

PERFUME DATABASE MANAGEMENT SYSTEM

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HTTP 5126 – Database Design & Development

Humber Polytechnic – North | Fall 2024

REAL-WORLD SCENARIO

As a database manager hired by a retail perfume company to manage their database system, which tracks brands, products, notes (fragrance components), and related information. You will want to be able to handle product updates seamlessly and also be able to make decisions, such as inventory management, analysis, and marketing.

PROBLEMS

Product Inventory Management:

- Maintain accurate product and brand data with efficient updates.
- Trigger notifications for changes.

Fragrance Analysis for Marketing:

- Simplify access to fragrance profiles for trend analysis.

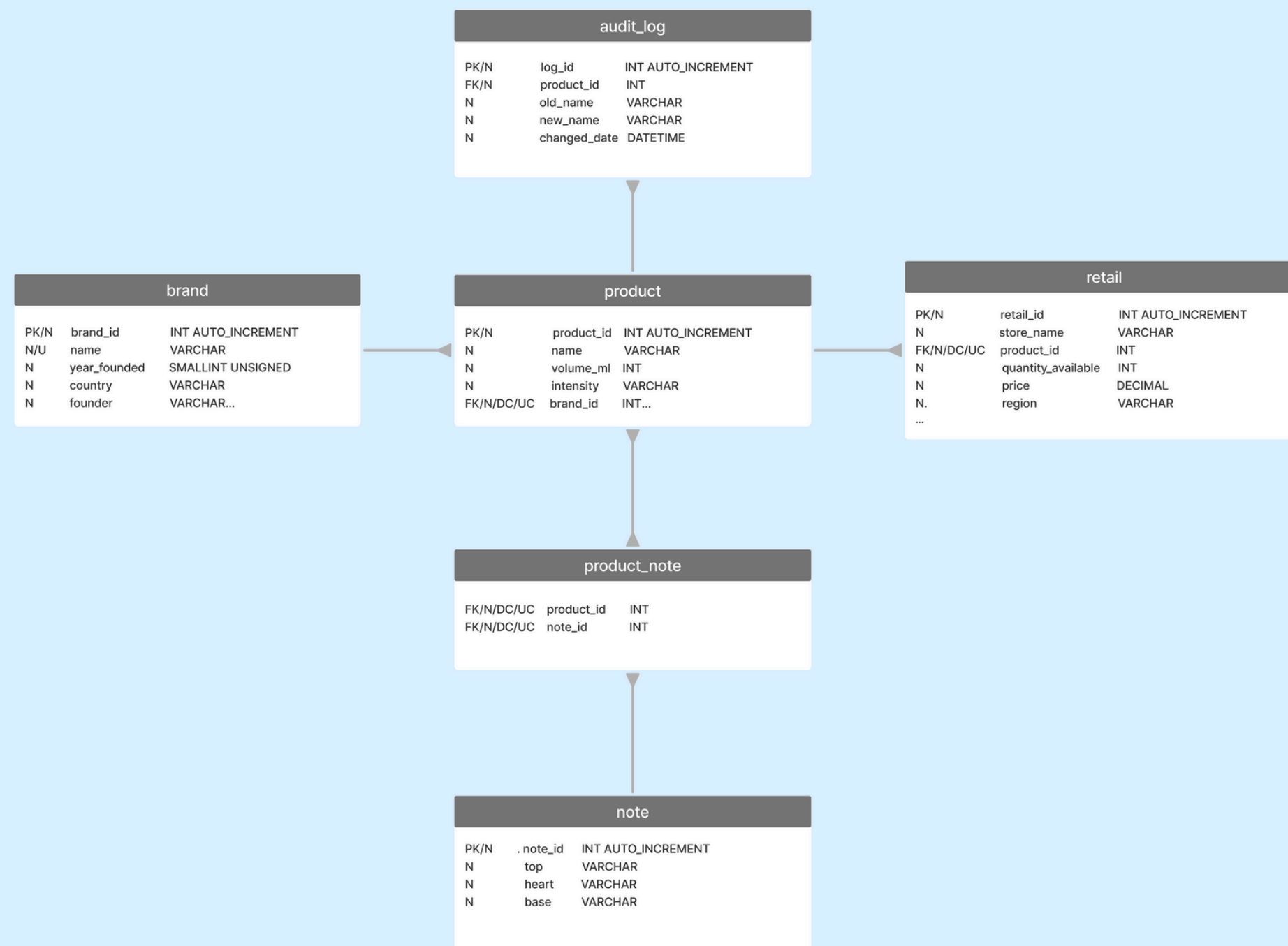
DATABASE SOLUTIONS

Product Inventory Management:

- Stored procedures for adding/updating products and brands.
- Triggers for logging inventory updates.

Fragrance Analysis:

- Views for simplified access to fragrance profiles.
- Functions for revenue calculation.



ENTITY RELATIONSHIP DIAGRAM (ERD)

KEY FEATURES IN THE DATABASE

Problem 1 – Product Inventory Management

- **Feature 1: Stored Procedure**
(usp_add_product_brand_note_retail)
 - Automates adding/updating products, brands, and related data.
- **Feature 2: Trigger** (trg_product_update)
 - Logs changes to product names in the audit_log table for accountability.

KEY FEATURES IN THE DATABASE CONT'D

Problem 2 – Fragrance Analysis for Marketing

- **Feature 1: View** (fragrance_profile_view)
 - Simplifies fragrance data for marketing teams.
- **Feature 2: Function** (fn_get_total_revenue_per_product)
 - Calculates revenue potential of products across retail stores.

AUDIT LOG FOR ACCOUNTABILITY

Purpose:

- Tracks updates to product.name for accountability.
- Logs old name, new name, timestamp, and product ID.

How it Works:

- Trigger (trg_product_update) automatically logs changes when product.name is updated.
- Ensures a history of changes for compliance and troubleshooting.

SUMMARY

- Addressed inventory management and marketing analysis challenges.
- Enhanced accountability with the audit_log table and triggers.
- Simplified data handling using views, procedures, and functions.
- Delivered a robust and scalable database for decision-making and operations.

FUTURE IMPLEMENTATIONS

Tables:

- **Order:** To record purchase transactions, linking products to customers.
- **Supplier:** To manage supplier relationships and track the supply chain of raw materials or finished goods.
- **Customer:** To track customer information for marketing and personalized recommendations.

Features:

- **Stored Procedure:** Use the customer and order tables to recommend products based on purchase history.
- **View:** Provide aggregated insights across customers, products, and orders.
- **Trigger:** Create a trigger will log to an alert table when `retail.quantity_available` is below a threshold.



WIREFRAME

The background is a dark navy blue. It features several concentric circles centered in the middle, creating a subtle ripple effect. Overlaid on these circles are large, stylized, overlapping geometric shapes in various shades of blue, ranging from a deep navy to a bright, vibrant blue. These shapes resemble stylized 'W' or 'M' characters or perhaps abstract mountain peaks. The overall composition is modern and dynamic.

**THANK
YOU**