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Assignment Name: Implementation of Quick sort for integer
Class: MCA I                                          Lab: CA Lab III (DS)
--------------------------------------------------------------------------

#include<iostream.h>
#include<conio.h>
#include<string.h>

class demo
{
     int x[20],n;
     public:
     void get();
     void asort(int,int);
     int partition(int,int);
     void disp();
};


void demo::get()
{
     cout<<"\nEnter the array size:";
     cin>>n;
     cout<<"\nEnter the array element:";
     for(int i=1;i<=n;i++)
     cin>>x[i];
     asort(1,n);
}

void demo::asort(int p,int q)
{
     if(p<q)
     {
          int j=partition(p,q);
          asort(p,j-1);
          asort(j+1,q);
     }
}

int demo::partition(int lb, int ub)
{
     int a,left,right,temp;
     a=x[lb];
     left=lb+1;
     right=ub;
     do
     {
          while(x[left]<a) //change x[left]>a for descending
          left++;
          while(x[right]>a) //change x[right]<a for descending
          right--;
          if(left<right)
          {
               temp=x[left];
               x[left]=x[right];
               x[right]=temp;
          }
     }while(left<=right);
```

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        x[lb]=x[right];
        x[right]=a;
        return(right);
}

void demo::disp()
{
        cout<<"\nThe array element are: ";
        for(int i=1;i<=n;i++)
        cout<<x[i]<<"\t";
}

void main()
{
        clrscr();
        demo d;
        d.get();
        cout<<"\nAfter Ascending sort";
        d.disp();
        getch();
}

*/ Output */


Enter the array size: 5

Enter the array element: 12 3 -45 -67 8

After Ascending sort
The array element are: -67        -45      3        8        12
```