# Industrial Internship Report on

# ”GroceryGo Application”

## Prepared by


## [Prajwal Ajaykumar Shahi]



| *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).<br><br>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.<br><br>My project was the development of a mobile application called **GroceryGo**, built using **Android Studio** and **Cursor AI**. It allows grocery **sellers** to list their products and **buyers** to browse, rate, and purchase items online. The app includes key features like product catalog, cart, order history, and role switching between buyer and seller. It was successfully tested with a local grocery store to ensure accuracy and performance.<br><br>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. |

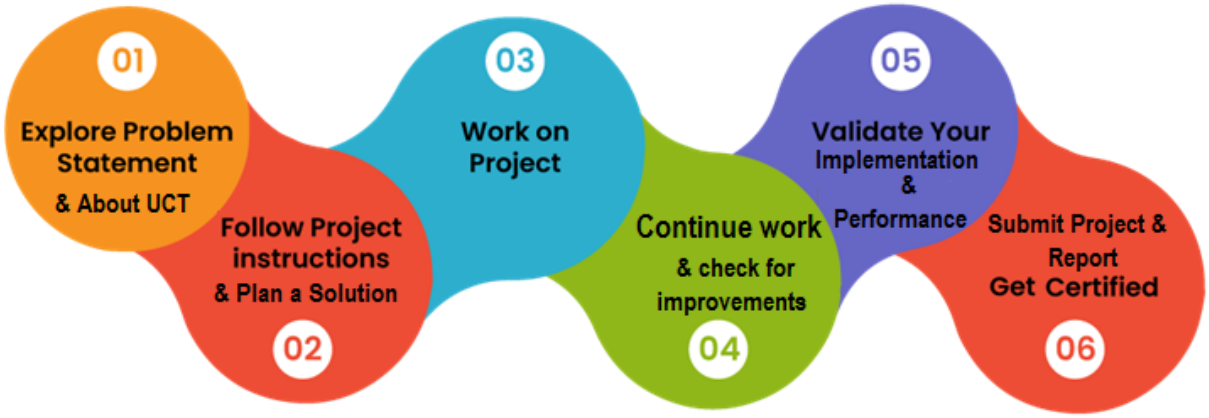
## TABLE OF CONTENTS

# 1 Preface

The rapid advancement of technology has revolutionized how people shop for daily essentials, particularly groceries. In this digital age, convenience, reliability, and efficiency have become key expectations for both consumers and sellers. With this vision in mind, I have developed **GroceryGo**, a mobile application designed to streamline the grocery shopping experience for buyers while empowering sellers with a simple and accessible platform to list and sell their products online.

This project was undertaken as part of my learning journey with the support of **Upskill Campus** and **UniConverge Technologies Pvt Ltd**, where I gained hands-on experience in Android application development using **Android Studio** and **Cursor AI**. GroceryGo focuses on creating a dual-interface system—one for buyers and one for sellers—offering essential features such as product listings, ratings, shopping cart management, order history, and secure account handling.

The development of this application has been a significant learning experience, involving real-world problem-solving, user interface design, backend integration, and performance testing. This report documents the journey of creating GroceryGo, from identifying the problem to proposing a viable solution, testing its performance, and exploring future enhancements.




# 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.

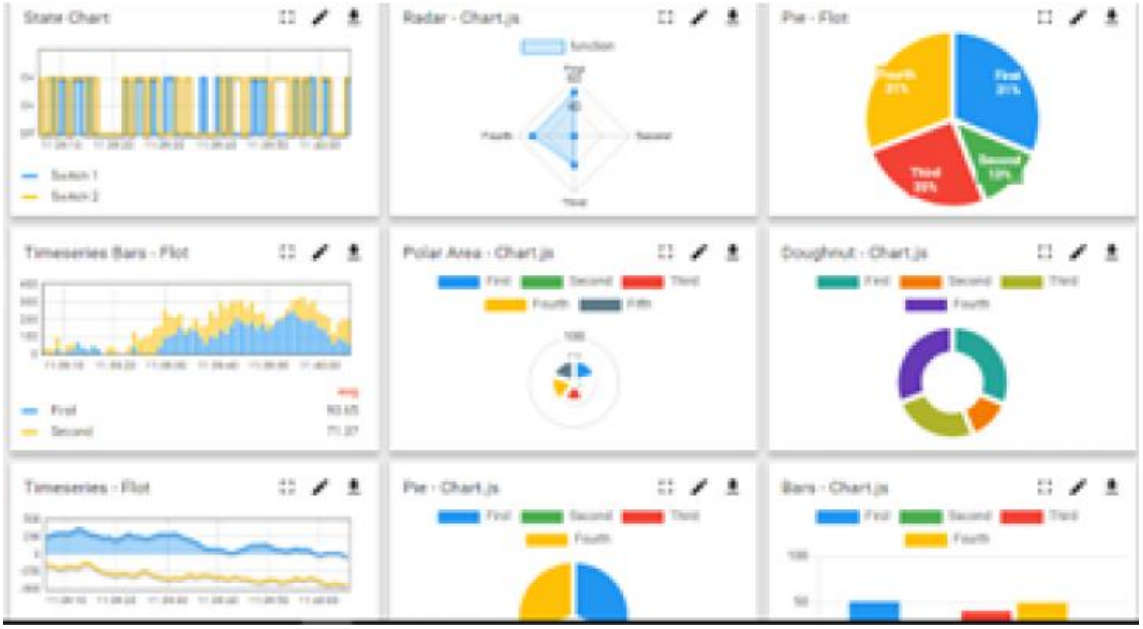
For developing its products and solutions it is leveraging various **Cutting Edge Technologies e.g. Internet of Things (IoT), Cyber Security, Cloud computing (AWS, Azure), Machine Learning, Communication Technologies (4G/5G/LoRaWAN), Java Full Stack, Python, Front end** etc.

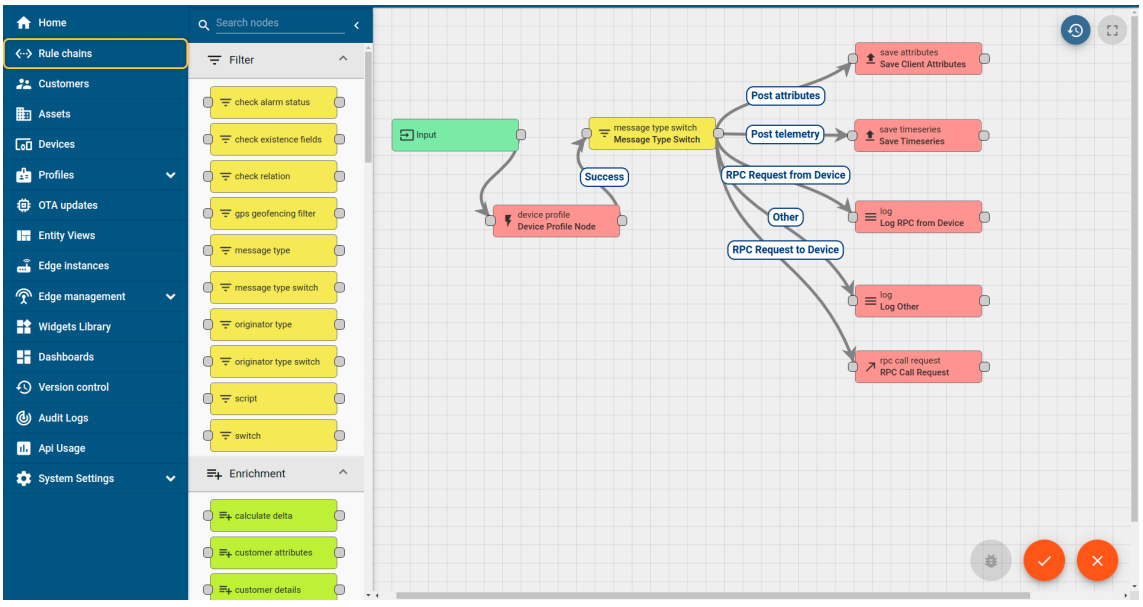

## i. UCT IoT Platform (uct Insight)

**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


State Chart
Radar - Chart.js
Pie - Plot
Timeseries Bars - Plot
Polar Area - Chart.js
Doughnut - Chart.js
Timeseries - Plot
Pie - Chart.js
Bars - Chart.js


Home
Rule chains
Customers
Assets
Devices
Profiles
OTA updates
Entity Views
Edge instances
Edge management
Widgets Library
Dashboards
Version control
Audit Logs
Api Usage
System Settings
Search nodes
Filter
check alarm status
check existence fields
check relation
gps geofencing filter
message type
message type switch
originator type
originator type switch
script
switch
Enrichment
calculate delta
customer attributes
customer details
Input
message type switch
Message Type Switch
device profile
Device Profile Node
Success
Post attributes
Post telemetry
RPC Request from Device
Other
RPC Request to Device
save attributes
Save Client Attributes
save timeseries
Save Timeseries
log
Log RPC from Device
log
Log Other
rpc call request
RPC Call Request

## 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.

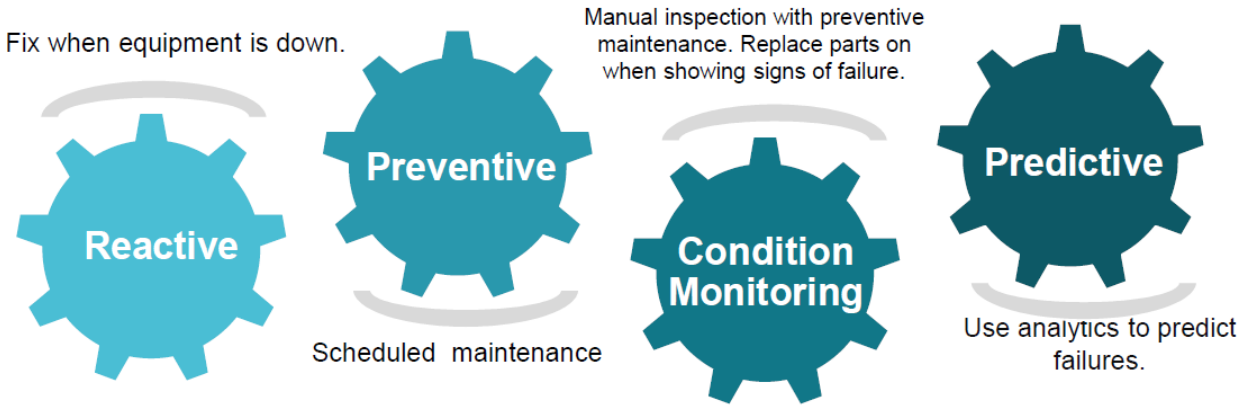

| Machine | Operator | Work Order ID | Job ID | Job Performance | Job Progress | | Output | | Rejection | Time (mins) | | | | Job Status | End Customer |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Start Time | End Time | Planned | Actual | | Setup | Pred | Downtime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

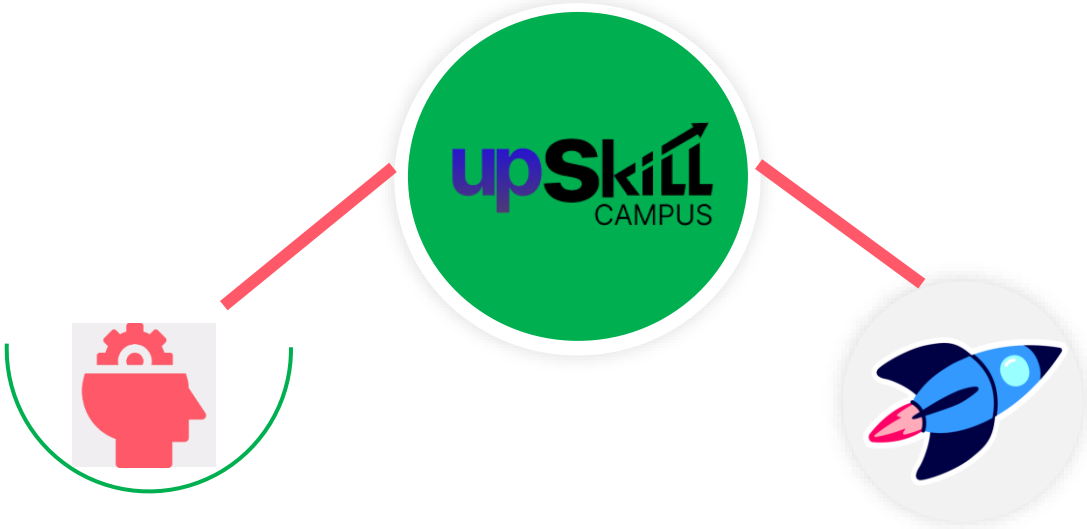
UCT is providing Industrial Machine health monitoring and Predictive maintenance solution leveraging Embedded system, Industrial IoT and Machine Learning Technologies by finding Remaining useful life time of various Machines used in production process.




### 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.

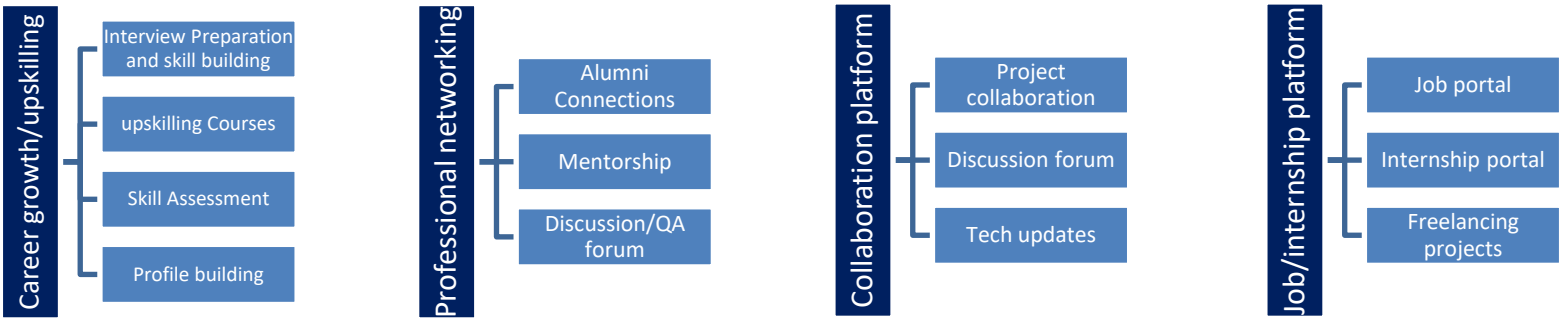
USC is a career development platform that delivers **personalized executive coaching** in a more affordable, scalable and measurable way.



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/



## 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 primary objective of the **GroceryGo** mobile application is to create a user-friendly, efficient, and reliable platform for online grocery shopping that equally serves **buyers** and **sellers**. The application aims to address the limitations of current grocery platforms by enabling local sellers to list their products and reach a broader customer base, while providing buyers with easy access to a wide variety of groceries sorted by rating, category, and availability.

Key goals include:

- Providing sellers with a simple, fast, and effective way to list and manage their grocery products.
- Enabling buyers to browse products easily, add them to a cart, and complete purchases efficiently.
- Offering features such as product ratings, quick actions, order history, and secure account management for a seamless user experience.
- Supporting dual login modes (Buyer/Seller) and intuitive navigation through main categories such as Catalog, Cart, and Settings.

## 2.5 Reference

The following resources were used during the development and research phases of this project:

- Android Developers Documentation
- Cursor AI official documentation and code assistance tools
- Firebase documentation for backend support and real-time database handling
- GitHub repositories for sample UI/UX and navigation flows
- YouTube tutorials for Android Studio basics and advanced implementations
- Stack Overflow community support
- Online articles and blogs on best practices for mobile e-commerce app design

## 2.6 Glossary

| Term | Full Form / Description |
|---|---|
| **UI** | *User Interface* – The visual layout and interactive elements of the application. |
| **UX** | *User Experience* – The overall feel and ease of use of the application for the end user. |
| **API** | *Application Programming Interface* – Allows communication between software components. |
| **Firebase** | A backend-as-a-service (BaaS) platform by Google used for authentication and real-time data. |
| **Cursor AI** | An AI-powered coding assistant that helps in auto-generating and debugging code. |
| **Android Studio** | The official Integrated Development Environment (IDE) for Android app development. |
| **Buyer Mode** | The user mode in GroceryGo that allows browsing, adding to cart, and purchasing groceries. |
| **Seller Mode** | The user mode in GroceryGo that allows listing, managing, and selling grocery products. |
| **Quick Actions** | Predefined shortcuts in the app for faster access to frequently used functions. |
| **Catalog** | A categorized list of grocery products available for buyers to browse. |
| **Order History** | A feature that displays past orders made by the buyer. |
| **Rating System** | A functionality that allows buyers to rate products, helping others make informed choices. |
| **Logout** | Option for users to securely exit their current session. |
| **Cart** | A virtual container where selected grocery items are stored before making a purchase. |

# 3 Problem Statement :

In today's fast-paced digital world, the demand for convenient and reliable grocery shopping solutions has significantly increased. However, despite the presence of several e-commerce platforms, many small and local grocery sellers face challenges in taking their business online due to the lack of affordable, easy-to-use, and dedicated platforms. At the same time, buyers often struggle with limited choices, trust issues due to lack of product transparency, and complex app interfaces that do not cater to quick, efficient grocery shopping.

The existing online grocery platforms primarily cater to large retailers and organized supply chains, leaving small sellers behind. These platforms also tend to impose high commissions or listing fees, which discourages individual vendors or small store owners from participating. This creates a gap in the market for a solution that is both inclusive and easy to operate for local sellers.

From the buyer's perspective, users often face difficulties such as:

- Lack of product ratings or reviews for informed decision-making
- Cluttered and unintuitive user interfaces
- Limited access to local sellers or nearby product options
- Unclear or unavailable order history for tracking purchases
- Inconvenient switching between buyer and seller roles

To address these issues, there is a need for a mobile application that provides a **dedicated platform for both buyers and sellers**, ensuring ease of use, trustworthiness, and efficiency. The solution must allow sellers to list products effortlessly and enable buyers to browse, rate, and purchase items with minimal friction.

**GroceryGo** aims to solve this problem by providing:

- A dual-mode application (Buyer and Seller) accessible via a single login
- An intuitive, user-friendly interface built with Android Studio
- A quick product listing and browsing system
- Features such as cart management, order history, product ratings, and secure account settings
- Minimal setup and no high fees for small sellers

This application bridges the gap between buyers seeking convenience and sellers looking for a simple, digital sales platform—empowering both ends of the grocery market.

# 4 Existing and Proposed solution

"Currently, many grocery platforms have limited seller options and complex user interfaces that make the shopping experience cumbersome for both buyers and sellers. Also, the lack of a rating system or genuine reviews can lead to trust issues."

**Proposed Solution**

"GroceryGo proposes a streamlined platform that offers:

- Easy product listing for sellers
- A rating and review system to build trust
- An intuitive user interface for seamless navigation
- Secure payment integration
- Quick actions and easy reordering"

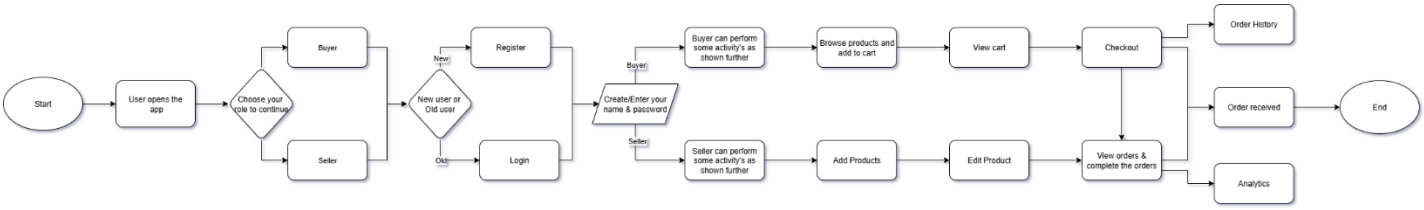
## 4.1 Code submission (Github link)

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

# 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 Interfaces (if applicable)



# 6 Performance Test

To validate the performance, functionality, and user experience of the **GroceryGo** application, a live testing phase was conducted in collaboration with a **small local grocery store**. The objective was to assess the real-world usability of the app from both **seller and buyer perspectives**, ensure accuracy in product listings, cart operations, and order tracking, and gather practical insights for future improvement.

## 6.1 Test Plan/ Test Cases :

**Test Environment:**

- Device: Android smartphone (Android 10+)
- User Type: One seller account (Grocery Shop Owner), Two buyer accounts (test users)
- Duration: 3 days of testing
- Network: Stable Wi-Fi and 4G mobile data
- Version: GroceryGo Beta v1.0

| Test Case ID | Scenario | Expected Result | Status |
|---|---|---|---|
| TC001 | Seller lists a new product | Product should appear in catalog for buyers | ☑ Passed |
| TC002 | Buyer browses the catalog | Products should load correctly with images and details | ☑ Passed |
| TC003 | Buyer adds items to cart | Items should reflect correctly in the cart section | ☑ Passed |
| TC004 | Buyer removes item from cart | Item should be removed from the cart instantly | ☑ Passed |
| TC005 | Buyer places an order | Order should be confirmed and visible in order history | ☑ Passed |

| Test Case ID | Scenario | Expected Result | Status |
|---|---|---|---|
| TC006 | Seller views recent orders | Latest orders should be listed with details | ☑ Passed |
| TC007 | Ratings are submitted by buyers | Ratings should appear on product details | ☑ Passed |
| TC008 | Switching between buyer and seller modes | User should be able to switch roles without logout | ☑ Passed |
| TC009 | Password is changed from Settings | New password should be saved and work for next login | ☑ Passed |
| TC010 | App handles slow internet connection | App should display loading indicator or retry message | ⚠ Minor Lag |

## 6.2 Test Procedure :

1. **Product Listing (Seller Side):**
   - The shop owner used the Seller mode to upload 10 grocery items, including images, prices, quantity, and descriptions.
   - Verified that all products appeared under the appropriate categories in the buyer's catalog.
2. **Browsing and Cart Management (Buyer Side):**
   - Two test buyers browsed products, filtered them by category and rating.
   - Added 5 items to the cart, removed one, and adjusted quantity for others.
   - Verified total cost and delivery address details.
3. **Order Placement:**
   - Placed two separate orders with different items and quantities.
   - Received real-time order confirmation messages.
4. **Seller Order Management:**
   - Seller received instant notifications of incoming orders.
   - Checked order details (items, buyer, time) in the seller dashboard.
5. **Ratings & Reviews:**
   - Buyers submitted product ratings after order completion.
   - Ratings appeared under the respective product listings.
6. **Settings & Security:**

- Tested password change and logout features.
- Successfully re-logged in with the new credentials.

## 6.3 Performance Outcome :

The GroceryGo application demonstrated stable and accurate performance during the real-world testing with the small grocery store. Key highlights include:

- **Accuracy:** All listed products were displayed correctly, with accurate pricing and availability. Order totals matched cart selections without errors.
- **Responsiveness:** Most actions (like adding to cart, placing orders, switching roles) completed within 2–3 seconds.
- **Reliability:** No app crashes or critical bugs were encountered during the 3-day testing period.
- **Usability:** The shop owner (non-technical user) was able to list products and manage orders without any assistance after initial training.
- **Minor Issues:** A slight delay (~1 second extra) was noticed during product browsing under slower network conditions. Optimization may be required in future versions for low-bandwidth environments.

# 7 My learnings :

This section describes what you **learned** from the project. You could reflect on:

- The challenges of building a fully functional e-commerce app
- How you used Android Studio and Cursor AI in the development process
- Insights into user experience design
- How to handle backend integration with databases
- Lessons learned about app optimization

For example:
“During the development of GroceryGo, I gained hands-on experience with Android Studio and learned how to implement advanced features like real-time cart updates and secure payment methods. I also learned about the importance of user interface simplicity and performance optimization.”

# 8 Future work scope :

This section discusses potential **improvements or future features** for the app. Some ideas could include:

- Integration with more payment gateways
- Multi-language support for a wider user base
- AI-based personalized recommendations for buyers
- A loyalty or rewards program for frequent shoppers
- Seller analytics dashboard to track sales performance