

```
/******Bubble Sort*****/  
  
#include <stdio.h>  
#include <conio.h>  
void main()  
{  
    int a[10],i,j,n,t;  
    clrscr();  
    printf("Enter Number of Elements : ");  
    scanf("%d",&n);  
    printf("Enter Array elements\n");  
    for(i=0;i<n;++i)  
        scanf("%d",&a[i]);  
    for(i=0;i<n-1;++i)  
        for(j=i+1;j<n;++j)  
            if (a[i]>a[j])  
            {  
                t=a[i];  
                a[i]=a[j];  
                a[j]=t;  
            }  
    printf("Sorted Array\n");  
    for(i=0;i<n;++i)  
        printf("%d\n",a[i]);  
    getch();  
}
```

```

/**** Selection Sort ****/
#include <stdio.h>
#include <conio.h>
void main()
{
    int a[10],i,j,p,n,t;
    clrscr();
    printf("Enter Number of Elements : ");
    scanf("%d",&n);
    printf("Enter Array Elements\n");
    for(i=0;i<n;++i)
        scanf("%d",&a[i]);
    for(i=0;i<n-1;++i)
    {
        p=i;
        for(j=i+1;j<n;++j)
            if (a[j]<a[p])
                p=j;
        if (p!=i)
        {
            t=a[i];
            a[i]=a[p];
            a[p]=t;
        }
    }
    printf("Sorted Array\n");
    for(i=0;i<n;++i)
        printf("%d\n",a[i]);
    getch();
}

```

```
/*****Insertion Sort *****/
#include <stdio.h>
#include <conio.h>
void main()
{
int a[10],i,j,n,t;
clrscr();
printf("Enter N value : ");
scanf("%d",&n);
printf("Enter Array Elements\n");
for(i=0;i<n;++i)
scanf("%d",&a[i]);
for(i=1;i<=n;++i)
for(j=i;j>0 && a[j-1]>a[j];--j)
{
t=a[j];
a[j]=a[j-1];
a[j-1]=t;
}
printf("Sorted Array\n");
for(i=0;i<n;++i)
printf("%d\n",a[i]);
getch();
}
```

```

/****Shell Sort*****/

#include <stdio.h>
#include <conio.h>
void main()
{
int a[10],i,j,k,n,t;
clrscr();
printf("Enter N Value : ");
scanf("%d",&n);
printf("Enter Array Elements\n");
for(i=0;i<n;++i)
scanf("%d",&a[i]);
for(k=n/2;k>0;k/=2)
for(i=k;i<n;++i)
for (j=i-k;j>=0;j-=k)
if (a[j+k]>=a[j])
break;
else
{
t=a[j];
a[j]=a[j+k];
a[j+k]=t;
}
printf("Sorted Array\n");
for(i=0;i<n;++i)
printf("%d\n",a[i]);
getch();
}

```

```
/****Heap Sort *****/
```

```
#include <stdio.h>
```

```
#include <conio.h>
```

```
void swap(int *a,int *b)
```

```
{
```

```
    int t;
```

```
    t=*a;
```

```
    *a=*b;
```

```
    *b=t;
```

```
}
```

```
void heapify(int a[], int n, int i)
```

```
{
```

```
    int max,lc,rc;
```

```
    max=i;
```

```
    lc=2*i+1;
```

```
    rc=2*i+2;
```

```
    if (lc<n && a[lc]>a[max])
```

```
        max=lc;
```

```
    if (rc<n && a[rc]>a[max])
```

```
        max=rc;
```

```
    if (max!=i)
```

```
    {
```

```
        swap(&a[i],&a[max]);
```

```
        heapify(a,n,max);
```

```
    }
```

```
}
```

```
void heapsort(int a[],int n)
```

```
{
```

```
    int i;
```

```
    for(i=n/2-1;i>=0;i--)
```

```
        heapify(a,n,i);
```

```
    for(i=n;i>=0;i--)
```

```
    {
```

```
        swap(&a[0],&a[i]);
```

```
        heapify(a,i,0);
```

```
    }
```

```
}
```

```
void main()
```

```
{
```

```
    int a[10],n,i;
```

```
    clrscr();
```

```
    printf("Enter Number of Elements : ");
```

```
    scanf("%d",&n);
```

```
    printf("Enter Array Elements\n")
```

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

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

```
heapsort(a,n-1);  
printf("Sorted Array\n");  
for(i=0;i<n;++i)  
    printf("%d\n",a[i]);  
getch();  
}
```