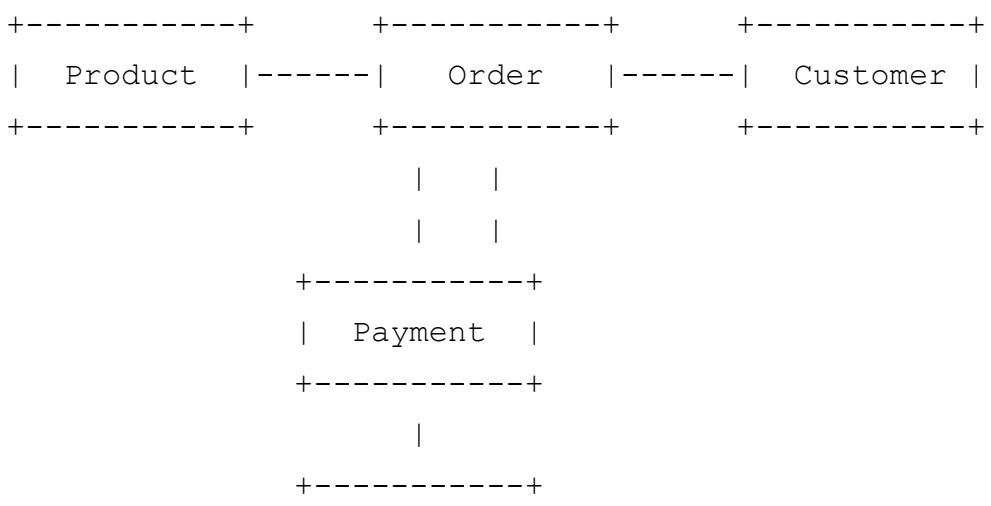
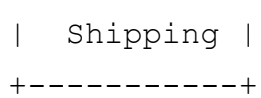
Problem Statement 1: Draw the Flowchart/Workflow Diagram for Classes Used in Data Models

1. **Identify Classes:**
   Start by identifying the main classes in your data model. For example, if you have an **e-commerce website**:
   - Product
   - Customer
   - Order
   - Payment
   - Shipping
2. **Determine Relationships:**
   Determine how these classes interact with one another. For instance:
   - **Product** is related to **Order** (many products can be part of one order).
   - **Customer** is related to **Order** (a customer places many orders).
   - **Order** is linked to **Payment** and **Shipping** (an order needs payment and shipping information).
3. **Flowchart:**
   You can draw a flowchart that represents the lifecycle or workflow of the data. For example:
   - Start: Customer places an order.
   - Order is validated.
   - Payment is processed.
   - Shipping is arranged.
   - Order is completed.

Sample Diagram for Class Interaction:



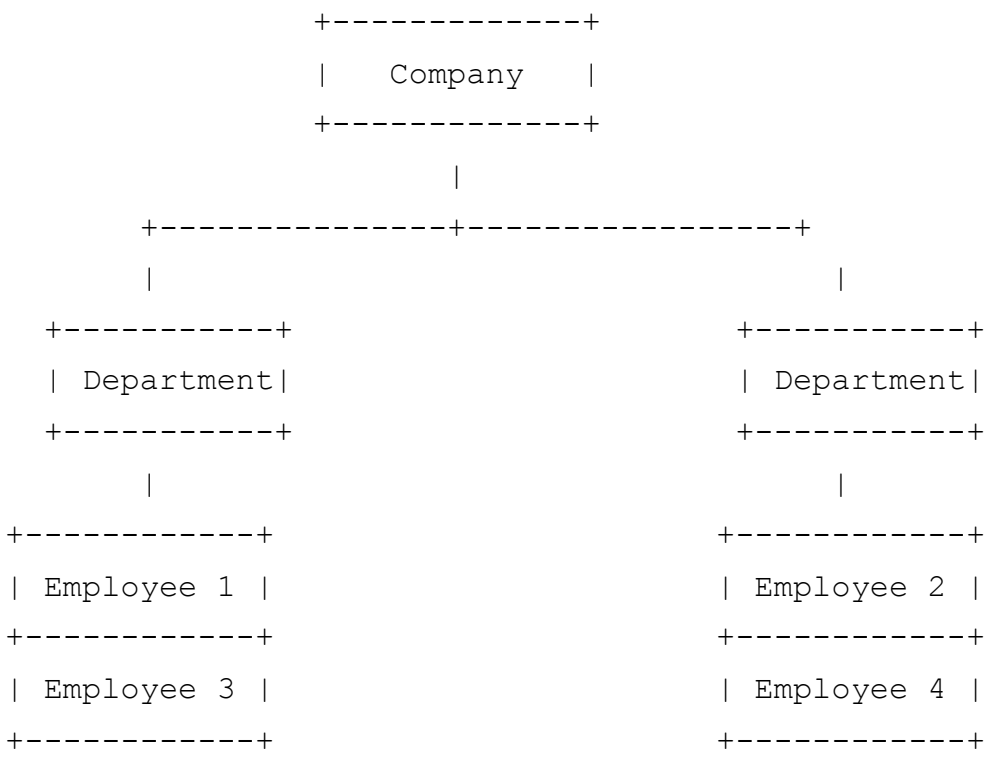


Problem Statement 2: Draw the Workflow Diagram for Hierarchical Databases (Company and Employees)

In a hierarchical database, you store data in a tree-like structure. For example, if you have a **company** and **employees**, the company would be the root node, and employees would be the leaf nodes.

1. **Tree Structure:**
    - Root: **Company**
        - Child: **Departments**
            - Sub-child: **Employees**
        - Sub-child: **Employees**
2. **Hierarchy Relationship (One-to-Many):**
    - A company can have many departments.
    - A department can have many employees.
    - This relationship is one-to-many.

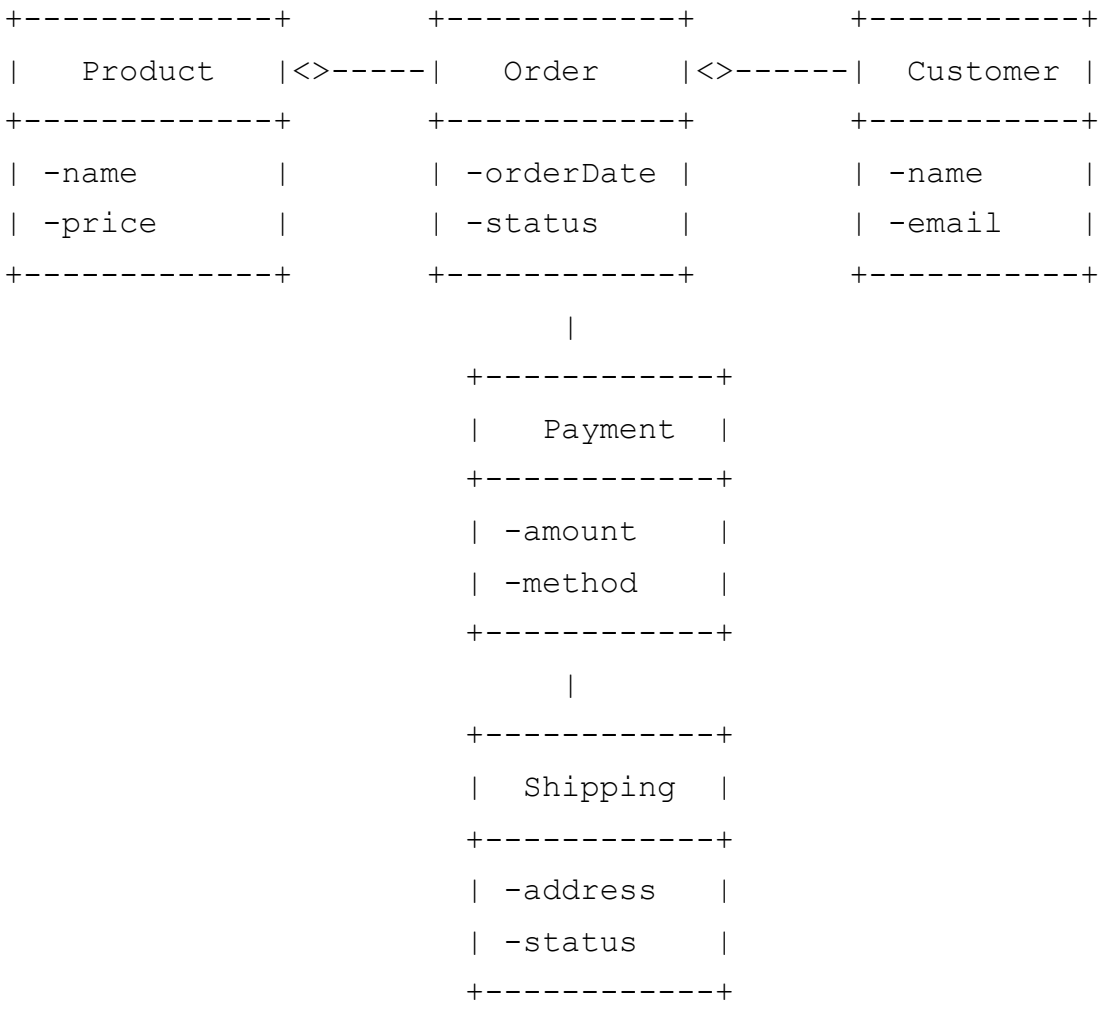
Sample Diagram:



Problem Statement 3: Draw UML Class Diagrams for Object-Oriented Database Design for Ecommerce Website

1. **Identify Key Entities:**
    - **Product** (with attributes like name, price, description)
    - **Customer** (with name, email, address)
    - **Order** (with order date, payment status)
    - **Payment** (with payment method, amount)
    - **Shipping** (with shipping address, status)
2. **Define Relationships:**
    - A **Customer** can have many **Orders**.
    - An **Order** has many **Products**.
    - **Order** has one **Payment** and one **Shipping**.

Sample UML Class Diagram:



Problem Statement 4: Draw UML Class Diagrams for Dynamic Model for Job Portal Website

1. **Identify Key Entities:**
    - **JobSeeker** (with resume, skills, contact info)
    - **Employer** (with company details, job posts)
    - **JobPost** (with title, description, salary)
    - **Application** (with applied date, status)
2. **Define Relationships:**
    - A **JobSeeker** can apply to many **JobPosts**.
    - An **Employer** posts many **JobPosts**.

Sample UML Class Diagram: