Isai Mercado

January 21, 2016

Space Complexity

The maximum 'n' that my computer can handle in RAM for a multiplication of two n x n matrixes A and B is 12000. After that 'n' we see a big jump in computational time, which means that the memory RAM is out and the computer has started using the virtual memory in the hard disk. If I leave it running it freezes since it needs all the computational resources to finish the matrix multiplication.

Time complexity

The formula for the slope of a line is $(y2 - y1) / (x2 - x1)$ so from the log plot we can grab some numbers, put them in the equation and get the slope. From the slope of the line in a log function we can get an approximation of the time complexity that matrix multiplication has.
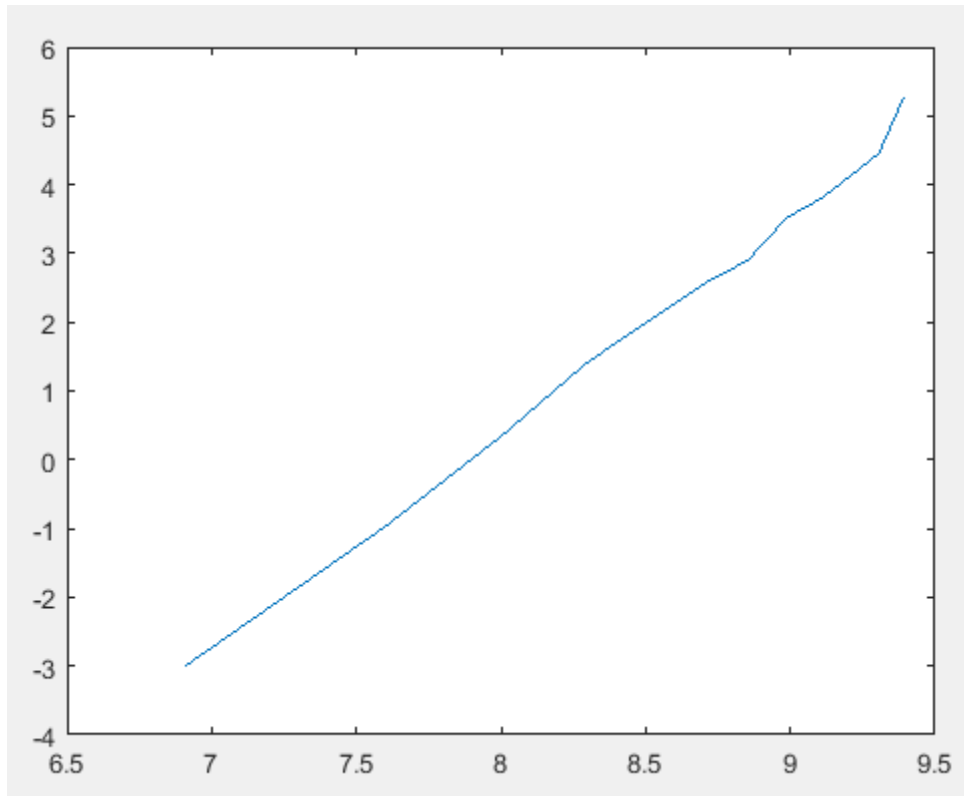
$((4.135) - (-3.004)) / ((9.21) - (6.908)) = 3.1012$ so the time complexity is $O(n^3)$