

Start here X \*selectionSortTimeC.c X

```
1  #include<stdio.h>
2  #include<conio.h>
3  #include<process.h>
4  #include<stdlib.h>
5  #include<time.h>
6  void selection_sort(int n,int arr[])
7  {
8      int temp,small,pos;
9      for(int i=0;i<n-1;i++)
10         {
11             small=arr[i];
12             pos=i;
13             for(int j=i+1;j<n;j++)
14                 {
15                     if(arr[j]<small)
16                         {
17                             small=arr[j];
18                             pos=j;
19                         }
20                 }
21             temp=arr[i];
22             arr[i]=arr[pos];
23             arr[pos]=temp;
24         }
25 }
26 void main()
27 {
28     int a[15000],n;
29     clock_t start,end;
30     n=500;
31     while(n<=14500)
32     {
33         for(int i=0;i<n;i++)
34             a[i]=n-i;
35
36         start=clock();
37         selection_sort(n,a);
38         for(int j=0;j<=100;j++);
39         end=clock();
40         printf("time taken by %d elements = %f secs \n",n,((double)(end-start))/CLOCKS_PER_SEC);
41         n=n+1000;
42     }
43 }
```

```
time taken by 500 elements = 0.000000 secs
time taken by 1500 elements = 0.015000 secs
time taken by 2500 elements = 0.047000 secs
time taken by 3500 elements = 0.063000 secs
time taken by 4500 elements = 0.125000 secs
time taken by 5500 elements = 0.187000 secs
time taken by 6500 elements = 0.250000 secs
time taken by 7500 elements = 0.328000 secs
time taken by 8500 elements = 0.422000 secs
time taken by 9500 elements = 0.532000 secs
time taken by 10500 elements = 0.641000 secs
time taken by 11500 elements = 0.768000 secs
time taken by 12500 elements = 0.896000 secs
time taken by 13500 elements = 1.078000 secs
time taken by 14500 elements = 1.235000 secs

Process returned 46 (0x2E)    execution time : 6.729 s
Press any key to continue.
```

```
1  #include <stdio.h>
2  #include <stdlib.h>
3  #include <time.h>
4  #define size 9000
5  int main() {
6      int i, arr[size];
7      double cc;
8      clock_t start, end;
9      start = clock();
10
11     for (i = 0; i < size; i++)
12     {
13         arr[i] = rand() % 100;
14     }
15     for (int step = 0; step < size - 1; step++)
16     {
17         for (int i = 0; i < size - step - 1; i++)
18         {
19             if (arr[i] > arr[i + 1])
20             {
21                 int temp = arr[i];
22                 arr[i] = arr[i + 1];
23                 arr[i + 1] = temp;
24             }
25         }
26     }
27     printf("\n");
28     end = clock();
29     cc = ((double) end - start);
30     printf("The number of clock cycles taken = %f \n", cc);
31     printf("The total time taken = %f \n", (cc / CLOCKS_PER_SEC));
32 }
33
```



The number of clock cycles taken = 781.000000

The total time taken = 0.781000

Process returned 0 (0x0) execution time : 0.828 s

Press any key to continue.