**The Super Market Database**

**Group 7**

A supermarket database Project with:

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****Detailed Description of Entity Types, Relationships, and Constraints for a Supermarket Database****

### Entity Types and Attributes

1. ****Product****
   * ****Attributes****:
     + ProductID (Primary Key)
     + Name
     + Description
     + Category
     + Brand(Foreign Key)
       - BrandID
       - Brand Name
       - Description
     + Price
     + StockLevel
     + SupplierID (Foreign Key)
2. ****Customer****
   * ****Attributes****:
     + CustomerID (Primary Key)
     + Name
     + ContactNumber
     + Email
     + LoyaltyProgramID (Foreign Key)
3. ****Transaction****
   * ****Attributes****:
     + TransactionID (Primary Key)
     + Date
     + TotalAmount
     + PaymentMethod
     + CustomerID (Foreign Key)
     + EmployeeID (Foreign Key)
4. ****Employee****
   * ****Attributes****:
     + EmployeeID (Primary Key)
     + Name
     + Role
     + ContactNumber
     + HireDate
5. ****Supplier****
   * ****Attributes****:
     + SupplierID (Primary Key)
     + Name
     + ContactNumber
     + Email
6. ****LoyaltyProgram****
   * ****Attributes****:
     + LoyaltyProgramID (Primary Key)
     + ProgramName
     + PointsEarned

### Relationships

* ****Product to Supplier****:
  + A Product is supplied by one Supplier (One-to-Many relationship).
    - **Brand to Brand Name**
* ****Customer to Transaction****:
  + A Customer can have multiple Transactions (One-to-Many relationship).
* ****Transaction to Employee****:
  + A Transaction is processed by one Employee (Many-to-One relationship).
* ****Customer to LoyaltyProgram****:
  + A Customer can be enrolled in one Loyalty Program (One-to-One relationship).

### Constraints

* ****Primary Key Constraints****:
  + Each entity has a unique identifier (e.g., ProductID, CustomerID).
* ****Foreign Key Constraints****:
  + Relationships between entities are enforced through foreign keys (e.g., SupplierID in Product, CustomerID in Transaction).
* ****Unique Constraints****:
  + Attributes like Email in Customer and Name in Supplier may need to be unique to prevent duplicates.
* ****Not Null Constraints****:
  + Certain attributes (e.g., Name, Price) should not be null to ensure data integrity.