**A diagram of a business structure

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**Why we chose Layered Architecture?**

**1. Scalability and Adaptability:** Layered architecture enables seamless growth and change without disrupting the entire system.

**2. Clear Roles and Easy Maintenance:** Different layers have specific roles, making development and maintenance straightforward.

**3. Effortless Maintenance:** It simplifies issue resolution and updates without risking system stability.

**4. Enhanced Security:** You can apply security measures at different levels to safeguard your website.

**5. Code Reusability:** Common functionalities can be easily reused, saving time and reducing errors.

**7. Thorough Testing:** Layered architecture makes testing at different levels easier for bug fixing and quality assurance.

**8. Efficient Team Collaboration:** Multiple teams or developers can work independently on different layers.

***Layered architecture*** is a design pattern we are going to use in Purdue Bazaar E-commerce application development to separate an application into distinct layers or tiers, each responsible for specific functionality. It helps to improve maintainability, scalability, and modularity of a software system.

The following are the ***two different views*** for Layered Architecture:

**Functional View:**

**1. Presentation Layer:** This is like the front of a store, where customers interact with products. It manages how the website or app looks and how users navigate through it.

**2.** **Application Layer:** Think of it as the decision-maker in the store. It figures out how to handle orders, apply discounts, and make everything work smoothly for customers.

**3. Data Layer:** It's like the stockroom in the back. It stores all the information - product details, customer data, and order history. It ensures everything is organized and safe.

**4.** **Infrastructure Layer:** This layer is like the support team behind the scenes. It takes care of the servers, networks, and technical stuff to make sure the store stays open and runs without problems.

**Deployment View:**

**1. Presentation Layer:** In this view, the presentation layer is where the store's front is physically located. It's like having your store on a busy street where everyone can see it. This is where web pages and images are hosted.

**2. Application Layer:** It's as if the decision-makers in the store have their own offices. These offices can be in separate buildings to handle lots of customers. Load balancers help spread out the work evenly.

**3. Data Layer:** This is the place where all the stock and inventory is stored. It can be a dedicated warehouse with backups to make sure the products are always available.

**4. Infrastructure Layer:** Think of this layer as the backbone of the store. It sets up the connections, keeps things secure, and makes sure everything runs smoothly, like the electricity and plumbing in a real store.