

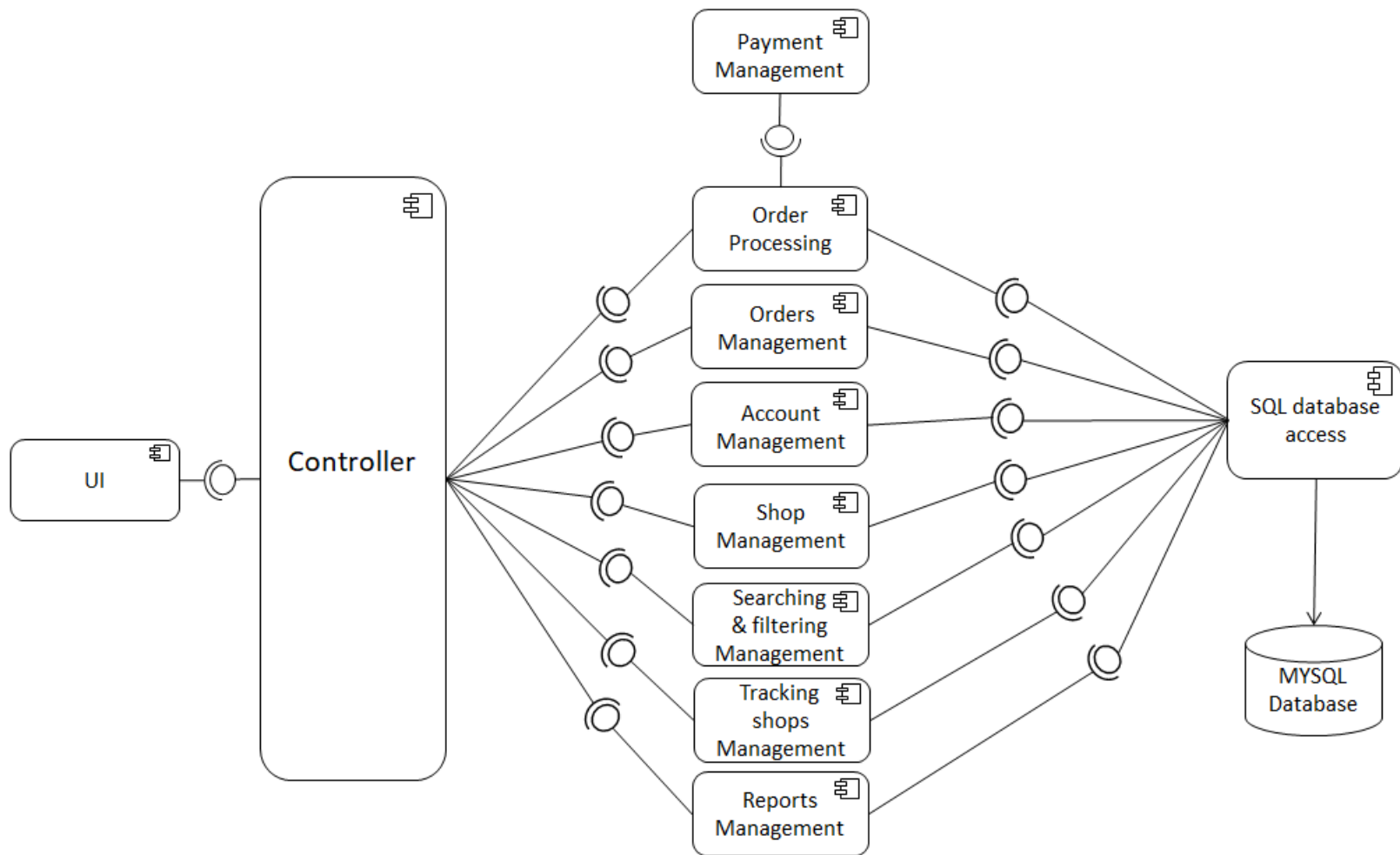
## non-functional requirements:

**Security:** the system should be able to protect its all sensitives users data successfully, this includes using strong password and good architecture.

**Maintainability:** Ensuring that the system remains easy to modify and extend through clear layer separation.

**Availability:** the system should be able to remain operational without interruptions, meaning that users can access the online store at any time without facing issues logging in or using it.

## System decomposition – Component diagram:



## Components functionalities:

- 1. UI:** This component is responsible for presenting the user interface to customers and collecting input to be sent to backend services through the API Gateway.
- 2. Controller:** this component is responsible for unified Entry point, Authentication and logging.
- 3. Payment Management:** This component is responsible for managing payment operations, verifying payment details, and communicating with the payment provider external service to confirm financial transactions.
- 4. Order Processing:** This component is responsible for coordinating the order fulfillment process, ensuring that validated orders are processed and updated accordingly.
- 5. Orders management:** this component is responsible for the functionalities of managing orders Such as accept orders, reject order and update order status.

**6. Account management:** this component is responsible for the functionalities of managing account Such as user registration, update account, delete account for users, and add users, delete users, update users details and view all users for system admin.

**7. shop management:** this component is responsible for the functionalities of shop management, products management, categories management and inventory management.

**8. Searching & filtering Management:** This component is responsible for enabling users to search, filter, and view products and categories effectively.

**9. Tracking shops Management:** This component is responsible for monitoring shop performance, including delivery times and ratings.

**10. Reports management:** this component is responsible for the functionalities of generating reports through external AI system.

**11. SQL Database Access :** This component is responsible for executing database operations such as queries and updates between services and the MySQL database.

# System architecture:



- We used **layered** architecture to organize the system into hierarchical layers with distinct responsibilities, improving maintainability and scalability.
- **Presentation layer:** it is the front-end application building with Html & Css.  
It handles user interaction, Displays data and collects user Input and send them to back-end services through API Getaway.
- **Business layer:** contain the main logic of the system.
- **Infrastructure layer:** it handles the communication with the external systems.
- **Data access layer:** communicates with databases and performs CRUD operations.