



MILITARY INSTITUTE OF SCIENCE AND TECHNOLOGY (MIST)

CSE-464 : Software Development Project II

Final Project Report

**App Name: NityMulya: A Multi-Role Fair Price &
Supply Chain Application**

Group Number: B2

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1 Introduction

NitiMulya is a mobile and web-based application designed to ensure fair pricing of daily commodities in Bangladesh. It enables customers to check government-declared prices, find nearby shops, submit complaints with photo or video evidence, and provide reviews. Shop owners can manage inventory and pricing, while wholesalers connect directly with shop owners to supply goods. Regulatory officers (DNCRP) can monitor activities, handle complaints, and take corrective measures. The app aims to promote transparency, fairness, and digital transformation in the retail ecosystem.

2 Target Users

- Customers
- Shop Owners
- Wholesalers
- Regulatory Officers (DNCRP)

3 Literature Review

Digital retail systems and price monitoring apps have gained attention for improving transparency and accessibility. Existing apps like Vegetable Market Price, Shwapno, Daraz, and Pandamart provide convenience in shopping and delivery but fail to integrate **government-declared prices** or **complaint reporting mechanisms**. Research indicates that users demand reliable price information, efficient complaint handling, and seamless integration between retailers and wholesalers. Our proposed app addresses these gaps by combining fair price monitoring, complaint submission with evidence, and supply chain management under one platform.

App Name	Features	Limitations
Vegetable Market Price	Daily city-based prices, multiple categories, lightweight app	Only shows prices, no complaints, not govt verified
Shwapno	10,000+ products, live order tracking, delivery, loyalty offers	No govt price integration, no reporting, weak loyalty system
Daraz	Large inventory, fast delivery, seller tools	No govt pricing, no violation reporting, delivery complaints
Padamart	Quick grocery delivery, O2O pick-up, discounts	No govt pricing, no wholesaler-shop link, reliability issues
Meena Bazar	Fast delivery, online payment, wide grocery range, user-friendly	Delayed delivery, stock errors, quality issues, area-limited fast delivery

4 Problem Statement and Identification

- Many shops do not follow government declared prices, creating unfairness.
- Customers cannot easily identify compliant shops.
- Wholesalers lack visibility of local shop demand.
- Customers cannot lodge complaints with proof in an easy way.
- Shopkeepers lack digital platforms for inventory and restocking.
- Honest shops are not rewarded or recognized.

5 Objectives

- To provide citizens with easy access to government-declared prices.
- To help users locate shops that follow fair practices.
- To enable users to report overpricing with receipts or photo/video evidence.

6 Feature List

- Price Checker: View daily government-fixed prices.
- Shop Locator: Find nearby fair-price shops.
- Complaint System: Submit complaints with receipts or proof.
- Shop Management: Shop owners add and update inventory.
- Wholesaler Integration: Connect shop owners with suppliers.

7 Technologies Used

Frontend	Flutter
Backend	Hono
Database	Supabase PostgreSQL
Additional Tools	Geolocator, FL Chart, Google Fonts, FlutterToast, Flutter Map

8 Developed System

The system includes the following key pages (screenshots attached):

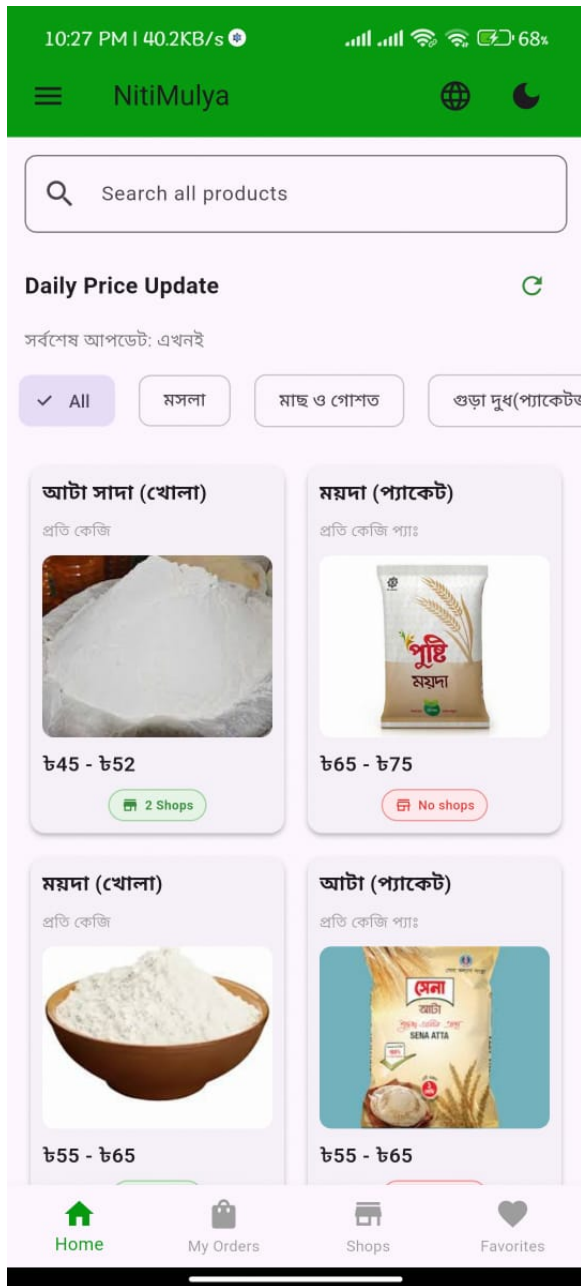


Figure 1: Products with category

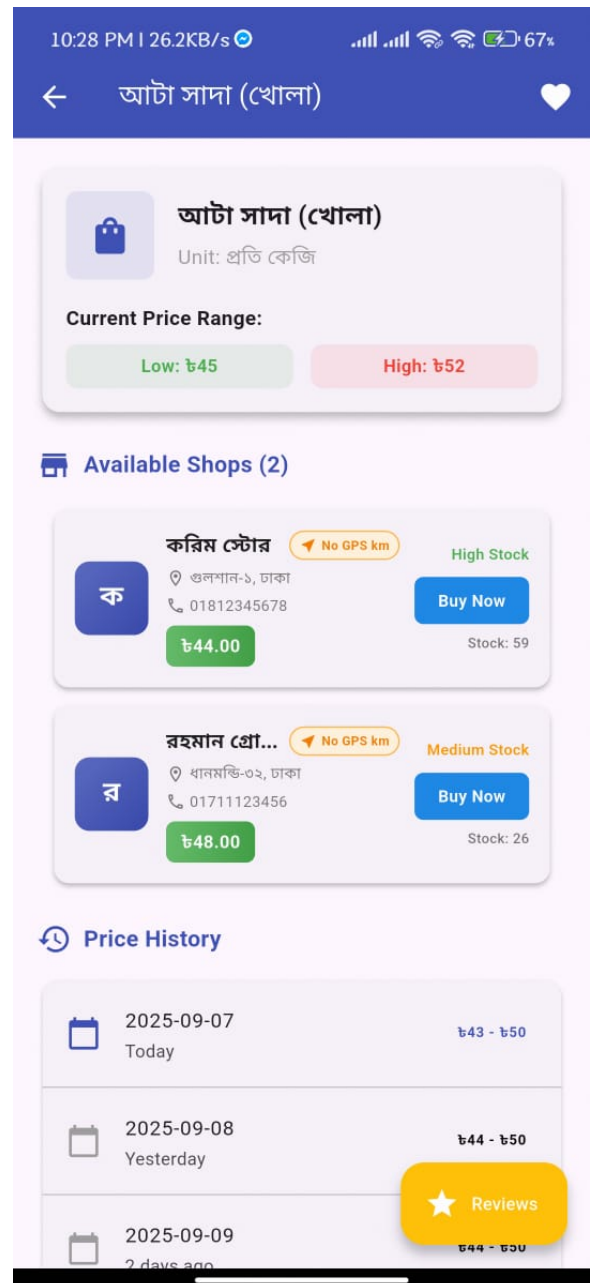


Figure 2: Buy product from available shops

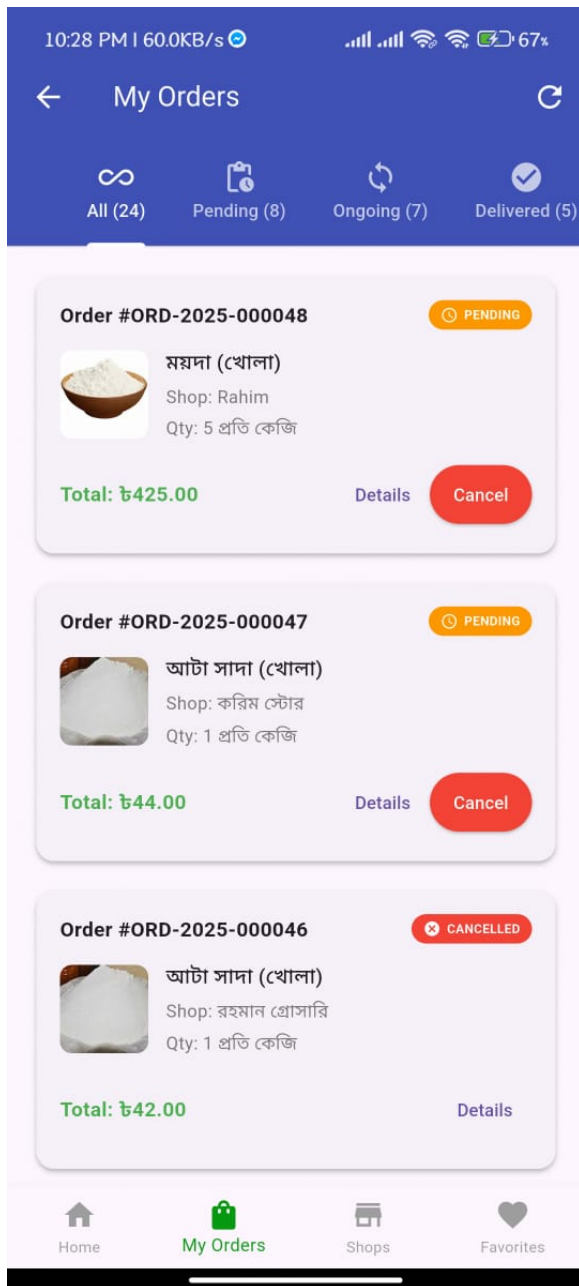


Figure 3: Customer Orders

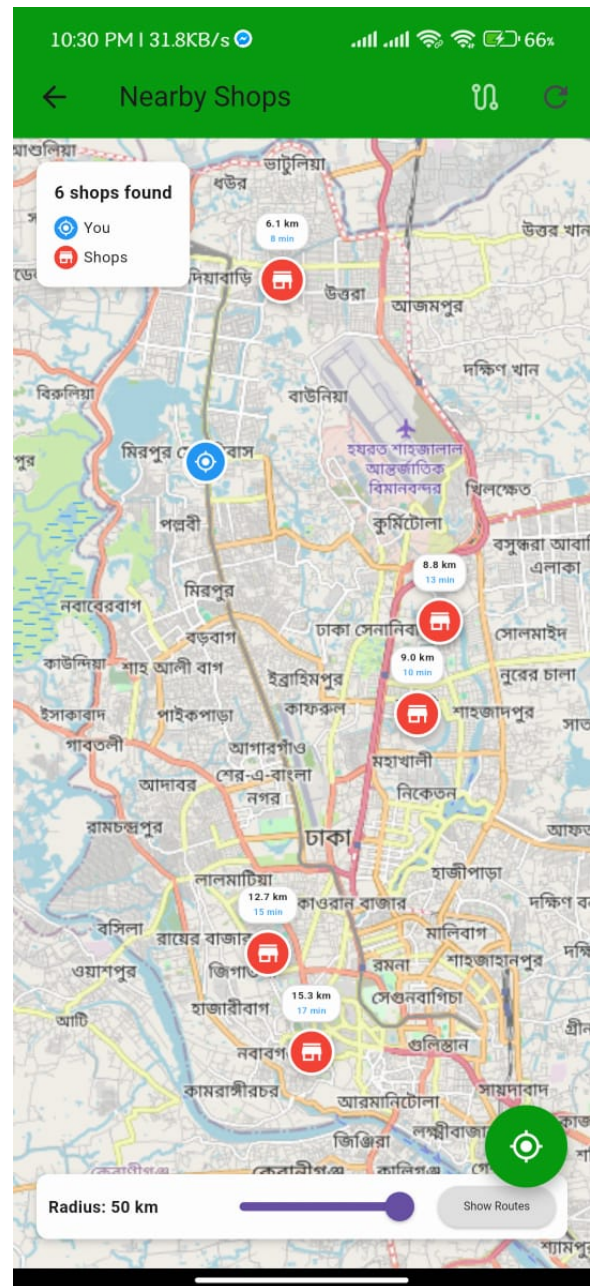


Figure 4: Nearby Shops

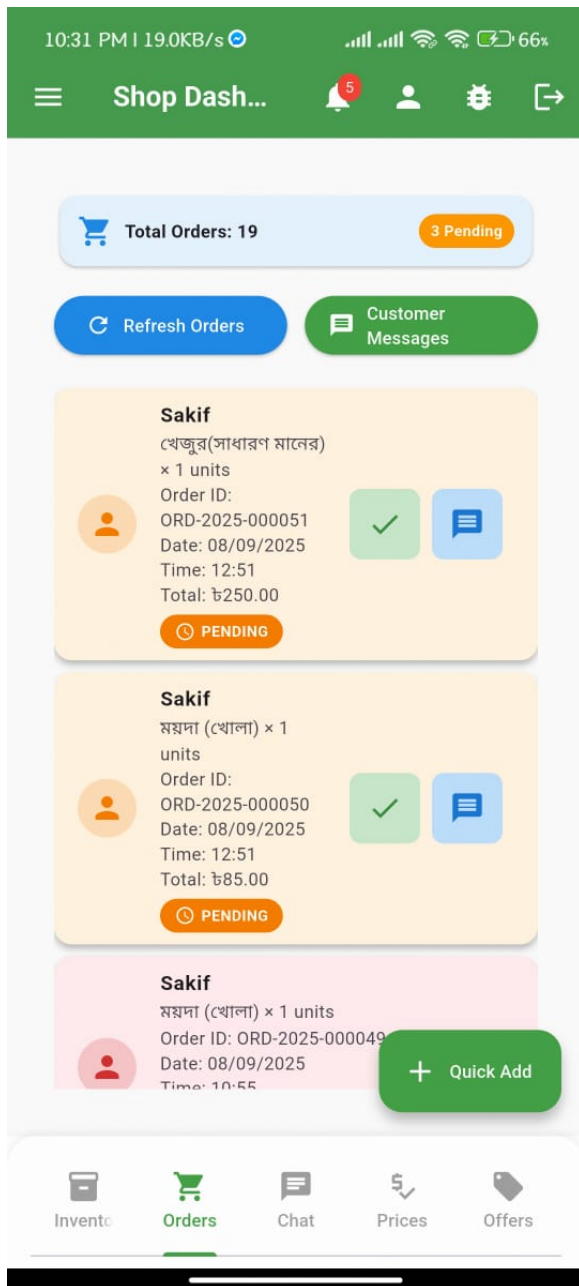


Figure 5: Shop Owner Orders

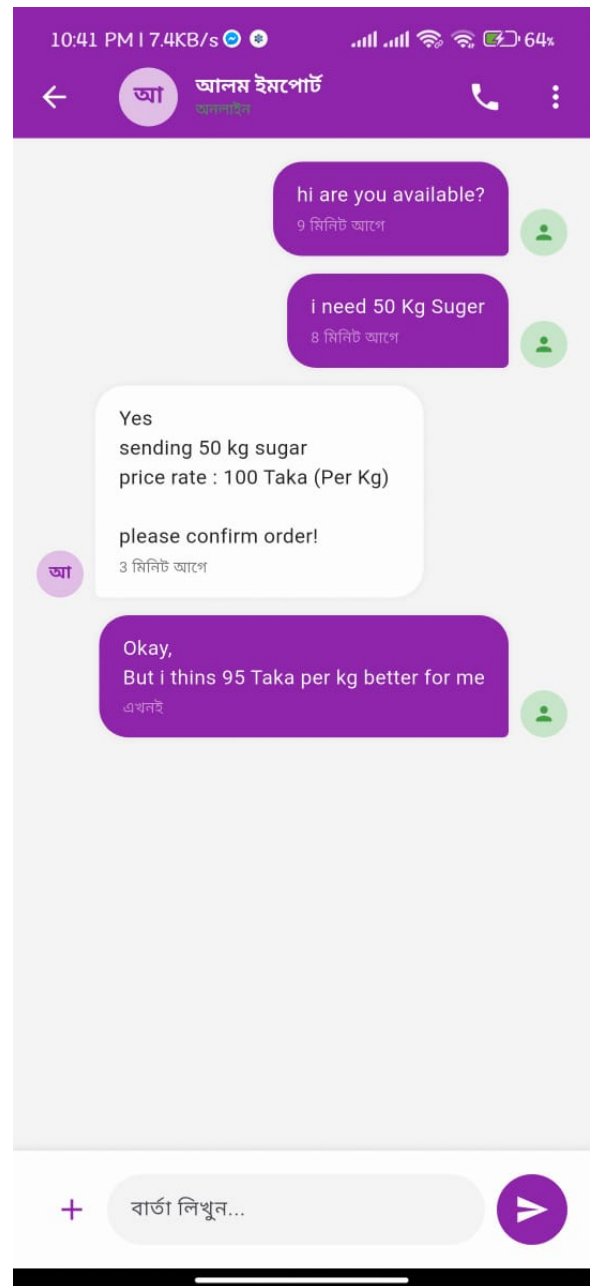


Figure 6: Chat with Wholesaler

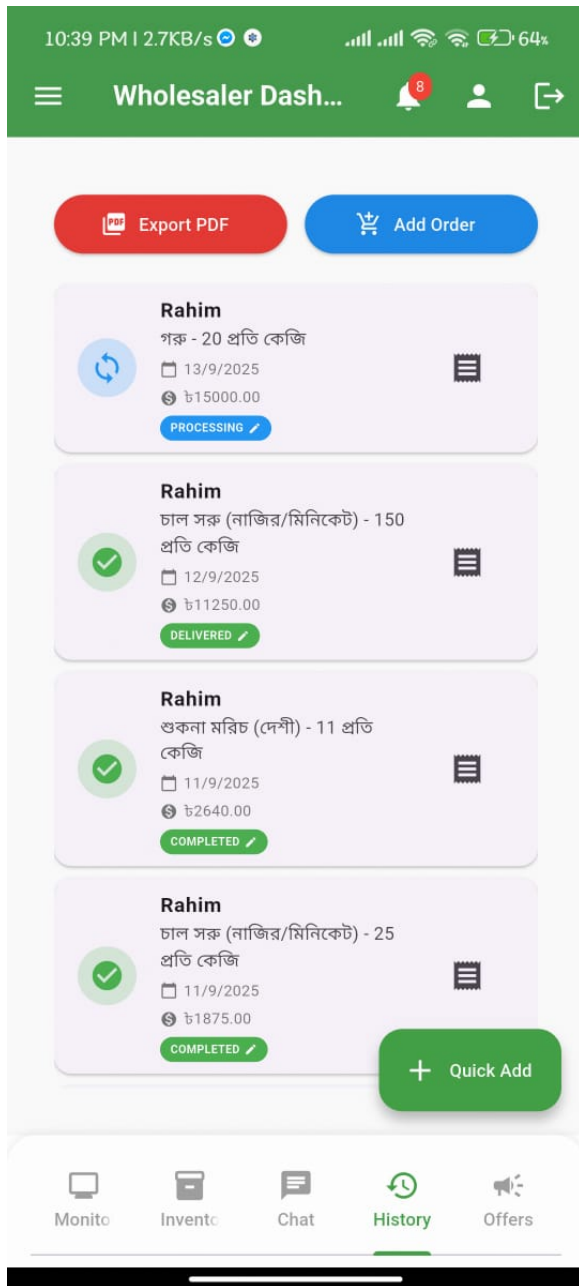


Figure 7: Products Supplied by Wholesaler

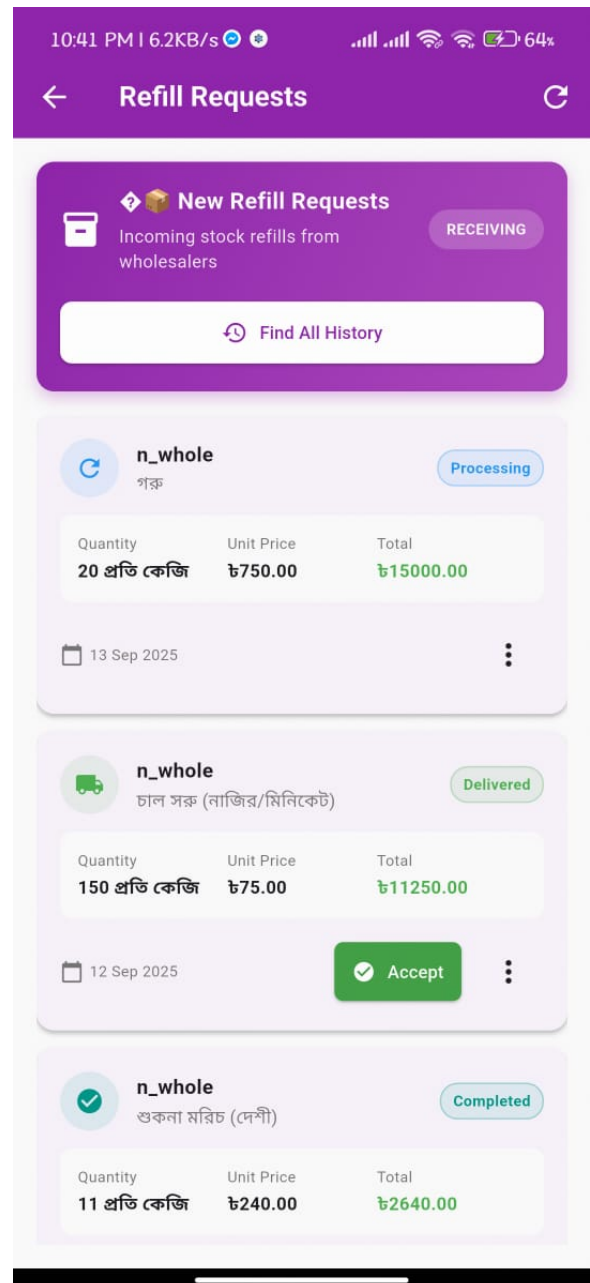


Figure 8: (Shop Owner) View and Confirm Wholesaler Supplies

9 Ethical Concerns for NityMulya Project

- **Data Privacy & Collection**

- Only collect necessary personal data (name, email, role)
- Store location data only with user permission
- Keep order history safe from unauthorized access
- Keep data separated between different user roles

- **Permission & Consent Management**

- Ask permission for GPS/location services
- Ask permission for file storage use for complaints

- **Complaint System Ethics**

- Keep complaint evidence safe and secure
- Show clearly when DNCRP is only a demo
- Ensure fair handling of disputes

- **Platform Fairness**

- Show shops fairly without bias
- Show prices clearly with no hidden charges

10 Societal Impacts

- Protects consumers by ensuring compliance with government pricing.
- Promotes transparency and accountability in the retail market.
- Encourages businesses to adopt digital platforms.
- Supports government digitalization efforts under Digital Bangladesh.

11 Design Changes

- Removed overflow issues and improved overall design.
- Implemented nearby shop feature and added a way to view them.
- Added shop owner and wholesaler drawer with name and email.
- When wholesaler places an order, it automatically updates shop owner's inventory.
- Added chat with phone call option; clicking call opens phone dialer.
- Integrated complaint system into a proper form for easy submission.

12 Lifelong Learning

- Users learn how to monitor prices and support fair trade.
- Developers get practical experience in building full-stack apps.
- Students learn how to use databases and APIs in real projects.
- Skills and knowledge can be used in future digital commerce projects.

13 SUS Usability Testing

The System Usability Scale (SUS) evaluation scored **80**, indicating high usability.

Task Completion Time

Task Name	Description	Evaluator 1 (s)	Evaluator 2 (s)	Avg (s)
Add Product (Shop Owner)	Shop owner adds a new product	32	35	33.5
Order Product (Customer)	Customer orders a product	5	8	6.5
Update Inventory (Wholesaler)	Wholesaler updates stock	17	16	16.5

Average Task Completion Time = 18.67s

14 Future Work

- Introduce AI-based price prediction.
- Add fraud detection for complaints.
- Implement multilingual support.
- Expand to international commodity tracking.

15 Work Distribution

Frontend Work Distribution

SL	Members	FrontEnd Pages
1	Syed Mafijul Islam 202214105	Login Screen, DNCRP Dashboard, Customer Dashboard, Wholesaler Dashboard, Custom Navigation Drawer
2	Sakif Shahrear 202214093	My Orders, Pending Orders, On-going Orders, Cancelled Orders, Customer Orders Overview
3	Nahidur Zaman 202214075	Complaint Screen, New Complaint Screen, Shop Reviews, Complaint Form, Add Review Page
4	Khadiza Khanom Mithila 202114171	Complaint Submission, Complaint Details, DNCRP Complaint List, Complaint Data Models, Temporary Dashboard

Backend Work Distribution

SL	Members	Features
1	Syed Mafijul Islam 202214105	Main Server Setup, API Controllers, Shop Owner Management, Wholesaler Management, Authentication & JWT
2	Sakif Shahrear 202214093	Customer Order Database, Order Messages Table, Order Message Controller, Inventory Testing, Order Migration
3	Nahidur Zaman 202214075	Frontend Complaint Integration, Complaint UI/UX Handling, Shop Review Backend, Customer Service Interface, Navigation UX
4	Khadiza Khanom Mithila 202114171	Complaint Table Creation, Complaint Scripts, Cancelled Orders Testing, Customer Testing, Data Model Validation

References

- [1] North South University, “Fair Pricing of Farm Produce in Bangladesh,” [Online]. Available: Link. [Accessed: Sep. 13, 2025].
- [2] Government of Bangladesh, “Review Report on the Essential Articles Price Control and Anti-Hoarding Act, 1953,” 2023. [Online]. Available: Link. [Accessed: Sep. 13, 2025].
- [3] New Age Bangladesh, “Task Force to Monitor Prices of Daily Essentials at District Level,” 2023. [Online]. Available: Link. [Accessed: Sep. 13, 2025].
- [4] Relevant app websites: Daraz, Shwapno, Pandamart, Vegetable Price apps.