**LAB2 Part 2 and Part 3**

N = 250

+---------+-----------+-------------+-----------+

| Method | Statement | My estimate | Empirical |

| | count | | results |

| | formula | | |

+---------+-----------+-------------+-----------+

| methodA | O(n^3) | 1s | 136.0ms |

+---------+-----------+-------------+-----------+

| methodE | O(n) | .03s | .005 ms |

+---------+-----------+-------------+-----------+

| methodC | O(nlogn) | .5s | 2 ms |

+---------+-----------+-------------+-----------+

N = 500

+---------+-----------+-------------+-----------+

| Method | Statement | My estimate | Empirical |

| | count | | results |

| | formula | | |

+---------+-----------+-------------+-----------+

| methodA | O(n^3) | 2s | 1042ms |

+---------+-----------+-------------+-----------+

| methodE | O(n) | .06s | .015 ms|

+---------+-----------+-------------+-----------+

| methodC | O(nlogn) | 1s | 4 ms |

+---------+-----------+-------------+-----------+

N = 1000

+---------+-----------+-------------+-----------+

| Method | Statement | My estimate | Empirical |

| | count | | results |

| | formula | | |

+---------+-----------+-------------+-----------+

| methodA | O(n^3) | 4s | 8624ms |

+---------+-----------+-------------+-----------+

| methodE | O(n) | .12s | .025ms |

+---------+-----------+-------------+-----------+

| methodC | O(nlogn) | 2s | 9ms |

+---------+-----------+-------------+-----------+

N = 2000

+---------+-----------+-------------+-----------+

| Method | Statement | My estimate | Empirical |

| | count | | results |

| | formula | | |

+---------+-----------+-------------+-----------+

| methodA | O(n^3) | 8s | 68735ms |

+---------+-----------+-------------+-----------+

| methodE | O(n) | .24s | .043 ms |

+---------+-----------+-------------+-----------+

| methodC | O(nlogn) | 4s | 23ms |

+---------+-----------+-------------+-----------+

Part 3-

Answer -The value of the variable loop has been changed from 1000 to 10.

So for(i = 0;i < 10;i++).Now loop will run 10 \* MethodB(n) whereas earlier it was running at 1000 \* MethodB(n).That is why it will take much less time.