BÀI TẬP LÀM THÊM

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 40 | 70 | 20 | 60 | 90 | 10 | 50 | 30 |

BÀI 2.5:

Phần tử:

Vị trí: 0 1 2 3 4 5 6 7

QUICK SORT

X = A[(left+right)/2] = a[3] = 60

A[i]=a[0]=40<x i++

A[i]=a[1]=70>x : vi phạm

A[j]=a[7]=30<x: vi phạm

Swap(a[1],a[7]), i++; j--

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 40 | 30 | 20 | 60 | 90 | 10 | 50 | 70 |

A[i]=a[2]=20<x i++

A[i]=a[3]=60: vi phạm

A[j]=a[6]=50<x: vi phạm

Swap(a[3],a[6]), i++, j--

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 40 | 30 | 20 | 50 | 90 | 10 | 60 | 70 |

A[i]=a[4]=90 >x: vi phạm

A[j]=a[5]=10< x\_ vi phạm

Swap(a[4],a[5]), i++, j--

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 40 | 30 | 20 | 50 | 10 | 90 | 60 | 70 |

A[i]=a[5]=90>x: vi phạm

A[j]=a[4]=10<x: vi phạm

Dừng chương trình khi j<i

Chia dãy ban đầu làm hai dãy con: (tiếp tục phân hoạch 2 dãy con cho tới khi mỗi dãy chỉ con duy nhất 1 phần tử)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 40 | 30 | 20 | 50 | 10 |

|  |  |  |
| --- | --- | --- |
| 90 | 60 | 70 |

***Dãy con*** 1:

***Dãy con*** 2:

1. ***Dãy con 1:***

Left=0;

Right=4;

A[(0+4)/2]=a[2]=20=X;

A[i]=a[0]=40>x: vi phạm

A[j]=a[4]=10 <x: vi phạm

Swap(a[0],a[4]) i++, j--

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 10 | 30 | 20 | 50 | 40 |

A[i]=a[1]=30>x, vi phạm

A[j]=a[3]=50>x, j --

A[j]=a[2]=20, vi phạm

Swap(a[1],a[2]) i++, j—

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 10 | 20 | 30 | 50 | 40 |

A[i]=a[2]=30> x, vi phạm

A[j]=a[1]=20, vi phạm

Dừng chương trình khi j<I, chia day con 1 làm 2 dãy con tiếp:

|  |  |
| --- | --- |
| 10 | 20 |

**(a):**

|  |  |  |
| --- | --- | --- |
| 30 | 50 | 40 |

**(b):**

**(b):** left=2;

Right=4;

A[(left+right)/2]=a[3]=50=X

A[i]=a[2]=30>x i++

A[i]=a[3]=50, vi phạm

A[j]=a[4]=40<x, vi phạm

|  |  |  |
| --- | --- | --- |
| 30 | 40 | 50 |

Swap(a[3],a[4])

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 10 | 20 | 30 | 40 | 50 |

⬄(1)

***(2)Dãy con 2***:

Left=5;

Right=7;

A[(5+7)/2]=a[6]=60=X

A[i]=a[5]=90> x, vi phạm

A[j]=a[7]=70>x, j—

A[j]=a[6]=60, vi phạm

Swap(a[5],a[6]\_, i++, j—

|  |  |  |
| --- | --- | --- |
| 60 | 90 | 70 |

A[i]=a[6]=90>x, vi phạm

A[j]=a[5]=60, vi phạm

|  |
| --- |
| 60 |

Dừng chương trình khi j<i, tiếp tục chia dãy con 2 làm 2 dãy con

***(c):***

|  |  |
| --- | --- |
| 90 | 70 |

***(d)***:

***(d):*** left=6;

Right=7;

A[(6+7)/2]=a[6]=90=X

A[i]=a[6]=90, vi phạm

A[j]=a[7]=70<x, vi phạm

Swap(a[6],a[7])

|  |  |  |
| --- | --- | --- |
| 60 | 70 | 90 |

⬄(2)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 10 | 20 | 30 | 40 | 50 | 60 | 70 | 90 |

⬄(1)(2):