Algorithms Running Time Tool

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Input Size 1

1000

Time for Input 1

0.0012

Input Size 2

2000

Time for Input 2

0.00158

Input Size 3

4000

Time for Input 3

0.0024

Input Size 4

8000

Time for Input 4

0.0037

Input size to predict time

1000000

Apply Changes

```
[1] "         Doubling Method                                  "
[1] "T(N) = a * N ^ b"
[1] "a =  3.56691125013463e-05  |  b =  0.541496954969265"
[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 =  0.54765824421548   |  c =  -4.58370424627357"
[1] "                                                          "
[1] "                                                          "
[1] "                                                          "
[1] "Estimated Running Time for  1000000  Input(s)"
[1] "Doubling:  0.0632811019857777    |   Linear Regression:  0.0503784984469697"
[1] "                                                          "
[1] "                                                          "
[1] "                                                          "
[1] "Doubling Data"
  Input Size    Time   Ratios log(2) Ratios a (coefficient)
1       1000 0.00120 1.316667     0.3968902    7.735899e-05
2       2000 0.00158 1.518987     0.6031098    1.613516e-05
3       4000 0.00240 1.541667     0.6244909    1.351318e-05
4       8000 0.00370       NA            NA              NA
[1] "                                                           "
[1] "Linear Model Data"
  Input Size Time (Model Estimate) Time (Actual)
1       1000           0.001146227       0.00120
2       2000           0.001675452       0.00158
3       4000           0.002449027       0.00240
4       8000           0.003579770       0.00370
```