//二分探索木

void setup(){

int lo, hi;

int n;

int Q = 10000;

int interval = 2000;

int x;

double sumOfNanoTime;

IntList list = new IntList();

PrintWriter outfile;

outfile = createWriter("data.txt");

for(n = 2000; n <= 10000000; n += interval){

sumOfNanoTime = 0;

for(int j = 0; j < interval; j++){

list.append((int)random(n));

}

list.sort();

for(int i = 0; i < Q; i++){

x = (int)random(n);

//x = list.get((int)random(n));

double startOfNanoTime = System.nanoTime();

lo = 0;

hi = n-1;

while(lo <= hi){

int mid = (int)(lo + hi)/2;

if(x == list.get(mid)){

break;

}else if(x < list.get(mid)){

hi = mid - 1;

}else{

lo = mid + 1;

}

}

double NanoTime = System.nanoTime() - startOfNanoTime;

sumOfNanoTime += NanoTime;

}

outfile.println(n +", "+sumOfNanoTime/Q);

}

outfile.close();

println("finished");

}