Lab Sheet 01: Understanding the Fundamentals of Software Architecture

# Learning Objective:

By the end of this lab, students should be able to:

* Explain the significance of software architecture in the software development lifecycle.
* Differentiate between software architecture and software design.
* Recognize the responsibilities and skills required of a software architect.
* Identify key quality attributes of good architecture.

# Lab Activities:

**Activity 1: Define Key Concepts**

Instructions:

Individually write short definitions (2–3 sentences each) for the following terms:

1. Software Architecture
2. Software Design
3. Component Interaction
4. Complexity Management
5. System Blueprint

# Activity 2: Architecture vs. Design

Instructions:

Prepare a simple comparison table between Software Architecture and Software Design using the criteria below:

* + Scope
  + Purpose
  + Focus
  + Level of Abstraction
  + Stakeholders involved

# Activity 3: Role Play - Be the Architect!

Instructions:

Take a fictional case:

"A university wants a web-based system to manage student registrations, timetables, and payments."

As software architects:

1. Identify at least 3 major components of the system.
2. Suggest how these components should interact.
3. List 2–3 quality attributes that are crucial for this system and explain why.

# Activity 4: Reflection Discussion

Instructions:

Discuss the following points

* + Why is the role of a software architect critical for system success?
  + How do communication and leadership play into their responsibilities?

**Submission:**

**Create a pdf document and upload it to the LMS on or before 28th of May 2025**