Experiments on a DELL 7000

IT-C Course on Advanced Algorithms

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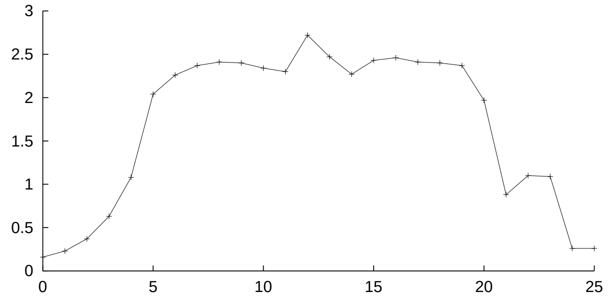
Cache Behavior

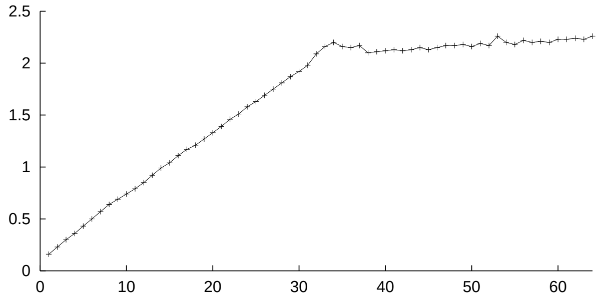
```
for (i=0, j=0; i<r; i++, j=(j+d) % n) X[j]++
```



The running time for different values of d, plottet as ($\log_2 d$, seconds) on a DELL 7000 with 128MB of RAM, $n = 64$MB, $r = 2^{23}$, and X storing chars.

32 Byte Cache Lines

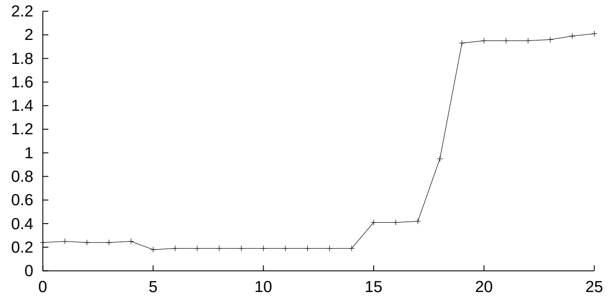
```
for (i=0, j=0; i<r; i++, j=(j+d) % n) X[j]++
```



The running time for small values of d, plottet as (d, seconds) on a DELL 7000 with 128MB of RAM, $n = 64$MB, $r = 2^{23}$, and X storing chars.

256 KB Cache

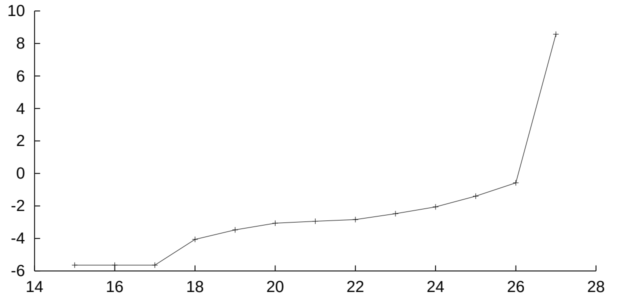
```
for (i=0, j=0; i<r; i++, j=(j+d) % n) X[j]++
```



The running time for different values of n, plottet as ($\log_2 n$, seconds) on a DELL 7000 with 128MB of RAM, $d = 16$, $r = 2^{24}$, and X storing chars.

128 MB DRAM

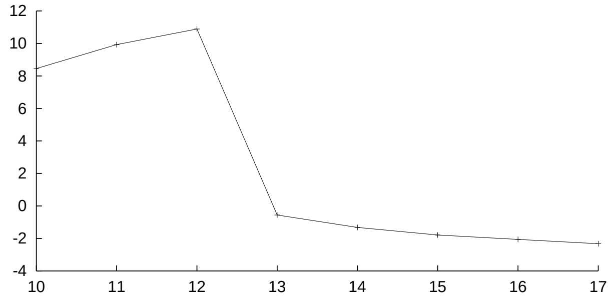
```
for (i=0, j=0; i<r; i++, j=(j+d) % n) X[j]++
```



The running time for large values of n, plottet as ($\log_2 n$, $\log(\text{seconds})$) on a DELL 7000 with 128MB of RAM, $d = 1024$, $r = 2^{19}$, and X storing chars.

4096 Bytes Block Size

```
for (i=0, j=0; i<r; i++, j=(j+d) % n) X[j]++
```



The running time for medium values of d, plottet as ($\log_2 d$, $\log(\text{seconds})$) on a DELL 7000 with 128MB of RAM, $n = 128\text{MB}$, $r = 2^{19}$, and X storing chars.