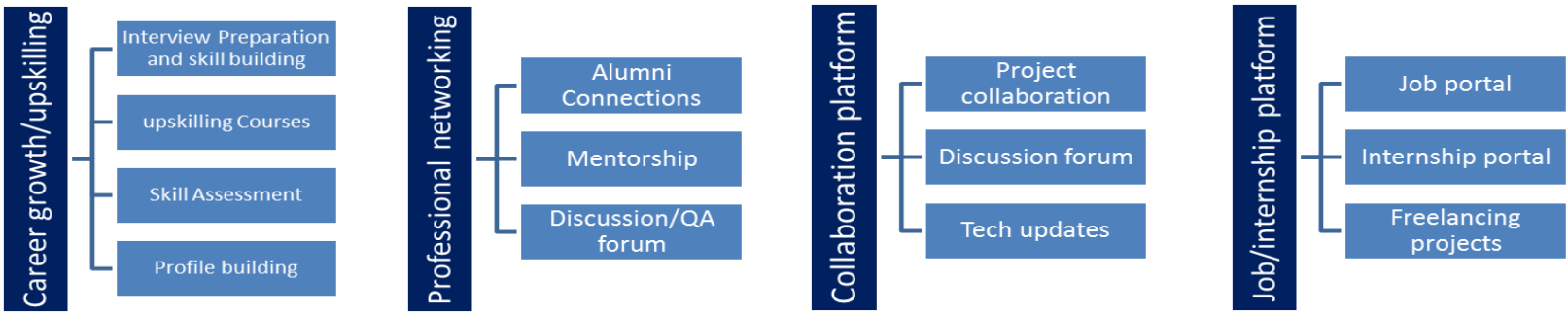
USC is a career development platform that delivers **personalized executive coaching** in a more affordable, scalable and measurable way.



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/



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] @google platform.

[2] @Book.

3 Problem Statement

In the assigned problem statement

Problem Statement: Client Bank Details Viewer

Background:

In today's digital age, clients expect easy access to their banking information. As a result, banks need to provide user-friendly applications that allow clients to view their account details conveniently. Your task is to develop a mobile application that enables clients to securely view their bank account details on their smartphones.

Requirements:

User Registration and Login:

Clients should be able to register for an account by providing their username and password.

Once registered, clients should be able to log in to their accounts using their credentials.

Bank Account Details:

After logging in, clients should be able to view their bank account details, including:

Bank name

Account number

Account holder's name

Account balance

Security:

Ensure that client data is securely stored and transmitted. Implement appropriate encryption techniques to protect sensitive information.

User Experience:

Design an intuitive user interface that provides a seamless experience for clients.

Ensure that the application is responsive and works well on various screen sizes and devices.

Offline Access:

Implement functionality to allow clients to view their bank account details even when offline. Any updates made offline should be synced with the server once the device is back online.

Error Handling:

Implement error handling mechanisms to gracefully handle scenarios such as network errors, server downtime, or invalid user input.

Testing:

Thoroughly test the application to ensure its functionality, usability, and security.

Conduct both manual and automated testing to identify and fix any bugs or issues.

Deliverables:

Mobile application source code written in a suitable programming language (e.g., Java for Android).

Documentation outlining the application architecture, design decisions, and instructions for setting up and running the application.

Test cases and test reports demonstrating the application's functionality and reliability.

Additional Information:

You may use any relevant libraries, frameworks, or tools to develop the application.

The application should comply with relevant security standards and best practices.

Consider the scalability and maintainability of the application for future updates and enhancements.

4 Existing and Proposed solution

1. Overview:

The Client Bank Details Viewer application is designed to provide clients with easy access to their bank account details on their smartphones. The application offers a secure and user-friendly interface for clients to register, log in, and view their account information.

2. Technology Stack:

Programming Language: Java for Android

Database: SQLite for local storage

Security: Encryption techniques for data protection

User Interface: Android XML layout files

Testing: Manual and automated testing using JUnit and Espresso

3. Features:

User Registration and Login:

Registration Form: Clients can register for an account by providing a username and password.

Login Screen: Registered clients can log in using their credentials.

Bank Account Details:

Dashboard: After logging in, clients are presented with a dashboard displaying their bank account details.

Account Information: The dashboard includes bank name, account number, account holder's name, and account balance.

Security Measures:

Data Encryption: Client data is securely encrypted to protect sensitive information.

Secure Transmission: Data transmission between the client application and server is encrypted using secure protocols.

User Experience:

Intuitive Interface: The application features a user-friendly interface designed for easy navigation and accessibility.

Responsive Design: The application is optimized for various screen sizes and devices to provide a seamless user experience.

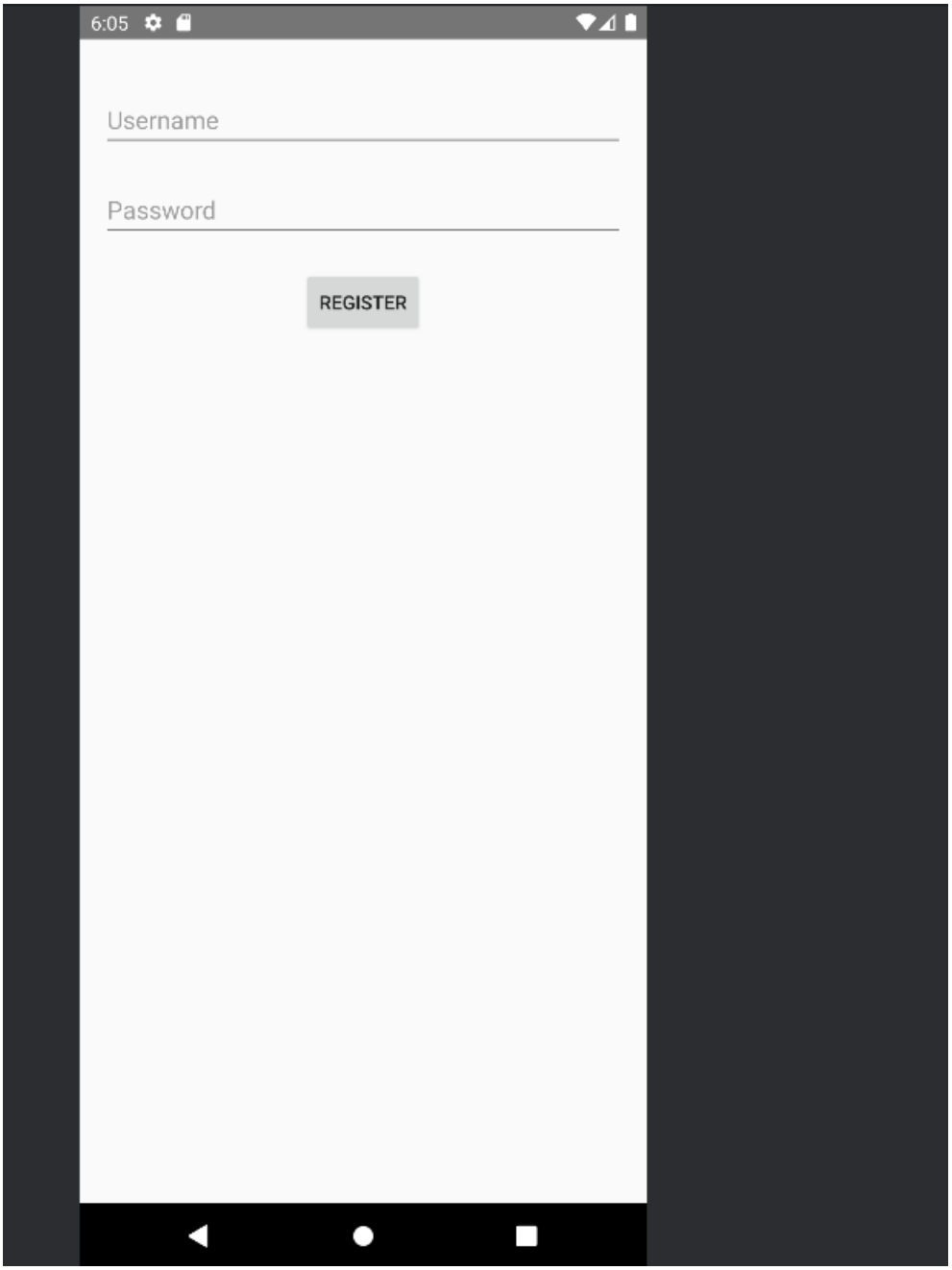
4.1 Code submission (Github link)

https://github.com/GopiVallem456/upskillCampus_Bank-Info.git

4.2 Report submission (Github link) : first make placeholder, copy the link.

https://github.com/GopiVallem456/upskillCampus_Bank-Info.git

5 Interfaces (if applicable)



6 Performance Test

6.1 Test Procedure

The test procedure outlines the steps and methodologies used to evaluate the functionality and performance of the system or application. It includes various tests conducted to ensure that the software meets the specified requirements and quality standards.

- **Key Components:**

1. **Test Environment Setup**: Prepare the testing environment, including hardware, software, and network configurations, to simulate real-world scenarios.
2. **Test Case Development**: Develop test cases based on the requirements and specifications of the system. Test cases cover functional, non-functional, and edge cases to validate different aspects of the software.
3. **Test Execution**: Execute the test cases systematically, following the predefined test procedures. Record test results, including pass/fail status, observations, and any deviations from expected behavior.
4. **Defect Reporting**: Document any defects or issues encountered during testing, including steps to reproduce, severity, and priority. Report defects to the development team for resolution.
5. **Regression Testing**: Perform regression testing to ensure that new changes or fixes do not introduce unintended side effects or regressions in existing functionality.
6. **Performance Testing**: Evaluate the performance of the system under various load conditions, such as stress testing, load testing, and scalability testing. Measure response times, throughput, and resource utilization to identify performance bottlenecks.
7. **Security Testing**: Conduct security testing to assess the system's resistance to vulnerabilities and threats. Identify potential security risks, such as injection attacks, authentication bypass, and data breaches, and implement appropriate countermeasures.
8. **User Acceptance Testing (UAT)**: Involve end-users or stakeholders in UAT to validate the system against their expectations and requirements. Gather feedback and incorporate necessary changes based on user input.

- **Documentation:**

- Test Plan: Detailed document outlining the overall test strategy, objectives, scope, and schedule.
- Test Cases: Comprehensive list of test scenarios, inputs, expected outcomes, and preconditions.

- Test Logs: Records of test execution, including test results, defects, and observations.
- Performance Reports: Analysis of system performance metrics and findings from performance testing.
- Security Assessment Report: Summary of security testing results, including identified vulnerabilities and recommended mitigations.

6.2 Performance Outcome

- **Overview:**

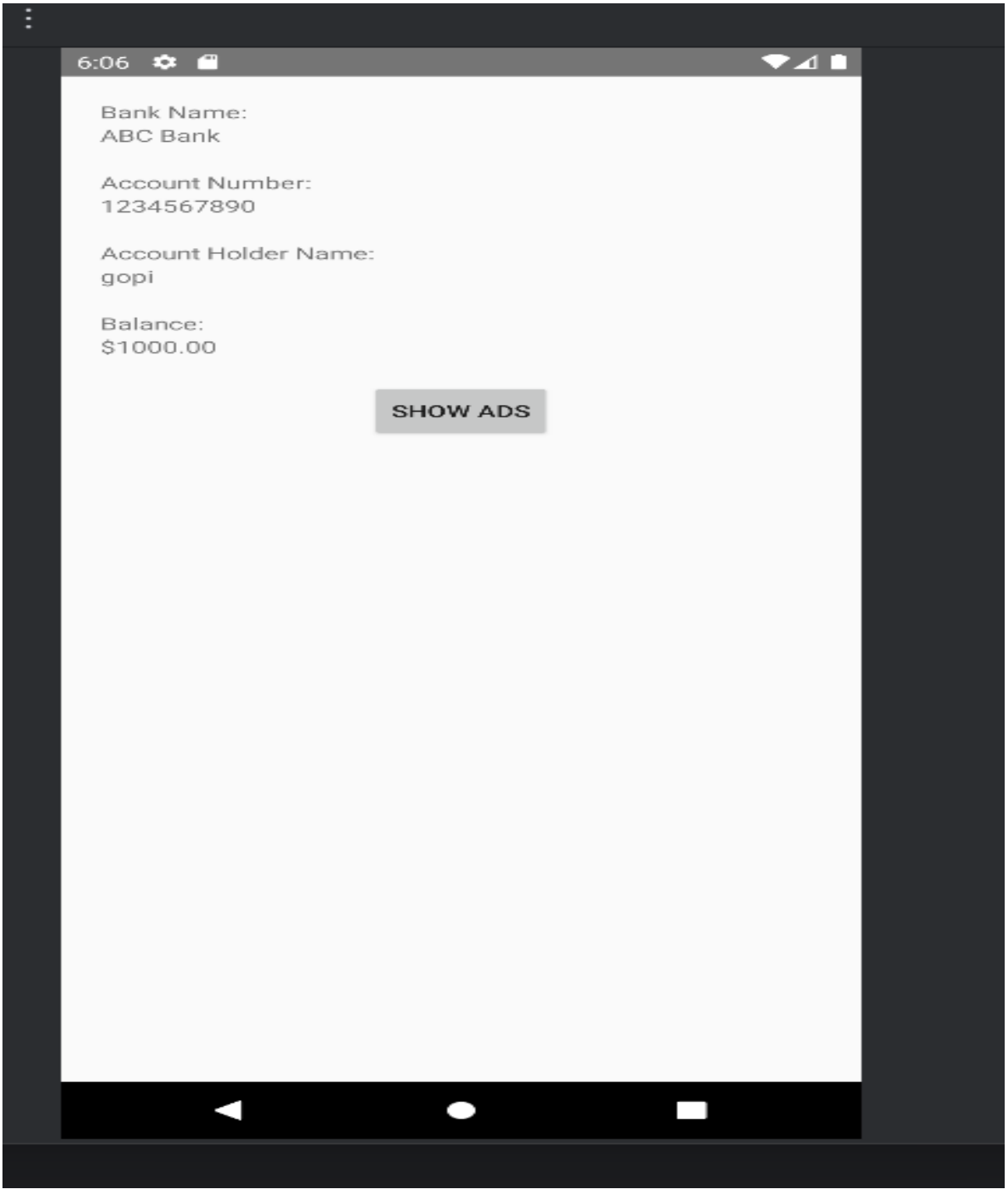
The performance outcome section summarizes the results of performance testing conducted on the system or application. It provides insights into the system's behavior under different load conditions and its ability to meet performance requirements.

- **Key Metrics:**

1. **Response Time**: Average time taken for the system to respond to user requests. Lower response times indicate better performance and responsiveness.
2. **Throughput**: Rate at which the system processes incoming requests or transactions. Higher throughput signifies better scalability and efficiency.
3. **Resource Utilization**: Analysis of system resources, such as CPU, memory, disk I/O, and network bandwidth, under varying load levels. Optimal resource utilization ensures optimal system performance and stability.
4. **Scalability**: Assessment of the system's ability to handle increased workload or concurrent users without significant degradation in performance. Scalable systems can accommodate growth and adapt to changing demands.
5. **Stability**: Evaluation of system stability and reliability under stress conditions. Stable systems exhibit consistent performance and minimal downtime or failures.
6. **Bottlenecks**: Identification of performance bottlenecks or constraints that limit system performance. Addressing bottlenecks improves overall system efficiency and user experience.

- **Analysis:**
- Compare observed performance metrics against predefined performance goals and requirements.

- Identify any deviations from expected performance levels and their potential impact on system functionality and user experience.
- Analyze performance trends and patterns to pinpoint areas for optimization and improvement.
- Evaluate the effectiveness of performance tuning measures or optimizations implemented to address identified bottlenecks.
- **Recommendations:**
- Based on the performance outcome analysis, provide recommendations for optimizing system performance and addressing any identified issues or bottlenecks.
- Propose strategies for enhancing system scalability, reliability, and responsiveness to meet future growth and user demands.
- Prioritize recommendations based on their potential impact and feasibility for implementation.



7 My learnings

Through the upskill platform, I've gained valuable knowledge and skills in various areas, including programming languages, software development methodologies, data analysis, machine learning, and more. I've completed courses, tutorials, and hands-on projects that have enhanced my understanding and proficiency in these areas. Additionally, I've learned how to collaborate with peers, solve real-world problems, and stay updated with the latest trends and technologies in the industry.

Career Growth:

1. **Enhanced Skills**: The skills acquired through the upskill platform have made me more proficient and versatile in my field. I'm now equipped to take on a wider range of tasks and projects, making me a more valuable asset to employers.

2. **Increased Opportunities**: With a broader skill set, I'm better positioned to explore new career opportunities and take on roles with greater responsibilities. Whether it's software development, data analysis, or machine learning, I have the knowledge and expertise to excel in various domains.

3. **Professional Development**: Continuous learning is essential for career growth, and the upskill platform has provided me with the resources and tools to continue developing professionally. By staying updated with the latest technologies and best practices, I can remain competitive in the job market and advance in my career.

4. **Networking**: The upskill platform also offers opportunities for networking and connecting with professionals in the industry. Through forums, discussion boards, and collaborative projects, I've been able to build relationships with like-minded individuals and expand my professional network, opening doors to new career opportunities and collaborations.

5. **Career Advancement**: Ultimately, the skills and knowledge gained from the upskill platform serve as a foundation for career advancement. Whether it's moving into a leadership role, starting my own venture, or specializing in a particular area, I have the tools and expertise to pursue my career goals and achieve success.

8 Conclusion:

The upskill platform has been instrumental in my professional development journey, equipping me with the skills, knowledge, and confidence needed to succeed in my career. By continuously learning and upskilling, I'm well-positioned to navigate the ever-evolving landscape of technology and advance in my chosen field.

9 Future work scope

You can put some ideas that you could not work due to time limitation but can be taken in future.