CS316 Project 4 Running time Report, April 2015

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| --- | --- | --- |
| Name of the image processed: Buchtel Hall | | |
|  |  |  |
| Sorting algorithm | Window size | Recorded Running time |
| Insertion sort | 5 |  |
| Insertion sort | 11 |  |
| Insertion sort | 23 |  |
| Insertion sort | 47 |  |
| Insertion sort | 97 |  |
|  |  |  |
| Sorting algorithm | Window size | Recorded Running time |
| Quicksort sort | 5 |  |
| Quicksort sort | 11 |  |
| Quicksort sort | 23 |  |
| Quicksort sort | 47 |  |
| Quicksort sort | 97 |  |
|  |  |  |
| Sorting algorithm (list the name) | Window size | Recorded Running time |
| Radix | 5 | 60.01 ms |
| Radix | 11 | 267.818 ms |
| Radix | 23 | 1060.16 ms |
| Radix | 47 | 4105.36 ms |
| Radix | 97 | 14151.6 ms |
|  |  |  |
|  |  |  |
|  |  |  |

The asymptotic running time of the three algorithms:

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| --- | --- | --- | --- |
|  | Time complexity | | |
|  | Best case | Average case | Worst case |
| Insertion sort | O(n) | O(n^2) | O(n^2) |
| Quicksort sort | O(n\*log(n)) | O(n\*log(n)) | O(n^2) |
| Your alg (name it) |  |  |  |
| Radix | O(nk) | O(nk) | O(nk) |

Did your implementation meet your expectation? Why?

Overall out implementation did meet our expectations because the time complexities ran comparably to the expected best, average and worst cases listed in the table above.