//InsertionSort

#include<stdio.h>

#include<stdlib.h>

#include<time.h>

void Insert\_Sort(int a[],int n){

int i, j;

for(i=1; i<n; i++){

int current = a[i];

int j = i-1;

while(a[j]>current && j>=0){

a[j+1] = a[j];

j--;

}

a[j+1] = current;

}

}

int main(){

int n, i;

clock\_t start, end;

int \*x;

FILE \*Rand, \*Sort;

float total;

printf("\nHow many Inputs=> ");

scanf("%d", &n);

x = (int\*)malloc(sizeof(int)\*n);

Rand = fopen("arr\_rand.txt", "w"); //This will open the file in given mode

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

fprintf(Rand,"%d\n",(rand())); // Writes random input in the input file

}

fclose(Rand);

Rand = fopen("arr\_rand.txt", "r");

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

fscanf(Rand,"%d",&x[i]); //this will place the value in array

}

start = clock();

//Timer Started

Insert\_Sort(x, n);

end = clock();

//Timer Stoped

Sort = fopen("arr\_sort.txt", "w");

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

fprintf(Sort,"%d\n",x[i]); // writes all the input form array to arr\_sort.txt file

}

//Calculate time

total = (float)(end - start) / CLOCKS\_PER\_SEC; // CLOCKS\_PER\_SEC is contant predefined in <time.h>

printf("\nTime: %f", total);

return 0;

}



