33. Bubble Sort

#include <stdio.h>

#include <stdlib.h>

#include <time.h>

void bubbleSort(int arr[], int n)

{

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

{

int swapped = 0;

for (int j=0;j<n-i-1;j++)

{

if (arr[j]>arr[j+1])

{

int temp=arr[j];

arr[j]=arr[j+1];

arr[j+1]=temp;

swapped=1;

}

}

if(swapped==0)

{

break;

}

}

}

double testBubbleSort(int arr[],int n)

{

clock\_t start\_time=clock();

bubbleSort(arr,n);

clock\_t end\_time=clock();

double elapsed\_time =((double)(end\_time-start\_time))/CLOCKS\_PER\_SEC;

return elapsed\_time;

}

int main()

{

int n;

printf("Enter the number of elements: ");

scanf("%d",&n);

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

printf("Enter %d elements:\n", n);

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

{

scanf("%d", &arr[i]);

}

double elapsedTime=testBubbleSort(arr,n);

printf("Sorted array: ");

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

{

printf("%d ",arr[i]);

}

printf("\n");

return 0;

}

