1. Write a program for the Insertion sort algorithm.

#include <stdio.h>

int main()

{

int n, array[100], i, d, temp;

printf("Enter number of elements\n");

scanf("%d", &n);

printf("Enter %d integers\n", n);

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

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

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

{

d = i;

while ( d > 0 && array[d-1] > array[d]) {

temp = array[d];

array[d] = array[d-1];

array[d-1] = temp;

d--;

}

}

printf("Sorted array in ascending order:\n");

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

printf("%d\n", array[i]);

}

return 0;

}

1. Write a program for the Selection sort algorithm.

#include <stdio.h>

int main()

{

int n, i, d, p, temp;

printf("Enter number of elements\n");

scanf("%d", &n);

int a[n];

printf("Enter the integers" );

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

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

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

{

p=i;

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

{

if (a[p]>a[d])

p= d;

}

if (p!=i)

{

temp=a[i];

a[i]=a[p];

a[p] = temp;

}

}

printf("Sorted array in ascending order is:\n");

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

printf("%d\n",a[i]);

return 0;

}

1. Write a program for Bubble sort algorithm.

#include <stdio.h>

int main()

{

int n,i,j,temp;

printf("Enter number of elements\n");

scanf("%d", &n);

int a[n];

printf("Enter %d integers\n", n);

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

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

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

{

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

{

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

{

temp=a[j];

a[j]=a[j+1];

a[j+1]=temp;

}

}

}

printf("Sorted list in ascending order:\n");

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

printf("%d\n", a[i]);

return 0;

}

1. Write a program for the Merge sort algorithm.

#include<stdio.h>

void mergesort(int a[],int i,int j);

void merge(int a[],int i1,int j1,int i2,int j2);

 int main()

{

int n,i;

printf("Enter no of elements:");

scanf("%d",&n);

int a[n];

printf("Enter array elements:");

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

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

mergesort(a,0,n-1);

printf("\nSorted array is :");

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

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

return 0;

}

 void mergesort(int a[],int i,int j)

{

int mid;

if(i<j)

{

mid=(i+j)/2;

mergesort(a,i,mid);

mergesort(a,mid+1,j);

merge(a,i,mid,mid+1,j);

}

}

 void merge(int a[],int i1,int j1,int i2,int j2)

{

int temp[50];

int i,j,k;

i=i1;

j=i2;

k=0;

while(i<=j1 && j<=j2)

{

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

temp[k++]=a[i++];

else

temp[k++]=a[j++];

while(i<=j1)

temp[k++]=a[i++];

while(j<=j2)

temp[k++]=a[j++];

for(i=i1,j=0;i<=j2;i++,j++)

a[i]=temp[j];

}