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Class: SE Comp-1

Roll no: 20

Write a function template for selection sort that inputs, sorts and outputs an integer array and a float array.

Code:

#include<iostream>

using namespace std;

#define size 10

int n;

template<class T>

void selection(T a[size])

{

int i,j,k;

T temp;

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

{

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

{

if(a[j]<a[i])

{

temp=a[i];

a[i]=a[j];

a[j]=temp;

}

}

cout<<"\nAfter pass"<<i+1<<" :";

for(k=0;k<n;k++)

{

cout<<a[k]<<" ";

}

}

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

{

cout<<"\nAfter sorting is:"<<a[i];

}

}

int main()

{

int i;

int a[size];

float b[size];

cout<<"\nHow many integers: ";

cin>>n;

cout<<"\nEnter the values: \n";

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

{

cin>>a[i];

}

selection(a);

cout<<"\nHow many floats: ";

cin>>n;

cout<<"\nEnter the values: \n";

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

{

cin>>b[i];

}

selection(b);

cout<<"\n\n";

return 0;

}

Output:

How many integers: 7

Enter the values:

987

654

321

123

456

789

741

After pass1 :123 987 654 321 456 789 741

After pass2 :123 321 987 654 456 789 741

After pass3 :123 321 456 987 654 789 741

After pass4 :123 321 456 654 987 789 741

After pass5 :123 321 456 654 741 987 789

After pass6 :123 321 456 654 741 789 987

After sorting is:123

After sorting is:321

After sorting is:456

After sorting is:654

After sorting is:741

After sorting is:789

After sorting is:987

How many floats: 7

Enter the values:

987

852.023

951.236

753.0258

847.574

59

4562.015987453

After pass1 :59 987 951.236 852.023 847.574 753.026 4562.02

After pass2 :59 753.026 987 951.236 852.023 847.574 4562.02

After pass3 :59 753.026 847.574 987 951.236 852.023 4562.02

After pass4 :59 753.026 847.574 852.023 987 951.236 4562.02

After pass5 :59 753.026 847.574 852.023 951.236 987 4562.02

After pass6 :59 753.026 847.574 852.023 951.236 987 4562.02

After sorting is:59

After sorting is:753.026

After sorting is:847.574

After sorting is:852.023

After sorting is:951.236

After sorting is:987

After sorting is:4562.02