#include <iostream>

using namespace std;

#include <conio.h>

void merge(int \*,int, int , int );

void mergesort(int \*a, int s, int e) //called function

{

int mid;

if (s < e)

{

mid=(s+e)/2;

mergesort(a,s,mid); //again calling to mergesort

mergesort(a,mid+1,e);

merge(a,s,e,mid);

}

return;

}

void merge(int \*a, int s, int e, int mid)

{

int i, j, k, c[5];

i = s;

k = s;

j = mid + 1;

while (i <= mid && j <= e)

{

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

{

c[k] = a[i];

k++;

i++;

}

else

{

c[k] = a[j];

k++;

j++;

}

}

while (i <= mid)

{

c[k] = a[i];

k++;

i++;

}

while (j <= e)

{

c[k] = a[j];

k++;

j++;

}

for (i = s; i < k; i++)

{

a[i] = c[i];

}

}

////////////////////////////////////////////////////////////

int main()

{

int a[5], i,flag,x;

cout<<"Enter the elements\n";

for (i = 0; i < 5; i++)

{

cin>>a[i];

}

mergesort(a, 0, 4); //calling function passing array, staring and ending index no.

cout<<"Sorted array\n";

for (i = 0; i < 5; i++)

{

cout<<a[i]<<endl;

}

start:

cout<<"\nEnter value to search :";

cin>>x;

for(i=0;i<5;i++)

{

if(a[i]==x)

{

flag=1;

break;

}

else

{

flag=0;

}

}

if(flag==1)

{

cout<<"Value found !";

}

else

if(flag==0)

{

cout<<"Value not Found !";

}

else

{

cout<<"Value not Found !";

}

goto start;

getchar();

getchar();

}