



Engineering, Computing / Florida International University

Summer 2024 Senior Design Project

Design and Implementation of an E-commerce Database System

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INTRODUCTION

Background: Growing e-commerce businesses need efficient, scalable database systems to handle increasing transaction volumes and manage data accurately.

Objective: Develop a robust database system to improve performance, accuracy, and scalability.

CURRENT SYSTEM

Issues: Current manual processes and basic database lead to slow performance, frequent errors, and inefficiencies.

Impact: Affects customer satisfaction, operational efficiency, and scalability.

REQUIREMENTS

Functional: Handle orders, products, shipments, customer data, integrate with payments systems.

Non-Functional: Scalable, reliable, secure, and user-friendly.

OBJECT DESIGN

Entities: Users, Categories, Products, Orders, Cart, and many more.

Relationships: Customers place Orders, Orders include Products, Inventory track Products.

IMPLEMENTATION

Technologies Used: MySQL, PHP, JavaScript, HTML, CSS.

Key Steps: Database schema development, Backend and frontend creation, Integration and deployment.

REFERENCES

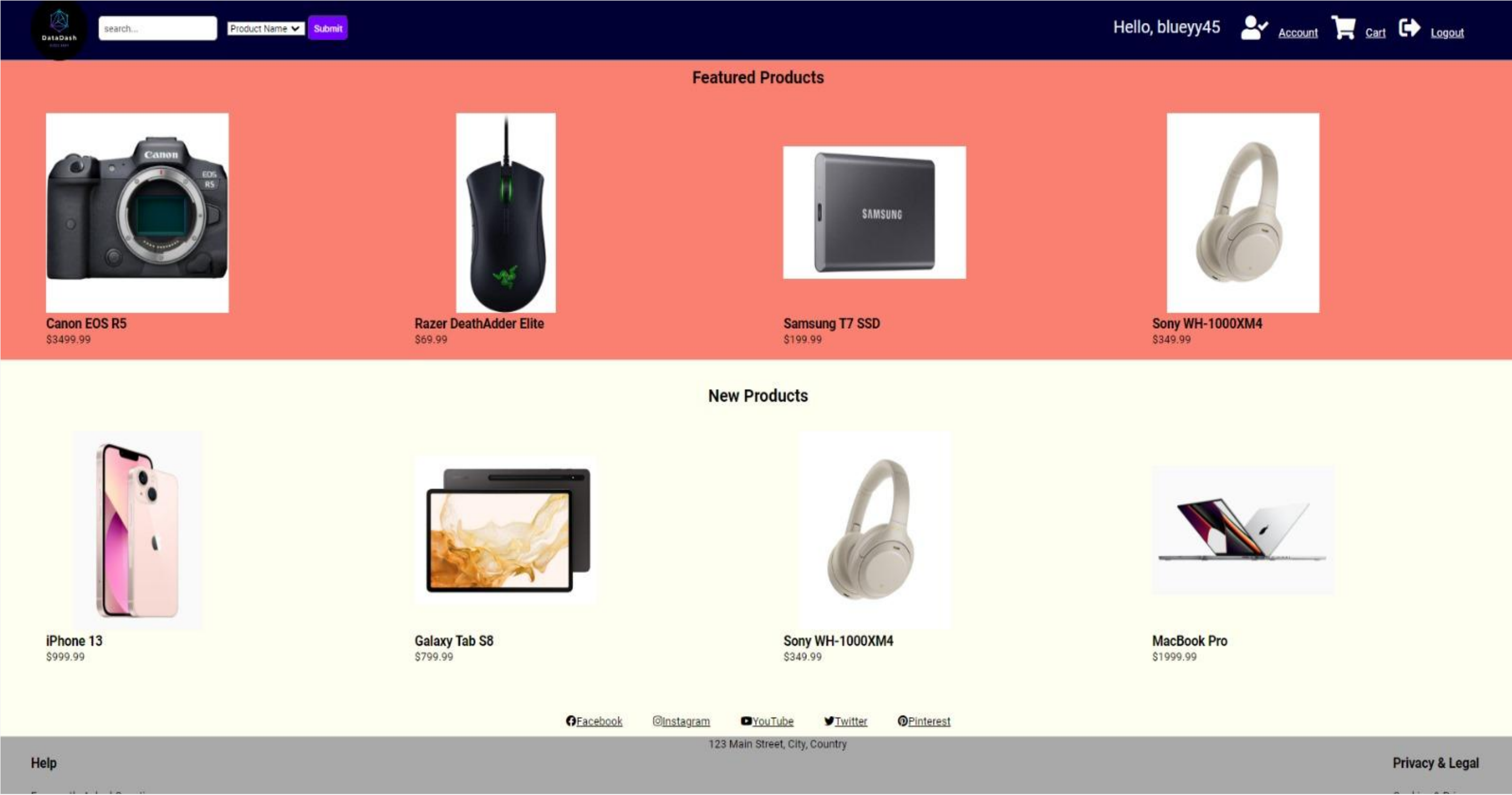
Sources: YouTube, w3schools, Stack Overflow, and many more.

Credits: Aday Devora Delgado, Daniel Jesus Gamon, Joshua Michael Doucette, Natan Farhy, Robens Duverny

SUMMARY

Summary: Successfully developed and implemented an efficient e-commerce database system.

Future Directions: Consider adding machine learning for recommendations and ongoing system optimization.



SYSTEM DESIGN

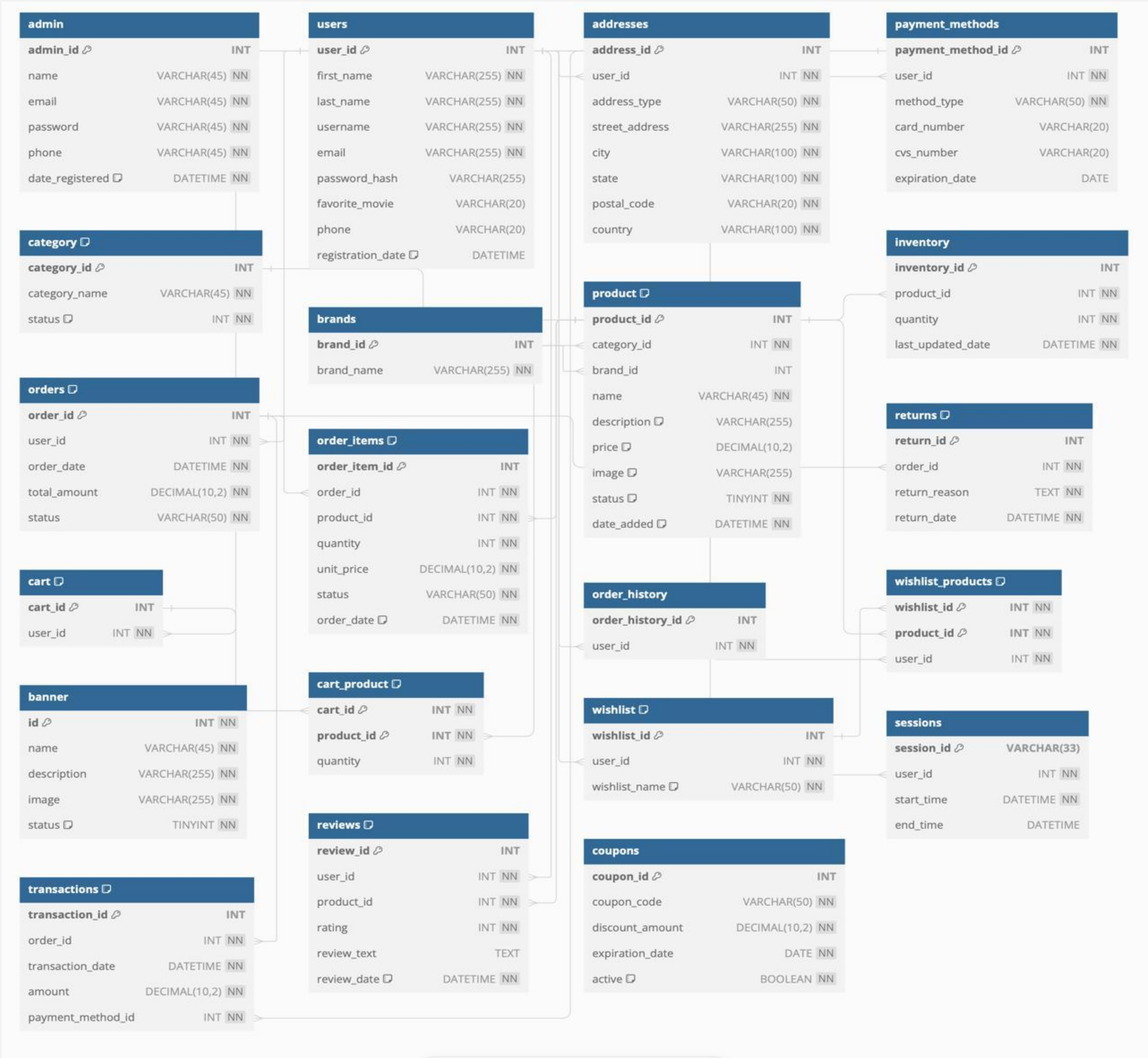
Architecture: MySQL, PHP.

Components: Front-end, Back-end, Database Server.

VERIFICATION

Testing Methods: Unit testing, Integration testing, user acceptance testing (UAT)

Results: Addressed issues, met performance criteria, validated system functionality.



ACKNOWLEDGEMENT

The material presented in this poster is based upon the work supported by XXXXX (*name of the project sponsor: federal, state or local government, or corporate partners, where applicable*). We/I thank XXXX for his/her/their assistance and mentorship that I/we received throughout the senior design project.