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1.#include<iostream>
int SIZE=5;
int lsearch (int[],int);
using namespace std;
int main()
{
int num[SIZE]={4,67,89,90,500},item,val1;
cout<<"\nEnter element to search:";
cin>>item;
cout<<"\nLinear Search:\n";
val1=lsearch(num,item);
if(val1== -1)
cout<<"Element Not Found";
else
cout<<"Element Found at index position"<<val1;
return 0;
}
int lsearch(int num[],int item)
{
for(int i=0;i<SIZE;i++)
{
if(item == num[i])
{
return(i);
}
}
return -1;
}

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2.#include<iostream>
int SIZE=5;
int bsearch (int[],int);
using namespace std;
int main()
{
int num[SIZE]={4,67,89,90,500},item,val1;
cout<<"\nEnter element to search:";
cin>>item;
cout<<"\nBinary Search:\n";
val1=bsearch(num,item);
if(val1== -1)
cout<<"Element Not Found";
else
cout<<"Element Found at index position"<<val1;
}

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return 0;
}
int bsearch(int num[],int item)
{
int beg=0,end=SIZE-1;
int mid=(beg+end)/2;
while(beg<=end && num[mid]!=item)
{
if(item<num[mid])
end=mid-1;
else
beg=mid+1;
mid=(beg+end)/2;
}
if(num[mid]==item)
return mid;
else
return -1;
}

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3.#include <iostream>
using namespace std;
void sel_sort(int a[],int n)
{
int i,j,tmp;
for (i=0;i<n-1;i++)
{
for (j=i+1;j<n;j++)
{
if(a[i] > a[j])
{
tmp =a[i];
a[i]=a[j];
a[j]=tmp;
}
}
}
cout<<"Printing the sorted array:\n";
for(i=0;i<n;i++)
cout<<a[i]<<"\t";
}
int main()
{
int la[100], size, i;

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cout<<"Enter size of array:\n";
cin>>size;
cout<<"Enter"<<size<<"integers:\n";
for (i=0;i<size;i++)
cin>>la[i];
sel_sort(la, size);
return 0;
}

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4.#include<stdlib.h>
#include<time.h>
#include<iostream>
using namespace std;
void bubble_sort(int a[], int n)
{
int i=0,j=0,tmp,cnt;
for(i=0;i<n-1;i++)
{
for(j=0;j<n-i-1;j++)
{
if(a[j] > a[j+1])
{
tmp = a[j];
a[j]=a[j+1];
a[j+1] = tmp;
}
}
}
}cout<<"\nPrinting th sorted array:\n";
for(i=0;i<n;i++)
cout<<"\t"<<a[i];
}
int main()
{
int la[1000], n, i;
cout<<"Enter size of the array:";
cin>>n;
cout<<"Numbers are:\n";
for(i=0;i<n;i++)
{
la[i]=rand();
cout<<"\t"<<la[i];
}
time_t begin=time(NULL);
bubble_sort(la,n);

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time_t end=time(NULL);
cout<<"\nTime Required in Seconds"<<(end-begin);
return 0;
}

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5#include<iostream>
using namespace std;
void inssort(int num[], int size)
{
int i, j, temp;
for(i=0;i<=size-1;i++)
{
temp=num[i];
j=i-1;
while(j>=0 && temp<=num[j])
{
num[j+1]=num[j];
j--;
}
num[j+1]=temp;
}
cout<<"\nSorted Elements are:\n";
for(i=0;i<size;i++)
{
cout<<num[i]<<"\t";
}
}
int main()
{
int la[100], size, i;
cout<<"Enter size of array:\n";
cin>>size;
cout<<"Enter"<<size<<"integers:\n";
for (i=0;i<size;i++)
cin>>la[i];
inssort(la, size);
return 0;
}

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