

## Activity 2.2 – Learning Highlights

**Separation of Concerns:** SoC divides a program into smaller parts, each handling its own task independently. This allows teams to work on different parts without conflicts and ensures changes only impact one section, not the whole system.

**Modularity and Encapsulation:** Modularity breaks a system into small pieces, while encapsulation hides their inner workings behind an interface. This makes updates easier without affecting the whole system and simplifies troubleshooting.

**Coupling and Cohesion:** Low coupling means system parts don't overly rely on each other, while high cohesion ensures each part focuses on a specific task.

**Scalability and Performance:** One of the most important things in a big system is making sure it can handle more users and more data without breaking. This ensures that the system stays fast and responsive even as the workload grows.

**Security and Reliability:** Security and reliability are crucial for systems that handle sensitive data. Encryption and authentication are good practices for security. In other hand, adding utilising load balancers to distribute traffic can make system more reliable.

**Documentation and Justification:** The design process involved creating a well readable document explaining design choices, backed by industry standards and best practices. Diagrams and flowcharts illustrated key components, interactions, and data flow, making the system understandable for stakeholders.