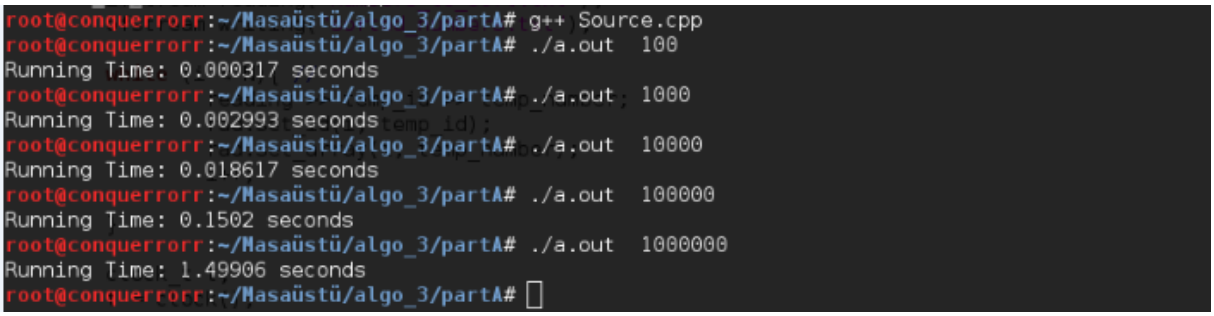
Fatih Budak
150130006

Analysis of Algorithms 1
Report 3

PART A

1. Running time of radix sort algorithm with different N values:



We expected to obtain that complexity of radix sort algorithm is O(n*k), it happened according to result of our program.

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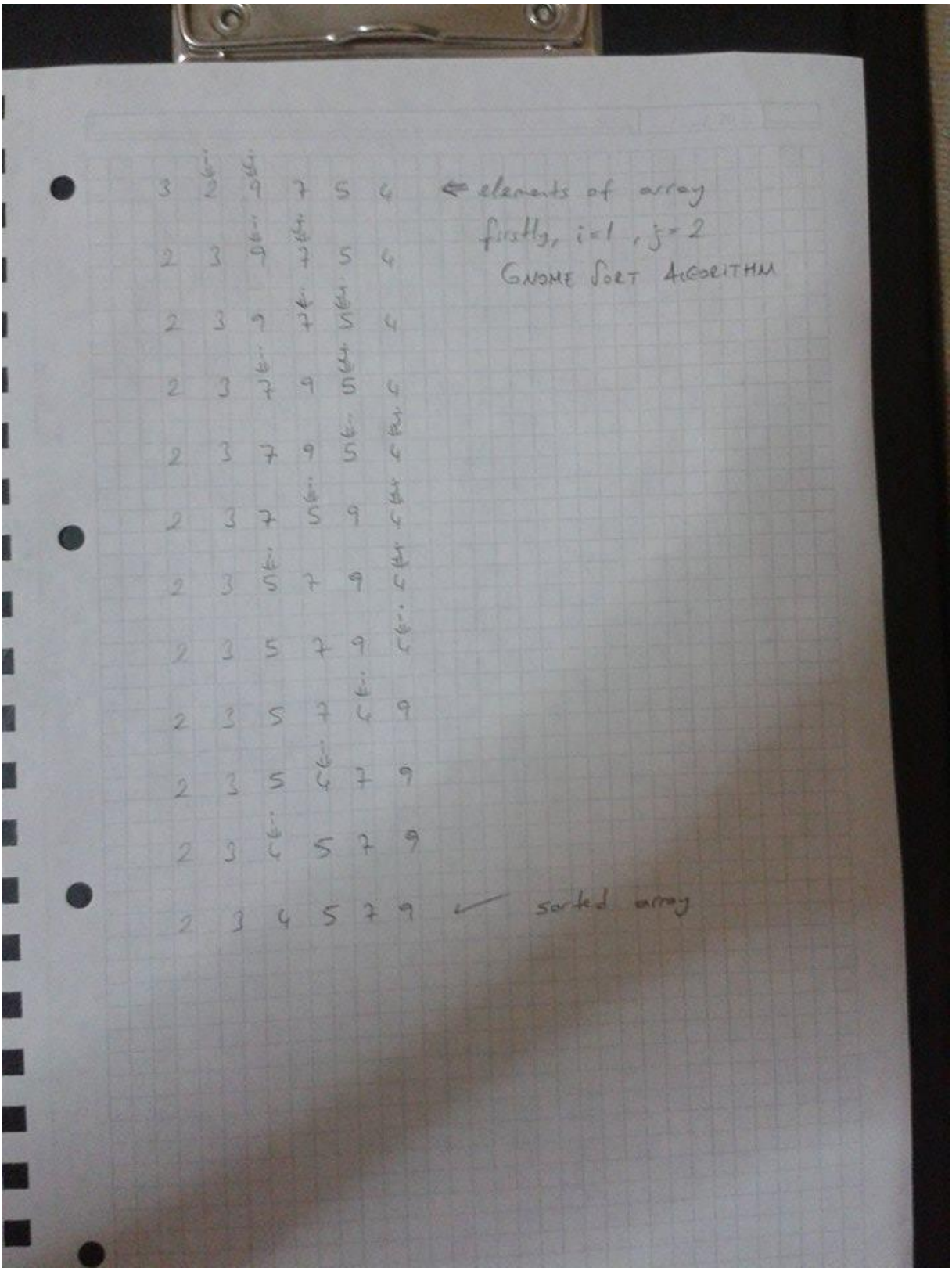
2. Gnome Sort Algorithm: We have learned how to gnome sort algorithm works basically by using sample array.



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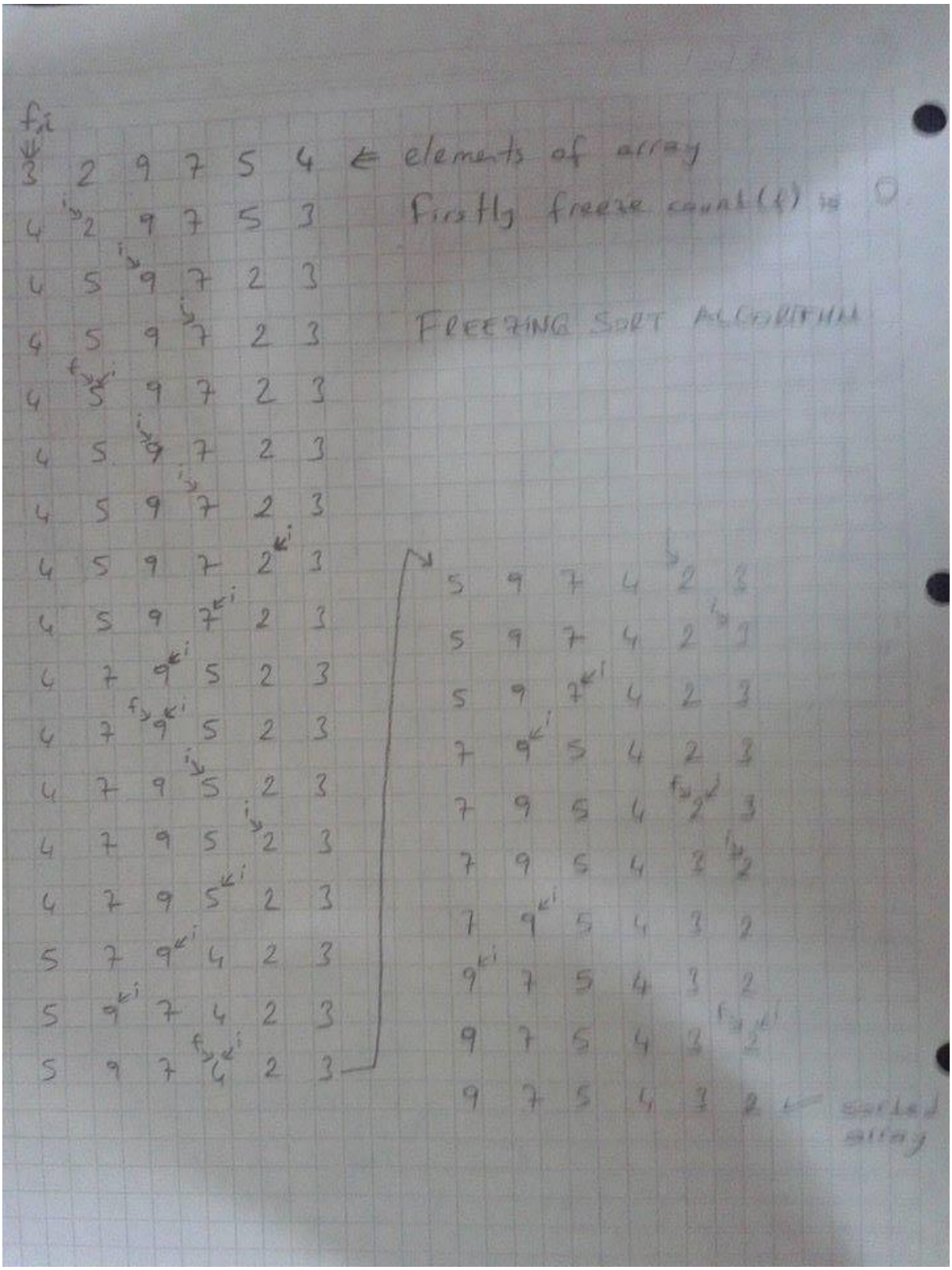
1. Freezing Sort Algortihm: : We have learned how to freezing sort algorithm works basically by implementing sample array.



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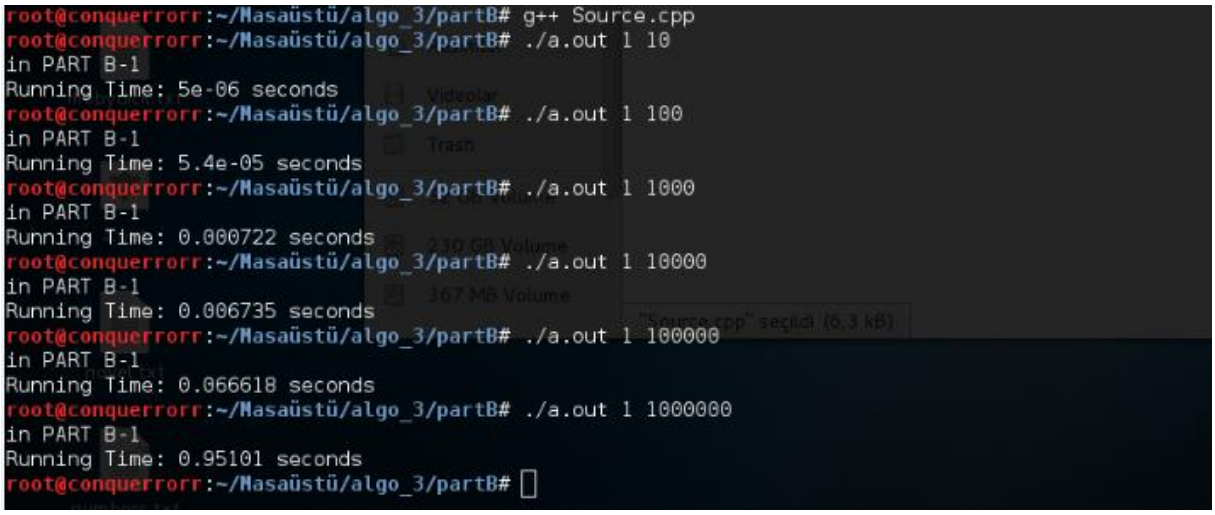
The most important feature of counting sort using as intermediate step of radix sort is being stable sorting algorithm. Reason of using as intermediate step of radix sort algorithm is that. Therefore, sorting algorithm that will use as intermediate step of radix sort algorithm should be stable algorithm.(A sorting algorithm is said to be stable if two elements with equal value should appear in the same order in sorted output as they appear in the input unsorted array). Also gnome sort and freezing sort algorithms are stable. As a result, both of them can be used as intermediate step of radix sort algorithm.

PART B.

1. Complexity of heap sort algoritm is O(n*log n)



2. Result of tournament: