

PROGRAM 3

Sort a given set of N integer elements using Selection Sort technique and compute its time taken. Run the program for different values of N and record the time taken to sort.

//code

```
#include<iostream>
```

```
#include<ctime>
```

```
using namespace std;
```

```
void selection_sort(int a[],int n){
```

```
    int min,k;
```

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

```
        min=a[i];
```

```
        for(int j=i+1;j<n;j++){
```

```
            if(min>a[j]){
```

```
                min=a[j];
```

```
                k=j;
```

```
            }
```

```
        }
```

```
        int temp=a[i];
```

```
        a[i]=a[k];
```

```
        a[k]=temp;
```

```
    }
```

```
}
```

```
int main(){
```

```
    int n;
```

```
    cout<<"Enter n:";
```

```
    cin>>n;
```

```
    int a[n];
```

```
    cout<<"Enter elements:";
```

```

for(int i=0;i<n;i++)
    cin>>a[i];
clock_t start=clock();
selection_sort(a,n);
cout<<"Sorted: ";
for(int i=0;i<n;i++)
    cout<<a[i]<<" ";
cout<<endl<<"Time: "<<(clock()-start)<<endl;
}

```

//Output

```

❯ clang++-7 -pthread -std=c++17 -o main main.cpp
❯ ./main
Enter n:5
Enter elements:5
4
3
2
1
Sorted: 1 2 4 3 5
Time: 38
❯ █

```

```

❯ clang++-7 -pthread -std=c++17 -o main main.cpp
❯ ./main
Enter n:5
Enter elements:34
67
89
12
4
Sorted: 4 12 34 89 67
Time: 46
❯ █

```