Algorithms Running Time Tool

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Input Size 1

1000

Time for Input 1

0.08

Input Size 2

2000

Time for Input 2

0.47

Input Size 3

4000

Time for Input 3

3.4

Input Size 4

8000

Time for Input 4

24.6

Input size to predict time

1000000

Apply Changes

```
[1] "         Doubling Method                                  "
[1] "T(N) = a * N ^ b"
[1] "a =  6.96334807313237e-10  |  b =  2.75481420007553"
[1] "                                                          "
[1] "                                                          "
[1] "                                                          "
[1] "         Linear Regression Method                                  "
[1] "log(T(n)) = b*log(n) + c      thus, T(n) = 10 ^ (b*log(n) + c"
[1] "b =  2.76481298851399   |  c =  -9.41847596118977"
[1] "                                                          "
[1] "                                                          "
[1] "                                                          "
[1] "Estimated Running Time for  1000000  Input(s)"
[1] "Doubling:  23534409.4504129    |   Linear Regression:  14804780.4010711"
[1] "                                                          "
[1] "                                                          "
[1] "                                                          "
[1] "Doubling Data"
  Input Size  Time   Ratios log(2) Ratios a (coefficient)
1       1000  0.08 5.875000      2.554589    1.735096e-09
2       2000  0.47 7.234043      2.854802    1.771375e-10
3       4000  3.40 7.235294      2.855052    1.767712e-10
4       8000 24.60       NA            NA              NA
[1] "                                                          "
[1] "Linear Model Data"
  Input Size Time (Model Estimate) Time (Actual)
1       1000            0.07515589         0.08
2       2000            0.51080442         0.47
3       4000            3.47173277         3.40
4       8000           23.59597515        24.60
```