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CREATE TABLE Prod_Purchased(
    UPC_code INTEGER NOT NULL UNIQUE,
    PurchaseID INTEGER NOT NULL UNIQUE,
    StoreID INTEGER NOT NULL UNIQUE,
    Amount_Purchased INTEGER NOT NULL CHECK(Amount_Purchased>=0),
    PRIMARY KEY(UPC_code,PurchaseID,StoreID)
);

CREATE TABLE Store_Vendor(
    VendorID INTEGER NOT NULL UNIQUE,
    StoreID INTEGER NOT NULL UNIQUE,
    PRIMARY KEY(VendorID,StoreID)
);

CREATE TABLE Vendor_Product(
    UPC_code INTEGER NOT NULL UNIQUE,
    VendorID INTEGER NOT NULL UNIQUE,
    BrandID INTEGER NOT NULL UNIQUE,
    Vendor_Price DOUBLE PRECISION NOT NULL CHECK(Vendor_Price>0),
    PRIMARY KEY(UPC_code,VendorID,BrandID)
);

CREATE TABLE Product_Type(
    UPC_code INTEGER NOT NULL UNIQUE,
    TypeID INTEGER NOT NULL UNIQUE,
    PRIMARY KEY(UPC_code,TypeID)
);

CREATE TABLE Store_Product(
    UPC_code INTEGER NOT NULL UNIQUE,
    StoreID INTEGER NOT NULL UNIQUE,
    Amount INTEGER NOT NULL CHECK(Amount>=0),
    Product_Price DOUBLE PRECISION NOT NULL CHECK(Product_Price>0),
    PRIMARY KEY(UPC_code,StoreID)
);

CREATE TABLE Brand_Product(
    UPC_code INTEGER NOT NULL UNIQUE,
    BrandID INTEGER NOT NULL UNIQUE,
    TypeID INTEGER NOT NULL UNIQUE,
    PRIMARY KEY(UPC_code,BrandID,TypeID)
);

CREATE TABLE Purchase(
    PurchaseID INTEGER NOT NULL UNIQUE,
    StoreID INTEGER NOT NULL UNIQUE,
    CustomerID INTEGER NOT NULL UNIQUE,
    Sum_of_Purchase DOUBLE PRECISION NOT NULL CHECK(Sum_of_Purchase>0),
    Date_of_Purchase DATE NOT NULL,
    Type_of_Purchase VARCHAR(20) NOT NULL,
    PRIMARY KEY(PurchaseID,StoreID,CustomerID),
    FOREIGN KEY(PurchaseID) REFERENCES Prod_Purchased(PurchaseID)
);

CREATE TABLE Vendor(
    VendorID INTEGER PRIMARY KEY,
    vendor_name VARCHAR(50) NOT NULL,
    country VARCHAR(50) NOT NULL,
    city VARCHAR(50) NOT NULL,
    street VARCHAR(50) NOT NULL,
    FOREIGN KEY(VendorID) REFERENCES Store_Vendor(VendorID),
    FOREIGN KEY(VendorID) REFERENCES Vendor_Product(VendorID)
);

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CREATE TABLE PreType(
    TypeID INTEGER NOT NULL UNIQUE,
    PreTypeID INTEGER NOT NULL UNIQUE,
    PRIMARY KEY(TypeID,PreTypeID)
);

CREATE TABLE Type(
    TypeID INTEGER PRIMARY KEY,
    type_name VARCHAR(30) NOT NULL,
    FOREIGN KEY(TypeID) REFERENCES Product_Type(TypeID),
    FOREIGN KEY(TypeID) REFERENCES PreType(TypeID),
    FOREIGN KEY(TypeID) REFERENCES PreType(PreTypeID),
    FOREIGN KEY(TypeID) REFERENCES Brand_Product(TypeID)
);

CREATE TABLE Registered_Customer(
    Registered_CustomerID INTEGER PRIMARY KEY,
    first_name VARCHAR(20) NOT NULL CHECK(char_length(first_name)>3),
    last_name VARCHAR(20) NOT NULL CHECK(char_length(last_name)>3),
    phone_number VARCHAR(20),
    Day_of_registration DATE NOT NULL,
    Bonuses DOUBLE PRECISION CHECK(Bonuses>=0),
    FOREIGN KEY(Registered_CustomerID) REFERENCES Purchase(CustomerID)
);

CREATE TABLE Store(
    StoreID INTEGER PRIMARY KEY,
    country VARCHAR(50) NOT NULL,
    city VARCHAR(50) NOT NULL,
    street VARCHAR(50) NOT NULL,
    open TIMESTAMP NOT NULL,
    close TIMESTAMP NOT NULL,
    FOREIGN KEY(StoreID) REFERENCES Store_Product(StoreID),
    FOREIGN KEY(StoreID) REFERENCES Store_Vendor(StoreID),
    FOREIGN KEY(StoreID) REFERENCES Purchase(StoreID),
    FOREIGN KEY(StoreID) REFERENCES Prod_Purchased(StoreID)
);

CREATE TABLE Brand(
    BrandID INTEGER PRIMARY KEY,
    brand_name VARCHAR(50) NOT NULL,
    FOREIGN KEY(BrandID) REFERENCES Brand_Product(BrandID),
    FOREIGN KEY(BrandID) REFERENCES Vendor_Product(BrandID)
);

CREATE TABLE Product(
    UPC_code INTEGER PRIMARY KEY,
    product_name VARCHAR(50) NOT NULL,
    product_size VARCHAR(30) NOT NULL,
    packaging_method VARCHAR(30) NOT NULL,
    FOREIGN KEY(UPC_code) REFERENCES Store_Product(UPC_code),
    FOREIGN KEY(UPC_code) REFERENCES Brand_Product(UPC_code),
    FOREIGN KEY(UPC_code) REFERENCES Vendor_Product(UPC_code),
    FOREIGN KEY(UPC_code) REFERENCES Prod_Purchased(UPC_code),
    FOREIGN KEY(UPC_code) REFERENCES Product_Type(UPC_code)
);

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