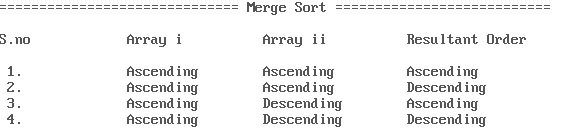
**Aim:**

To write a program to merge the two structured arrays into a third array according to given options:



**Source Code:**

#include<iostream.h>

#include<conio.h>

#include<stdio.h>

struct student

{

int rno;

char name[20];

void getdata()

{

cout<<"Enter rno =";

cin>>rno;

cout<<"Enter name =";

gets(name);

}

void showdata()

{

cout<<"\nRno : "<<rno;

cout<<" Name : "<<name;

}

}s1[10],s2[10],s3[20];

void asecasecasecmerge(student\* s1,int m,student\* s2,int n,student\* s3)

{

int a,b,c;

for(a=0,b=0,c=0;a<m&&b<n;)

{

if(s1[a].rno<=s2[b].rno)

{

s3[c++]=s1[a++];

}

else

{

s3[c++]=s2[b++];

}

}

if(a<m)

{

while(a<m)

{

s3[c++]=s1[a++];

}

}

else

{

while(b<n)

{

s3[c++]=s2[b++];

}

}

}

void asecasecdescmerge(student\* s1,int m,student\* s2,int n,student\* s3)

{

int a,b,c;

for(a=0,b=0,c=(m+n)-1;a<m&&b<n;)

{

if(s1[a].rno<=s2[b].rno)

{

s3[c--]=s1[a++];

}

else

{

s3[c--]=s2[b++];

}

}

if(a<m)

{

while(a<m)

{

s3[c--]=s1[a++];

}

}

else

{

while(b<n)

{

s3[c--]=s2[b++];

}

}

}

void asecdescasecmerge(student\* s1,int m,student\* s2,int n,student\* s3)

{

int a,b,c;

for(a=0,b=n-1,c=0;a<m&&b>=0;)

{

if(s1[a].rno<=s2[b].rno)

{

s3[c++]=s1[a++];

}

else

{

s3[c++]=s2[b--];

}

}

if(a<m)

{

while(a<m)

{

s3[c++]=s1[a++];

}

}

else

{

while(b>=0)

{

s3[c++]=s2[b--];

}

}

}

void asecdescdescmerge(student\* s1,int m,student\* s2,int n,student\* s3)

{

int a,b,c;

for(a=0,b=n-1,c=(m+n)-1;a<m&&b>=0;)

{

if(s1[a].rno<=s2[b].rno)

{

s3[c--]=s1[a++];

}

else

{

s3[c--]=s2[b--];

}

}

if(a<m)

{

while(a<m)

{

s3[c--]=s1[a++];

}

}

else

{

while(b>=0)

{

s3[c--]=s2[b--];

}

}

}

void main()

{

clrscr();

int ch,i,m,n;

cout<<"============================== Merge Sort ===========================\n";

cout<<"\nS.no Array i Array ii Resultant Order\n";

cout<<"\n 1. Ascending Ascending Ascending";

cout<<"\n 2. Ascending Ascending Descending";

cout<<"\n 3. Ascending Descending Ascending";

cout<<"\n 4. Ascending Descending Descending";

cout<<"\n\nEnter Your Choice : ";

cin>>ch;

clrscr();

cout<<"Enter size of array 1 : ";

cin>>m;

cout<<"Enter size of array 2 : ";

cin>>n;

cout<<"Enter elements of array 1 :\n";

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

{

s1[i].getdata();

}

cout<<"Enter elements of array 2 :\n";

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

{

s2[i].getdata();

}

switch(ch)

{

case 1:

{

clrscr();

cout<<"\nS.no Array i Array ii Resultant Order";

cout<<"\n 1. Ascending Ascending Ascending\n";

asecasecasecmerge(s1,m,s2,n,s3);

cout<<"\nMerged array is : ";

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

{

s3[i].showdata();

}

break;

}

case 2:

{

clrscr();

cout<<"\nS.no Array i Array ii Resultant Order";

cout<<"\n 2. Ascending Ascending Descending\n";

asecasecdescmerge(s1,m,s2,n,s3);

cout<<"\nMerged array is :";

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

{

s3[i].showdata();

}

break;

}

case 3:

{

clrscr();

cout<<"\nS.no Array i Array ii Resultant Order";

cout<<"\n 3. Ascending Descending Ascending\n";

asecdescasecmerge(s1,m,s2,n,s3);

cout<<"\nMerged array is : ";

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

{

s3[i].showdata();

}

break;

}

case 4:

{

clrscr();

cout<<"\nS.no Array i Array ii Resultant Order";

cout<<"\n 4. Ascending Descending Descending\n";

asecdescdescmerge(s1,m,s2,n,s3);

cout<<"\nMerged array is : ";

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

{

s3[i].showdata();

}

break;

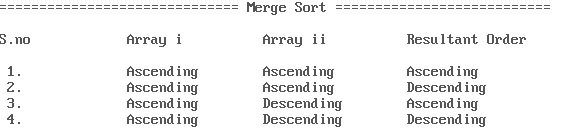
}

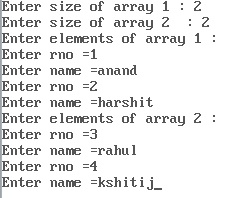
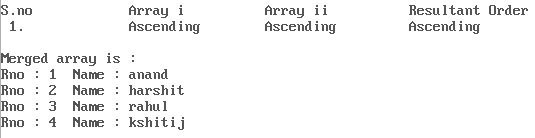
}

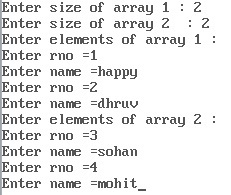
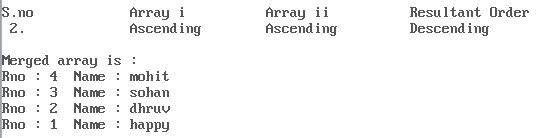
getch();

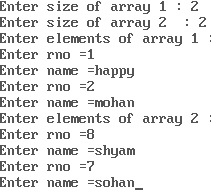
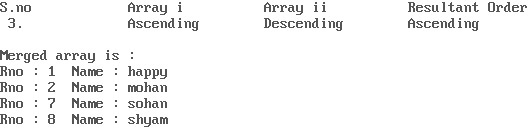
}

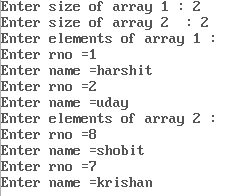
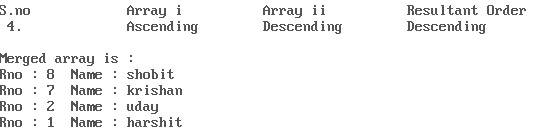
**Output :**

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