

## 2.3 Quantitative Principles of Computer Design

- ① Take advantage of parallelism
- CLA - Carry Lookahead Adder
  - ILP - Pipelining
  - HOC, multiprocessors

### ② Principle of locality

Programs tend to reuse data and instructions they have used recently

Rule of thumb: a program <sup>spends</sup> ~~uses~~ 90% of its execution time with only 10% of the code

This principle works for instructions! also applies to data

↙ temporal locality  
↘ spatial locality

### ③ Focus on the common case