CMP – Lab2 Assignment  
  
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• Section: 2

• Bench number: 1

1. Zeta = Selection sort
2. Theta = Insertion sort
3. Alpha = Merge sort
4. Epsilon = Quick sort
5. Gamma = Heap sort

1. How I detected Selection sort?

* It's the worst algorithm from total time perspective over all the algorithms mentioned in the test and also over all types of properties
* It performs the same number of comparisons over all types of data no matters if the data is sorted, reversed, …etc., it always performs (n^2) / 2 comparison

2. How I detected Insertion sort?

* Its performance almost like the performance of Zeta(Selection) which is almost n^2 from previous knowledge
* The important observation when running Theta(Insertion) is that the performance gets better significantly when the data was sorted

3. How I detected Merge sort?

* Its performance almost the same for all data set and all types of list properties, which is n\*log(n)
* Number of movements (assignments) also can be considered as a constant for all list properties for example = 282622 for all types of list properties when n = 10513

4. How I detected Quick sort?

* Its performance is almost like merge (Alpha) which is n\*log(n) but its complexity increased significantly when the input data is (In-Order | Reversed-Order)

5. How I detected Heap sort?

* It's not either 1 or 2 or 3 or 4, also works perfectly for all list properties with time complexity similar to merge sort which n\*log(n)