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E-commerce Platform – Oracle PL/SQL RetailFlow Management System

1. Project Idea Explanation

The E-commerce Backend System aims to streamline and automate core online retail operations by solving challenges such as inventory mismanagement, order processing delays, and lack of transaction accountability. The system utilizes Oracle PL/SQL to build a reliable, rule-driven, and secure backend capable of managing product data, order fulfillment, and audit logging. This project implements automation through procedures, triggers, and packages to ensure data consistency and enhance operational efficiency.

2. Database Schema(s)

The database schema for the E-commerce Platform is structured around key entities including **Customer**, **Product**, **Orders**, **Delivery, Payment ,Order_item,Category**, and **Audit_Log**. These tables are interconnected to manage customer information, product inventory, purchase transactions, and audit trails. Functions and procedures will be used to handle core operations like placing orders, calculating total spending, and updating stock automatically. Where System checks stock, creates order and items Admin reviews and confirms while Finance validates payment Delivery dispatches.

Table Name	Purpose
Customer	Stores customer information like name, email, and address.
Product	Contains product details including price and stock quantity.
Orders	Tracks orders placed by customers.
OrderItem	Links specific products to orders with quantities and subtotals.
Audit_Log	Maintains records of user actions for accountability.
Delivery	This stores the delivered products

Payment	This will store the payment price of each product.

3. Innovation or Improvement

This project introduces several innovations compared to traditional database-driven systems:

- Automation of order handling and inventory updates through structured PL/SQL packages and procedures.
- Enforcement of operational constraints to ensure that data changes are not allowed during weekends or holidays.
- Utilization of Oracle Enterprise Manager (OEM) to continuously observe database performance and ongoing activities in real time.
- Implementation of an auditing mechanism to ensure accountability and provide clear visibility into all data modifications.