**UNIVERSITY OF LAHORE, SARGODHA CAMPUS**

**Department of Computer Science**

**BPE, Assignment # 02**

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**Process of Architecture and its Levels**

The term "architecture" in the context of systems or enterprise architecture refers to the high-level structure and design of a complex system. This can apply to various domains, including information technology, business, and urban planning. The process of architecture involves creating a blueprint or framework that guides the design and evolution of a system. Let's explore the process of architecture and its levels in more detail:

**Process of Architecture:**

**Understanding Requirements:**

Identify and understand the goals, objectives, and requirements of the system or organization.

Gather input from stakeholders, including end-users, business leaders, and technical experts.

**Analysis:**

Analyze the current state of the system or organization, including existing processes, technology, and infrastructure.

Identify strengths, weaknesses, opportunities, and threats (SWOT analysis).

**Vision and Scope:**

Define the vision for the future state of the system or organization.

Clearly articulate the scope of the architecture, specifying what is included and excluded.

**Reference Models and Standards:**

Identify and leverage industry standards and reference models relevant to the domain.

Establish a foundation of best practices to guide the architecture.

**Conceptual Design:**

Develop a high-level conceptual design that captures the key components and their relationships.

Focus on fundamental concepts, principles, and patterns.

**Iterative Design and Feedback:**

Create iterative design iterations, seeking feedback from stakeholders.

Refine the architecture based on feedback and changing requirements.

**Documentation:**

Document the architecture, creating artifacts such as diagrams, specifications, and guidelines.

Ensure that documentation is accessible and understandable to a wide range of stakeholders.

**Implementation Planning:**

Develop a plan for implementing the architecture, considering phased or incremental approaches.

Identify dependencies, risks, and resource requirements.

**Governance and Compliance:**

Establish governance mechanisms to ensure that the architecture aligns with organizational goals.

Monitor compliance with established standards and guidelines.

**Monitoring and Adaptation:**

Continuously monitor the performance and effectiveness of the architecture.

Be prepared to adapt the architecture in response to changing business needs and technological advancements.

**Levels of Architecture:**

**Enterprise Architecture (EA):**

Focuses on the overall structure and alignment of an entire organization's business processes, information, technology, and human resources.

**Solution Architecture:**

Concentrates on specific projects or systems, ensuring that individual solutions align with the overall enterprise architecture.

**System Architecture:**

Deals with the design and structure of individual systems, including hardware and software components.

**Software Architecture:**

Focuses specifically on the design and structure of software applications, defining how different software components interact.

**Infrastructure Architecture:**

Deals with the design and layout of an organization's IT infrastructure, including networks, servers, and data centers.

**Data Architecture:**

Concentrates on the organization's data assets, defining data models, storage, and data flow across systems.