|         |                | 10mb  | Sorting | Data           | 100mb  |        |
|---------|----------------|-------|---------|----------------|--------|--------|
|         | Unix Test1.txt |       |         | Unix Test2.txt |        |        |
|         | Real           | User  | Sys     | Real           | User   | Sys    |
| Trial 1 | 6.114          | 2.016 | 1.204   | 65.518         | 26.291 | 11.961 |
| Trial 2 | 5.400          | 2.013 | 1.204   | 60.152         | 26.121 | 11.991 |
| Trial 3 | 5.280          | 1.997 | 1.189   | 60.028         | 26.176 | 11.981 |
| Average | 5.598          | 2.009 | 1.199   | 61.899         | 26.196 | 11.978 |

Sorting Data

|         | Bucket Sort Test1.txt |        |       | Bucket Sort Test2.txt |        |        |
|---------|-----------------------|--------|-------|-----------------------|--------|--------|
|         | Real                  | User   | Sys   | Real                  | User   | Sys    |
| Trial 1 | 13.350                | 10.597 | 2.953 | 136.744               | 98.474 | 28.460 |
| Trial 2 | 17.074                | 11.438 | 3.075 | 122.661               | 97.517 | 28.423 |
| Trial 3 | 18.932                | 11.951 | 3.046 | 126.953               | 98.278 | 28.860 |
| Average | 16.452                | 11.329 | 3.025 | 128.786               | 98.090 | 28.581 |

|         | Counting Sort Test1.txt |        |       | Counting Sort Test2.txt |         |        |
|---------|-------------------------|--------|-------|-------------------------|---------|--------|
|         | Real                    | User   | Sys   | Real                    | User    | Sys    |
| Trial 1 | 14.787                  | 9.987  | 2.845 | 100.237                 | 117.954 | 29.190 |
| Trial 2 | 16.225                  | 10.597 | 2.929 | 153.423                 | 117.423 | 29.252 |
| Trial 3 | 18.351                  | 10.761 | 2.888 | 172.872                 | 121.939 | 29.060 |
| Average | 16.454                  | 10.448 | 2.887 | 142.177                 | 119.105 | 29.167 |

As expected the default unix sort beat both of the java implementations of radix/bucket sort and radix/counting sort by a wide margin. Bucket sort and counting sort are very close to eachother. so much so that they are only 2/100ths of a second off from eachother in the 10mb file. When sorting the 100mb file bucket sort finshed 14 seconds before counting sort. Neither of these are very surprisng considering how closely related the two sorts are. The difference is most likely explained by the differnece in overhead for each of the functions.