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

0.19

Input Size 3

4000

Time for Input 3

0.5

Input Size 4

8000

Time for Input 4

1.55

Input size to predict time

1000000

Apply Changes

```
[1] "         Doubling Method                                  "
[1] "T(N) = a * N ^ b"
[1] "a =  6.59221991412835e-06  |  b =  1.42537480175808"
[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 =  1.42243018921539   |  c =  -5.39179547557112"
[1] "                                                          "
[1] "                                                          "
[1] "                                                          "
[1] "Estimated Running Time for  1000000  Input(s)"
[1] "Doubling:  2351.15086627958    |   Linear Regression:  1389.26680778921"
[1] "                                                          "
[1] "                                                          "
[1] "                                                          "
[1] "Doubling Data"
  Input Size Time   Ratios log(2) Ratios a (coefficient)
1       1000 0.08 2.375000      1.247928    1.443137e-05
2       2000 0.19 2.631579      1.395929    4.685448e-06
3       4000 0.50 3.100000      1.632268    6.598451e-07
4       8000 1.55       NA            NA              NA
[1] "                                                          "
[1] "Linear Model Data"
  Input Size Time (Model Estimate) Time (Actual)
1       1000            0.07507496         0.08
2       2000            0.20122839         0.19
3       4000            0.53936579         0.50
4       8000            1.44569791         1.55
```