# Software Architecture Pattern of Hospital and Healthcare Management System

**Course Title: Software Development Project**
**Course No. : CSE 3106**


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- **Project Title :** Hospital and Healthcare Management System

- **Software Architecture Pattern :** Layered Architecture Pattern

- **Contention :**
  As the name suggests, components(code) in this pattern are separated into layers of subtasks and they are arranged one above another. Each layer has unique tasks to do and all the layers are independent of one another. Since each layer is independent, one can modify the code inside a layer without affecting others.
  In our project , hospital management and healthcare management system there are several tasks, subtasks and pages. Here every page is a layer. Admin, Doctor, Patient, Receptionist pages all have separate code segments, so layered architecture pattern is suitable for this project.

- **Layered Architecture Pattern :**

  1. Presentation Layer:

     This layer houses the front-end code base. This is the application's highest level and effectively, a layer that users can access directly. All interfaces that are visible to users are contained in this layer. It might offer many user interfaces, including online, desktop, and native mobile apps.

  2. Business Layer :

     This layer handles all business operations, validations, and logic. It deals with issues pertaining to fulfilling functional requirements. The application's behavior is governed by rules in this document, such as "If an invoice is printed, send an email to the customer, select all sold products, and reduce their stock in the stock management module."

3. Persistence Layer:

   This layer is in charge of communicating with a database. It is employed to manage operations like object-relational mapping. By updating the changes in the databases, it is making those changes 'persist'.

4. Database Layer :

   All the application's data is stored at this layer. It deals with things like which database tables must be queried to retrieve the required data.

- **Layered Architecture Pattern Diagram :**

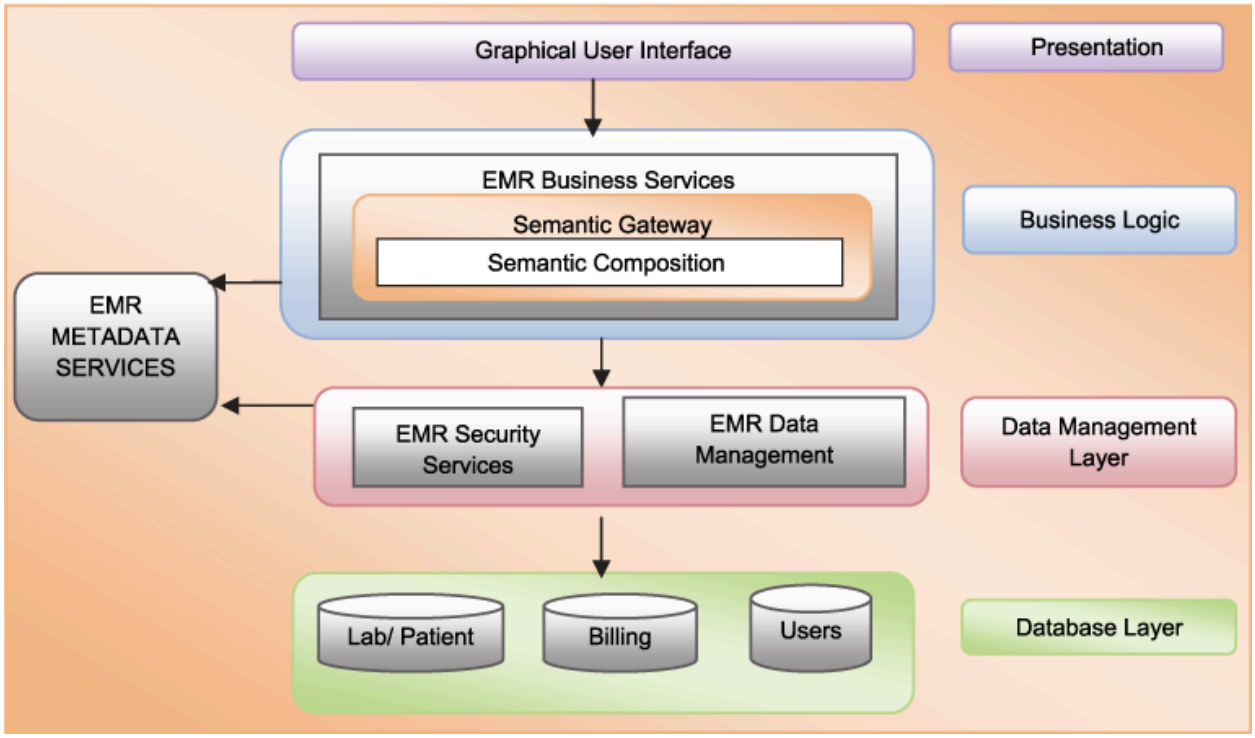
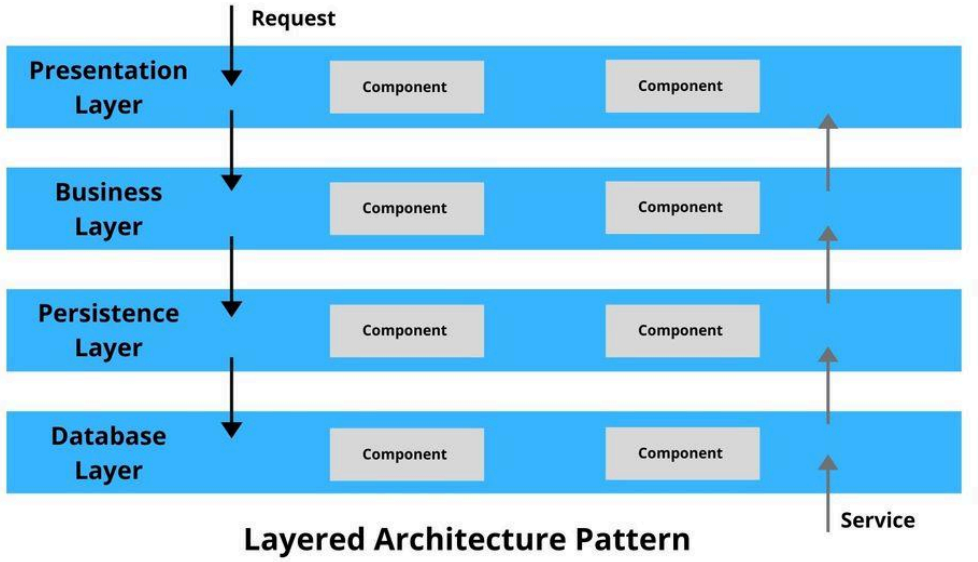



figure : Layered Architecture pattern model of Hospital management system.

Layered architecture pattern block diagram:



Layered Architecture Pattern

- **Conclusion :**

➔ The layered architecture pattern is a strong all-purpose pattern that works well for most applications, making it an excellent place to start when deciding which architecture pattern is appropriate for your application.

➔ Each layer of the architecture creates an abstraction around the work required to complete a specific requirement.

➔ This design pattern is well-known and doesn't require too much effort to implement. It is simple to develop, test, govern, and maintain applications using this architecture pattern.