



Basic Computer course

**welcome
Everyone!**



#CLASS :4





In This Class

We are going to Learn:

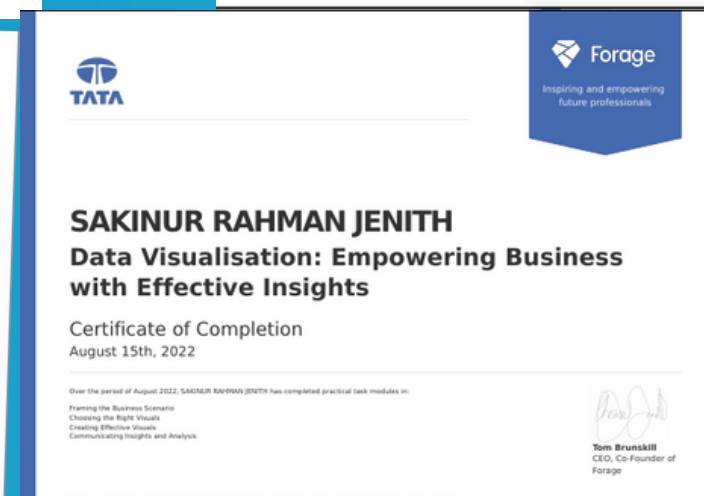
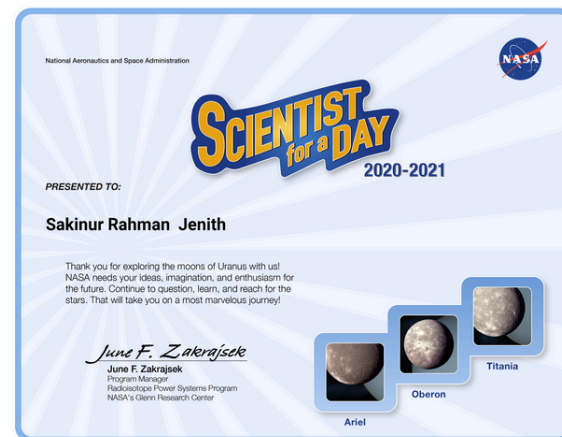
***Everything about processors and
motherboards***

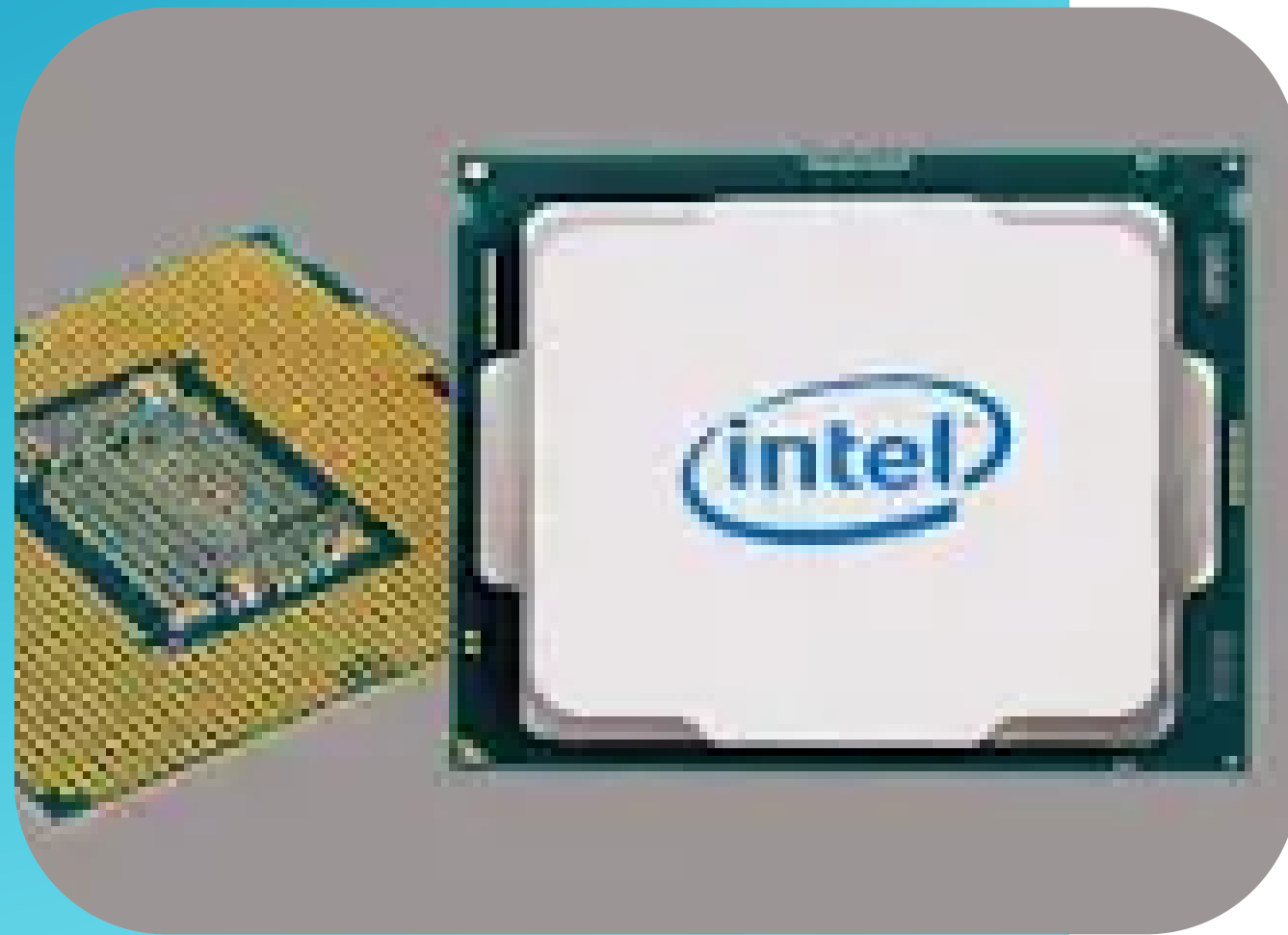


Instructor

SR Jenith

Google, Microsoft, CS50 certified programmer



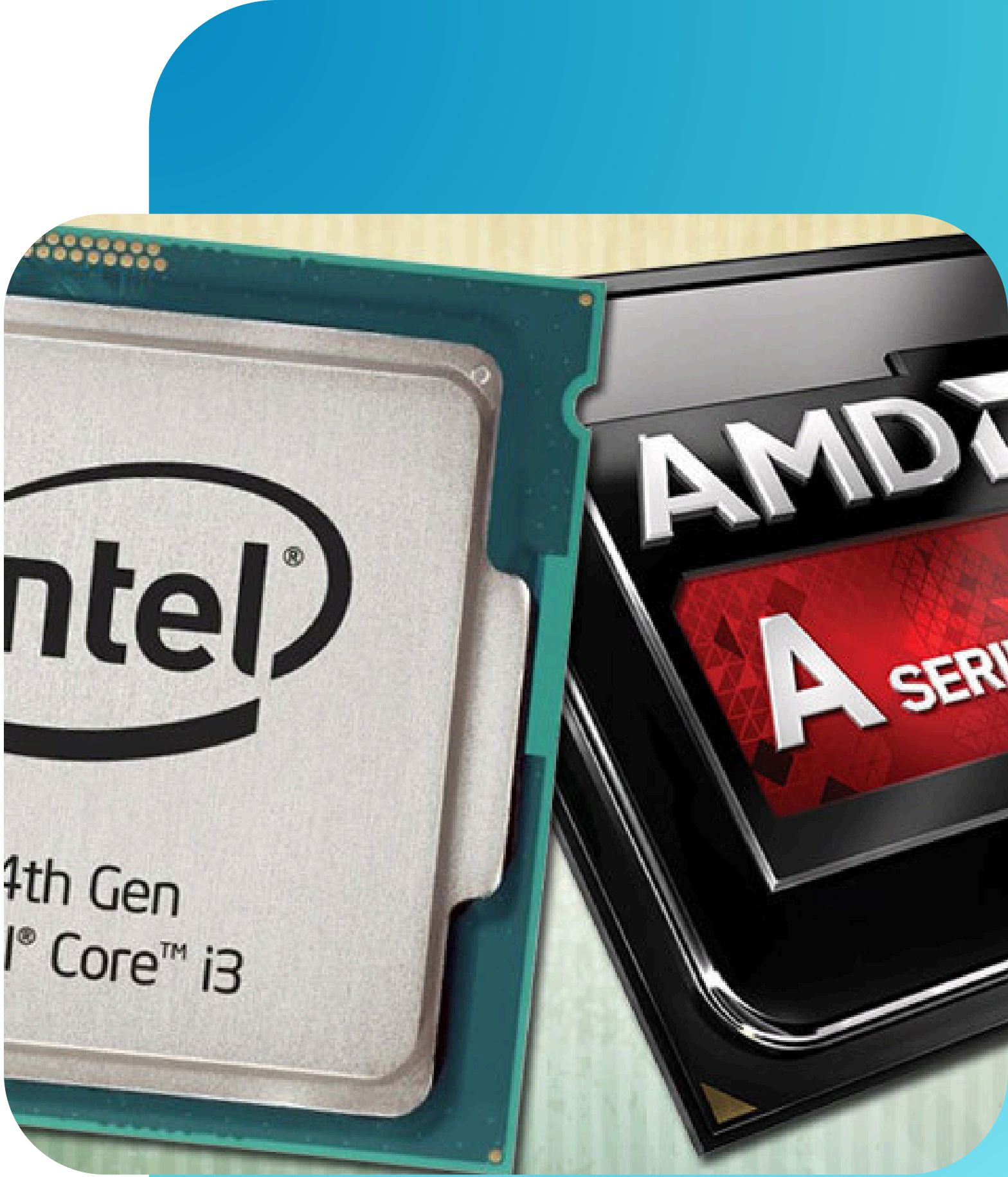


what is processor?

A processor (or CPU – Central Processing Unit) is the brain of a computer. It performs calculations and executes instructions to run software and manage hardware.

⚙️ 2. Main Functions of a Processor

Component	Function
ALU (Arithmetic Logic Unit)	Performs all arithmetic and logical operations
CU (Control Unit)	Directs operations inside the processor
Registers	Small, fast memory to hold data temporarily
Cache	Fast memory inside the CPU to store frequently used data
Clock	Sends timing signals to synchronize operations



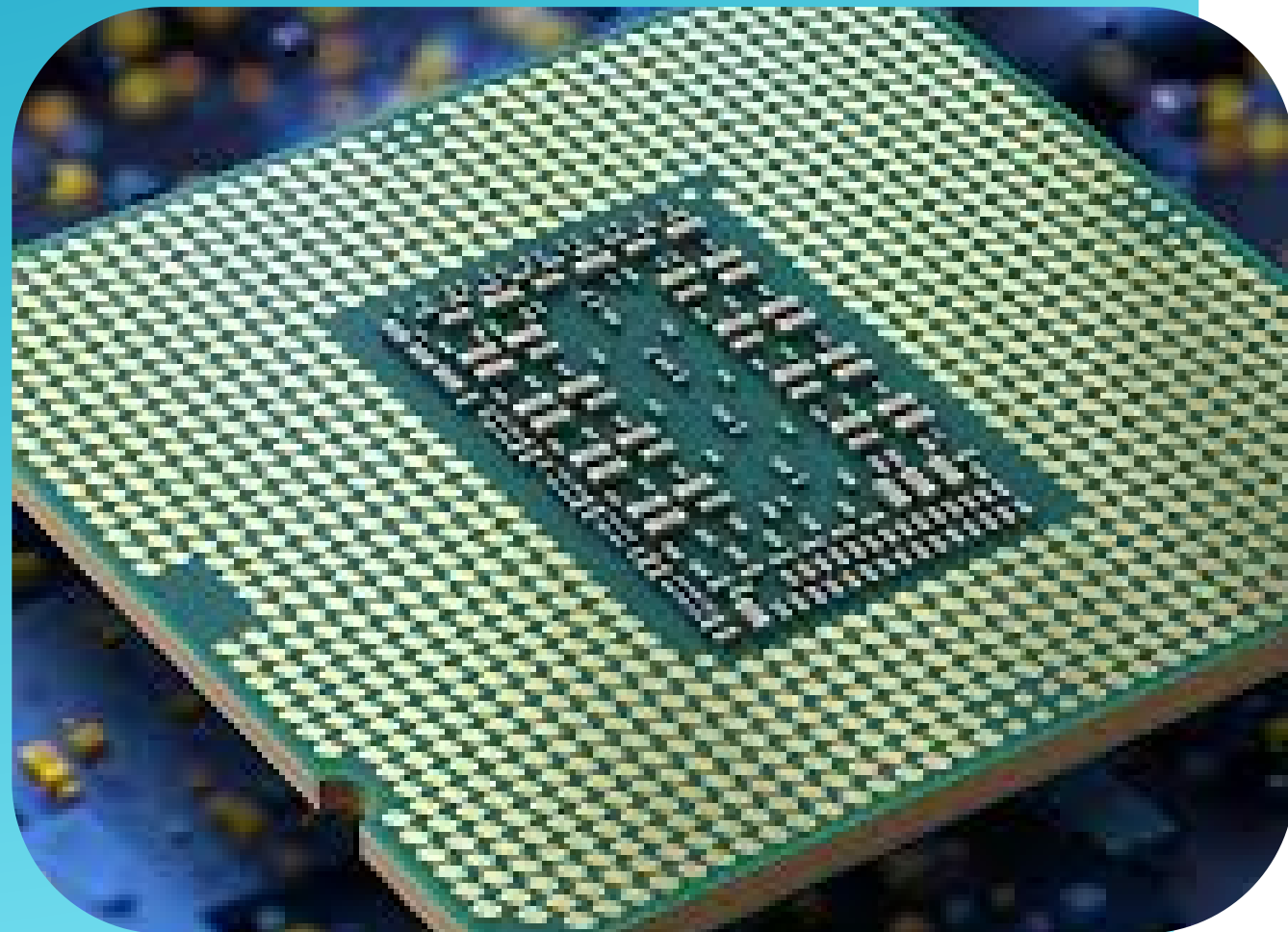


In This Part

Let's Understand.....

**Let's understand
the processor more
deeply 😊**





4. Important CPU Specifications

- **Clock Speed (GHz)** – Higher means faster, usually.
- **Cores** – Each core can handle its own task. More cores = better multitasking.
- **Threads** – Virtual cores. Helps improve performance using multithreading.
- **Cache Size** – L1, L2, L3 caches. More cache = faster access to data.
- **Architecture** – 32-bit or 64-bit.
- **TDP (Thermal Design Power)** – Measures heat output; important for cooling.

5. Types of Processors

Type	Description
General-Purpose CPUs	Used in PCs, laptops (e.g., Intel Core, AMD Ryzen)
Mobile CPUs	Used in smartphones (e.g., Apple A-series, Qualcomm Snapdragon)
Server CPUs	High power for data centers (e.g., Intel Xeon,
Embedded CPUs	Built into devices (e.g., washing machines, routers)
GPU/CPU Hybrids	Combine CPU and GPU cores (e.g., Apple M1/M2 chips)



6. CPU Generations & Trends

- Older CPUs had 1 core, no multithreading.
- Modern CPUs have multiple cores and energy efficiency.
- ARM architecture is now popular for mobile and even laptops (Apple Silicon).
- AI acceleration is becoming part of new processors (e.g., neural engines).



7. Processor Brands

Brand	Known For
Intel	High-performance desktop and server CPUs
AMD	Multicore performance, gaming, value
Apple	M-series ARM chips – efficient, powerful
Qualcomm	Mobile Snapdragon chips
MediaTek	Budget mobile chips
IBM	High-end server and mainframe CPUs



Intel VS AMD

Feature	Intel	AMD Ryzen
Company	Intel Corporation (USA)	AMD (Advanced Micro Devices, USA)
Popular Series	Core i3, i5, i7, i9 (desktop/laptop)	Ryzen 3, 5, 7, 9 (desktop/laptop)
First Released	Core series: 2006	Ryzen: 2017
Current Architecture (as of 2025)	Intel 14th Gen / Meteor Lake	Ryzen 7000 series (Zen 4), soon Zen 5
Socket Type	LGA1700 (desktop)	AM5 (desktop)

Intel VS AMD

Feature	Intel	Ryzen
Core Types	Hybrid: Performance (P) + Efficiency (E) cores	All cores are equal (homogeneous)
Threads	Hyper-Threading (2 threads/core)	Simultaneous Multithreading (SMT)
Manufacturing	Intel 7 (approx. 10nm equivalent)	TSMC 5nm (more efficient)
Chip Design	Monolithic or tiled (newer)	Chiplet design (multiple smaller dies)

Intel VS AMD

Task	Intel	Ryzen
Gaming	Slight edge in FPS (especially high refresh rate)	Excellent, very close performance
Productivity	Strong in apps like Photoshop, Premiere Pro	Strong in 3D rendering, compiling, multitasking
Multitasking	Good, especially with more P/E core balance	Better for heavy multi-core tasks
Power Efficiency	Slightly less efficient (depending on model)	More efficient with TSMC 5nm

Intel VS AMD

Aspect	Intel	Ryzen
Price	Often more expensive at launch	Generally offers better price/performance
Coolers	Usually not included with higher-end CPUs	Includes coolers with many models
Overclocking	Unlocked "K" CPUs only	Most CPUs unlocked for overclocking

Intel VS AMD

Feature	Intel	Ryzen
Socket	LGA1700 (needs 600/700 series chipset)	AM5 (and older AM4 for past models)
Chipset Options	H610, B660, Z690, Z790, etc.	B650, X670, etc.
RAM Support	DDR4 or DDR5 (depends on board)	DDR5 only (for Ryzen 7000+)

Intel VS AMD

Use Case	Choose Intel if...	Choose Ryzen if...
Gaming at high FPS	You want top FPS in competitive gaming	You want excellent performance and value
Content Creation	You use Adobe Suite often	You do 3D rendering, video editing, compiling
Budget Build	You find a good deal on an i5/i7	You want more cores for the same price
Future-proofing	You're okay upgrading your motherboard often	You want long-term AM5 platform support

Qualcomm VS mediatek

Feature	Qualcomm Snapdragon	MediaTek
Performance	Generally better CPU+GPU balance	Good CPU, GPU slightly behind in gaming
Power Efficiency	More efficient due to better thermal design	Improving, but less efficient overall
5G Modem	Best-in-class (integrated & standalone)	Integrated 5G in newer Dimensity chips
AI Performance	Strong NPU & DSP (Hexagon Engine)	Catching up with Dimensity AI
Gaming	Preferred for high-end gaming (Adreno GPU)	Budget-friendly gaming (Mali GPU)
Price/Value	Expensive (especially	More affordable for
Device Brands	Found in flagship phones (Samsung, OnePlus)	Common in mid-range & budget phones
Thermal Management	Excellent on premium	Can run hotter under load



That's all for today

**Thank you
Everyone!**

