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| **PERCOLATION QUICK FIND** |  |  | |  | | --- | |  | |  |  |  |  |  |
| **n** | **time** | T |  |  |  |  |  |  |
| 2 | 0.001355 | 20 |  |  |  |  |  |  |
| 4 | 0.002674 | 20 |  |  |  |  |  |  |
| 8 | 0.0164 | 20 |  |  |  |  |  |  |
| 16 | 0.144507 | 20 |  |  |  |  |  |  |
| 32 | 2.377784 | 20 |  |  |  |  |  |  |
| 64 | 36.609586 | 20 |  |  |  |  |  |  |
| 128 | 558.506356 | 20 |  |  |  |  |  |  |
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| **T** | **time** | n |  |  |  |  |  |  |
| 2 | 0.002006 | 8 |  |  |  |  |  |  |
| 4 | 0.004935 | 8 |  |  |  |  |  |  |
| 8 | 0.005658 | 8 |  |  |  |  |  |  |
| 16 | 0.013749 | 8 |  |  |  |  |  |  |
| 32 | 0.02259 | 8 |  |  |  |  |  |  |
| 64 | 0.043356 | 8 |  |  |  |  |  |  |
| 128 | 0.096323 | 8 |  |  |  |  |  |  |
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| Time Analysis:  Change T: When we double the number of trials, the function looks linear ~ O(N), almost a straight line. time = CT where C is a constant.  Change N: When we double n, the graph seems so be quadratic. ~O(N^2) |  |  |  |  |  |  |  |  |
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| **PERCOLATION WEIGHTED QUICK UNION** |  |  | |  | | --- | |  | |  |  |  |  |  |
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| **n** | **time** | T |  |  |  |  |  |  |
| 2 | 0.001739 | 20 |  |  |  |  |  |  |
| 4 | 0.00268 | 20 |  |  |  |  |  |  |
| 8 | 0.009203 | 20 |  |  |  |  |  |  |
| 16 | 0.025355 | 20 |  |  |  |  |  |  |
| 32 | 0.102043 | 20 |  |  |  |  |  |  |
| 64 | 0.408516 | 20 |  |  |  |  |  |  |
| 128 | 1.679768 | 20 |  |  |  |  |  |  |
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| **T** | **time** | n |  |  |  |  |  |  |
| 2 | 0.001082 | 8 |  |  |  |  |  |  |
| 4 | 0.003179 | 8 |  |  |  |  |  |  |
| 8 | 0.002804 | 8 |  |  |  |  |  |  |
| 16 | 0.006548 | 8 |  |  |  |  |  |  |
| 32 | 0.010548 | 8 |  |  |  |  |  |  |
| 64 | 0.020509 | 8 |  |  |  |  |  |  |
| 128 | 0.040371 | 8 |  |  |  |  |  |  |
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|  | Analysis:  Change T: When we double the number of trials, the function looks linear O(N), almost a straight line. time = CT where C is a constant.  Change N: When we double n, the graph seems to be quadratic. ~O(N^2) |  |  |  |  |  |  |  |
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