#include <fstream>

#include <iostream>

using namespace std;

int k = 0;

void hoarasort(int\* a, int first, int last)

{

int i = first, j = last;

double tmp, x = a[(first + last) / 2];

k += 5;

do {

while (a[i] < x) {

i++;

k += 2;

}

k++;

while (a[j] > x) {

j--;

k += 2;

}

k++;

if (i <= j)

{

k++;

if (i < j)

{

tmp = a[i];

a[i] = a[j];

a[j] = tmp;

k += 4;

}

i++;

j--;

k += 3;

}

} while (i <= j);

k++;

if (i < last) {

k++;

hoarasort(a, i, last);

}

k++;

if (first < j) {

k++;

hoarasort(a, first, j);

}

k++;

}

int main()

{

ofstream f("Myfile.txt");

f << "n=" <<" "<<"k="<< endl;

for (int n = 100; n <= 10000; n += 100)

{

k = 0;

for (int m = 0; m <= 1000; m++) {

int\* arr = new int[n];

for (int i = 0; i < n; i++)

{

arr[i] = i;

}

hoarasort(arr, 0, n - 1);

}

cout << endl << "n=" << n << " " << k/1000;

f <<n<< " " << k / 1000 << endl;

}

}