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#include<bits/stdc++.h>
using namespace std;
int insertion(int ar[],int n,int k,int data){
    int i;
    for(i=n;i>k;i--){
        ar[i]=ar[i-1];
    }
    ar[k]=data;
    return n+1;
}
void binarySearch(int ar[],int n,int e,int data){
    int hi=n-1,lo=0,c=0,mid,k;
    while(lo<=hi){
        mid=(hi+lo)/2;
        if(ar[mid]==e){
            c=1; k=mid;break;
        }
        else if(ar[mid]>e){
            hi=mid-1;
        }
        else{
            lo=mid+1;
        }
    }
    if(c==0)insertion(ar,n,0,data);
    else insertion(ar,n,k,data);
}
int main()
{
    int n;
    cout<<"Enter the size of the array: "<<endl;
    cin>>n;
    int ar[n],i;
    for(i=0;i<n;i++)cin>>ar[i];
    int k,d;
    cin>>k>>d;
    binarySearch(ar,n,k,d);
    for(i=0;i<=n;i++)cout<<ar[i]<<" ";
}

```