

Sample output from my solution to Problem #1:  
(yours should match the format: the times depend on your machine's speed).

Nearest Neighbor, size = 100

Analysis of 5 timings

avg = 0.00097 min = 0.00085 max = 0.00117 span = 33.0%

Time Ranges

```
8.49e-04<>8.81e-04[ 20.0%] | *****
8.81e-04<>9.13e-04[ 20.0%] | *****
9.13e-04<>9.45e-04[ 20.0%] | *****
9.45e-04<>9.77e-04[  0.0%] | A
9.77e-04<>1.01e-03[ 20.0%] | *****
1.01e-03<>1.04e-03[  0.0%] |
1.04e-03<>1.07e-03[  0.0%] |
1.07e-03<>1.11e-03[  0.0%] |
1.11e-03<>1.14e-03[  0.0%] |
1.14e-03<>1.17e-03[  0.0%] |
1.17e-03<>1.20e-03[ 20.0%] | *****
```

Nearest Neighbor, size = 200

Analysis of 5 timings

avg = 0.00209 min = 0.00201 max = 0.00219 span = 8.7%

Time Ranges

```
2.01e-03<>2.03e-03[ 40.0%] | *****
2.03e-03<>2.05e-03[  0.0%] |
2.05e-03<>2.06e-03[  0.0%] |
2.06e-03<>2.08e-03[  0.0%] |
2.08e-03<>2.10e-03[ 20.0%] | *****A
2.10e-03<>2.12e-03[  0.0%] |
2.12e-03<>2.14e-03[  0.0%] |
2.14e-03<>2.15e-03[  0.0%] |
2.15e-03<>2.17e-03[ 20.0%] | *****
2.17e-03<>2.19e-03[  0.0%] |
2.19e-03<>2.21e-03[ 20.0%] | *****
```

Nearest Neighbor, size = 400

Analysis of 5 timings

avg = 0.00433 min = 0.00426 max = 0.00440 span = 3.4%

Time Ranges

```
4.26e-03<>4.27e-03[ 20.0%] | *****
4.27e-03<>4.29e-03[  0.0%] |
4.29e-03<>4.30e-03[  0.0%] |
4.30e-03<>4.32e-03[  0.0%] |
4.32e-03<>4.33e-03[ 20.0%] | *****
4.33e-03<>4.34e-03[ 40.0%] | *****A
4.34e-03<>4.36e-03[  0.0%] |
4.36e-03<>4.37e-03[  0.0%] |
4.37e-03<>4.39e-03[  0.0%] |
4.39e-03<>4.40e-03[  0.0%] |
4.40e-03<>4.42e-03[ 20.0%] | *****
```

Nearest Neighbor, size = 800

Analysis of 5 timings

avg = 0.00968 min = 0.00947 max = 0.00995 span = 5.0%

Time Ranges

```
9.47e-03<>9.52e-03[ 20.0%] | *****
```

```

9.52e-03<>9.57e-03[ 0.0%]|
9.57e-03<>9.61e-03[ 0.0%]|
9.61e-03<>9.66e-03[ 20.0%]| *****
9.66e-03<>9.71e-03[ 40.0%]| *****A
9.71e-03<>9.76e-03[ 0.0%]|
9.76e-03<>9.81e-03[ 0.0%]|
9.81e-03<>9.85e-03[ 0.0%]|
9.85e-03<>9.90e-03[ 0.0%]|
9.90e-03<>9.95e-03[ 0.0%]|
9.95e-03<>1.00e-02[ 20.0%]| *****

```

Nearest Neighbor, size = 1600

Analysis of 5 timings

avg = 0.02231 min = 0.02169 max = 0.02313 span = 6.5%

#### Time Ranges

```

2.17e-02<>2.18e-02[ 20.0%]| *****
2.18e-02<>2.20e-02[ 0.0%]|
2.20e-02<>2.21e-02[ 40.0%]| *****
2.21e-02<>2.23e-02[ 0.0%]|
2.23e-02<>2.24e-02[ 0.0%]| A
2.24e-02<>2.26e-02[ 0.0%]|
2.26e-02<>2.27e-02[ 20.0%]| *****
2.27e-02<>2.28e-02[ 0.0%]|
2.28e-02<>2.30e-02[ 0.0%]|
2.30e-02<>2.31e-02[ 0.0%]|
2.31e-02<>2.33e-02[ 20.0%]| *****

```

Nearest Neighbor, size = 3200

Analysis of 5 timings

avg = 0.04936 min = 0.04533 max = 0.05466 span = 18.9%

#### Time Ranges

```

4.53e-02<>4.63e-02[ 40.0%]| *****
4.63e-02<>4.72e-02[ 0.0%]|
4.72e-02<>4.81e-02[ 20.0%]| *****
4.81e-02<>4.91e-02[ 0.0%]|
4.91e-02<>5.00e-02[ 0.0%]| A
5.00e-02<>5.09e-02[ 0.0%]|
5.09e-02<>5.19e-02[ 0.0%]|
5.19e-02<>5.28e-02[ 0.0%]|
5.28e-02<>5.37e-02[ 20.0%]| *****
5.37e-02<>5.47e-02[ 0.0%]|
5.47e-02<>5.56e-02[ 20.0%]| *****

```

Nearest Neighbor, size = 6400

Analysis of 5 timings

avg = 0.10750 min = 0.10005 max = 0.11775 span = 16.5%

#### Time Ranges

```

1.00e-01<>1.02e-01[ 40.0%]| *****
1.02e-01<>1.04e-01[ 0.0%]|
1.04e-01<>1.05e-01[ 0.0%]|
1.05e-01<>1.07e-01[ 0.0%]|
1.07e-01<>1.09e-01[ 20.0%]| *****A
1.09e-01<>1.11e-01[ 20.0%]| *****
1.11e-01<>1.12e-01[ 0.0%]|
1.12e-01<>1.14e-01[ 0.0%]|
1.14e-01<>1.16e-01[ 0.0%]|
1.16e-01<>1.18e-01[ 0.0%]|
1.18e-01<>1.20e-01[ 20.0%]| *****

```

Nearest Neighbor, size = 12800

Analysis of 5 timings

avg = 0.21930 min = 0.21385 max = 0.22416 span = 4.7%

#### Time Ranges

```

2.14e-01<>2.15e-01[ 40.0%] | *****
2.15e-01<>2.16e-01[  0.0%] |
2.16e-01<>2.17e-01[  0.0%] |
2.17e-01<>2.18e-01[  0.0%] |
2.18e-01<>2.19e-01[  0.0%] |
2.19e-01<>2.20e-01[  0.0%] | A
2.20e-01<>2.21e-01[ 20.0%] | *****
2.21e-01<>2.22e-01[  0.0%] |
2.22e-01<>2.23e-01[  0.0%] |
2.23e-01<>2.24e-01[ 20.0%] | *****
2.24e-01<>2.25e-01[ 20.0%] | *****

```

Nearest Neighbor, size = 25600

Analysis of 5 timings

avg = 0.48683 min = 0.46404 max = 0.50300 span = 8.0%

#### Time Ranges

```

4.64e-01<>4.68e-01[ 20.0%] | *****
4.68e-01<>4.72e-01[  0.0%] |
4.72e-01<>4.76e-01[ 20.0%] | *****
4.76e-01<>4.80e-01[  0.0%] |
4.80e-01<>4.84e-01[  0.0%] |
4.84e-01<>4.87e-01[  0.0%] | A
4.87e-01<>4.91e-01[  0.0%] |
4.91e-01<>4.95e-01[  0.0%] |
4.95e-01<>4.99e-01[ 40.0%] | *****
4.99e-01<>5.03e-01[  0.0%] |
5.03e-01<>5.07e-01[ 20.0%] | *****

```

Sample output from my solution to Problem #2:

(yours should match the format: the times/counts depend on your machine's speed).

Fri May 31 08:15:00 2019 test\_profile

3078237 function calls (3045471 primitive calls) in 0.788 seconds

Ordered by: call count

List reduced from 20 to 12 due to restriction <12>

ncalls	totttime	percall	cumtime	percall	filename:lineno(function)
959030	0.042	0.000	0.042	0.000	{built-in method builtins.len}
581867	0.063	0.000	0.063	0.000	nearestneighbor.py:9(swap)
411862	0.018	0.000	0.018	0.000	{built-in method builtins.abs}
374783	0.018	0.000	0.018	0.000	{method 'append' of 'list' objects}
184320	0.010	0.000	0.010	0.000	nearestneighbor.py:64(<lambda>)
174080	0.010	0.000	0.010	0.000	nearestneighbor.py:63(<lambda>)
61884	0.034	0.000	0.040	0.000	nearestneighbor.py:37(dist)
61884	0.005	0.000	0.005	0.000	{built-in method math.sqrt}
55544	0.145	0.000	0.208	0.000	nearestneighbor.py:8(partition)
32767/1	0.320	0.000	0.787	0.787	nearestneighbor.py:36(closest_2d)
32766	0.007	0.000	0.007	0.000	nearestneighbor.py:38(<listcomp>)
32766	0.013	0.000	0.025	0.000	nearestneighbor.py:38(min_none)

Fri May 31 08:15:00 2019 test\_profile

3078237 function calls (3045471 primitive calls) in 0.788 seconds

Ordered by: internal time

List reduced from 20 to 12 due to restriction <12>

ncalls	totttime	percall	cumtime	percall	filename:lineno(function)
32767/1	0.320	0.000	0.787	0.787	nearestneighbor.py:36(closest_2d)
55544	0.145	0.000	0.208	0.000	nearestneighbor.py:8(partition)
581867	0.063	0.000	0.063	0.000	nearestneighbor.py:9(swap)
32766	0.062	0.000	0.083	0.000	{method 'sort' of 'list' objects}
959030	0.042	0.000	0.042	0.000	{built-in method builtins.len}
61884	0.034	0.000	0.040	0.000	nearestneighbor.py:37(dist)
16383	0.019	0.000	0.227	0.000	nearestneighbor.py:21(select)
411862	0.018	0.000	0.018	0.000	{built-in method builtins.abs}
374783	0.018	0.000	0.018	0.000	{method 'append' of 'list' objects}
16383	0.014	0.000	0.014	0.000	nearestneighbor.py:44(<listcomp>)
32766	0.013	0.000	0.025	0.000	nearestneighbor.py:38(min_none)
174080	0.010	0.000	0.010	0.000	nearestneighbor.py:63(<lambda>)