CS 1632 – DELIVERABLE 4: Performance Testing Using VisualVM

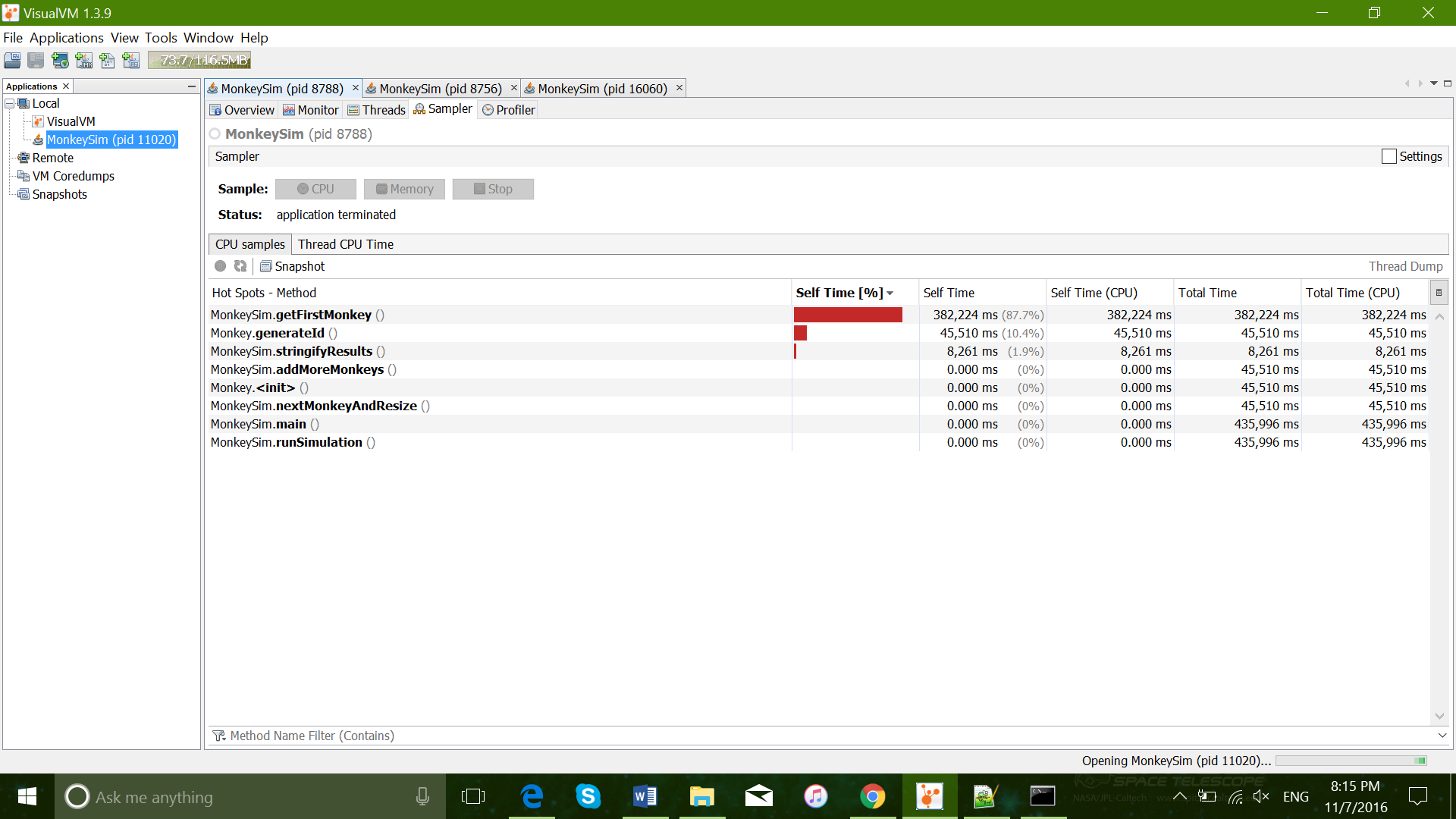
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Summary

To determine where this program was running slowly, we sampled the CPU and Memory in VirtualVM. We found that the method getFirstMonkey() was taking up a large percentage of the CPU. We then looked at that method to see if there was a way we could keep the same functionality while being more efficient. After we made the improvements, the runtime decreased slightly, but generateId() was now taking up the most time. We went through the same method to improve this function and decreased the runtime again by another few seconds. The last function we changed was stringifyResults(). After this, the runtime decreased noticeably from over 25 seconds to less than 1. We also deleted the MonkeySim field called HEADER for clarity because it was only used in stringifyResults() in the original code and was now not needed at all. We could have continued on with methods like monkeyWithBanana() which are still taking up a significant portion of the CPU but for this project we only changed 3 methods.

Screenshots of VisualVM and Runtimes (using parameter 23)

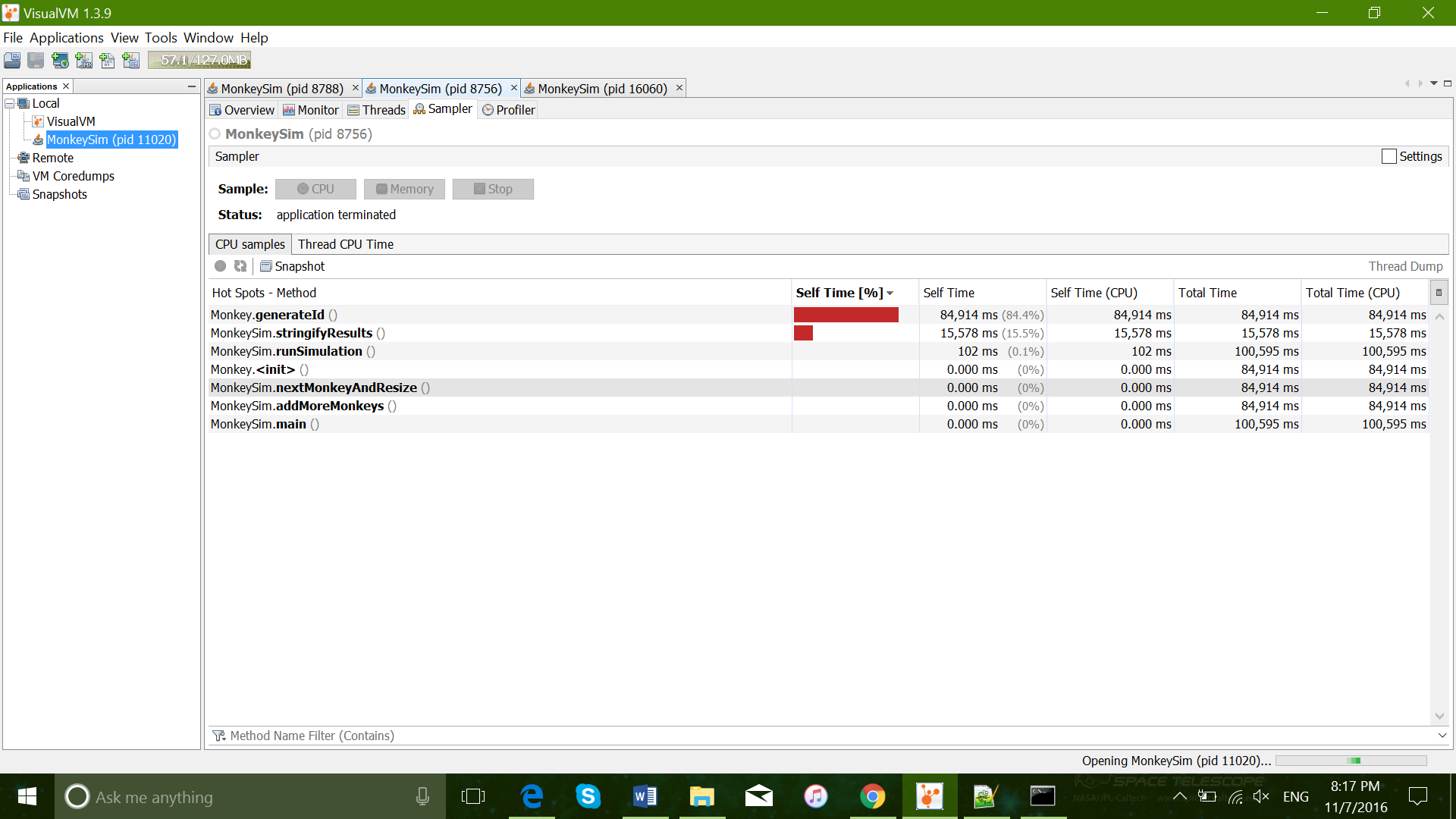
Original MonkeySim Program:



Maximum Time: 39.023s

Average Time: 37.148s

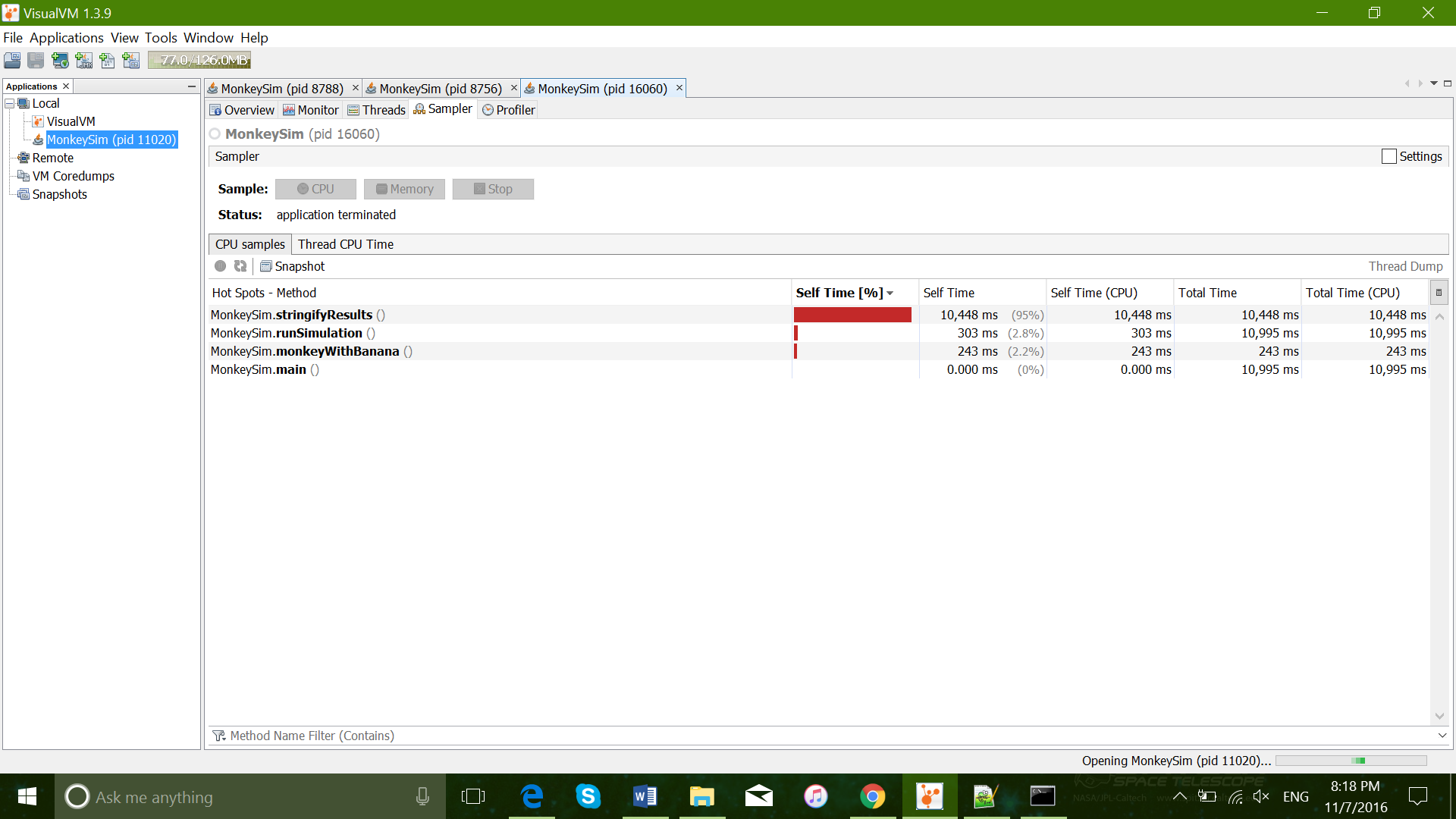
After modifying MonkeySim.getFirstMonkey():



Maximum Time: 34.459s

Average Time: 34.002s

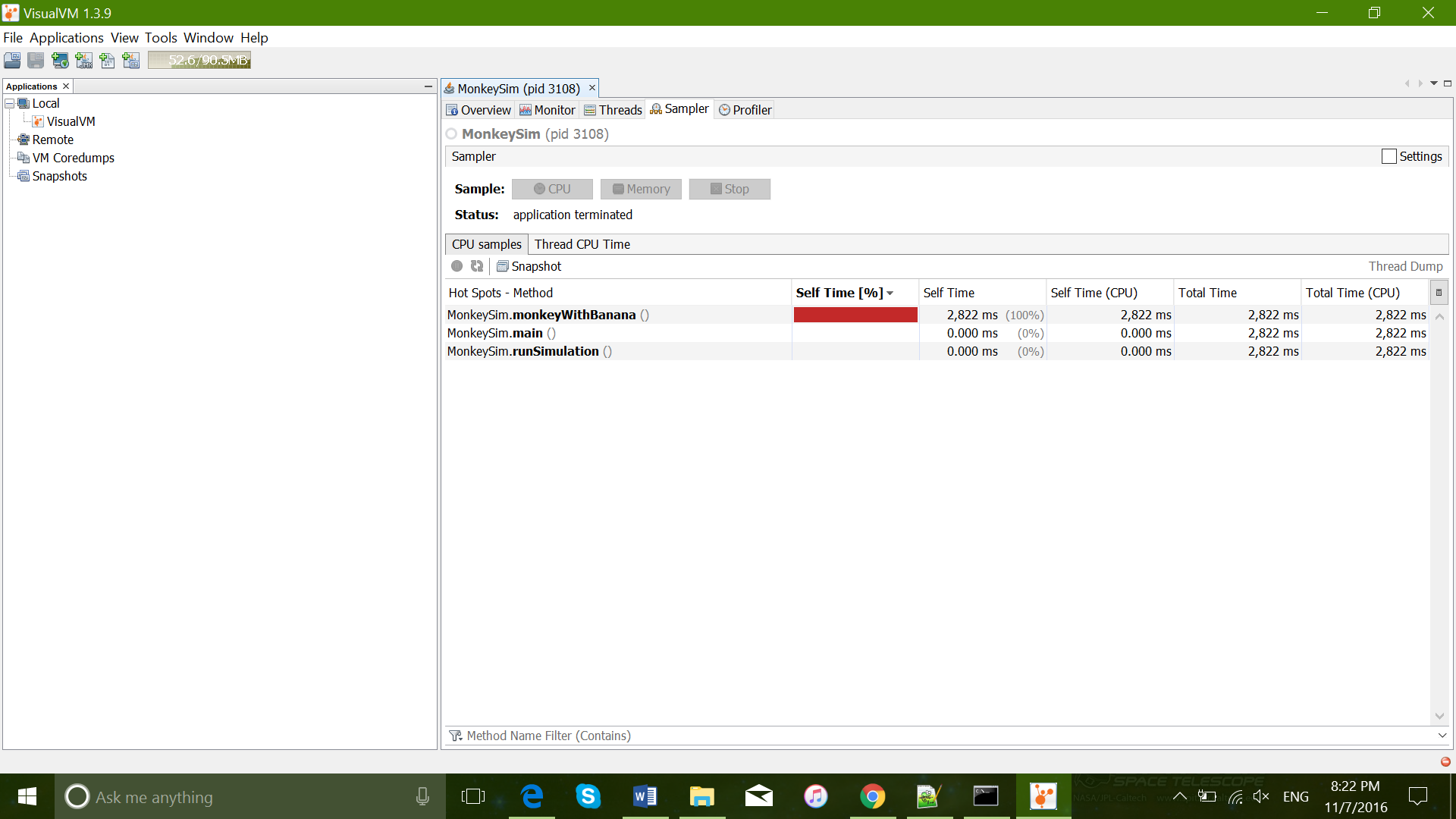
After modifying Monkey.generateId():



Maximum Time: 25.238s

Average Time: 26.740s

After modifying stringifyResults():



Maximum Time: .292s

Average Time: .286s