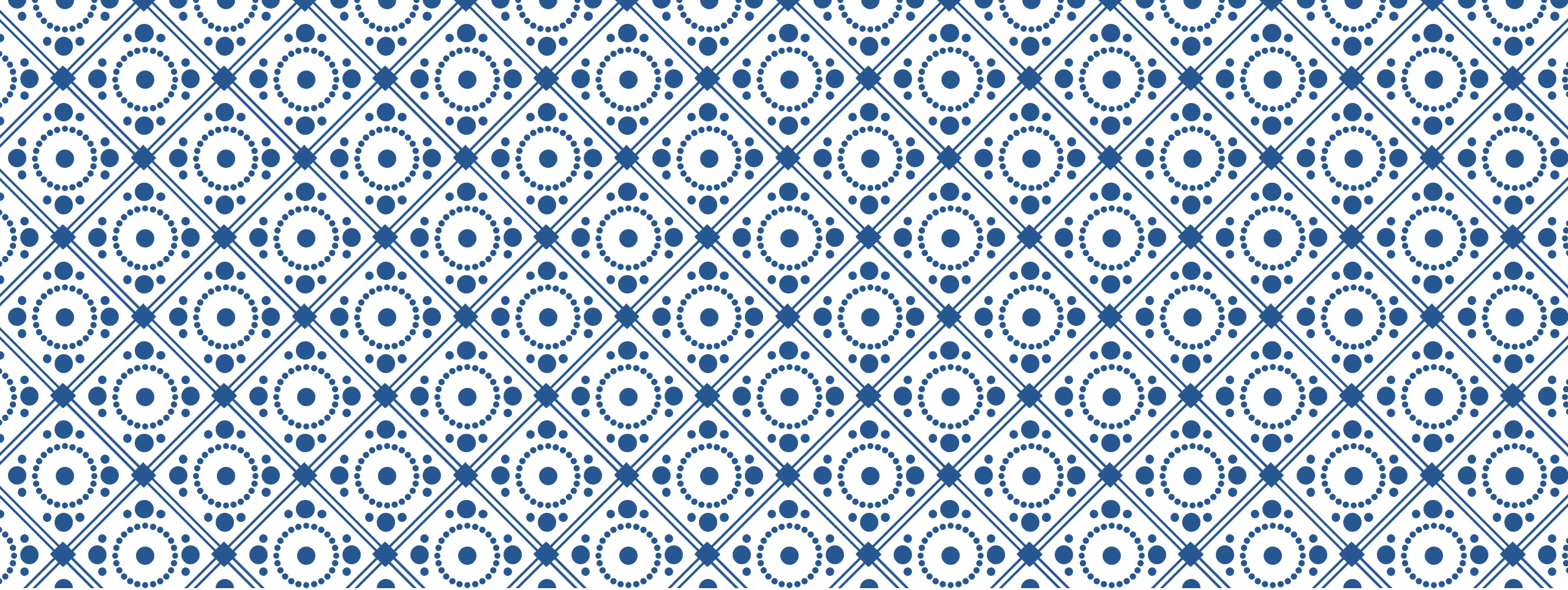

UNIT-10 CURRENT ERA OF MICROPROCESSORS

Aniruddh Fataniya

Comparison of AMD and Intel Architecture

Intel	AMD
Less expensive than AMD Processor at the lower range.	Less expensive than Intel at a higher range.
Less efficient than AMD.	More efficient than Intel.
Can heat up when used with Clock Speed Boost(14 nm)	Is generally cooler due to smaller lithography(TSMC 7nm is similar to Intel 10 nm)
IPC (Rocket Lake) is lower than AMD (Zen 3)	IPC(Zen 3) is higher than Intel (Rocket Lake)
Clock speed reaches and surpassed 5.0 GHz	The clock speed can reach 5.0 GHz but results in more heat
iGPU present in almost all Core i series CPU(except Core i F-series)	iGPU is present only in AMD APU series with higher GPU performance compared to Intel iGPU(HD Graphics and)
It has symmetric multiprocessing capabilities of up to 4 sockets/28 cores.	It has symmetric multiprocessing capabilities of up to 8 sockets/128 cores.

TICK-TOCK MODEL: INTEL

Tick-Tock was an aggressive development model introduced by Intel for their mainstream microprocessors in 2005 and phased out in 2016 whereby microarchitecture changes were in-sync with their process shrink

Under the tick-tock scheme roughly every 12-18 months the Intel alternated between "Tick" and "Tock“

Intel no longer uses this model

TICK

With each tick, Intel advances their manufacturing process technology in line with Moore's Law

Each new process introduces higher transistor density and a generally a plethora of other advantages such as higher performance and lower power consumption

During a tick, Intel retrofits their previous microarchitecture to the new process which inherently yielded better performance and energy saving

At this phase, only lightweight features and improvements are introduced

TOCK

With each tock, Intel uses the their latest manufacturing process technology from their "tick" to manufacture a newly designed microarchitecture

The new microarchitecture is designed with the new process in mind and typically introduces Intel's newest big features and functionalities

New instructions are often added during this cycle stage

Thank You