Asymptotic Analysis – Quiz

- Example: Running time estimates - empirical analysis
  - Personal computer executes 10^9 compares/second
  - Super-computer executes 10^{13} compares/second

N	Selection sort – $O(N^2)$			Merge sort – $O(N \log_2 N)$		
	Million 10^6	10 million 10^7	Billion 10^9	Million	10 million	Billion
PC	16.7 min	27.8 hours	31.7 years	instant	0.2 sec	29.9 sec
Super Com	0.1 sec	10 sec	27.8 hours	Instant	Instant	Instant

✱ 소숫점 두번째 자리에서 반올림 함

$log_{10}2 \cong 0.3$
$86,400sec/day$
instant < 0.1 sec

Use a reasonable or understandable time units.
Do not say, for example, "3660 days" nor "1220 seconds",
but 10.0 years or 20.3 min, respectively.

※ **Bottom line**: Good algorithms are better than supercomputers.

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