10B1 B-树：大数据

#数据结构邓神

B-树：动机

什么是B-树?

```
640K ought to be enough for everybody
- Bill Gates , 1981
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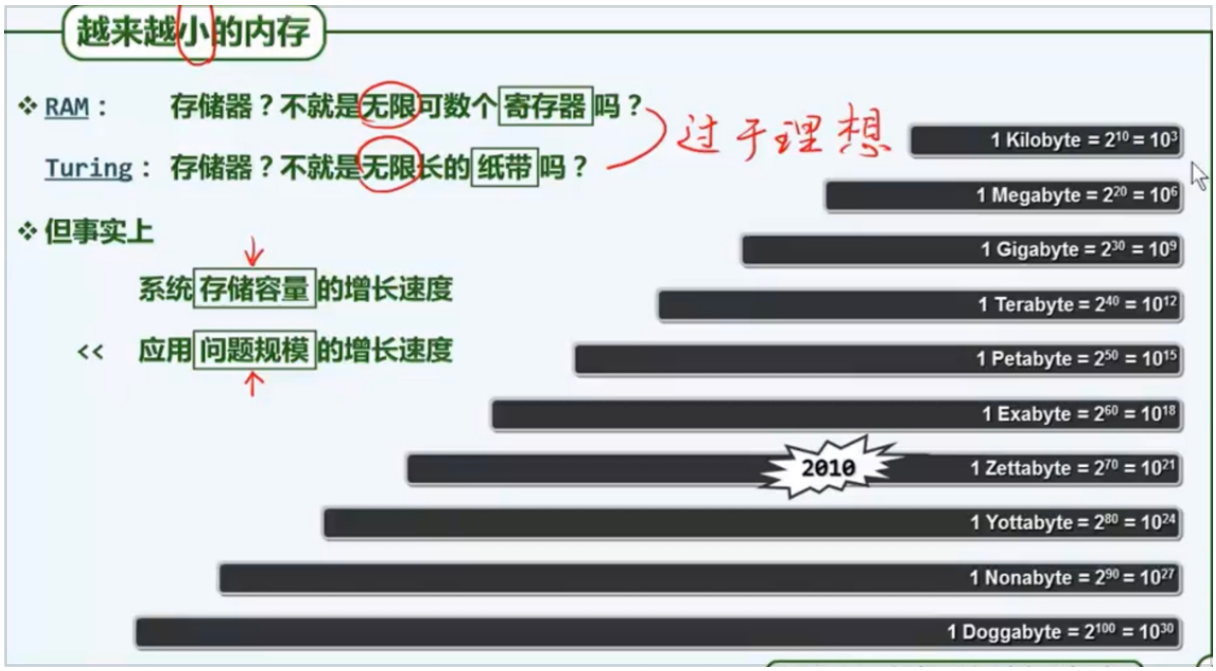
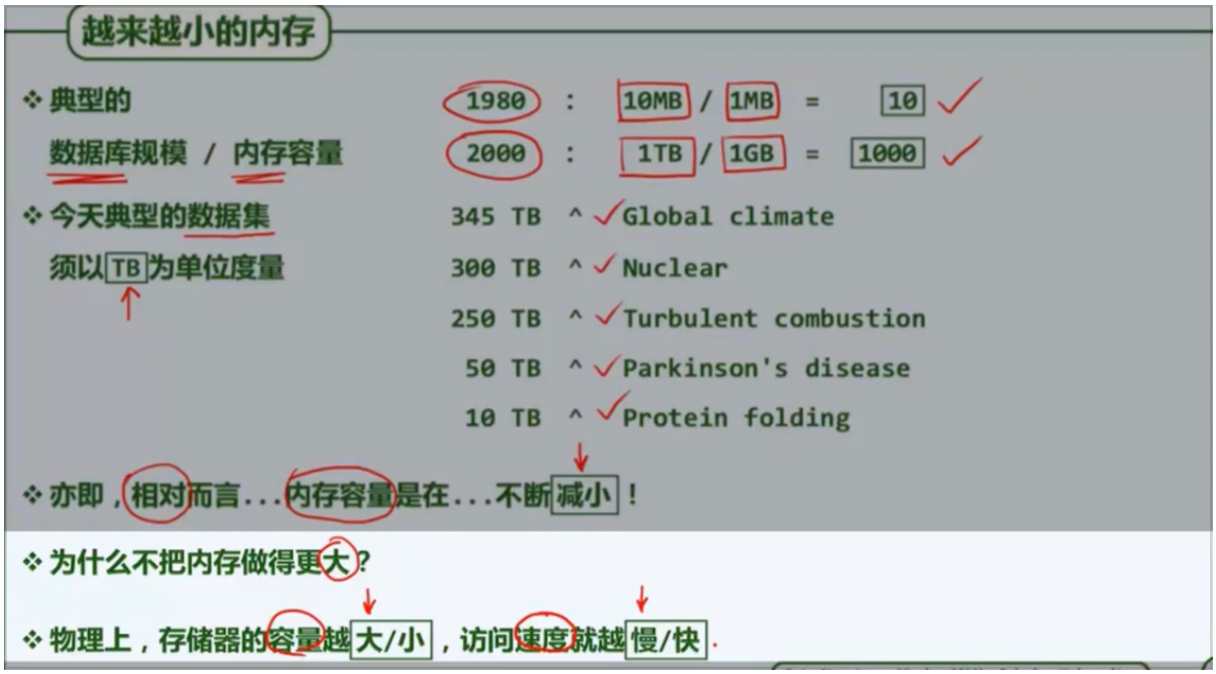
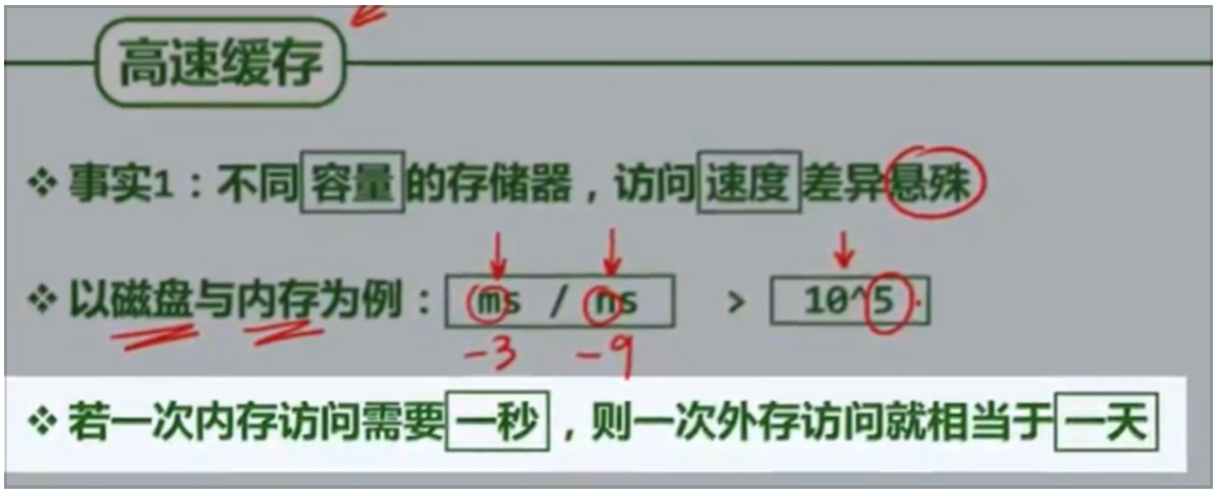
越来越大的数据 | 越来越小的内存



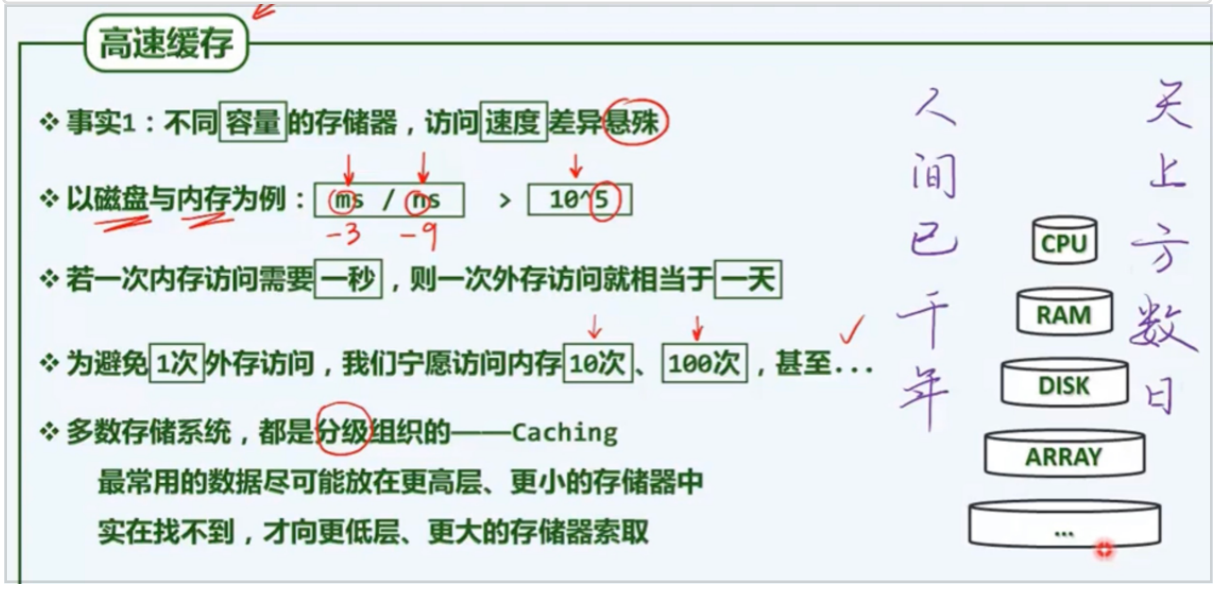


高速缓存



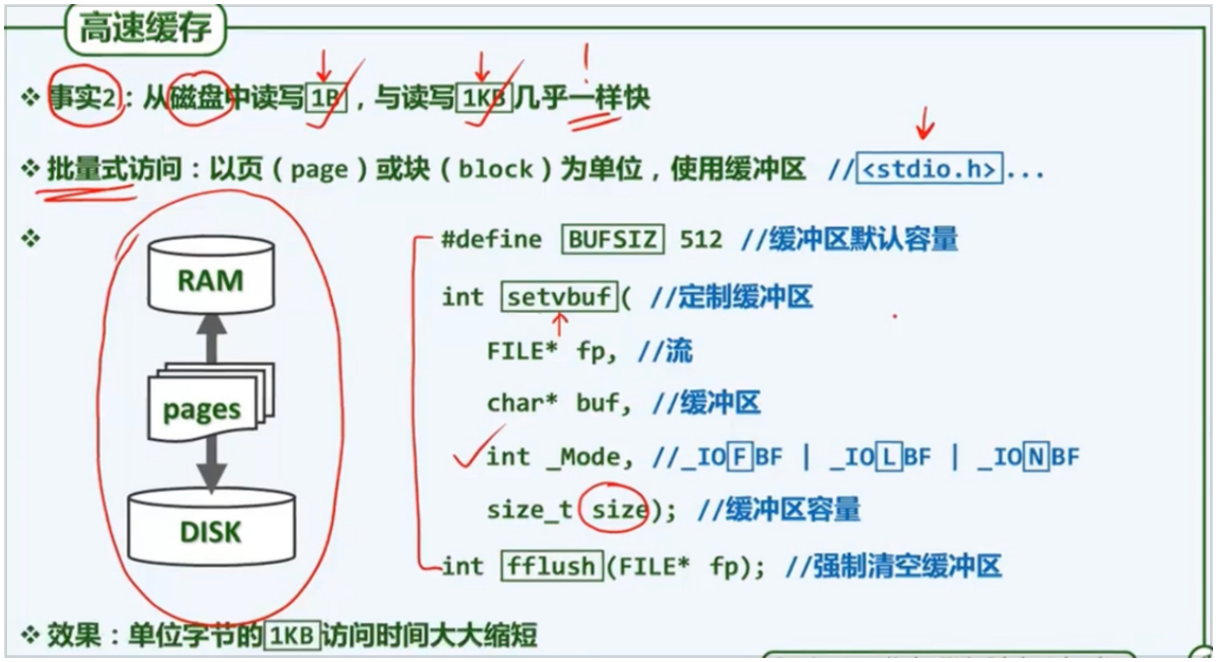
分级IO

天上方数日，人间已千年



跨层级的读写都是IO

1B = 1KB


高速缓存
❖ 事实2：从磁盘中读写1B，与读写1KB几乎一样快
❖ 批量式访问：以页（page）或块（block）为单位，使用缓冲区 //<stdio.h>...
❖
RAM
pages
DISK
#define BUFSIZ 512 //缓冲区默认容量
int setvbuf(//定制缓冲区
FILE* fp, //流
char* buf, //缓冲区
int _Mode, //_IOFBF | _IOLBF | _IONBF
size_t size); //缓冲区容量
int fflush(FILE* fp); //强制清空缓冲区
❖ 效果：单位字节的1KB访问时间大大缩短

B树有什么用呢?