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**I’d: 191-15-12145**

**Bubble sort:**

#include<stdio.h>

int n;

void Sort(int ara[])

{

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

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

{

if(ara[j]>ara[j+1])

{

int p=ara[j];

ara[j]=ara[j+1];

ara[j+1]=p;

}

}

}

int main()

{

int ara[]= {5,4,1,3,2,7};

n=6;

printf("Array before swap: ");

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

printf("%d ",ara[i]);

printf("\n");

Sort(ara);

printf("Array after swap: ");

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

printf("%d ",ara[i]);

printf("\n");

}

**Linear search:**

#include<stdio.h>

int main()

{

int a[20],i,x,n;

printf("How many elements?");

scanf("%d",&n);

printf("Enter array elements:n");

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

scanf("%d",&a[i]);

printf("nEnter element to search:");

scanf("%d",&x);

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

if(a[i]==x)

break;

if(i<n)

printf("Element found at index %d",i);

else

printf("Element not found");

return 0;

}

**Insertion:**

#include<bits/stdc++.h>

using namespace std;

void insertion(int ara[],int n)

{

int i,j,x;

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

{

x=ara[i];

j=i-1;

while(j>=0 && ara[j]>x)

ara[j+1]=ara[j],j--;

ara[j+1]=x;

}

}

int main()

{

int ara[]={5,1,4,2,8};

int n=sizeof(ara)/sizeof(ara[0]);

cout<<"Element before sorting: ";

for(int i=0;i<n;i++) cout<<ara[i]<<' ';

insertion(ara,n);

cout<<endl<<"Element before sorting: ";

for(int i=0;i<n;i++) cout<<ara[i]<<' ';

return 0;

}

**Selection sort:**

#include<bits/stdc++.h>

using namespace std;

void selection\_sort(int ara[],int n)

{

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

{

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

{

if(ara[i]>ara[j])

swap(ara[i],ara[j]);

}

}

return;

}

int main()

{

int ara[]={1,3,2,7,4,12,6},n;

n=sizeof(ara)/sizeof(ara[0]);

cout<<"Before: ";

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

cout<<ara[i]<<' ';

cout<<endl;

selection\_sort(ara,n);

cout<<"After: ";

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

cout<<ara[i]<<' ';

cout<<endl;

return 0;

}