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#include <iostream>
using namespace std;
//Mohammed Abusarie
static int arraycount=0;;
class Array
{
private:
    int elem[100];
    int size;
public:
    Array(int x=10)
    {
        size=x;
        for(int i=0;i<size;i++)
            elem[i]=0;
        arraycount++;
    }
    Array(Array &a)
    {
        size=a.size;
        for(int i=0;i<size;i++)
            elem[i]=a.elem[i];
        arraycount++;
    }
    ~Array()
    {
        size=0; arraycount--;
    }
    int getsize()
    {
        return size;
    }
    int getarraycount()
    {
        return arraycount;
    }
    Array operator =(Array &a)
    {
        size=a.size;
        for(int i=0;i<size;i++)
            elem[i]=a.elem[i];
        return a;
    }
    bool operator == (Array a)
    {
        bool identical=true;
        for(int i=0;i<size;i++)
        {
            if(elem[i]!=a.elem[i])
            {

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        identical=false; break;
    }
}
return identical;
}
bool operator != (Array a)
{
    bool nonidentical=true;
    for(int i=0;i<size;i++)
    {
        if(elem[i]==a.elem[i])
        {
            nonidentical=false; break;
        }
    }
    return nonidentical;
}
void operator [] (int x)
{
    if(x>=size)
        cout<<"ERROR SORRY YOU SELECTED A NON VALID INDEX"<<endl;
    else
        cout<<"You selected index="<<x<<" and it has element="<<elem[x]<<endl;
}
friend istream &operator >> (istream &is,Array &a)
{
    for(int i=0;i<a.size;i++){
        cout<<"Enter element "<<i+1<<endl;
        is>>a.elem[i];
    }
    return is;
}
friend ostream &operator << (ostream &os,Array &a)
{
    for(int i=0;i<a.size;i++)
        os<<a.elem[i]<<" ";
    cout<<endl;
    return os;
}
};
int main()
{
    Array a1(5);
    cout<<"Smile Enter Array 1  => "<<"it's size="<<a1.getsize()<<endl;
    cin>>a1;
    cout<<"Displaying Array #1"<<endl;
    cout<<a1;
    a1[4];
    Array a2=a1;
    cout<<"Here is array 2 after using the copy constructor "<<endl;
}

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cout<<a2;  
cout<<arraycount<<" objects has been created "<<endl;  
}
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