README

Assignment 3: Understanding Algorithm Efficiency and Scalability

File Included: Readme.txt, Randamize\_Quicsort\_Analysis.py, Hasing\_with\_chaining.py

Run command: Go to the directory of the python file and run as ./Randomize\_Quicksort\_Analysis.py

The comparison table is given below:

|  |  |  |  |
| --- | --- | --- | --- |
| Data size | Data Type | Quicksort Time (s) | Randomized Quicksort Time (s) |
| 100 | sorted | 0.000380 | 0.000077 |
| 100 | reverse\_sorted | 0.000283 | 0.000066 |
| 100 | random | 0.000065 | 0.000064 |
| 100 | repeated | 0.000078 | 0.000076 |
| 1000 | sorted | 0.024249 | 0.000903 |
| 1000 | reverse\_sorted | 0.024759 | 0.000933 |
| 1000 | random | 0.000914 | 0.000933 |
| 1000 | repeated | 0.002764 | 0.001956 |
| 10000 | sorted | 2.319578 | 0.012581 |
| 10000 | reverse\_sorted | 2.407096 | 0.012248 |
| 10000 | random | 0.011332 | 0.012763 |
| 10000 | repeated | 0.226307 | 0.128573 |