## Increasing The Speed of Processors Moore's Law

Moore's Law's Problem (Power Wall):

The clock rate can not continue to scale without exceeding the air-cooling limits.



## Increasing The Speed of Processors Instruction Level Parallelism

Instruction: add a and b and store in c

IF	ID	Exec	Mem	WB
Instruction Fetch	Instruction Decode	Execution	Memory Reference	Write Back