

# CSE499: Senior Design Project

Project Report

## Product Distribution Network



Supervised by

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### Project Members

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Summer 2023

Department of Electrical and Computer Engineering

North South University

## Declaration

This report presents a self-contained software-based implementation developed for the Senior Design Project course at North South University (Spring-Summer 2023). We confirm its originality and affirm that it has not been submitted for any other degree or program. All previously published sources have been duly acknowledged within the report.

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## Approval

The Senior Design Project titled "Product Distribution Network" has been completed and accepted as satisfactory for partial fulfillment of the Bachelor of Science in Computer Science (BS CSE) degree program by Md. Razib (ID #1821931042), Md. Zahin Faiyaz Islam (ID #1912207642), Sanjida Rahman (ID #1911223042), Sadia Tahasin (ID #1921397042), and Hadia Tasmim Oishi (ID #1911146042) during Summer 2023.

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## **Acknowledgment**

First and foremost, we express our heartfelt gratitude to the Almighty for the blessings and guidance that have sustained us throughout our academic journey. We are profoundly thankful to our beloved parents for their unwavering support, encouragement, and sacrifices, which have made the pursuit of our educational aspirations possible.

We sincerely thank Dr. Shazzad Hosain, our esteemed supervisor, for his invaluable guidance, mentorship, and unwavering encouragement throughout the Senior Design Project. His expertise, patience, and dedication have played a pivotal role in shaping our understanding of the project and its real-world applications.

We are grateful to the Department of Electrical and Computer Engineering (ECE) at North South University for providing us with the essential resources, facilities, and academic support that were instrumental in the successful completion of our project. We acknowledge the department's unwavering commitment to fostering a stimulating learning environment encouraging innovation and exploration.

Finally, we acknowledge our fellow students and colleagues for their camaraderie, collaboration, and insightful discussions, enriching our learning experience. We are truly grateful for the supportive community at North South University that has contributed to our academic growth and personal development.

## **Abstract**

In the face of Dhaka's fast-paced retail environment, our team embarked on a mission to transform distribution operations, addressing critical challenges like optimizing shop visits, ensuring timely deliveries, managing complex orders, and fortifying vendor relationships. Our journey culminated in the creation of a robust distribution network system seamlessly connecting Sales Representatives (SRs), Distributors (Ds), and Delivery Sales Representatives (DSRs) through a unified platform. Using a user-friendly website and a tailor-made Android app for SRs, we revolutionized communication, order processing, and inventory management, eliminating lost phone calls and handwritten errors. Our system ensures instant order placement, real-time delivery tracking, and transparent inventory visibility for everyone involved. Beyond mere technology, our focus is on building meaningful connections. We believe the future of retail distribution lies in fostering strong relationships with vendors and partners. Our system promotes closer collaboration, providing real-time insights for Ds into SR needs and giving SRs direct access to vendor inventory and product details. This cultivates trust, transparency, and a more efficient and responsive distribution chain. Beyond reshaping Dhaka's distribution landscape, our project offers insights applicable to businesses navigating similar challenges in any dynamic urban setting. By embracing technology and nurturing relationships, we present a practical blueprint for the future of retail distribution that optimizes operations, strengthens partnerships, and delivers a seamless experience for both businesses and consumers.

*Keywords:* Retail environment, distribution operations, vendor relationships, unified platform, inventory management, real-time insights, efficient distribution chain, consumer