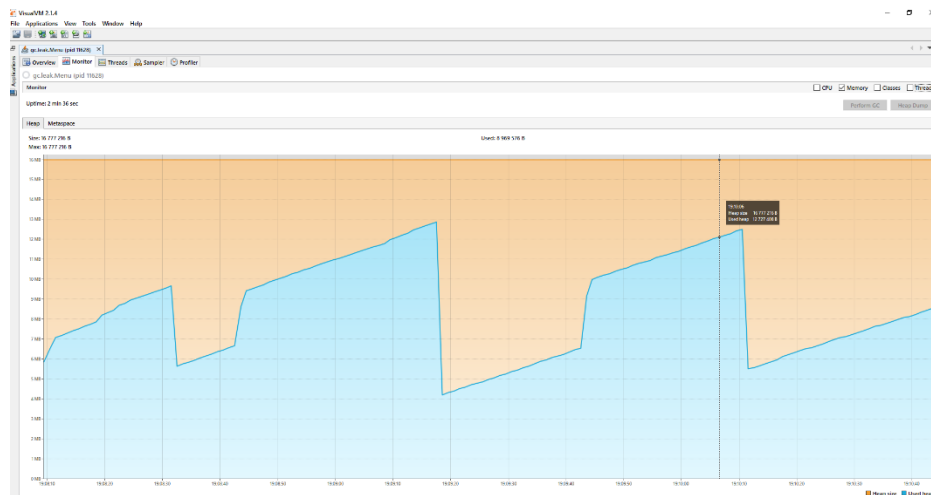


Вроде получилось.

Замеры ДО:



Лог:

[0.009s][info][gc] Using Serial

[4.203s][info][gc] GC(0) Pause Young (Allocation Failure) 4M->2M(15M) 5.183ms

[4.326s][info][gc] GC(1) Pause Young (Allocation Failure) 6M->2M(15M) 4.311ms

[4.421s][info][gc] GC(2) Pause Young (Allocation Failure) 7M->4M(15M) 4.783ms

[4.597s][info][gc] GC(3) Pause Young (Allocation Failure) 8M->4M(15M) 3.548ms

[4.906s][info][gc] GC(4) Pause Young (Allocation Failure) 8M->5M(15M) 10.032ms

[30.017s][info][gc] GC(5) Pause Young (Allocation Failure) 9M->5M(15M) 3.548ms

[43.139s][info][gc] GC(6) Pause Young (Allocation Failure) 9M->7M(15M) 11.384ms

[43.181s][info][gc] GC(7) Pause Young (Allocation Failure) 12M->15M(15M) 10.535ms

[43.215s][info][gc] GC(8) Pause Full (Allocation Failure) 15M->10M(15M) 33.688ms

[43.245s][info][gc] GC(9) Pause Young (Allocation Failure) 14M->14M(15M) 0.120ms

[43.290s][info][gc] GC(10) Pause Full (Allocation Failure) 14M->8M(15M) 44.130ms

[43.327s][info][gc] GC(11) Pause Young (Allocation Failure) 13M->13M(15M) 0.057ms

[43.370s][info][gc] GC(12) Pause Full (Allocation Failure) 13M->8M(15M) 42.942ms

[79.047s][info][gc] GC(13) Pause Young (Allocation Failure) 13M->13M(15M) 0.138ms

[79.090s][info][gc] GC(14) Pause Full (Allocation Failure) 13M->4M(15M) 43.212ms

[101.402s][info][gc] GC(15) Pause Young (Allocation Failure) 8M->6M(15M) 3.737ms

[101.429s][info][gc] GC(16) Pause Young (Allocation Failure) 10M->10M(15M) 6.814ms

[101.448s][info][gc] GC(17) Pause Young (Allocation Failure) 14M->14M(15M) 0.052ms

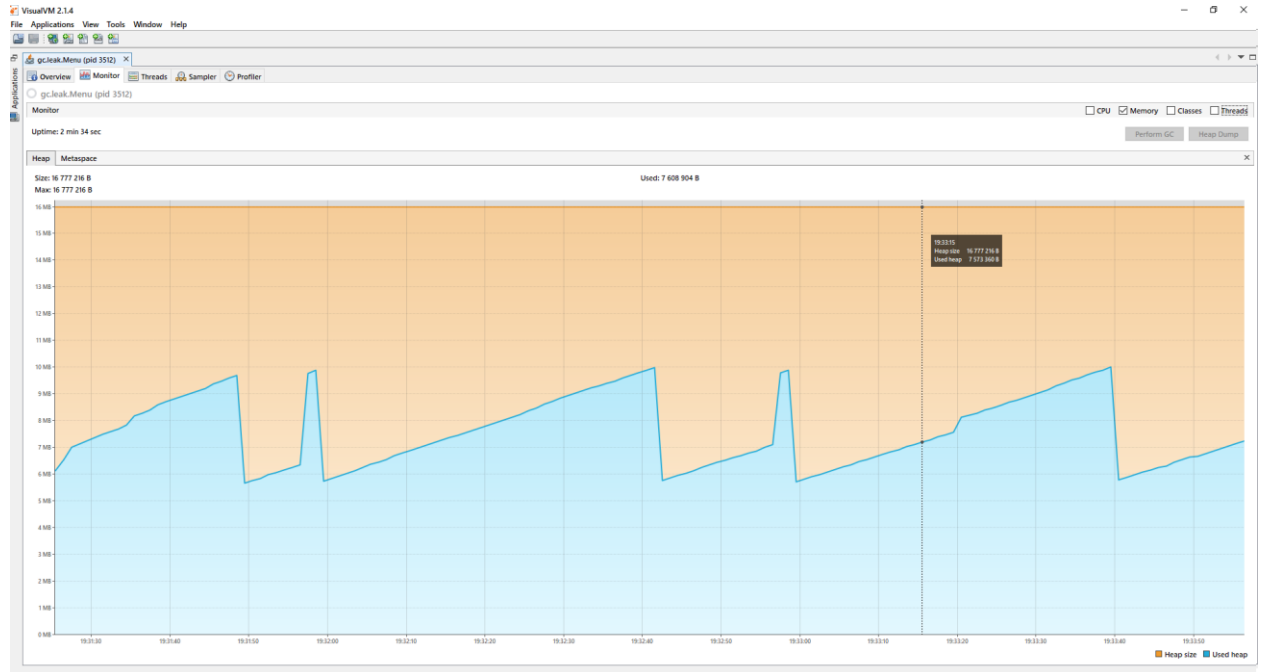
[101.486s][info][gc] GC(18) Pause Full (Allocation Failure) 14M->11M(15M) 37.759ms

[101.534s][info][gc] GC(19) Pause Full (Allocation Failure) 15M->8M(15M) 25.987ms

[131.118s][info][gc] GC(20) Pause Young (Allocation Failure) 12M->12M(15M) 0.063ms

[131.138s][info][gc] GC(21) Pause Full (Allocation Failure) 12M->5M(15M) 19.982ms

## Замеры ПОСЛЕ:



Лог:

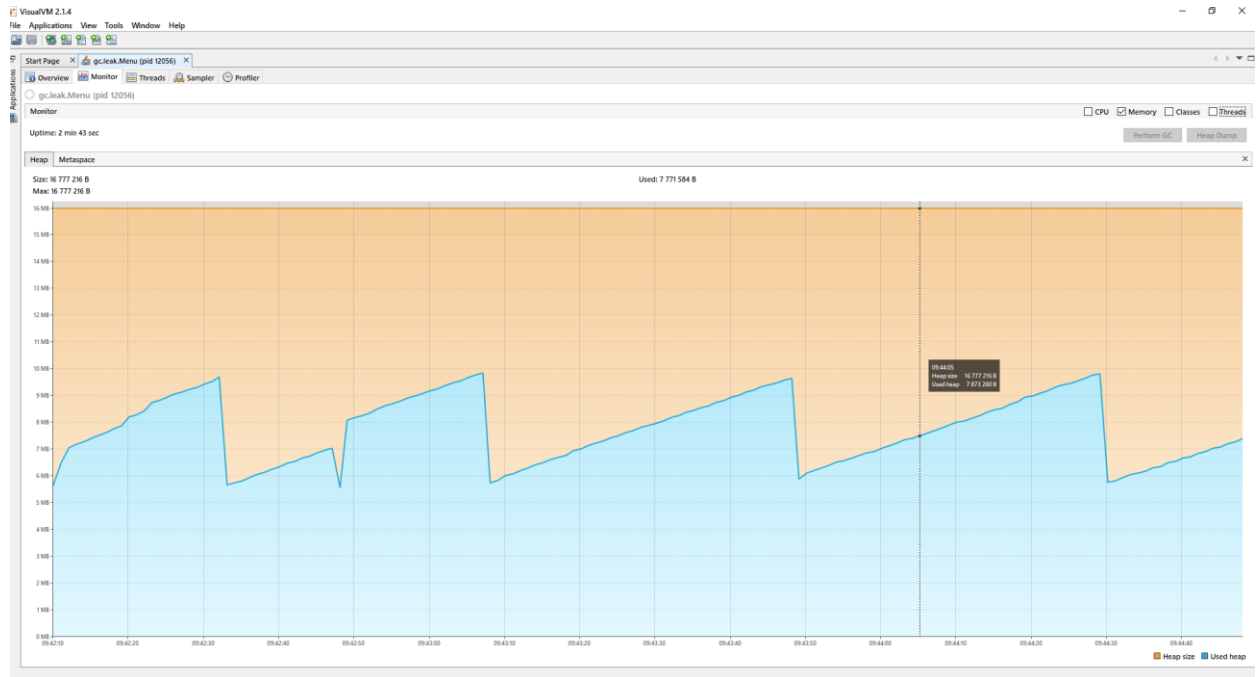
```
[0.008s][info][gc] Using Serial
[2.235s][info][gc] GC(0) Pause Young (Allocation Failure) 4M->2M(15M) 4.925ms
[2.363s][info][gc] GC(1) Pause Young (Allocation Failure) 6M->2M(15M) 7.813ms
[2.459s][info][gc] GC(2) Pause Young (Allocation Failure) 7M->4M(15M) 4.566ms
[2.631s][info][gc] GC(3) Pause Young (Allocation Failure) 8M->4M(15M) 3.377ms
[2.943s][info][gc] GC(4) Pause Young (Allocation Failure) 8M->5M(15M) 10.469ms
[26.051s][info][gc] GC(5) Pause Young (Allocation Failure) 9M->5M(15M) 7.154ms
[34.315s][info][gc] GC(6) Pause Young (Allocation Failure) 9M->5M(15M) 1.405ms
[34.352s][info][gc] GC(7) Pause Young (Allocation Failure) 9M->5M(15M) 2.241ms
[36.043s][info][gc] GC(8) Pause Young (Allocation Failure) 9M->5M(15M) 2.256ms
[79.077s][info][gc] GC(9) Pause Young (Allocation Failure) 10M->5M(15M) 1.931ms
[94.389s][info][gc] GC(10) Pause Young (Allocation Failure) 10M->5M(15M) 0.882ms
[94.412s][info][gc] GC(11) Pause Young (Allocation Failure) 9M->5M(15M) 0.762ms
[96.104s][info][gc] GC(12) Pause Young (Allocation Failure) 9M->5M(15M) 2.127ms
[137.143s][info][gc] GC(13) Pause Young (Allocation Failure) 10M->5M(15M) 2.268ms,
```

Что сделал:

1. Поменял все классы-обертки Integer на примит int;
2. Максимально сократил поля static;
3. Удалил методы finalize(). Теперь наглядно понятно, почему их не используют.

## ДОПОЛНИТЕЛЬНО:

1. Вернул константы. С их помощью мы избавились от magic numbers и хардкодинга в коде
2. Максимально избавился от статических полей (кроме констант)
3. Заменял конкатенацию строк с оператора "+" на метод concat(), сократив таким образом количество создаваемых объектов



[0.009s][info][gc] Using Serial

[4.047s][info][gc] GC(0) Pause Young (Allocation Failure) 4M->2M(15M) 5.382ms

[4.188s][info][gc] GC(1) Pause Young (Allocation Failure) 6M->2M(15M) 9.082ms

[4.296s][info][gc] GC(2) Pause Young (Allocation Failure) 7M->4M(15M) 4.585ms

[4.632s][info][gc] GC(3) Pause Young (Allocation Failure) 8M->4M(15M) 4.913ms

[5.058s][info][gc] GC(4) Pause Young (Allocation Failure) 8M->5M(15M) 5.417ms

[27.220s][info][gc] GC(5) Pause Young (Allocation Failure) 9M->5M(15M) 3.177ms

[43.087s][info][gc] GC(6) Pause Young (Allocation Failure) 9M->5M(15M) 2.535ms

[43.103s][info][gc] GC(7) Pause Young (Allocation Failure) 9M->5M(15M) 2.025ms

[43.117s][info][gc] GC(8) Pause Young (Allocation Failure) 9M->5M(15M) 1.953ms

[43.132s][info][gc] GC(9) Pause Young (Allocation Failure) 9M->5M(15M) 1.844ms

[43.147s][info][gc] GC(10) Pause Young (Allocation Failure) 9M->5M(15M) 2.182ms

[43.156s][info][gc] GC(11) Pause Young (Allocation Failure) 9M->5M(15M) 1.918ms

[62.252s][info][gc] GC(12) Pause Young (Allocation Failure) 9M->5M(15M) 1.363ms

[103.667s][info][gc] GC(13) Pause Young (Allocation Failure) 9M->5M(15M) 1.227ms

[103.676s][info][gc] GC(14) Pause Young (Allocation Failure) 9M->5M(15M) 1.270ms

[103.685s][info][gc] GC(15) Pause Young (Allocation Failure) 9M->5M(15M) 1.054ms

[103.694s][info][gc] GC(16) Pause Young (Allocation Failure) 9M->5M(15M) 1.001ms

[103.702s][info][gc] GC(17) Pause Young (Allocation Failure) 9M->5M(15M) 0.946ms

[103.711s][info][gc] GC(18) Pause Young (Allocation Failure) 9M->5M(15M) 1.035ms

[103.719s][info][gc] GC(19) Pause Young (Allocation Failure) 9M->5M(15M) 0.989ms

[144.352s][info][gc] GC(20) Pause Young (Allocation Failure) 9M->5M(15M) 1.591ms