
Subject: Re: Map implementation

Posted by [Novo](#) on Sun, 14 Apr 2019 16:55:14 GMT

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mirek wrote on Sun, 14 April 2019 02:03 If the performance is the issue, then the memory is the issue too. The game starts at L1 cache size, which can correspond to hundreds of records. How to deal with the memory hierarchy is more or less clear (Cache-Conscious Data Structures, Cache-oblivious algorithms).

What I'm trying to say is that by using a little bit more memory you can significantly improve performance. For example, you can create a bitset of unoccupied slots. That would be overkill for a small hash table.

I made a simple test.

```
Vector<Index<int> > v;
Cout() << "sizeof(Index<int>): " << sizeof(Index<int>) << " bytes" << EOL;
Cout() << "Mem used: " << MemoryUsedKb() - curMU << " Kb" << EOL;
v.SetCount(v_num);
Cout() << "Created " << v_num << " empty Index<int>" << EOL;
Cout() << "Mem used: " << MemoryUsedKb() - curMU << " Kb" << EOL;
const int isize = 100;
for (int i = 0; i < isize; ++i) {
    const int jsize = v_num;
    for (int j = 0; j < jsize; ++j)
        v[j].Add(i);
    Cout() << "Added " << i + 1 << " elements" << EOL;
    Cout() << "Mem used: " << MemoryUsedKb() - curMU << " Kb" << EOL;
}
```

Result:

```
sizeof(Index<int>): 80 bytes
Mem used: 0 Kb
Created 1000000 empty Index<int>
Mem used: 78128 Kb
Added 1 elements
Mem used: 237028 Kb
Added 2 elements
Mem used: 237028 Kb
Added 3 elements
Mem used: 237028 Kb
Added 4 elements
Mem used: 237028 Kb
Added 5 elements
Mem used: 237028 Kb
Added 6 elements
Mem used: 237028 Kb
Added 7 elements
Mem used: 237028 Kb
Added 8 elements
```

Mem used: 237028 Kb
Added 9 elements
Mem used: 397796 Kb
Added 10 elements
Mem used: 397796 Kb
...
Added 99 elements
Mem used: 2592740 Kb
Added 100 elements
Mem used: 2592740 Kb

IMHO, it is possible to do much better than this ...

File Attachments

1) [test_ht_perf.zip](#), downloaded 234 times
