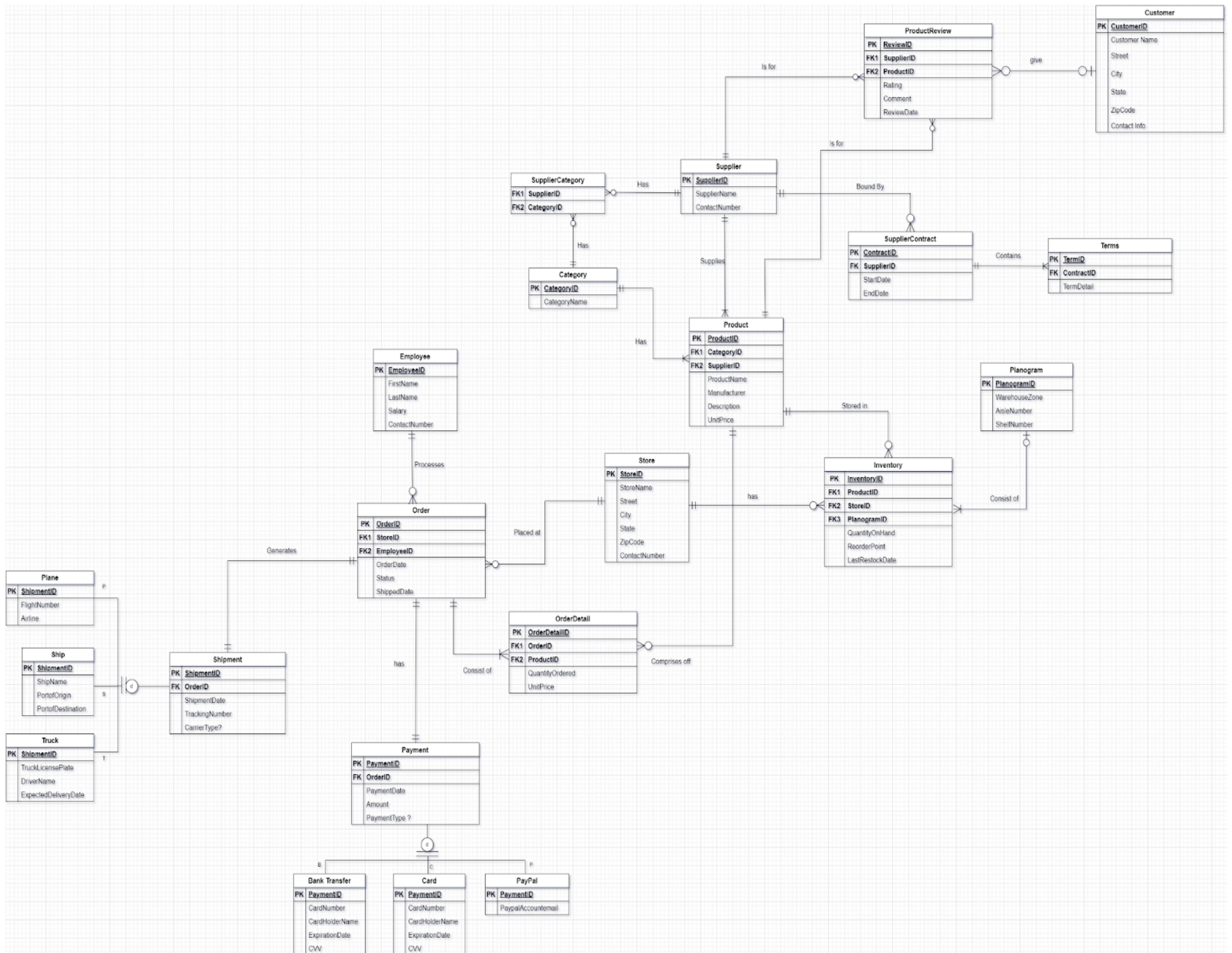


## P3 - Final ERD (Logical Model)



### Brief Description of changes made to the initial ERD

Final Logical ERD consist:

- 1) **Addition of Customer Entity:** Added a new entity "Customer" that contains all the attributes related to a customer
- 2) **Relationship Change:** The 'Product Review' is now related to the 'Customer' in order to map the reviews with their respective customers.
- 3) **Supplier Category:** Supplier Category has been identified as a associative entity with Suppliers and Category to form a many-to-many relationship
- 4) **Payment & Shipment Specialization:** Supertypes are introduced for the entities 'Payment' and 'Shipment' with subtypes representing specific payment methods and carriers

- 5) **Supplier Contract Terms:** Previously multi-valued, "Terms" in "SupplierContract" is now made into a distinct entity to best handle multiple terms
- 6) **PlanogramID Attribute:** Added attribute "PlanogramID" to the schema, which should refer to visual presentations of products in a store
- 7) **CategoryID in Product:** Now, the 'CategoryID' in the 'Product' table is a foreign key related to the 'Category' table
- 8) **Transactions Entity Removed:** The entity 'Transactions' is removed as, during review, it had been determined that there was no requirement of this model in this case
- 9) **Defined Relationships:** The relationship between the entities is well defined, with proper explanation, and hence there should be no kind of confusion about the schema of the database.
- 10) **Foreign Keys:** Foreign Keys are defined explicitly with clear relationships between the entities
- 11) **Clear Naming Conventions:** Clear naming conventions of entities and attributes are used in this case

### Entities & Their Relationships:

#### 1. Customer

- Primary Key (PK): CustomerID
- Attributes: CustomerName, Street, City, State, ZipCode, Contact Info
- Relationship: One-to-many with `ProductReview` indicating a customer can have multiple product reviews.

#### 2. Employee

- PK: EmployeeID
- Attributes: FirstName, LastName, Salary, ContactNumber
- Relationship: One-to-many with `Order` indicating an employee can process multiple orders.

#### 3. Order

- PK: OrderID
- Foreign Keys (FK): StoreID, EmployeeID
- Attributes: OrderDate, Status, ShippedDate
- Relationship: One-to-many with `OrderDetail`, one-to-many with `Payment`, one-to-one with `Shipment`.

#### 4. OrderDetail

- PK: OrderDetailID
- FK: OrderID, ProductID
- Attributes: QuantityOrdered, UnitPrice
- Relationship: One-to-one with `Order`, many-to-one with `Product`.

#### 5. Payment

- PK: PaymentID
- FK: OrderID
- Attributes: PaymentDate, Amount, PaymentType
- Relationship: One-to-one with `Order`, one-to-one with `BankTransfer/Card/PayPal`.

## 6. Shipment

- PK: ShipmentID
- FK: OrderID
- Attributes: TrackingNumber, ShipmentDate, CarrierType
- Relationship: One-to-one with `Order`.

## 7. Product

- PK: ProductID
- FK: CategoryID, SupplierID
- Attributes: ProductName, Manufacturer, Description, UnitPrice
- Relationship: One-to-many with `Inventory`, one-to-many with `ProductReview`, one-to-many with `OrderDetail`.

## 8. Inventory

- PK: InventoryID
- FK: StoreID, ProductID
- Attributes: QuantityOnHand, ReorderPoint, LastRestockedDate
- Relationship: Many-to-one with `Store`, many-to-one with `Product`.

## 9. Store

- PK: StoreID
- Attributes: StoreName, Street, City, State, ZipCode, ContactNumber
- Relationship: One-to-many with `Order`, one-to-many with `Inventory`.

## 10. Supplier

- PK: SupplierID
- Attributes: SupplierName, ContactNumber
- Relationship: One-to-many with `Product`, one-to-many with `SupplierContract`.

## 11. SupplierContract

- PK: ContractID
- FK: SupplierID
- Attributes: StartDate, EndDate
- Relationship: One-to-many with `Supplier`.

## 12. Category

- PK: CategoryID
- Attributes: CategoryName
- Relationship: One-to-many with `Product`.

## 13. ProductReview

- PK: ReviewID
- FK: CustomerID, ProductID
- Attributes: Rating, Comment, ReviewDate
- Relationship: One-to-many with `Product`.

#### 14. **Planogram**

- PK: PlanogramID
- Attributes: WarehouseZone, AisleNumber, ShelfNumber
- Relationship: One-to-many with 'Inventory' indicating which products are placed where in the store.

#### 15. **Terms**

- PK: TermID
- FK: ContractID
- Attributes: TermDetail
- Relationship: many-to-One with 'SupplierContract'.

