Faculty of Industrial and Energy Technology
Information Technology Department
3rd Year — 1st Term 2025/2026

كلية تكنولوجيا الصناعة والطاقة
جامعة برج العرب التكنولوجية
قسم تكنولوجيا المعلومات (IT)
الفرقة الثالثة — الفصل الدراسي الأول

Course: Computer Architecture

Assignment (1)

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Department:	Information Technology (IT)	**Course:**	Computer Architecture

Q1. What are the four basic functions that a computer can perform?

Based on the standard functional view of a computer system (Stallings Architecture), both at the system level and inside its major components, a computer performs four fundamental operations:

1. **Data Processing:** Manipulating and transforming information (arithmetic, logic, and comparison operations performed by the ALU / processor).
2. **Data Storage:** Retaining data both temporarily during active program execution (RAM / Registers / Cache) and permanently for long-term recovery (Secondary Storage).
3. **Data Movement (Input / Output):** Transferring data between the computer and the external environment (peripherals such as keyboard, display, network interfaces).
4. **Control:** Managing and orchestrating the computer's resources and coordinating the execution of operations according to programmed instructions (Control Unit).

Q2. Draw a top-down view of the computer structure

A top-down structural representation begins with the computer as an entire system interacting with peripherals, decomposing down into its core components (CPU, Memory, I/O, System Bus), followed by the internal organization of the Central Processing Unit:

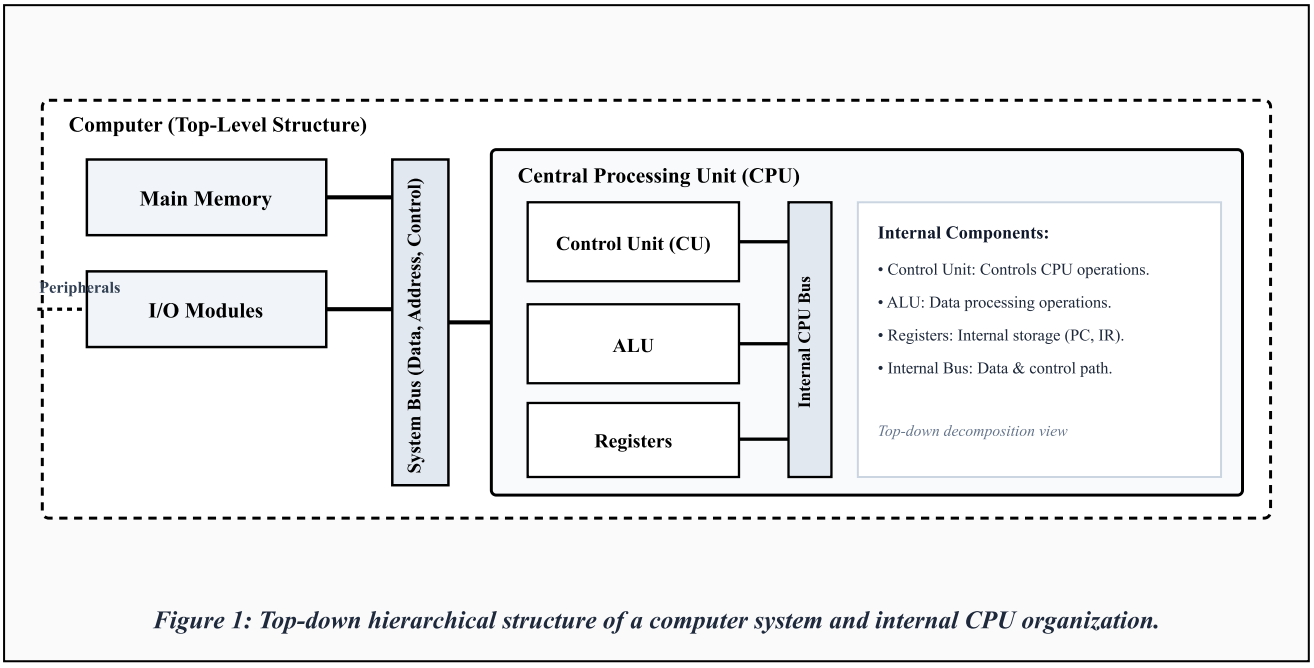


Figure 1: Top-down hierarchical structure of a computer system and internal CPU organization.