



100 Classes

```
profileSelection::allocs:3, compares:4950, swaps:99  
profileBubble::allocs:3, compares:4950, swaps:2343  
profileInsertion::allocs:3, compares:2343, swaps:2343  
profileQuicksort::allocs:809, compares:783, swaps:286
```

1000 Classes

```
profileSelection::allocs:3, compares:499500, swaps:999  
profileBubble::allocs:3, compares:499500, swaps:248567  
profileInsertion::allocs:3, compares:248567, swaps:248567  
profileQuicksort::allocs:8225, compares:13984, swaps:7827
```

10000 Classes

```
profileSelection::allocs:3, compares:49995000, swaps:9999  
profileBubble::allocs:3, compares:49995000, swaps:24929215  
profileInsertion::allocs:3, compares:24929215, swaps:24929215  
profileQuicksort::allocs:105161, compares:201583, swaps:75984
```

Selection sort works by going through the entire array, finding the smallest element, and then swapping that into the position of the first unsorted element. By repeatedly finding the smallest element in the shrinking subset, and then swapping it with the first unsorted element, the list becomes ordered from least to greatest. The amount of times an element is compared to another element is significantly greater than the amount of swaps needed to be done, since the code is running through the entire array, comparing every unsorted element with the selected “smallest” element. This is because the code only swaps once per outer loop iteration, but compares in every