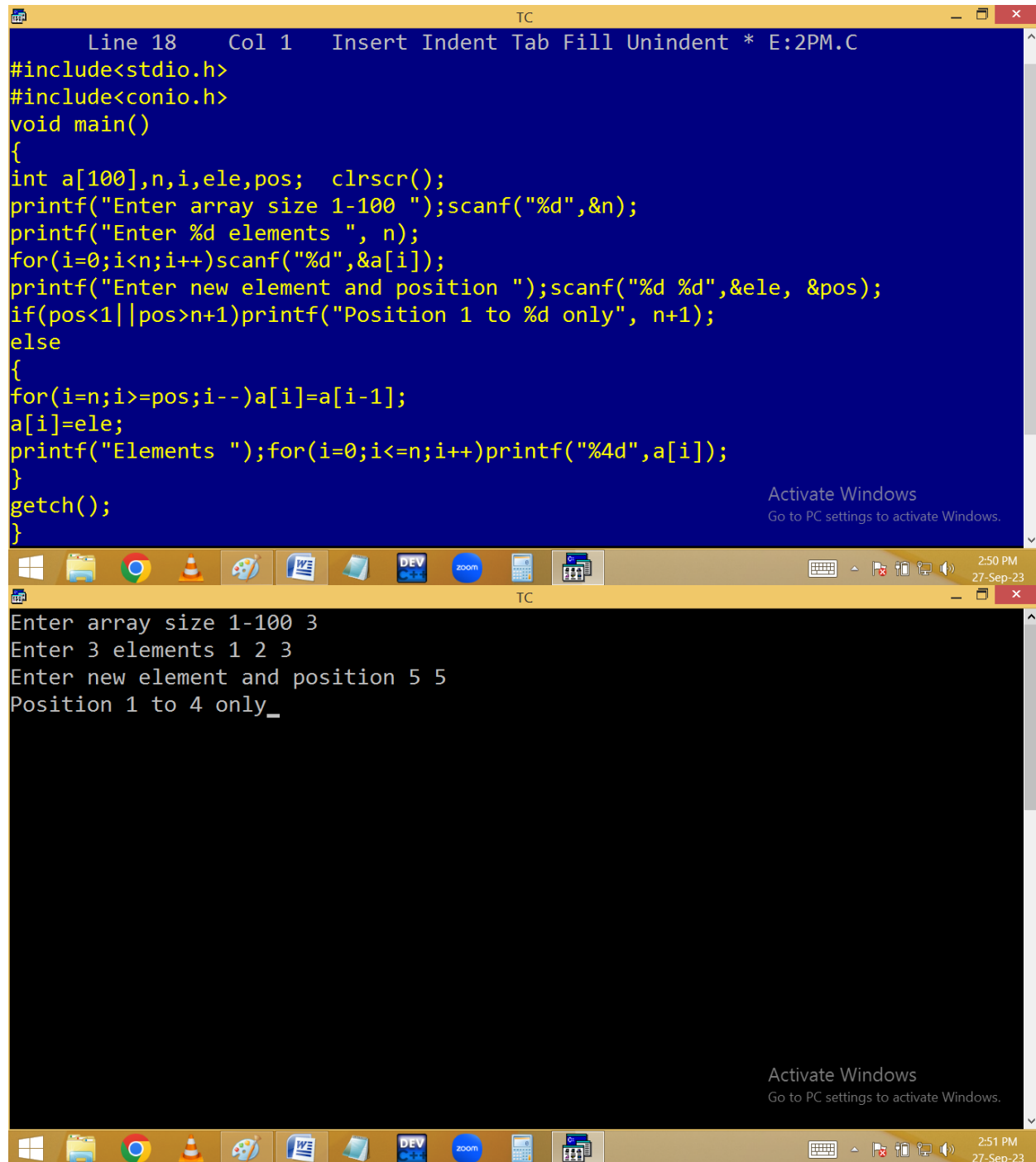


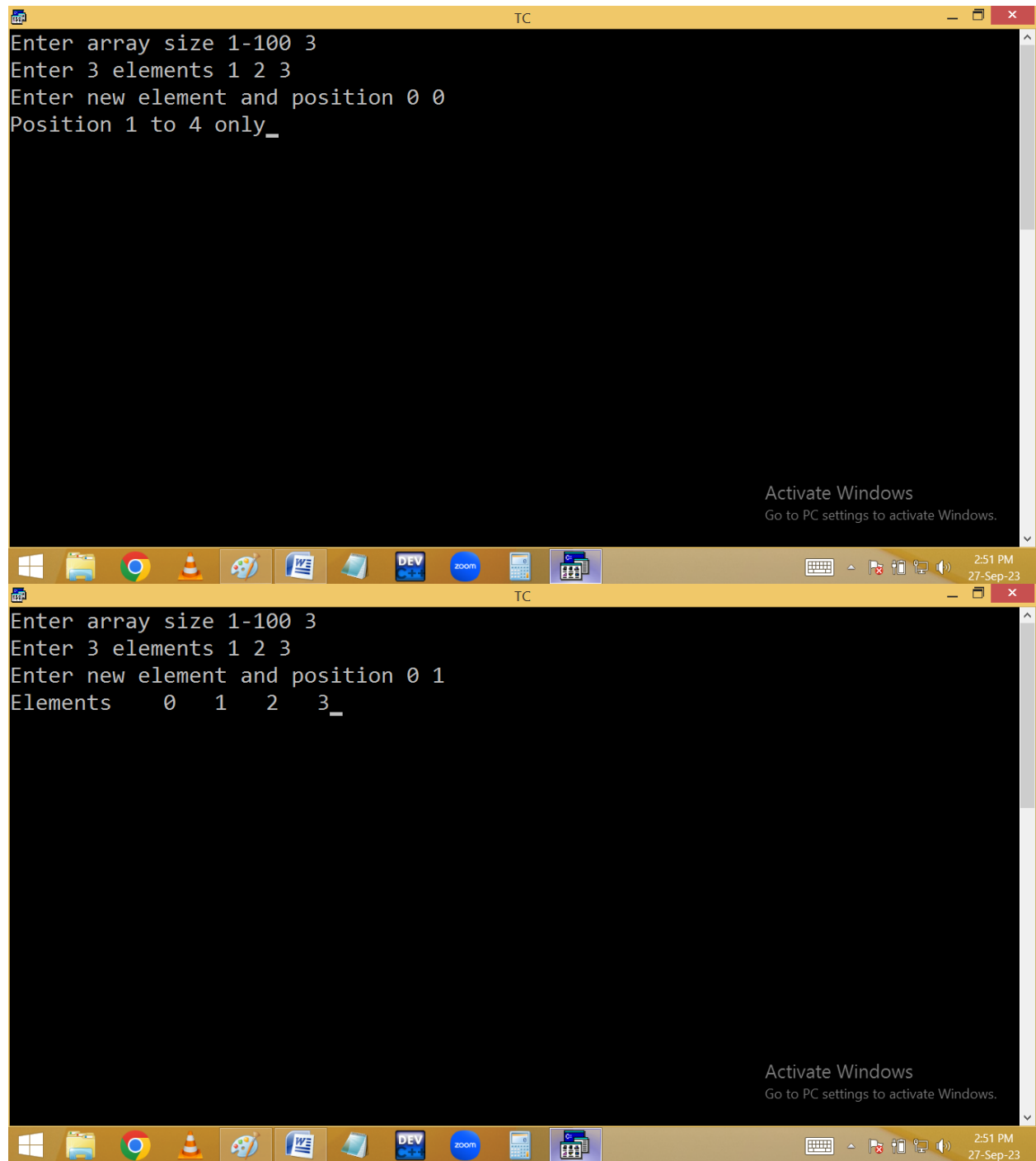
Inserting a new element into the array:

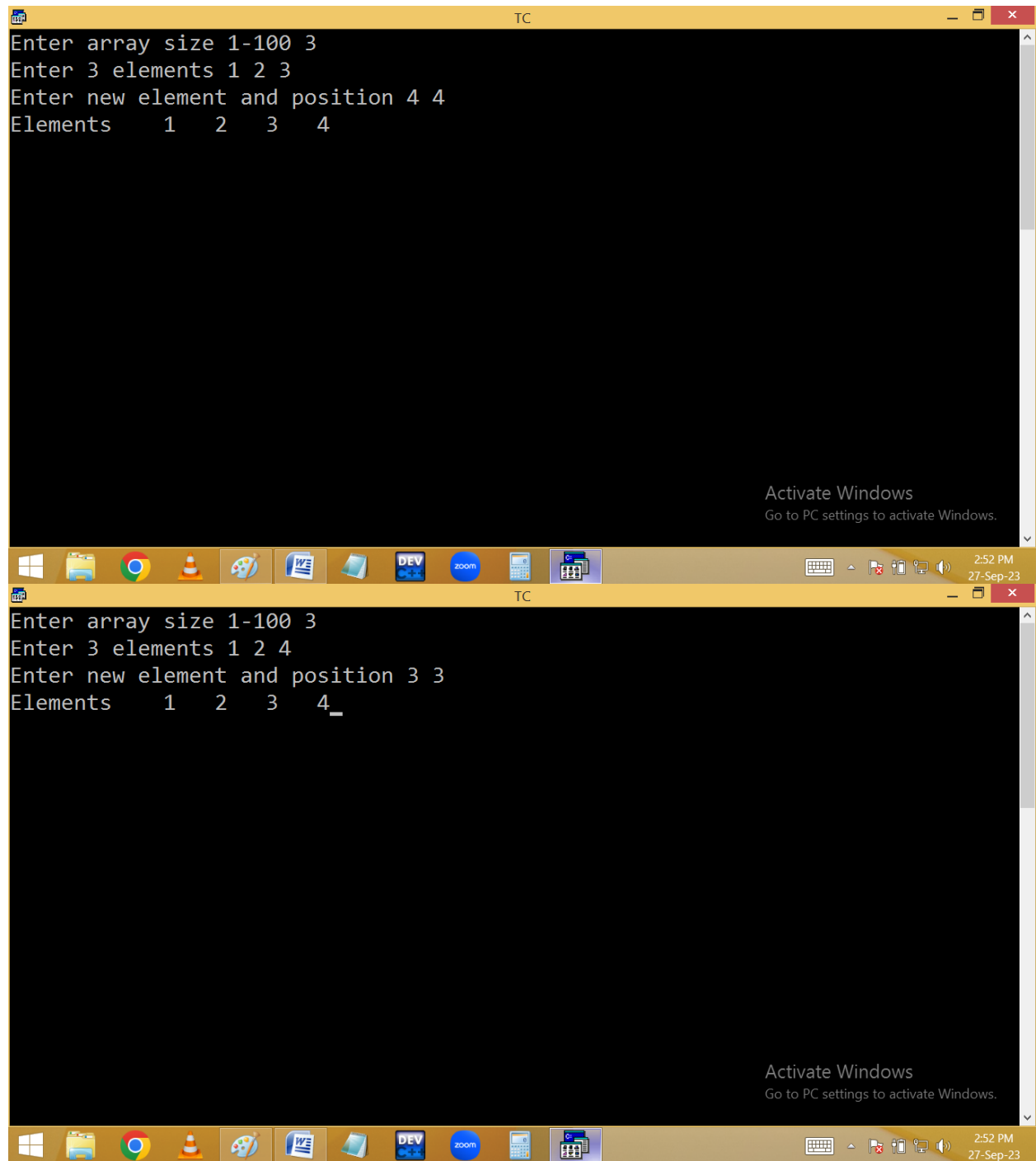
Right shifting of array elements:

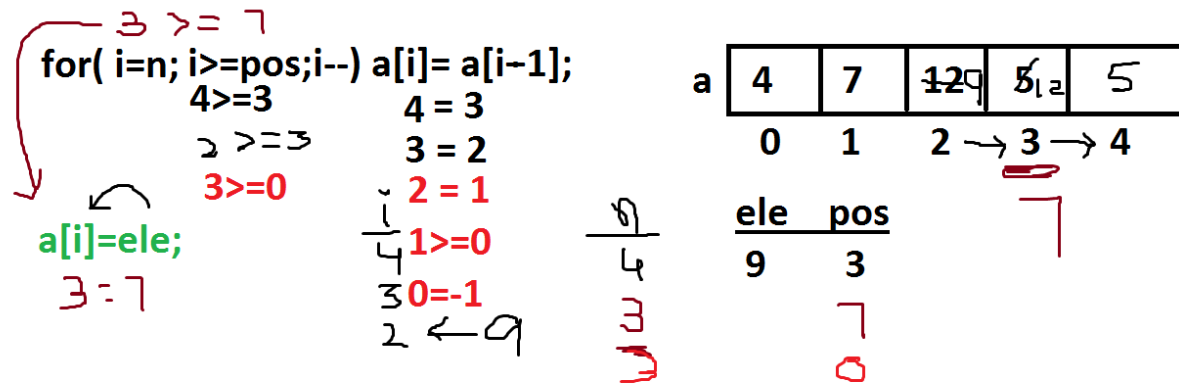


```
Line 18 Col 1 Insert Indent Tab Fill Unindent * E:2PM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a[100],n,i,ele,pos; clrscr();
printf("Enter array size 1-100 ");scanf("%d",&n);
printf("Enter %d elements ", n);
for(i=0;i<n;i++)scanf("%d",&a[i]);
printf("Enter new element and position ");scanf("%d %d",&ele, &pos);
if(pos<1||pos>n+1)printf("Position 1 to %d only", n+1);
else
{
for(i=n;i>=pos;i--)a[i]=a[i-1];
a[i]=ele;
printf("Elements ");for(i=0;i<=n;i++)printf("%4d",a[i]);
}
getch();
}
```

Enter array size 1-100 3
Enter 3 elements 1 2 3
Enter new element and position 5 5
Position 1 to 4 only_

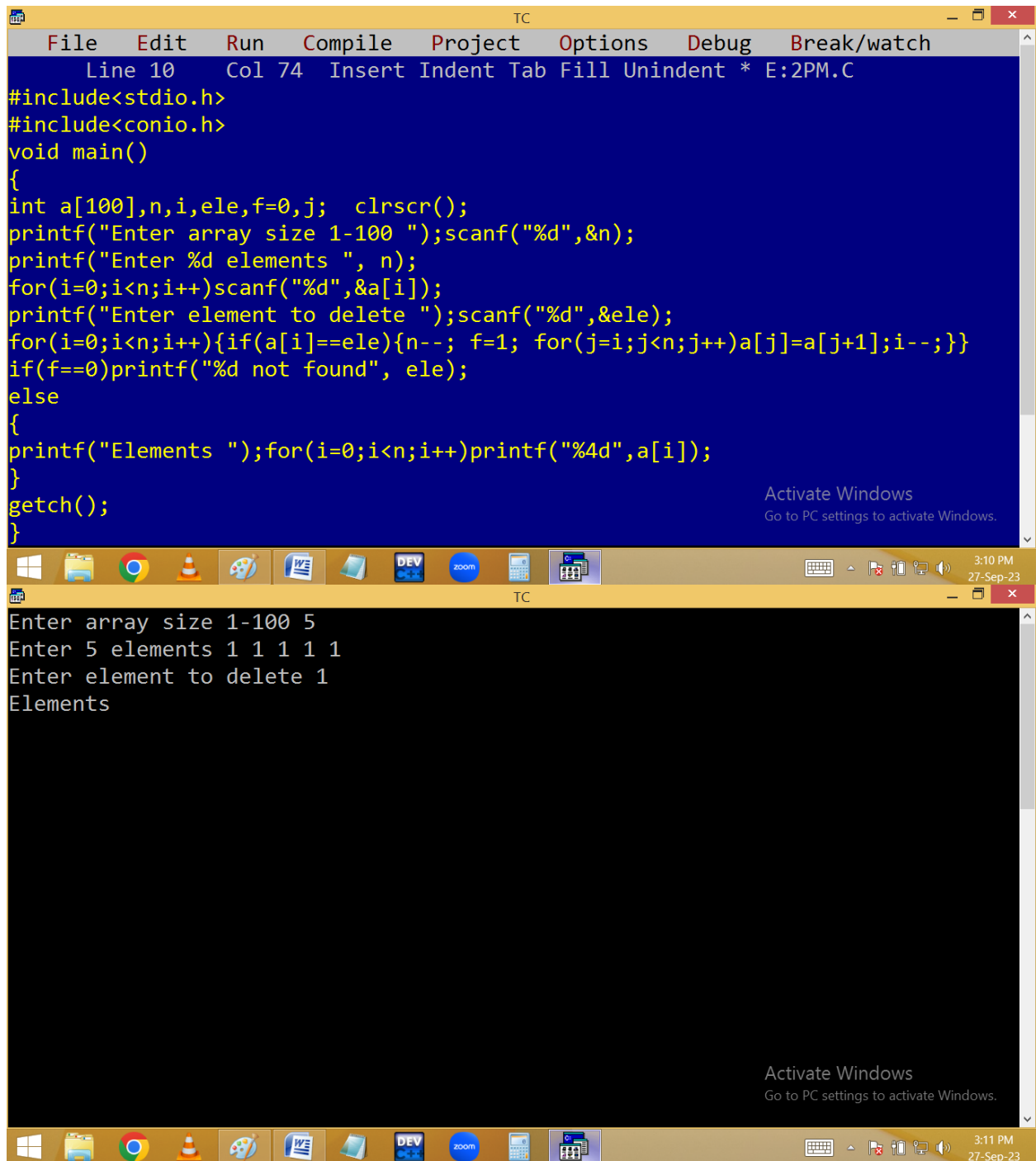






Deleting an array element:

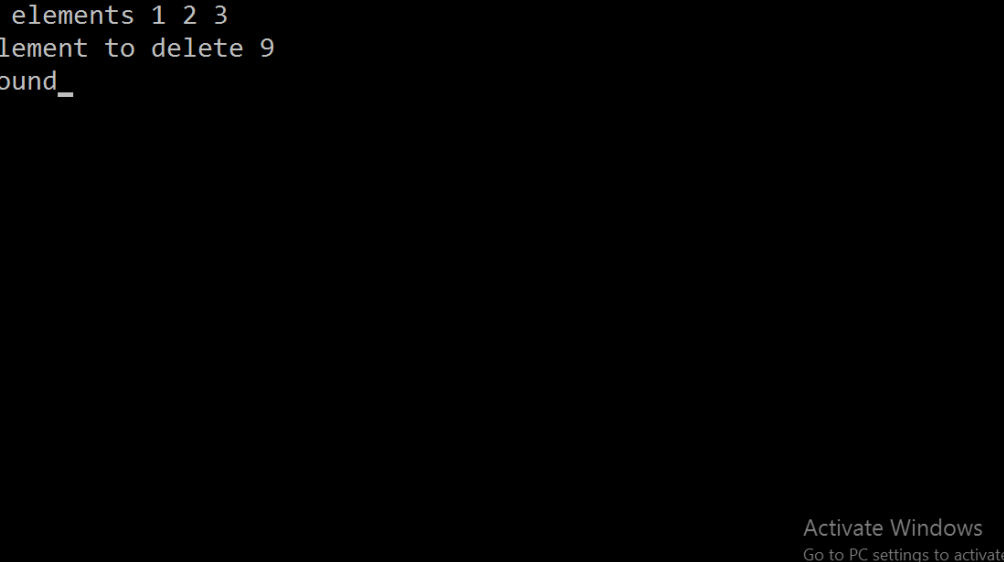
Left shifting of array elements:



```
TC
File Edit Run Compile Project Options Debug Break/watch
Line 10 Col 74 Insert Indent Tab Fill Unindent * E:2PM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a[100],n,i,ele,f=0,j; clrscr();
printf("Enter array size 1-100 ");scanf("%d",&n);
printf("Enter %d elements ", n);
for(i=0;i<n;i++)scanf("%d",&a[i]);
printf("Enter element to delete ");scanf("%d",&ele);
for(i=0;i<n;i++){if(a[i]==ele){n--; f=1; for(j=i;j<n;j++)a[j]=a[j+1];i--;}}
if(f==0)printf("%d not found", ele);
else
{
printf("Elements ");for(i=0;i<n;i++)printf("%4d",a[i]);
}
getch();
}
```

Enter array size 1-100 5
Enter 5 elements 1 1 1 1 1
Enter element to delete 1
Elements

Activate Windows
Go to PC settings to activate Windows.



The screenshot shows a Windows 10 desktop with a taskbar at the bottom. The taskbar contains icons for the Start menu, File Explorer, Google Chrome, VLC media player, Paint, Word, a folder named 'DEV', Zoom, a calculator, and a terminal window. The terminal window is titled 'TC' and contains the following C++ code and its output:

```
#include <iostream>
using namespace std;
int main()
{
    int n;
    cout<<"Enter array size 1-100 ";
    cin>>n;
    int arr[n];
    cout<<"Enter 3 elements ";
    for(int i=0; i<n; i++)
    {
        cin>>arr[i];
    }
    int x;
    cout<<"Enter element to delete ";
    cin>>x;
    bool found = false;
    for(int i=0; i<n; i++)
    {
        if(arr[i] == x)
        {
            found = true;
            break;
        }
    }
    if(found)
    {
        cout<<"Element found\n";
    }
    else
    {
        cout<<"Element not found\n";
    }
    return 0;
}
```

The output of the program is:

```
Enter array size 1-100 3
Enter 3 elements 1 2 3
Enter element to delete 9
9 not found_
```

In the bottom right corner of the desktop, there is a watermark that says "Activate Windows" and "Go to PC settings to activate Windows."

Left shifting of array elements

for($i=0; i < n; i++$)
{
if($a[i] == \text{ele}$)
{
 $n--$; $f=1$;
for($j=i; j < n; j++$) $a[j] = a[j+1]$; $i--$;
}
}

The image shows two windows of the Turbo C++ (TC) IDE. The top window is the source code editor for a file named 'E:2PM.C'. It contains a C program designed to find duplicate elements in an array. The code includes headers for `stdio.h` and `conio.h`, and defines a `main` function. Inside `main`, it declares an array `a` of size 100 and variables `n`, `i`, `k`, and `j`. It prompts the user to enter the array size (1-100) and the number of elements. It then reads the elements into the array. A nested loop structure is used to compare each element with the subsequent ones to find duplicates. If a duplicate is found, it prints the element and increments a counter `n--`. Finally, it prints all elements of the array. The bottom window is the output console, which shows the program's execution. It displays the prompts and the user's input: array size 9 and elements 1 2 3 1 2 3 4 6 1. The output shows the elements 1, 2, 3, 4, and 6, with a cursor under the last 6, indicating that the duplicate 1 and 2 were not printed. Both windows have a taskbar at the bottom with various application icons and a system clock showing 3:21 PM on 27-Sep-23.

```
TC
File Edit Run Compile Project Options Debug Break/watch
Line 13 Col 1 Insert Indent Tab Fill Unindent * E:2PM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a[100],n,i,k,j; clrscr();
printf("Enter array size 1-100 ");scanf("%d",&n);
printf("Enter %d elements ", n);
for(i=0;i<n;i++)scanf("%d",&a[i]);
for(i=0;i<n;i++)
{for(j=i+1;j<n;j++)
if(a[i]==a[j]){n--; for(k=j;k<n;k++)a[k]=a[k+1];j--;}}
printf("Elements ");for(i=0;i<n;i++)printf("%4d",a[i]);
getch();
}

Activate Windows
Go to PC settings to activate Windows.

TC
Enter array size 1-100 9
Enter 9 elements 1 2 3 1 2 3 4 6 1
Elements 1 2 3 4 6_

Activate Windows
Go to PC settings to activate Windows.
```

```

Enter array size 1-100 5
Enter 5 elements 1 1 1 1 1
Elements      1

```

Activate Windows
Go to PC settings to activate Windows.

3:21 PM
27-Sep-23

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

```
{
```

```
for( j=i+1;j<n;j++)
```

```
{
```

```
if(a[i]==a[j])
```

```
{
```

```
n--; for(k=j; k<n;k++) a[k]=a[k+1];
```

```
}
```

n	i	j
4	0	1 2
3	1	2
2		

a			
4	5	4	5
0	1	2	3
k	$k+1$		
2	3		
2			

Finding frequency of array elements:


```
TC
#include<stdio.h>
#include<conio.h>
void main()
{
int a[100],b[100]={0},n,i,c,j; clrscr();
printf("Enter array size 1-100 ");scanf("%d",&n);
printf("Enter %d elements ", n);
for(i=0;i<n;i++)scanf("%d",&a[i]);
for(i=0;i<n;i++)
{ if(b[i]!=-1)
{ for(c=1,j=i+1;j<n;j++)
{ if(a[i]==a[j]){c++; b[j]=-1;}
}
if(b[i]==0)b[i]=c;
}
}
for(i=0;i<n;i++)if(b[i]!=-1)printf("%d found %d times\n",a[i],b[i]);
getch();
}
```

Enter array size 1-100 9
Enter 9 elements 1 2 3 1 5 2 3 6 3
1 found 2 times
2 found 2 times
3 found 3 times
5 found 1 times
6 found 1 times

```

for(i=0;i<n;i++)
{ c=1; if(b[i]!=-1)
  {
    for( j=i+1;j<n;j++)
    {
      if(a[i]==a[j])
      { c++; b[j]=-1;}
      if(b[i]==0)b[i]=c;
    }
  }
}

```

$\begin{array}{c} i \\ \hline 0 \\ \hline 1 \\ \hline 2 \\ \hline 3 \end{array}$
 $\begin{array}{c} j \\ \hline 1 \ 2 \ 3 \\ \hline 2 \ 3 \ 4 \ 1 \ 2 \end{array}$
 $\begin{array}{c} c \\ \hline 1 \ 2 \end{array}$

a

4	5	4	5
0	1	2	3

b

0	0	0	0

X X

Merging of unsorted array elements:

Decimal to binary conversion

10 → 0000 0000 0000 1010