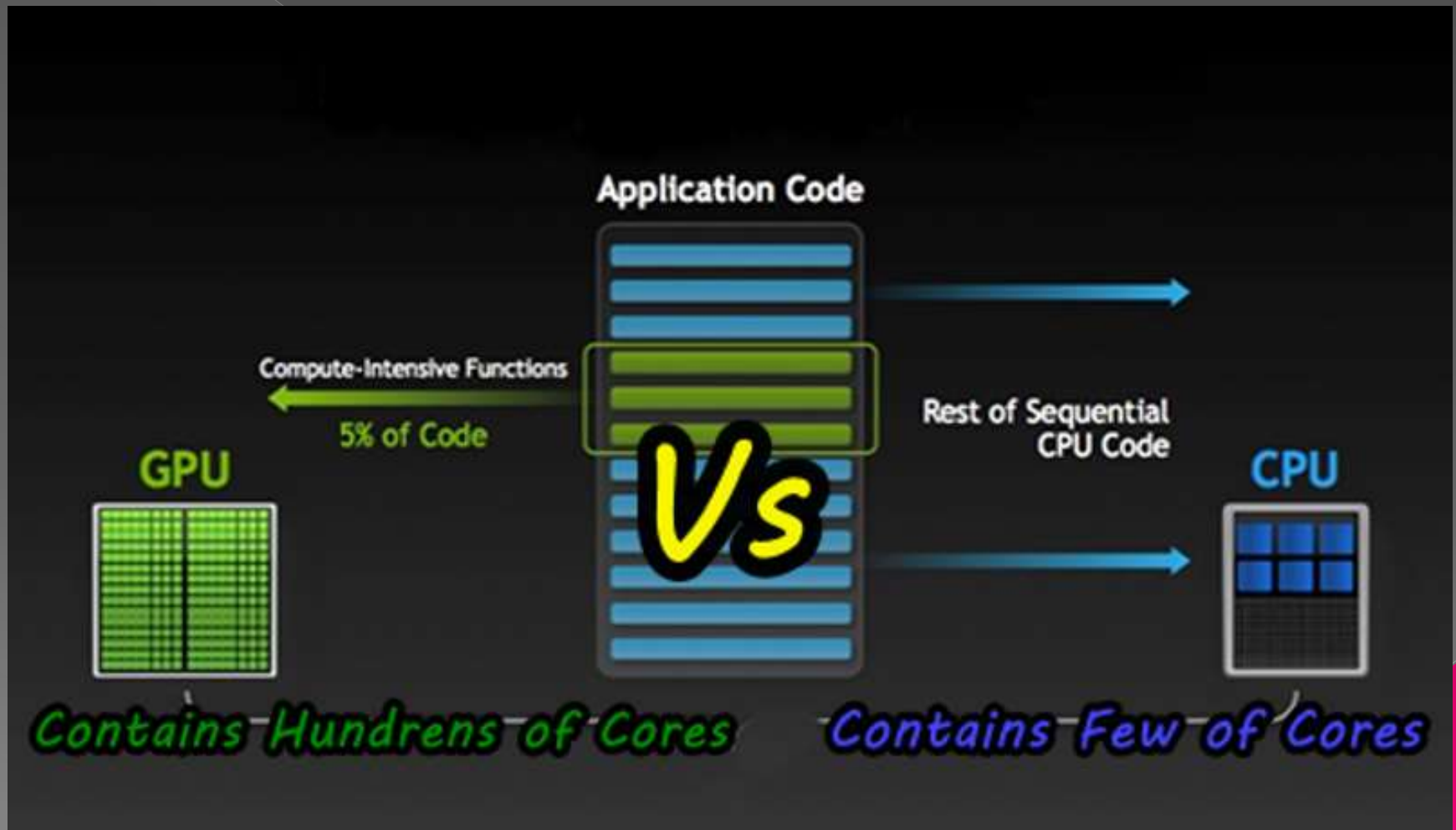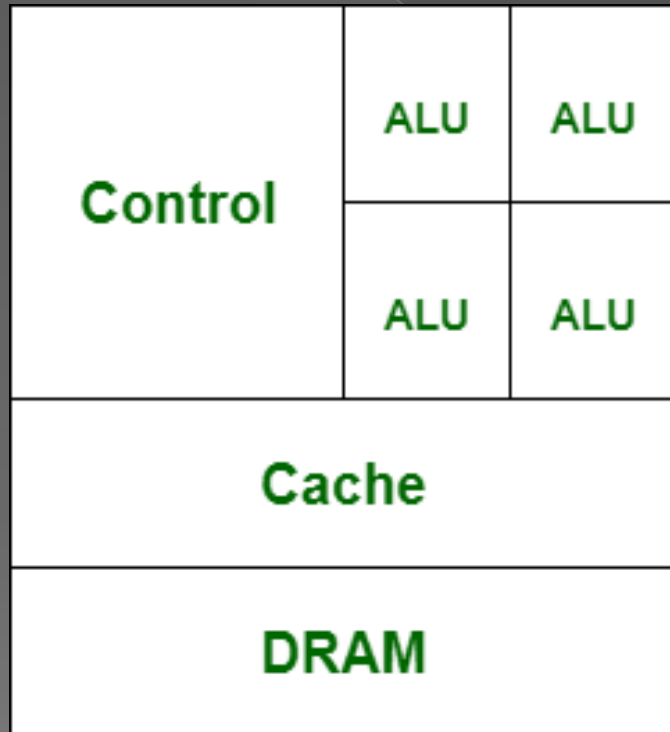# CPU vs GPU

Central Processing Unit (CPU)

- CPU is known as brain for every ingrained system. CPU comprises the arithmetic logic unit (ALU) accustomed quickly to store the information and perform calculations and Control Unit (CU) for performing instruction sequencing as well as branching. CPU interacts with more computer components such as memory, input and output for performing instruction.
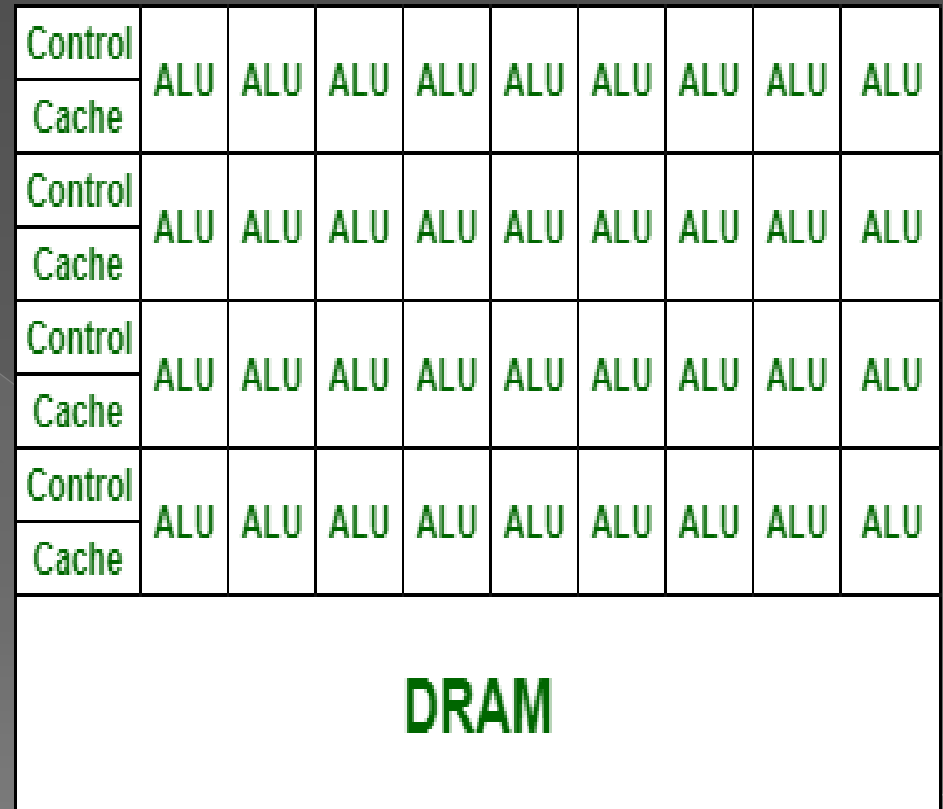
Graphics Processing Unit (GPU)

- GPU is used to provide the images in computer games. GPU is faster than CPU's speed and it emphasis on high throughput. It's generally incorporated with electronic equipment for sharing RAM with electronic equipment that is nice for the foremost computing task. It contains more ALU units than CPU.

CPU AND GPU ARCHITECTURE

Control	ALU	ALU
	ALU	ALU
Cache		
DRAM		

CPU

Control Cache	ALU	ALU	ALU	ALU	ALU	ALU	ALU	ALU	ALU
Control Cache	ALU	ALU	ALU	ALU	ALU	ALU	ALU	ALU	ALU
Control Cache	ALU	ALU	ALU	ALU	ALU	ALU	ALU	ALU	ALU
Control Cache	ALU	ALU	ALU	ALU	ALU	ALU	ALU	ALU	ALU
DRAM									

GPU

Difference Between CPU and GPU

There is a few **difference between CPU and GPU** given below.

Serial no	CPU	GPU
1.	CPU full form Central Processing Unit.	GPU full form Graphical Processing Unit.
2.	It consumes more memory than GPU.	It consumes less memory than CPU.
3.	It has less speed than GPU.	It is faster than the CPU.
4.	It has several cores.	It has many cores.
5.	The CPU is good for serial processing.	GPU has parallel processing.
6.	The CPU has low latency.	GPUs have high throughput.
7.	It is used for wide range processing.	It is used for rendering 3D graphics.

Features of GPU and CPU:

Features/ Attributes	GPU	CPU
Computing Capability	High	Low
Core complexity	Simple	Composite
Number of Cores	100 to 4000	4 to 30
Performance	Built for parallel computing, ideal for ML	Built to perform sequential operations.
Graphics rendering	1 to 2 milliseconds/ image (even lesser)	1 to 5 seconds/image
Core efficiency	1 to 5 Tera-Flops	100 to 500 Giga-Flops
Latest additions	Nvidia's Titan V, Tesla series and GTX 1050 series (expected soon)	Intel's CoreTM i7-8700K Series

Applications of CPU and GPU