**Project 1 Analysis**

After careful analysis of Shell Sort by generating 100 different sets and taking the average as well as the standard deviation where n = 1000, 3000, 5000, 7000, 9000, 11000, 13000, and 15000, we observe the following graphs and data points



|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **1000** | **3000** | **5000** | **7000** | **9000** | **11000** | **13000** | **15000** |
| Case 0 | 993 | 2992 | 4991 | 6991 | 8991 | 10990 | 12990 | 14990 |
| Case 1 | 20578 | 108037 | 233197 | 386938 | 564696 | 763612 | 981626 | 1217246 |
| Case 2 | 7966 | 28892 | 51795 | 75795 | 100603 | 126601 | 152601 | 178601 |
| Case 3 | 7980 | 28910 | 51814 | 75813 | 100622 | 126622 | 152621 | 178622 |
| Case 4 | 5082 | 19733 | 36675 | 55098 | 73992 | 92554 | 113591 | 134729 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **1000** | **3000** | **5000** | **7000** | **9000** | **11000** | **13000** | **15000** |
| Case 0 | 993 | 2992 | 4991 | 6991 | 8991 | 10990 | 12990 | 14990 |
| Case 1 | 20578 | 108037 | 233197 | 386938 | 564696 | 763612 | 981626 | 1217246 |
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| Case 4 | 5082 | 19733 | 36675 | 55098 | 73992 | 92554 | 113591 | 134729 |