

Assignment -2
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1.Problem:

Measure the running times of this sort, using four different initial array ordering situations: random, ordered, partially-ordered and reverse-ordered. I suggest that your arrays to be sorted are of type *Integer*. Use the doubling method for choosing n and test for at least five values of n . Draw any conclusions from your observations regarding the order of growth.

2.Output:

```
obj[44290]: Class java.awt.Color is implemented in both /Library/Java/JavaV
Size of array: 100
2020-09-20 00:15:04 DFB: Benchmark_Timer - Begin run: Results with 100 runs
Fully random array -- Average time to sort -- 0.97 milliseconds

2020-09-20 00:15:04 DFB: Benchmark_Timer - Begin run: Results with 100 runs
Fully partially Sorted array -- Average time to sort -- 0.83 milliseconds

2020-09-20 00:15:04 DFB: Benchmark_Timer - Begin run: Results with 100 runs
Fully Reverse Sorted Array -- Average time to sort -- 0.86 milliseconds

2020-09-20 00:15:04 DFB: Benchmark_Timer - Begin run: Results with 100 runs
Fully Sorted array -- Average time to sort -- 0.0 milliseconds

Size of array: 200
2020-09-20 00:15:04 DFB: Benchmark_Timer - Begin run: Results with 100 runs
Fully random array -- Average time to sort -- 0.94 milliseconds

2020-09-20 00:15:04 DFB: Benchmark_Timer - Begin run: Results with 100 runs
Fully partially sorted array -- Average time to sort -- 0.82 milliseconds

2020-09-20 00:15:04 DFB: Benchmark_Timer - Begin run: Results with 100 runs
Fully Reverse Sorted Array -- Average time to sort -- 0.15 milliseconds

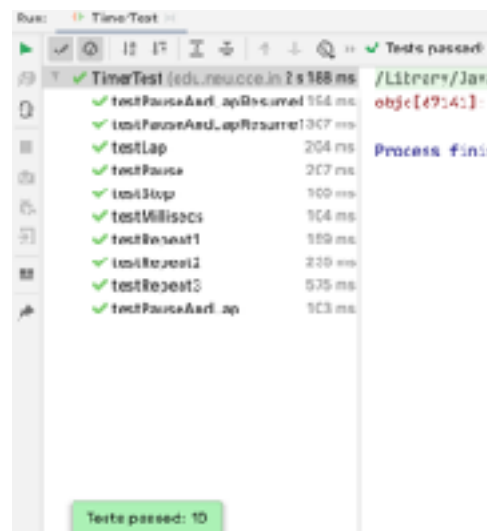
2020-09-20 00:15:04 DFB: Benchmark_Timer - Begin run: Results with 100 runs
Fully Sorted array -- Average time to sort -- 0.0 milliseconds

Size of array: 400
2020-09-20 00:15:04 DFB: Benchmark_Timer - Begin run: Results with 100 runs
Fully random array -- Average time to sort -- 0.15 milliseconds

2020-09-20 00:15:04 DFB: Benchmark_Timer - Begin run: Results with 100 runs
Fully partially sorted array -- Average time to sort -- 0.22 milliseconds

2020-09-20 00:15:04 DFB: Benchmark_Timer - Begin run: Results with 100 runs
Fully Reverse Sorted Array -- Average time to sort -- 0.16 milliseconds
```

3.TestCases



Values

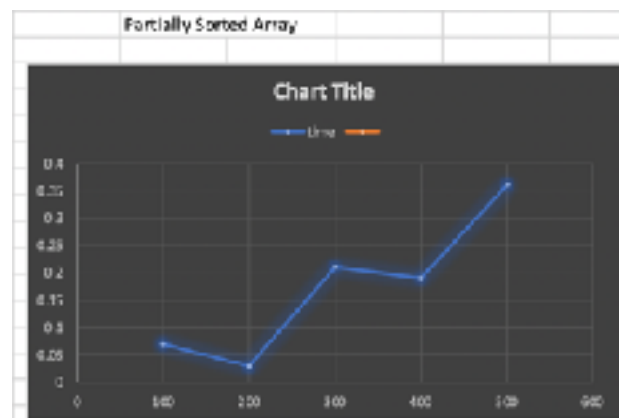
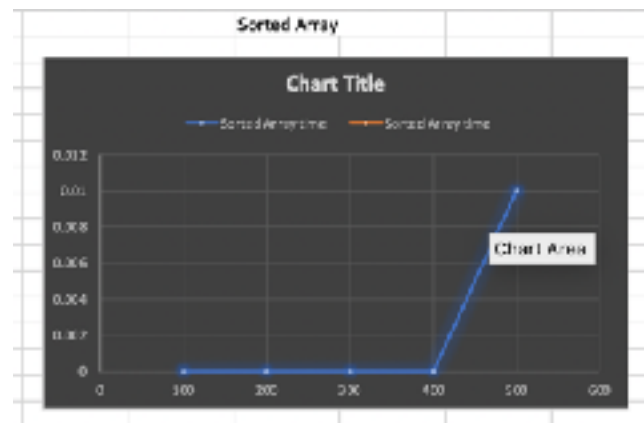
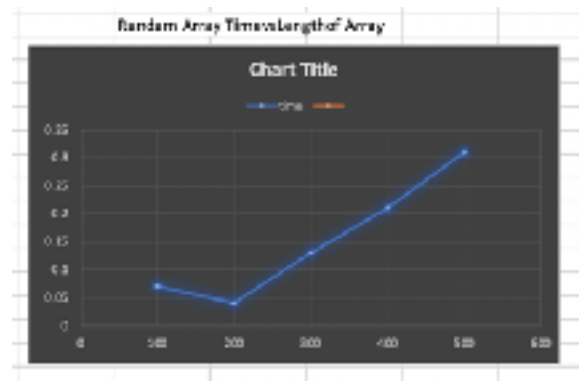
Random Array		
Length		time
100		0.07
200		0.04
300		0.13
400		0.21
500		0.31

partially sorted Array		
length		time
100		0.07
200		0.03
300		0.21
400		0.19
500		0.36

Reverse sorted Array		
length		time
100		0.04
200		0.13
300		0.36
400		1.32
500		0.73

Sorted Array		
length		time
100		0
200		0
300		0
400		0
500		0.01

Graph



Conclusion:

As Number of elements in array increases, The time is double.