Question 1 – Comparing Algorithm

Problem statement: Find the largest distance between any two even integers in an integer array.

* Algorithm 1: Create a new array consisting of even numbers only. Then use nested loops to solve the problem using the newly created array of even numbers only.
* Algorithm 2: Use a nested loop to solve the problem without creating an extra array.
* Algorithm 3: Use one loop. Find max and min of even integers. Compute max – \_min.
* Algorithm 4: Use Streams to find the max and min. Compute max – \_min.

Below is the time running report for the above four algorithms with different size of integer arrays: 1000, 2000, 3000, 4000. Note that values in array is randomly generated. Duration is in millisecond.

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| --- | --- | --- | --- | --- |
| **Array Size** | **Algorithm 1** | **Algorithm 2** | **Algorithm 3** | **Algorithm 4** |
| 1000 | 26 | 38 | 1 | 19 |
| 2000 | 9 | 14 | 0 | 0 |
| 3000 | 44 | 10 | 0 | 1 |
| 4000 | 2 | 2 | 1 | 1 |