Bangladesh University of Business and Technology (BUBT)

Database management systems project (CSE-208)

Of

BACHELOR OF SCIENCE

IN

COMPUTER SCIENCE AND ENGINEERING

Project Name - E commerce

Intake - *50* ***Section -*** *01*

Submitted By

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IDEA

The idea for this e-commerce database project emerged from observing the rapid growth of online shopping and the increasing demand for efficient and scalable e-commerce platforms.

E-commerce is fast gaining ground as an accepted and used business paradigm. More and more business houses are implementing web sites providing functionality for performing commercial transactions over the web. It is reasonable to say that the process of shopping on the web is becoming commonplace. Noticing how crucial data management is for seamless user experience and business operations, we aimed to create a robust database system that handles user information, product details, orders, transactions, user demands and shopping carts efficiently. The objective of this project is to develop a general purposes e-commerce store where products like electronics can be bought from the comfort of home through the Internet. However, for implementation purposes, this paper will deal with online shopping for electronics. Our inspiration was fueled by the need for :

Scalability: To support a growing number of users and products.

Data Integrity: To ensure accurate and consistent data.

Performance Optimization: To provide fast and reliable access to data.

Security: To protect sensitive user and transaction information.

By focusing on these aspects, we aim to build a comprehensive database system that not only supports the current needs of an e-commerce platform but is also adaptable for future growth and technological advancements.

Motivation

The motivation behind the development of our e-commerce platform stems from the ever-growing demand for online shopping experiences that are seamless, secure, and personalized. As traditional brick-and-mortar stores transition into the digital landscape, the need for robust e-commerce solutions becomes increasingly evident. Our project aims to address this need by creating a sophisticated database system that powers a dynamic and user-friendly online shopping platform.Several key factors drive our motivation

Consumer Convenience: In today's fast-paced world, consumers seek convenience in every aspect of their lives, including shopping. Our e-commerce platform aims to provide a hassle-free shopping experience where customers can browse, select, and purchase products from the comfort of their homes or on-the-go, at any time of the day.

Global Reach: The internet has bridged geographical boundaries, enabling businesses to reach customers worldwide. Our motivation lies in tapping into this vast potential market and

providing access to a wide range of products to customers across different regions and demographics.

Market Demand: The growing trend of online shopping is indicative of a significant shift in consumer preferences. By addressing this market demand, we aim to capitalize on the opportunities presented by e-commerce and establish a strong foothold in the digital marketplace.

Innovation and Adaptation: The e-commerce landscape is constantly evolving, driven by technological advancements and changing consumer expectations. Our motivation stems from our commitment to innovation and adaptation, as we continuously strive to enhance our platform's features, user experience, and operational efficiency to stay ahead of the curve.

Entrepreneurial Spirit: At the core of our motivation is a passion for entrepreneurship and a drive to build something impactful. We are inspired by the prospect of creating a successful e-commerce venture that not only generates revenue but also makes a positive difference in the lives of our customers and contributes to the digital economy.

Features

In our e-commerce website project, there are some features which is given bellow:

Product Catalog
A searchable collection of products with detailed descriptions, images, and pricing.

User Registration and Authentication
Allow users to create accounts, log in securely, and manage their profiles.

Shopping Cart
Enable users to add items to their cart for future purchase and manage the contents of their cart. Only admin can access to add items.

Checkout Process
Guided steps for users to complete their purchases, including shipping and billing information, payment options, and order confirmation.

Payment Gateway Integration
Integration with payment gateways to securely process transactions using credit/debit cards, digital wallets, or other payment methods.

Order Management
Backend system for administrators to manage orders, view order details, process payments, and handle returns and refunds.

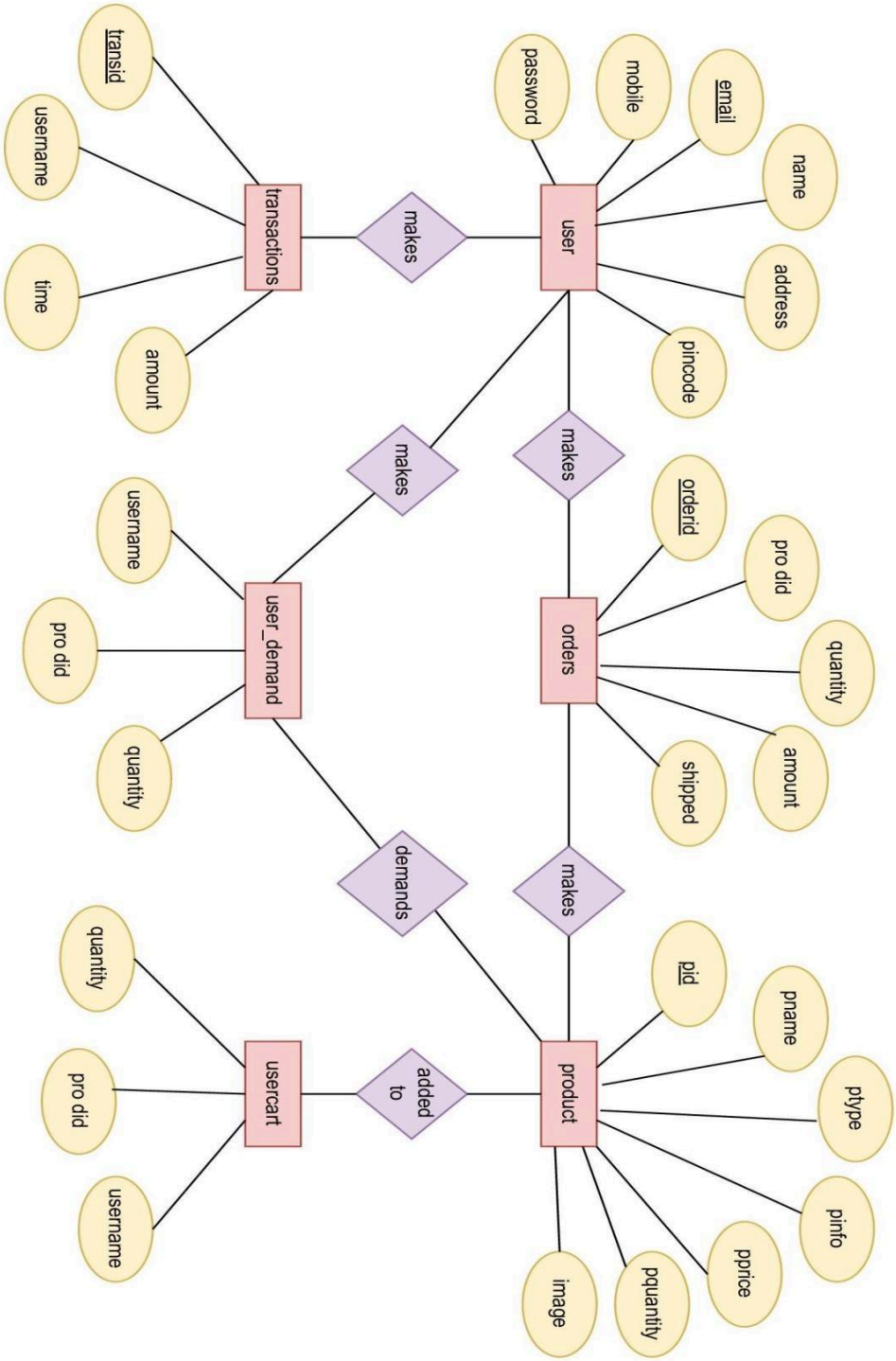
Search and Filtering
Robust search functionality and filtering options to help users find products quickly based on criteria such as category, price range, brand, or specifications.

Responsive Design
Ensure the website is optimized for various devices and screen sizes, providing a seamless shopping experience across desktops, tablets, and smartphones.

Security Features
Implement measures such as SSL encryption, PCI compliance, and secure payment processing to protect users' sensitive information.

These are just some of the common features of our e-commerce website project. Depending on the specific requirements and goals of the project, additional features and customizations may be necessary.

ER Diagram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Table/Relation List

User (name, address, mobile, e-mail, password, pincode)

Order (order-id, prod-id, quantity, amount, shipped)

Product (p-id, p-name, p-type, p-info, p-price, p-quantity, image)

Transactions (trans-id, username, time, amount)

user_demand (username, prod-id, quantity)

user_cart (username, prod-id, quantity)

Cardinality

User & Orders (one to many)

Each order placed in the system is tied to a specific user who initiated the order. A user can place multiple orders over time, indicating a one-to-many relationship between users and orders.

User & Transactions (one to many)

Each transaction recorded in the system is linked to a specific user who initiated the transaction. A user can engage in multiple transactions over time, indicating a one-to-many relationship between users and transactions.

User & User demand (one to many)

Each user can make multiple demands for various products within the system. A user may demand different products at different times, indicating a one-to-many relationship between users and their demands.

Orders & Product (one to many)

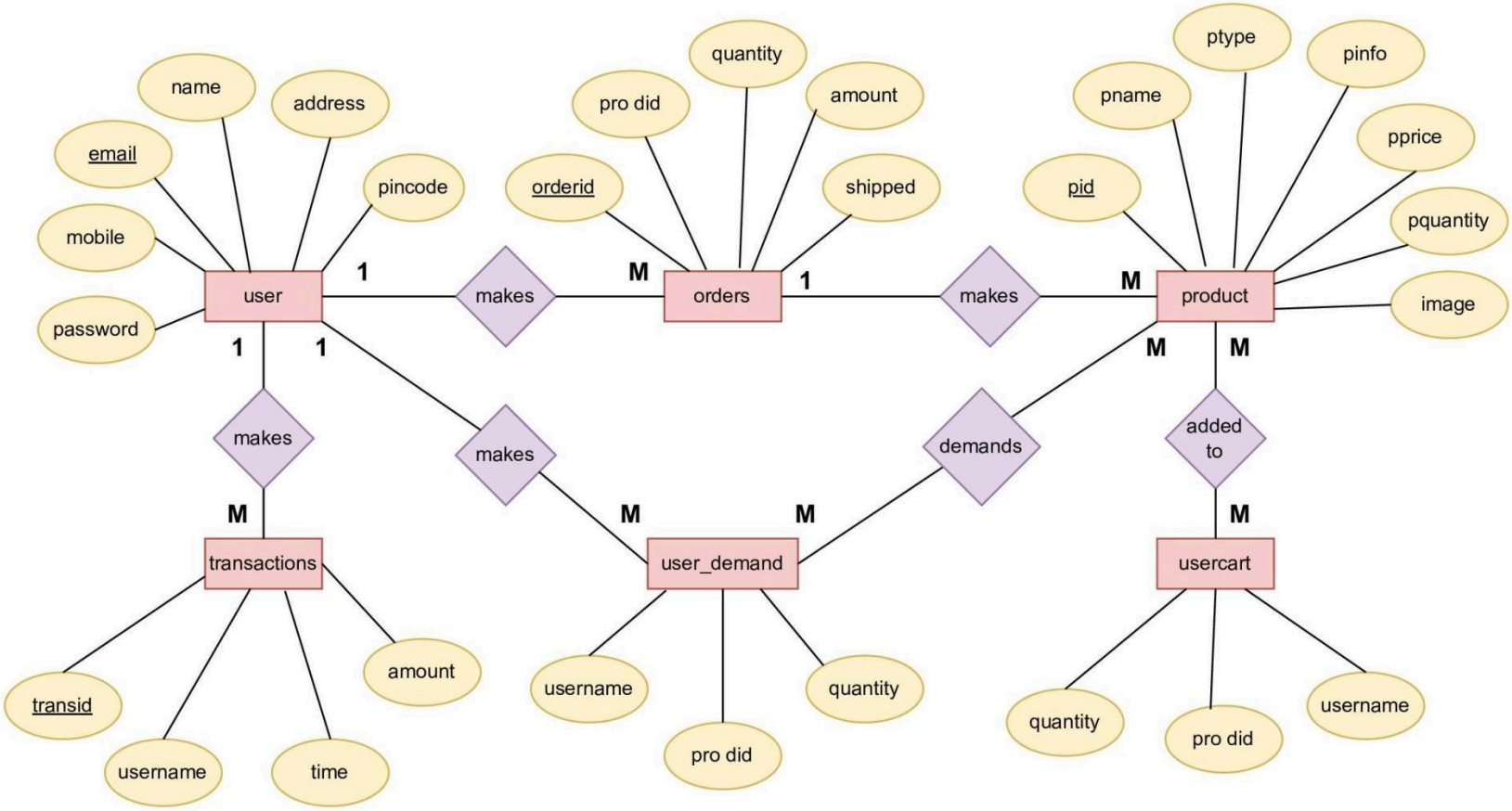
Each order placed in the system can contain multiple products. However, each product can belong to only one order at a time. This indicates a one-to-many relationship between orders and products.

Product & User demand (many to many)

Multiple users can demand multiple products, and each user demand can be associated with multiple products. Conversely, each product can be demanded by multiple users.

Product & User cart (many to many)

Multiple products can be added to a user's cart. Conversely, a single product can be added to multiple users' carts. This indicates a many-to-many relationship between products and user carts.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Schema diagram