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Course: Enterprise Architecture

**Class Exercise 2**

**Scenario for the Exercise:**

You are part of an IT team at a retail company looking to modernize its system using Service-Oriented Architecture (SOA). The company has departments such as Sales, Inventory, and Customer Management.

**Describe the following:**

* **Service Descriptions:**
  + **1. Sales Service:**  This service is used to manage the orders, contacting the external payment providers for the payment information and processing the payment events, and generating the bills/invoices to the products that customers bought.
  + **2. Customer Management Service:** This service is responsible for handling of user accounts like creating an account, logging in to the system and managing the orders and its history.
  + **3.** **Inventory Service:** This service is used to manage the products that are available and will be controlled by some admin/backend teams.
* **Integration:** The users will interact with the services through the presentation layer i.e. using Mobile phones, web apps or even physical stores. The Presentation layer is connected to the server (Business logic layer) that contains all these 3 services that are hosted in physical machines. Whenever the user interacts with the system, the business logic does all the calculations/processing work and gives the output to the end user. The Business logic layer is connected to the data layer as it contains all the data related to the application. All individual services will talk to the database according to how the user interacts in presentation layer. The Sales service is connected to the external payment provider to get the payment information whenever the users pay for their orders.
* **Benefits:** There are several benefits by using Service Oriented Architecture,
  + Scalability: Scaling individual services is easy when in-demand, as it contains only logic related to that part of it.
  + Security: Allowing certain services talk to other services will improve security as it doesn’t allow un-authorized services to interact with others.
  + Maintainability: Updating and maintaining versions will become easier and finding & fixing bugs will also become easier for developers.
  + Reusability: Reusing certain services in other parts or even different project will decrease time and effort to build a new service from scratch and existing services were maintained, versioned and has bug fixes.

**SOA solution diagram**

