

**Hướng dẫn:** Trương Tấn Khoa, Phạm Trọng Nghĩa

SORT

CẤU TRÚC DỮ LIỆU VÀ GIẢI THUẬT

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# THÔNG TIN

Cá Nhân

|  |  |  |
| --- | --- | --- |
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# BÁO CÁO

**Task 5**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 100 | 1k | 10k | 50k |
| Linear | 2 | 228 | 23540 | 570820 |
| Bubble sort + BS | <1 | 75 | 7837 | 201785 |
| Selection sort + BS | <1 | 65 | 6326 | 160137 |
| Insertion sort + BS | <1 | 46 | 3557 | 88904 |
| Merge sort + BS | <1 | 5 | 58 | 343 |
| Quick sort + BS | <1 | 4 | 49 | 294 |
| Radix sort + BS | <1 | 5 | 69 | 442 |

(ms)

We consider the cases:

- 100: Quick sort is the best algorithm, with complexity . In the worst case, pivot is minElement/maxElement with time complexity .

- 1k: Quick sort is the best algorithm, with complexity . In the worst case, pivot is minElement/maxElement with time complexity .

- 10k: Quick sort is the best algorithm, with complexity . In the worst case, pivot is minElement/maxElement with time complexity .

- 50k : Quick sort is the best algorithm, with complexity . In the worst case, pivot is minElement/maxElement with time complexity .

- Time complexity of Merge sort is .

- Time complexity of Radix sort is with k is maxUnitDigit, so Radix sort is still a good choice in average.

# 

# THAM KHẢO

[1] Hồ Nhật Linh