cpp快速排序

//快速排序时间复杂度下界为O(nlogn)，最坏情况为O(n^2)，平均时间复杂度为O(nlogn)

class Solution {

public:

void sortIntegers(vector<int> &A) {

if (A.empty())

return;

quick\_sort(A.begin(), A.end() - 1);

}

void quick\_sort(vector<int>::iterator left, vector<int>::iterator right)

{

if (left < right)

{

auto l = left;

auto r = right;

int mid\_num = \*l;

while (l < r)

{

while (l < r && \*r >= mid\_num)

r--;

if (l < r)

\*l++ = \*r;

while (l < r&&\*l < mid\_num)

l++;

if (l < r)

\*r-- = \*l;

}

\*l = mid\_num;

if (left < l)

quick\_sort(left, l - 1);

if (l < right)

quick\_sort(l + 1, right);

}

}

};