VELORIYA : AN END-TO-END E-COMMERCE APPLICATION

A PROJECT REPORT

Submitted by

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Under the esteemed Guidance of

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in partial fulfilment for the award of the degree of

BACHELOR OF TECHNOLOGY

in

COMPUTER SCIENCE & ENGINEERING

Centurion
UNIVERSITY
Shaping Lives...
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BONAFIDE CERTIFICATE

Certified that this project report "**Veloriya : An End-to-End Ecommerce Application**" is the Bonafide work of **Avantika Sharma (221801370004), S. Ganesh Kumar (221801370007), B. Prem Sai (221801370010), V. Josh Swaroop (221801370011), K. Vinay Kumar (221801370025) ,** who carried out the project work under my supervision. This is to further certify, to the best of my knowledge, that this project has not been carried out earlier in this institute and the university.

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Certified that the above-mentioned project has been duly carried out as per the norms of the college and statutes of the university.

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DEPARTMENT SEAL

DECLARATION

We hereby declare that the project entitled "**Role – Based Database Access Control Manager**" submitted to the fulfilment of the award of the degree of 7th semester, B. Tech in Computer Science and Engineering in Centurion University of Technology and Management, Vizianagaram. This is my original work and the project has not formed the basis for the award of any Degree / Diploma or any other similar titles in any other University / Institute.

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ABSTRACT

This project presents the comprehensive design and implementation of an **End to End E-Commerce Application (Veloriya)**, developed to deliver a secure, scalable, and user-centric online shopping experience. The system integrates a modern full-stack architecture that enables users to browse products, manage carts and wishlists, complete secure transactions, and track orders through an intuitive and responsive interface.

By incorporating **JWT-based authentication**, **role-based access control**, and **encrypted data handling**, the platform ensures strong security, protects sensitive user information, and prevents unauthorized access. The backend architecture leverages **RESTful APIs** and efficient **database management using MongoDB**, enabling seamless data storage, retrieval, and transaction processing.

The application features a powerful **admin dashboard** that allows administrators to manage products, users, orders, and inventory efficiently. Real-time updates, optimized search and filtering, and performance-focused UI/UX design enhance user engagement and operational efficiency. Additionally, the system supports scalability, making it adaptable for high-traffic commercial environments.

Emphasizing **security, usability, modularity, and performance optimization**, this project demonstrates how modern web technologies can be effectively applied to build a production-ready e-commerce platform. The Veloriya system enhances digital retail operations, improves customer experience, streamlines administrative workflows, and provides a strong foundation for future enhancements such as AI-driven personalization and advanced analytics.

Keywords

E-Commerce, Full-Stack Web Application, MERN Stack, Online Shopping Platform, Secure Payments, User Authentication, JWT, MongoDB, Product Management, Order Tracking, Admin Dashboard, Scalable Systems, Web Security, Digital Commerce, RESTful APIs, UI/UX Design, Cloud Deployment, Performance Optimization, Real-Time Systems, Secure Transactions