"Welcome”!

Imperial College of Engineering
(RU Affiliated)

BSC Engineering 1st year 1st semester Examination ,2024

Course code: CSE1111

Course title: Introduction to Computer System

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“CPU and Motherboard Overview”

- Introducing The Brain–[CPU].
- Components of CPU.
- Evolution of CPUs.
- Popular CPUs in the Market.

- Introducing Motherboard.
- Key Components of a Motherboard.
- Popular Motherboards in the Market.
- Summary of CPU & Motherboard.

“MOTIVATION”

This presentation is motivated by the need to demystify these critical components and explore their roles in the computing ecosystem.

- **Understanding CPU and Motherboard:** Key to understanding their roles in the computing ecosystem**.**
- **Impact on Performance:** CPU and motherboard significantly influence system performance.
- **Upgrade and Compatibility:** Knowing these components helps with upgrade options and compatibility**.**
- **Empowering Informed Choices:** Knowledge enables users to:

Optimize systems for specific tasks (AI, machine learning, gaming)Prepare systems for future technology advancements.

Fig:01

CPU and Motherboard:

“The Heart of Your Computer”

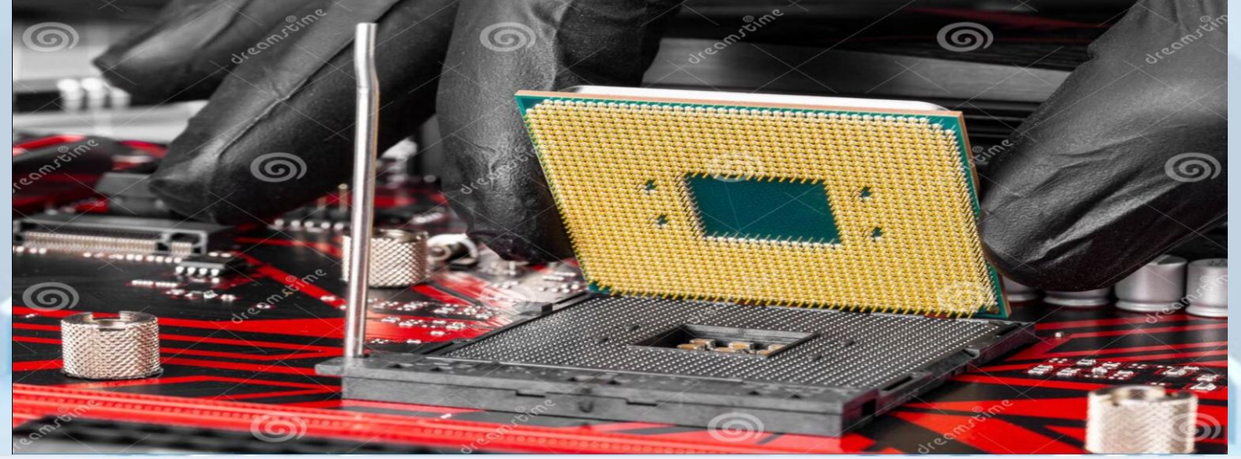

Fig:02

What is a CPU?

1 Brain of the Computer

Processes instructions and performs calculations.

2 Speed Matters

Measured in GHz, affects overall system performance.

3 Multi-Core Power

Multiple processing units for enhanced multitasking capabilities.

Components of CPU:-

Function

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Performance

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Brands

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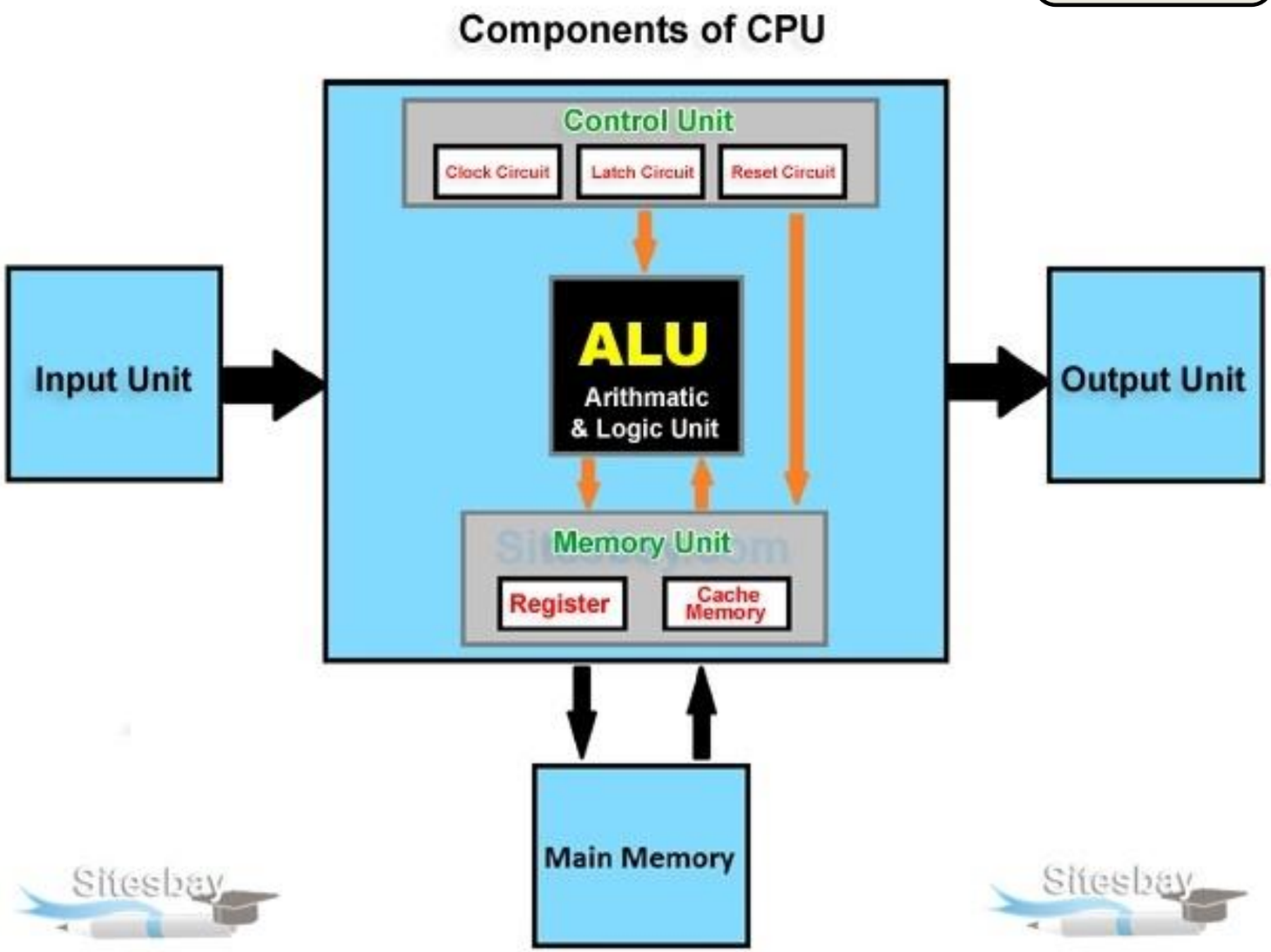

Fig:03

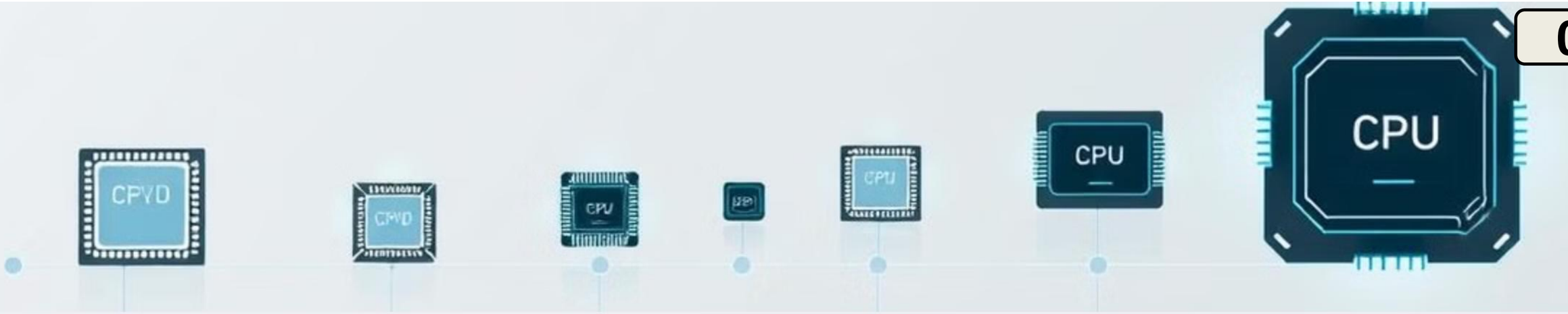

Fig:04

Evolution of CPUs

1

Single-Core Era

Limited multitasking, focus on clock speed.

2

Multi-Core Revolution

Improved parallelism and efficiency.

3

Modern Architectures

Advanced features like hyper-threading and integrated graphics.

Popular CPUs in the Market

Model	Cores	Clock Speed
Intel Core i9-13900K	24	5.8 GHz
AMD Ryzen 9 7950X	16	5.7 GHz

Fig:05

Motherboard :-

Function

Connects CPU, RAM, storage, and peripherals.

Compatibility

Determines component compatibility (CPU socket, RAM type).

Form Factors

Popular sizes: ATX, Micro-ATX, Mini-ITX.

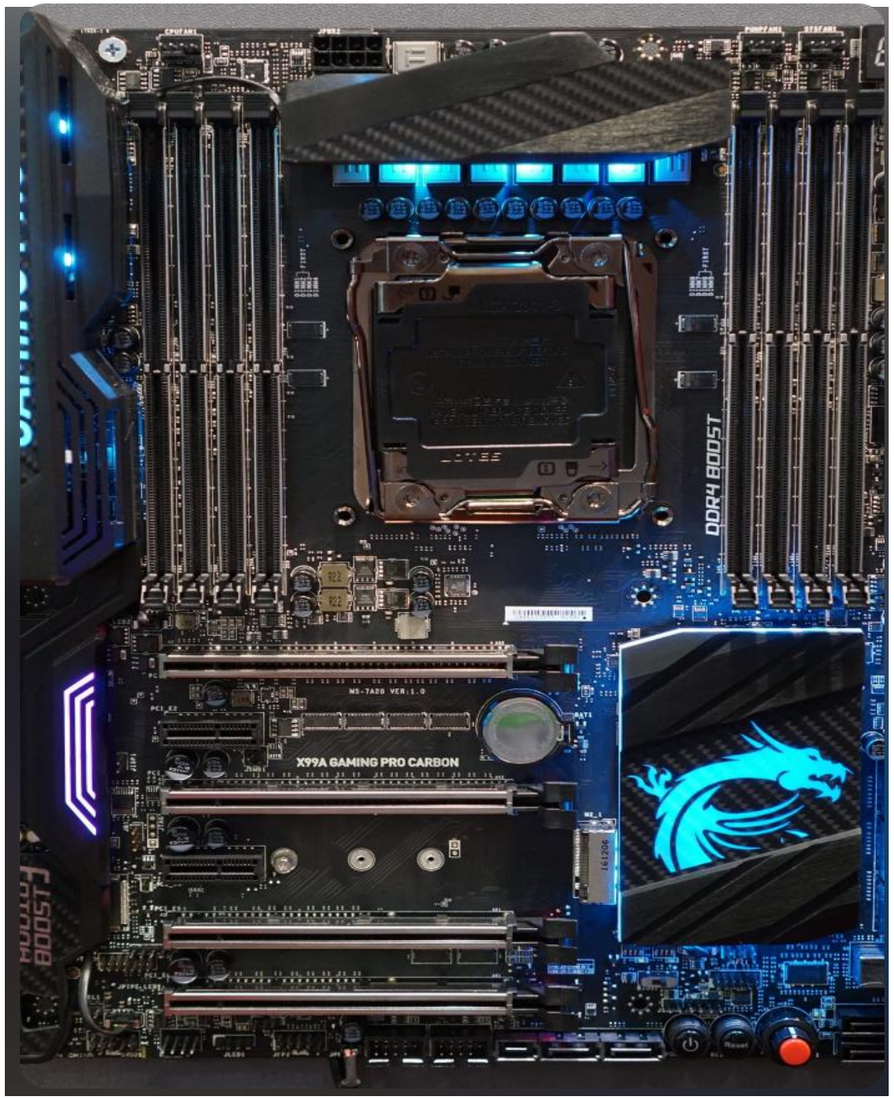

Fig:06

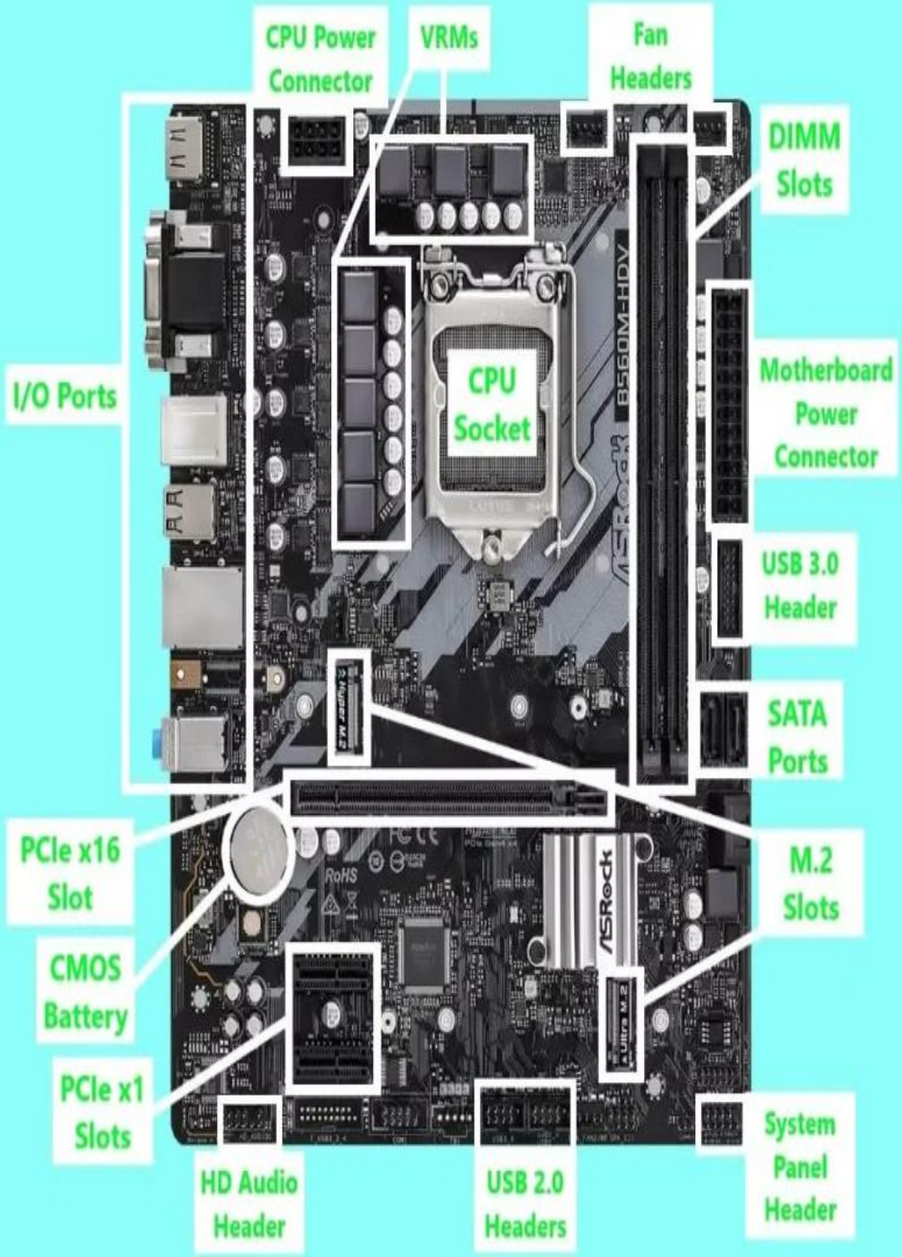

Fig:07

Key Components of a Motherboard

1

CPU Socket

Houses and connects the CPU.

2

RAM Slots

Accommodate memory modules for system RAM.

3

PCIe Slots

Expand functionality with graphics cards and peripherals

4

Storage Ports

Connect SSDs and HDDs via SATA/M.2.

Popular Motherboards

Fig:08

ASUS ROG Strix Z790-E

High-end Intel gaming motherboard with PCIe 5.0.

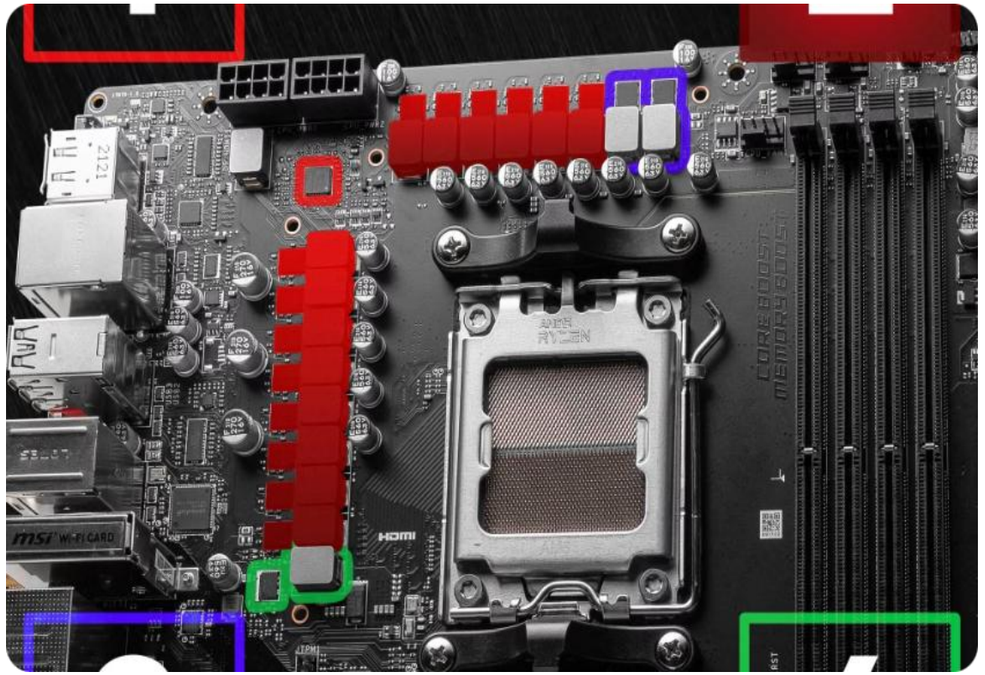

Fig:09

MSI MAG B650 TOMAHAWK

AMD Ryzen compatible with PCIe 4.0 support.

Fig:10

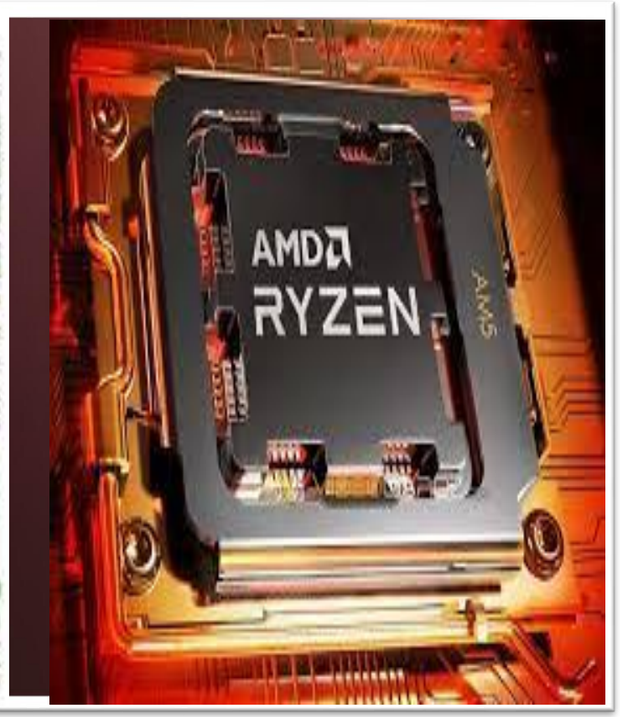

Fig:11

Summary

CPU

Processes tasks, runs applications.

Motherboard

Connects and powers all system components.

Compatibility

Crucial for optimal system performance.

THANK YOU FOR BEING HERE....