# CS222: Assignment 8 - Strassen's matrix multiplication

Sample Output :

| n<br>Value of n | T(n)<br>Time Taken | n^log 7<br>n^log7 | T(n) / n^log 7<br>Ratio (Time Taken/n^log7) |
|---|---|---|---|
| 2 | 1002 | 7 | 143.143 |
| 4 | 0 | 49 | 0 |
| 8 | 996 | 343 | 2.90379 |
| 16 | 6993 | 2401 | 2.91254 |
| 32 | 46995 | 16807 | 2.79616 |
| 64 | 322649 | 117649 | 2.74247 |
| 128 | 2217293 | 823543 | 2.69238 |
| 256 | 16474008 | 5.7648e+006 | 2.8576 |

Analysis :-

As we can see from the above table that the ratio ( T(n) / n^log 7) of time taken by their product using Strassen's method and n^log(7) looks approx. constant. Hence, we can conclude that the time complexity of the above method using strassen's is O(n^log(7)).