**Pause Target Time**

* We can **effectively instruct G1 to try its best to do its work within that pause target time**. Internally it will **choose the number of regions to work on based on the statistics from previous collections**. It will also resize regions because of that. You **could not do that with CMS**.

**Fragmentation**

* **CMS does not do any compaction, at all**. When **objects can't be moved to the old generation** (because the "gaps" are too small in that generation) - **everything stops and that space needs to be worked on**. This turned out to be **very expensive** and **took a lot of time**. On the other hand, each **G1 cycle does compaction as it moves live objects** and **leaves regions empty behind**.

**Remembered Sets**

* **CMS only has a card table internal structure**, which means that **it needs to always be scanned entirely**. On the other hand, **G1 uses Remembered Sets**, which are **smaller in size** and can **tell (quickly) what other regions need to be scanned as part of the current one**.

**Mixed Collections**

* Yes, **G1 can scan young plus a small portion of old** - called **mixed collections** (you can configure the size via flags), but this means it is **a lot faster than simply scanning just the old, entirely**.