Database management system.

Online clothes shopping.

Taking Amazon shopping site as an example, our team has come up with the online clothes shopping system. It's always an advantage to have a Virtual shop since it gives a variety of options for customers. Customers have been given full information about the product, so that they can purchase effectively. Online clothes shopping system becomes a great opportunity to grow with the huge population of internet users.

The look of the project is simple, elegant and customer friendly. It is designed based on certain aspects like loading appropriate data and its complexity, security etc.The site has the navigation facility to select the product category, product, size and color. Customers, Product categories, Products, Suppliers, Admin, Order details and Inventory data are loaded in the system.

Since the online shopping system has large bandwidth in collecting, loading and processing the data, we are imposing certain limitations. We are mainly focusing on the clothing section of shopping.

Limitations:

1. We are considering only US size.
2. We are limiting the location to the USA.
3. Adminid and password are pre-populated.
4. We are not implementing the payment gateway.
5. We are not including commercial taxes in the system.
6. There is no information regarding the courier services.
7. We are mainly focusing on the clothing section of shopping.
8. Delivery address and Billing address are considered to be the same for customers as we do not have payment gateway implemented in the project.
9. Supplier information will be managed by Admin. So we won't be providing credentials for suppliers.

Product and services:

- Tables: customer table, customer feedback, supplier table, inventory, orders.
- Product category: we are limiting the category to men and women.
    - Men/women
        - Shirt/T-shirt
        - Pants
        - Jackets
- Each category has its own limited attributes.
    - Size (following US size only)
    - Color
    - Product details
    - Brand
    - Rating

Data description:

1. CustomerDetails:

- Each customer has a unique id.
- Capturing the details of customers like Name, DateOfBirth, deliveryAddress, Email, Phone number, joining date, password.
- Based on the unique id and password, customers can login and can place the order.

2. OrderDetails:

- Each order will be assigned with a unique order id.
- Details like total amount, order date, quantity are captured as order details.
- Order id helps in identifying the order placed by a particular customer.
- The order amount will be dependent on the product chosen.

3. SupplierDetails:

- Each supplier has a unique id.
- Details like name, address, email, phone no, company name, quantity ,total price are stored.
- Supplier information will be managed by Admin.

4. AdminDetails:

- Admin has a unique id, name and password.
- Admin can perform CRUD operations on the database in the backend.

5. Product details:

- Each product has a unique product ID.
- Product details and categories are mentioned above in product and services.
- All the product details like category(shirt/t-shirt, pants, jackets), size, color, brand, gender type are captured.

6. ProductCostDetails:

- Product id will be used to get information about cost of the product(selling price).
- Selling price updates are tracked. Old selling price and new selling price along with their dates respectively, are captured.

7. Cart:

- Each customer has a unique cart id for all the products in the cart for one transaction.
- Cart details will be accessed using customer id.
- Each customer can temporarily keep items in the cart till orders are placed.

8. Inventory:

- It contains product id, quantity available, minimum quantity alert.
- Inventory is used to store the count of products available.

Business Goals:

1. Which product, brand, color, size, gender is ordered frequently.
   What?
   - Using the product and order details we can find the most selling product based on brand, color, size and gender.
   - Number of sales of the product.

   Why?
   - We can increase the inventory of a particular product which has the highest selling count in future.
   - Managing inventory becomes easier with the above details.

2. Which product, brand, color, size, gender is ordered frequently by customers that generates maximum profit.
   What?
   - Profit = Selling price - Cost Price.
   - We can recognize the product by brand and its size and color that has been purchased most by the customers that potentially generates the highest profit for the company.
   - Profit made by the products sold.

   Why?
   - We can increase inventory for most profitable products.
   - We can identify the frequency of a particular type of customer based on the orders.
   - Customer type: From the order details we can identify if the customer tends to buy expensive goods more frequently or less expensive items.

3. Identify the regular customer.
   What?
   - Customers who purchase more frequently in terms of quarterly reports.
   - We will also capture the most frequent customer in terms of age and gender.

   Why?
   - We can attract the customers of the age group and gender that are frequent buyers by providing discounts or coupons.
   - Attracting more customers by providing discount perks can be profitable for the business.

4. Identifying the frequency of orders made by customers based on the location.
   What?
   - From the order details we can recognize the location that has the highest order rate.
   - Highest no of order: compared to other locations in a quarterly report we can obtain the location that has the highest no of orders.

Why?

- To increase the inventory of the particular order that has been placed frequently.
- We can recognize the location that has the highest number of customers purchasing the products frequently.
- To increase the staff for services. (we do not have an employee management system, but this information can be used for improvisation of the project.)

5. Which month of the year has the highest no of orders by the customer based on product, brand, color, size, gender.

What?

- Using the order details we can identify which month has the highest number of orders. This gives us monthly analysis of the data.
- We can also identify what category of clothes are purchased in what month of the year. This gives us seasonal analysis of the orders data.

Why?

- Particular months like homecoming and vacations, when people are traveling tend to buy more items. We need to keep track of it to maintain the inventory when the demand is high. This is for monthly analysis.
- Keeping track of orders by season is important to update the inventory.
- Updating inventory: for instance, we can increase the no Jackets seasonally for winter.

6. Which month of the year has the highest number of new registration of what age, gender.

What?

- From the customer details and joining date we can identify the month which has the highest number of new registration by age and gender.

Why?

- New registration may increase when it's homecoming season.
- Since we have the data of age and gender of new users we can use it to attract more customers by providing new user discounts according to age and gender in the future.

7. Which product of a particular supplier is selling most with good reviews and has a better profit margin for the company.

What?

- Good review = we have up to 5 ratings. Any product with 3 or above rating is considered a good rating.
- Total no of sales of a particular product is calculated quarterly.
- We have the customer feedback details stored for a particular product.
- We have supplier details and the product they sell.

- Based on the above details captured we can find the product of a particular supplier who has good reviews.
- Since we have cost price and selling price we can calculate the profit margin of the product from each supplier.

Why?

- Using the feedback if the product has highest sales and good reviews we can increase the inventory by ordering more goods from the supplier.

8. Pricing strategy. (supplier and order)

   Increase the profit by increasing the product price for a particular brand depending on the demand(if frequency of customers buying the product of a certain brand is more when calculated quarterly).

   What?

   - The company has supplier data and selling data.
   - We have an old selling price and new selling price along with the dates.
   - Increase the price of a product seasonally(quarterly) and keep track of the orders.
   - We are buying the product from a supplier for the same price but sell it for a higher profit margin.
   - After a period of time check if the sales for the same product is increasing, decreasing or its the same.

   Why?

   - The company tries a new strategy to increase the profit.

9. Restocking of the inventory for a particular product based on the demand.

   What?

   - We have inventory details captured for all the products.
   - We have supplier details for each individual product.
   - We also have order details from the customer.
   - We can keep track of the inventory, whether a particular product is selling or not.
   - We are evaluating the quantity of the inventory quarterly.

   Why?

   - From the details captured in the inventory we can downsize the product if it is not sold.
   - If the product remains unsold for a long time we can clear the inventory by putting it on sale by providing discounts (quarterly clearance).

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