```cpp
//Class: CSE 330
// Term: Spring 2014
// Instructor: George M. Georgiou
// Name: Seth Lemanek
// Lab 8
// Title: bubble sort test

#include<vector>
#include<iostream>
#include<algorithm>

using namespace std;

//selection sort
int main()
{
cout << "Please print a number to test:\n";
int n;
cin >> n;
vector<int> v (n);
fill(v.begin(),v.begin()+n-1, 1);
//bubble sort
for (int i = n-1; i > 0; i--)
    for (int j = 0; j < i; j++)
        if (v[j] > v[j+1])
            swap(v[j], v[j+1]);
return 0;
}
//Class: CSE 330
// Term: Spring 2014
// Instructor: George M. Georgiou
// Name: Seth Lemanek
// Lab 8
// Title: insertion sort test

#include<vector>
#include<iostream>
#include<algorithm>

using namespace std;

int main()
```

```cpp
{
cout << "Please print a number to test:\n";
int n;
cin >> n;
vector<int> v (n);
fill(v.begin(),v.begin()+n-1, 1);
int j;
int elem;
//insertion sort
for (int i = 1; i < n; i++)
    for (elem = v[i], j = i-1; j >=0 and elem < v[j
]; j--)
        v[j+1] = v[j];
    v[j+1] = elem;
return 0;
}
```

```
//type script

Script started on Mon 02 Jun 2014 11:05:33 AM PDT
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08##[?1034h[004470530@jb358-17 lab08]$ tim
e./ssort
bash: time./ssort: No such file or directory
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ cd cse##[K#
#[K##[K##[K##[K##[Ktiem ##[K##[K##[Km,e##[K##[Ke .
/ssort
Please print a number to test:
1000

real    0m4.647s
user    0m0.025s
sys 0m0.005s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./ssot
##[Krt
Please print a number to test:
2000

real    0m15.563s
user    0m0.045s
```

```
sys 0m0.002s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./ssor
t
Please print a number to test:
3000

real    0m3.811s
user    0m0.060s
sys 0m0.005s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./ssor
t###########[Ktime ./ssort
Please print a number to test:
4000

real    0m3.761s
user    0m0.079s
sys 0m0.002s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ timw##[Ke .
/ssort
Please print a number to test:
5000

real    0m10.069s
user    0m0.113s
sys 0m0.002s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./ssor
t
Please print a number to test:
6000

real    0m3.820s
user    0m0.143s
sys 0m0.001s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./ssor
t###########[Ktime ./ssort
Please print a number to test:
7000
```

```
real    0m5.838s
user    0m0.181s
sys 0m0.005s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ../sso
rt
bash: ../ssort: No such file or directory

real    0m0.003s
user    0m0.000s
sys 0m0.000s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./ssor
t
Please print a number to test:
8000

real    0m5.044s
user    0m0.230s
sys 0m0.003s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./ssor
t
Please print a number to test:
9000

real    0m3.032s
user    0m0.282s
sys 0m0.002s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./ssor
t
Please print a number to test:
10000

real    0m4.613s
user    0m0.343s
sys 0m0.002s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./bsor
t
```

```
Please print a number to test:
1000

real    0m3.311s
user    0m0.006s
sys 0m0.002s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./bsor
t
Please print a number to test:
2000

real    0m2.765s
user    0m0.022s
sys 0m0.001s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./bosr
t
bash: ./bosrt: No such file or directory

real    0m0.001s
user    0m0.000s
sys 0m0.000s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./bsor
t
Please print a number to test:
3000

real    0m4.599s
user    0m0.040s
sys 0m0.000s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./bosr
t##[K##[K##[K##[Ksort
Please print a number to test:
4000

real    0m2.685s
user    0m0.062s
sys 0m0.000s
#]0;004470530@jb358-17:/students/csci/004470530/cs
```

```
e330/lab08#[004470530@jb358-17 lab08]$ time ./bsor
t
Please print a number to test:
5000

real    0m6.437s
user    0m0.085s
sys 0m0.001s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./bosr
t
bash: ./bosrt: No such file or directory

real    0m0.Script started on Mon 02 Jun 2014 11:05
:33 AM PDT
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08##[?1034h[004470530@jb358-17 lab08]$ tim
e./ssort
bash: time./ssort: No such file or directory
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ cd cse##[K#
#[K##[K##[K##[K##[Ktiem ##[K##[K##[Km,e##[K##[Ke .
/ssort
Please print a number to test:
1000

real    0m4.647s
user    0m0.025s
sys 0m0.005s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./ssot
##[Krt
Please print a number to test:
2000

real    0m15.563s
user    0m0.045s
sys 0m0.002s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./ssor
t
Please print a number to test:
```

```
3000

real    0m3.811s
user    0m0.060s
sys 0m0.005s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./ssor
t###########[Ktime ./ssort
Please print a number to test:
4000

real    0m3.761s
user    0m0.079s
sys 0m0.002s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ timw##[Ke .
/ssort
Please print a number to test:
5000

real    0m10.069s
user    0m0.113s
sys 0m0.002s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./ssor
t
Please print a number to test:
6000

real    0m3.820s
user    0m0.143s
sys 0m0.001s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./ssor
t###########[Ktime ./ssort
Please print a number to test:
7000

real    0m5.838s
user    0m0.181s
sys 0m0.005s
#]0;004470530@jb358-17:/students/csci/004470530/cs
```

```
e330/lab08#[004470530@jb358-17 lab08]$ time ../sso
rt
bash: ../ssort: No such file or directory

real    0m0.003s
user    0m0.000s
sys 0m0.000s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./ssor
t
Please print a number to test:
8000

real    0m5.044s
user    0m0.230s
sys 0m0.003s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./ssor
t
Please print a number to test:
9000

real    0m3.032s
user    0m0.282s
sys 0m0.002s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./ssor
t
Please print a number to test:
10000

real    0m4.613s
user    0m0.343s
sys 0m0.002s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./bsor
t
Please print a number to test:
1000

real    0m3.311s
user    0m0.006s
```

```
sys 0m0.002s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./bsor
t
Please print a number to test:
2000

real    0m2.765s
user    0m0.022s
sys 0m0.001s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./bosr
t
bash: ./bosrt: No such file or directory

real    0m0.001s
user    0m0.000s
sys 0m0.000s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./bsor
t
Please print a number to test:
3000

real    0m4.599s
user    0m0.040s
sys 0m0.000s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./bosr
t##[K##[K##[K##[Ksort
Please print a number to test:
4000

real    0m2.685s
user    0m0.062s
sys 0m0.000s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./bsor
t
Please print a number to test:
5000
```

```
real    0m6.437s
user    0m0.085s
sys 0m0.001s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./bosr
t
bash: ./bosrt: No such file or directory

real    0m0.001s
user    0m0.000s
sys 0m0.000s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./bsor
t
Please print a number to test:
6000

real    0m4.661s
user    0m0.116s
sys 0m0.001s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./bsor
t
Please print a number to test:
7000

real    0m3.751s
user    0m0.158s
sys 0m0.001s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./bsor
t
Please print a number to test:
8000\# #

real    0m4.521s
user    0m0.210s
sys 0m0.001s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ 9000##[K##[
K##[K##[Ktime ./bsort
Please print a number to test:
```

```
9000

real    0m4.266s
user    0m0.260s
sys 0m0.000s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./bsor
t
Please print a number to test:
10000

real    0m4.450s
user    0m0.322s
sys 0m0.000s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./ist#
#[Kort
Please print a number to test:
1000

real    0m3.803s
user    0m0.001s
sys 0m0.000s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./s##[
Kisort
Please print a number to test:
2000

real    0m5.546s
user    0m0.001s
sys 0m0.002s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./isor
t
Please print a number to test:
3000

real    0m3.153s
user    0m0.000s
sys 0m0.002s
#]0;004470530@jb358-17:/students/csci/004470530/cs
```

```
e330/lab08#[004470530@jb358-17 lab08]$ time ./isor
t
Please print a number to test:
4000

real    0m2.553s
user    0m0.001s
sys 0m0.001s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./isor
t
Please print a number to test:
5000

real    0m3.320s
user    0m0.001s
sys 0m0.001s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./isor
t
Please print a number to test:
6000

real    0m5.847s
user    0m0.002s
sys 0m0.001s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./isor
t
Please print a number to test:
7000

real    0m1.769s
user    0m0.001s
sys 0m0.000s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./isor
t
Please print a number to test:
8000

real    0m2.881s
```

```
user        0m0.002s
sys 0m0.000s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./isor
t
Please print a number to test:
9000

real        0m2.432s
user        0m0.001s
sys 0m0.001s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./isor
t
Please print a number to test:
10000

real        0m2.601s
user        0m0.002s
sys 0m0.002s
#]0;004470530@jb358-17:/students/csci/004470530/cse
330/lab08#[004470530@jb358-17 lab08]$ exit
exit

Script done on Mon 02 Jun 2014 11:35:27 AM PDT001s
user        0m0.000s
sys 0m0.000s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./bsor
t
Please print a number to test:
6000

real        0m4.661s
user        0m0.116s
sys 0m0.001s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./bsor
t
Please print a number to test:
7000
```

```
real    0m3.751s
user    0m0.158s
sys 0m0.001s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./bsor
t
Please print a number to test:
8000\# #

real    0m4.521s
user    0m0.210s
sys 0m0.001s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ 9000##[K##[
K##[K##[Ktime ./bsort
Please print a number to test:
9000

real    0m4.266s
user    0m0.260s
sys 0m0.000s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./bsor
t
Please print a number to test:
10000

real    0m4.450s
user    0m0.322s
sys 0m0.000s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./ist#
#[Kort
Please print a number to test:
1000

real    0m3.803s
user    0m0.001s
sys 0m0.000s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./s##[
Kisort
```

```
Please print a number to test:
2000

real    0m5.546s
user    0m0.001s
sys 0m0.002s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./isor
t
Please print a number to test:
3000

real    0m3.153s
user    0m0.000s
sys 0m0.002s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./isor
t
Please print a number to test:
4000

real    0m2.553s
user    0m0.001s
sys 0m0.001s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./isor
t
Please print a number to test:
5000

real    0m3.320s
user    0m0.001s
sys 0m0.001s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./isor
t
Please print a number to test:
6000

real    0m5.847s
user    0m0.002s
sys 0m0.001s
```

```
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./isor
t
Please print a number to test:
7000

real    0m1.769s
user    0m0.001s
sys 0m0.000s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./isor
t
Please print a number to test:
8000

real    0m2.881s
user    0m0.002s
sys 0m0.000s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./isor
t
Please print a number to test:
9000

real    0m2.432s
user    0m0.001s
sys 0m0.001s
#]0;004470530@jb358-17:/students/csci/004470530/cs
e330/lab08#[004470530@jb358-17 lab08]$ time ./isor
t
Please print a number to test:
10000

real    0m2.601s
user    0m0.002s
sys 0m0.002s
#]0;004470530@jb358-17:/students/csci/004470530/cse
330/lab08#[004470530@jb358-17 lab08]$ exit
exit

Script done on Mon 02 Jun 2014 11:35:27 AM PDT
```