CMPS 277: Project Proposal

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**Project Description:**

This Project aims to setup a database for a makeup store which handles products, customers and their orders.

**Entities:**

We will maintain information about the following set of entities:

1. Category: serial number, type.
2. Makeup Product: product ID, name, stock quantity, price, serial number, brand.
3. Supplier: supplier ID, company name, email, phone number.
   1. Order Details: detail number, price, date shipped.
4. Orders: Order number, date ordered, expected arrival date.
5. Shopping Cart: cart number, item quantity, total price.
6. Payment: payment number, credit card type, credit card number, status, amount paid.
7. Customer: customer ID, email, name, gender, shipping address, DOB.
8. Discount: percentage, name.

**Relationships:**

The following relationships will hold between our entities:

1. Makeup product(s) belong(s) to a category.
2. Makeup product(s) is/are added to a shopping cart.
3. Supplier provides makeup product(s).
4. Order(s) has/have order details.
5. Order(s) is/are linked to shopping cart(s).
6. Order(s) has/have a payment.
7. Customer(s) has/have a shopping cart.
8. Customer(s) issues a payment.
9. Customer(s) request order(s).

**Constraints:**

1. Each makeup product must have only 1 supplier.
2. Each makeup product must belong to 1 category only.
3. Each order must be issued to 1 customer.
4. Each order must have 1 payment.
5. Each order must have Order details.
6. Each order detail must be connected to exactly one makeup product.
7. Each payment is issued to exactly 1 person.
8. Each shopping cart must have 1 person only controlling it.
9. An order can have multiple discounts.
10. An order can either be made in bulks or per unit.
11. A customer can have more than 1 order at a time each considered separate.
12. Each product has only 1 brand.

**Sample Queries:**

1. List all orders by expected arrival date.
2. List all makeup products by category (lipstick, eyeliner …).
3. List all makeup products by certain brand based on price.
4. Order makeup products by rating.
5. Order makeup products by stock quantity.
6. List all makeup products in a shopping cart by quantity.

# Enhanced Entity-Relationship Diagram



# The Relational Database

# Indexes

1. Name: mp\_index

Table(column): Makeup\_Product(ProductID)

Reason: its column referenced in the where and order by clause and used frequently.

And used in joining tables

1. Name: mp\_index

Table(column): Makeup\_Product(Supplier\_ID)

Reason: its column referenced in the where clause and used frequently

1. Name: mp\_index

Table(column): Makeup\_Product(Category\_SerialNum)

Reason: its column referenced in the where clause and used frequently

1. Name: od\_index

Table(column): Order\_Details (Date\_Shipped)

Reason: its column referenced in the where clause and used frequently

1. Name: od\_index

Table(column): Order\_Details (OrderNum)

Reason: its column referenced in the where clause and used frequently

1. Name: od\_index

Table(column): Order\_Details (Order\_Num)

Reason: its column referenced in the where clause and used frequently. Also used in

Joining tables

1. Name: c\_index

Table(column): Customer (CustomerID)

Reason: its column referenced in the where and order by clause and used frequently also used

In joining tables

1. Name: c\_index

Table(column): Customer (Shipping\_Address)

Reason: its column referenced in the where clause and used frequently

1. Name: cate\_index

Table(column): Category (SerialNum)

Reason: its column referenced in the where clause and used frequently

1. Name: o\_index

Table(column): orders (OrderNum)

Reason: its column referenced in the where clause and used frequently

1. Name: o\_index

Table(column): orders (Customer\_ID)

Reason: its column referenced in the where and order by clause and used frequently

1. Name: L\_index

Table(column): linked (Order\_Num)

Reason: its column referenced in the where clause and used frequently

1. Name: L\_index

Table(column): linked (Cart\_Num)

Reason: its column referenced in the where clause and used frequently

1. Name: s\_index

Table(column): supplier (SupplierID)

Reason: its column referenced in the where and order by clause and used frequently

1. Name: seo\_index

Table(column): special\_event\_order (Order\_Num)

Reason: its column referenced in the where clause and used frequently

Views

# name: customers\_with\_orders

# purpose: Display customers that have orders

# name: credit\_card\_type\_used

# purpose: Displays credit card type used for each order

# name: on\_hold

# purpose: Display Payments that are on hold and amount paid is less than 10 $

# name: highest\_price

# purpose: Display products that has the highest price

# name: customer\_in\_lebanon

# purpose: Display customers that live in Lebanon

# name: discount\_on\_items

# purpose: Display discount on items

# name: items\_in\_bulk

# purpose: Display items bought in bulk and their special price

# name: type\_and\_supplier

# purpose: Display makeup products with their supplier and their types

# name: gender\_picks

# purpose: Displays the gender and the product brand and count that each gender bought of that brand

# Interface

A multipage website has been created using php to demonstrate the functionality of this project. It supports Adding data to 8 tables (like add brand, category etc) and 5 searching forms such as a certain category from a given brand supplied by a specific supplier. Additionally, it has a tables page where all data from tables is shown and most can be edited or deleted. Finally, a page where interesting information using 8 complex queries, such as displaying customer names and the amount they paid in total, is displayed.