**Mobile Phone Retail Company Database**

**1. General Problem Statement :**

Say, I’m a business owner who has a staff that sells mobile phones of various brands and models to customers. The staff sometimes does promotions on products during a particular time frame for the customer to benefit from. Customers (assume that staff can never be a customer) buy the products and bill the purchase and give ratings to the salesperson who will assist them. To effectively manage my business and maximise profits I need a relational database system to store and manage information about products, staff, promotions, customers and purchases. This database should help me make informed business decisions, optimise stock management and enhance sales through targeted marketing strategies.

For this project we’d like to limit to only 5 brands with 6 models each, the 5 brands being Apple, Samsung, Motorola, OnePlus and Nokia into consideration.

**2. Data To be Captured by the Business :**

* **Product :**

1. Mobile phone models from multiple brands.
2. Here, the brands are Apple, Samsung, Motorola, OnePlus and Nokia, and the models are specific phones each company has to offer, for example Apple’s iPhone 14 or Samsung’s S20.
3. The database should capture information like product id, brand name, model name, base price, selling price stock and stocking date (in yyyymmdd format).
4. I’d like to capture the base price and selling price to evaluate the profits I make. I also like to capture stock and stocking dates to learn the average of the stock sold over a period of time for each model to make informed decisions and to meet the demand in future sales.

* **Staff :**

1. Employees who’ll market the products my company has to offer by introducing promotions / ad campaigns with seasonal discounts.
2. The database should capture information like staff id, first name, middle name, last name, position, salary, email, password and phone.
3. I’d like to have the attribute “position” , since my staff is divided into marketing and sales teams. The marketing team will be responsible to email previous customers based on their preferences (products that they purchased) and the sales team will be responsible to introduce seasonal discounts.
4. I’d like to capture their email and password to let them have restricted access to the database.

* **Promotion :**

1. A seasonal ad campaign where the products are sold for discounted price to attract more customers.
2. The database should capture information like promotion id, staff id, product id , start date, end date (in yyyymmdd format) and the discount percent.
3. I’d like to capture the staff id cause I’d like to know which employee has introduced the discount, and the product id to know on which product the discount is applicable. I’d also like to capture the start date and end date to know during what times the discount will be valid.

* **Customer :**

1. Customers that purchase products from my company.
2. The database should capture information like customer id, first name, middle name, last name, age, email and phone.
3. I’d need their email or phone to promote products based on their previous purchases and seasonal discounts in future. I also need their age to learn about purchases made by different age groups.

* **Purchase :**

1. Details of the products purchased by a customer.
2. The database should capture information like purchase id, customer id , product id, purchase date (in yyyymmdd format), quantity, total amount, mode of payment, customer rating.
3. I’d need to capture customer id and product id to know which mobile phones are being purchased and by whom.
4. I also have a need to capture the total amount after the discounts (if applicable) to calculate profits I make on each purchase.
5. I want to capture the mode of payment so I can store what company the card is like for example: Discover, Chase Freedom, Deserve, Apple etc and offer discounts made by the most used mode.
6. I need the attribute customer rating to know how satisfied they are with the sales person on a rate of 0 to 5.

**3. Business Goals or Functional Requirements :**

1. Should help identify underperforming phones based on the purchases made during specific times. It is achieved using the customer , purchase data and product data.
2. Analyse the monthly purchase trends to understand customer behaviour. The purchase and customer data can be used to achieve this.
3. Based on the historical data (yearly, monthly or quarterly), I should be able to forecast demand and manage inventory by using the amount of sales done in previous months and estimating the stock that I might require in future months. It should be achieved using product data and purchase data.
4. Identify customers that buy all models of the same mobile phone brand. This should be achieved using customer, purchase and product data.
5. Maintain customer records , to track purchases and preferences. So, we can promote new products from their preferred brands in future dates. It should be achieved using customer id, email, phone of the customer data and product id from the purchase data .
6. Sales Performance Incentives. Maintain records of staff and the total amount of sales they generate in a year. Calculate the sales performance for each staff member based on the total sales amount associated with their transactions using the staff id and purchase data.
7. Evaluate staff performance. It should be achieved by using customer rating as a satisfactory attribute.
8. Evaluate the max used method of payment (specific for any bank) for purchase so that the offer can be clubbed for more discount and increase of sales. It should be achieved using the method of payment of the purchase data.

**Team ID - 4**

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