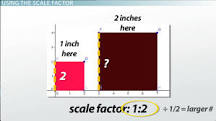
Step Runtime analysis:

2. Results for extraextralong array: insert (2.147212s) and append (9.1458s)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| FUNCTION | tinyArray | smallArray | mediumArray | largeArray |
| DOUBLER  APPENDER  RUNTIME | 126.2 nano s | 218 nano s | 371.2 nano s | 862.7 nano s |
| DOUBLER  INSERT  RUNTIME | 71.8 nano s | 133.2 nano s | 466.9 nano s | 11.5668 ms |

In summary, it seems the the doubler appender function takes almost double the amount of time to run as does insert runtime.

[[](https://www.google.com/search?q=What+is+the+scale+factor+of+a+function?&rlz=1C1GCEA_enUS907US907&sxsrf=AOaemvLovWJbL_2sTfzrKskZb4nIqwenhA:1638183493245&tbm=isch&source=iu&ictx=1&fir=ikBhd_nB0wTA8M%252CP5hKjcDNiF08hM%252C_&vet=1&usg=AI4_-kTWuFq9OteoYEadCzLlrTSWlvCPuw&sa=X&ved=2ahUKEwi_88OJtb30AhXtRjABHcqJACwQ9QF6BAg6EAE#imgrc=ikBhd_nB0wTA8M)](https://www.google.com/search?q=What+is+the+scale+factor+of+a+function?&rlz=1C1GCEA_enUS907US907&sxsrf=AOaemvLovWJbL_2sTfzrKskZb4nIqwenhA:1638183493245&tbm=isch&source=iu&ictx=1&fir=ikBhd_nB0wTA8M%252CP5hKjcDNiF08hM%252C_&vet=1&usg=AI4_-kTWuFq9OteoYEadCzLlrTSWlvCPuw&sa=X&ved=2ahUKEwi_88OJtb30AhXtRjABHcqJACwQ9QF6BAg6EAE" \l "imgrc=ikBhd_nB0wTA8M)

In two similar geometric figures, **the ratio of their corresponding sides** is called the scale factor. To find the scale factor, locate two corresponding sides, one on each figure. Write the ratio of one length to the other to find the scale factor from one figure to the other.

I believe that smallArray and tinyArray scale better because of the difference between runtimes. We can tell because of the amount of time to run the function changes less between the two.

EXTRA CREDIT

For extra credit, do some review / research on why the slower function is so slow, and summarize the reasoning for this.

ExtralargeArray (doubler insert) is slower because it is having to interate through the function 10000 x’s, whereas each function is about 100 x’s less than the one before.