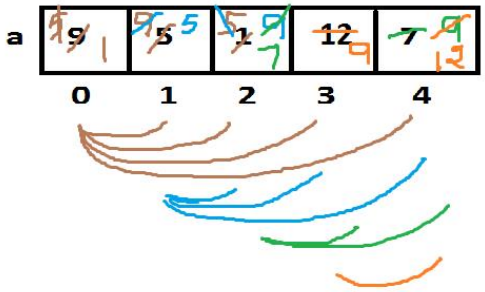
Sorting:

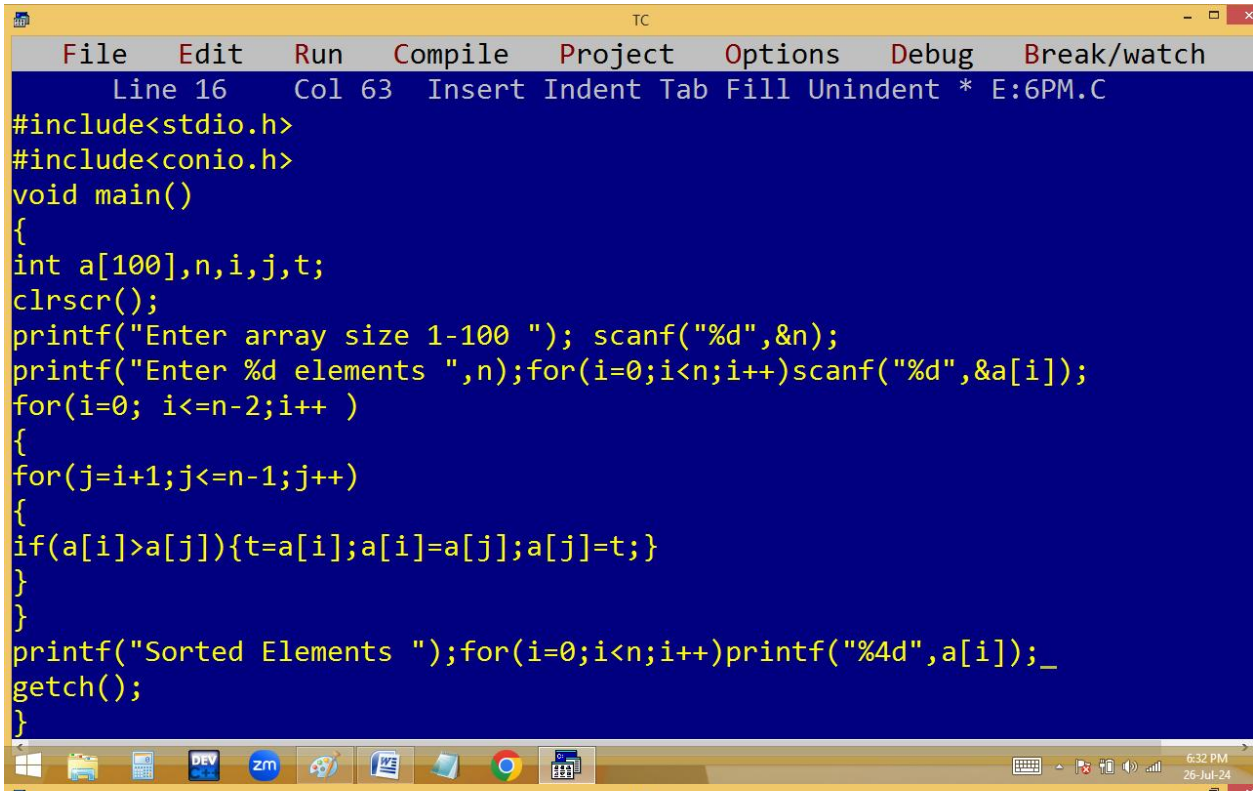
Arranging data in ascending or descending order.

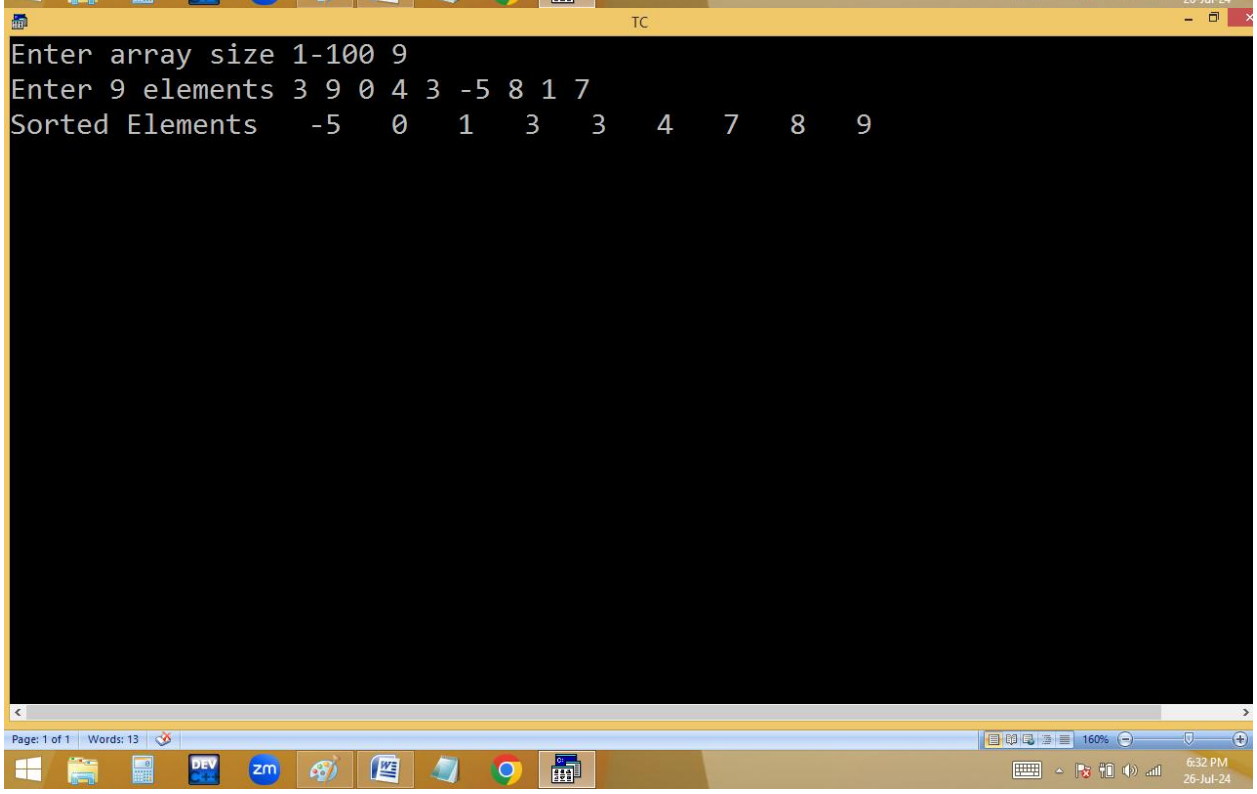
Selection sort in Ascending order:

9	5	1	12	7
5	9	1	12	7
1	9	5	12	7
1	5	9	12	7
1	5	9	12	7
1	5	7	12	9
1	5	7	9	12

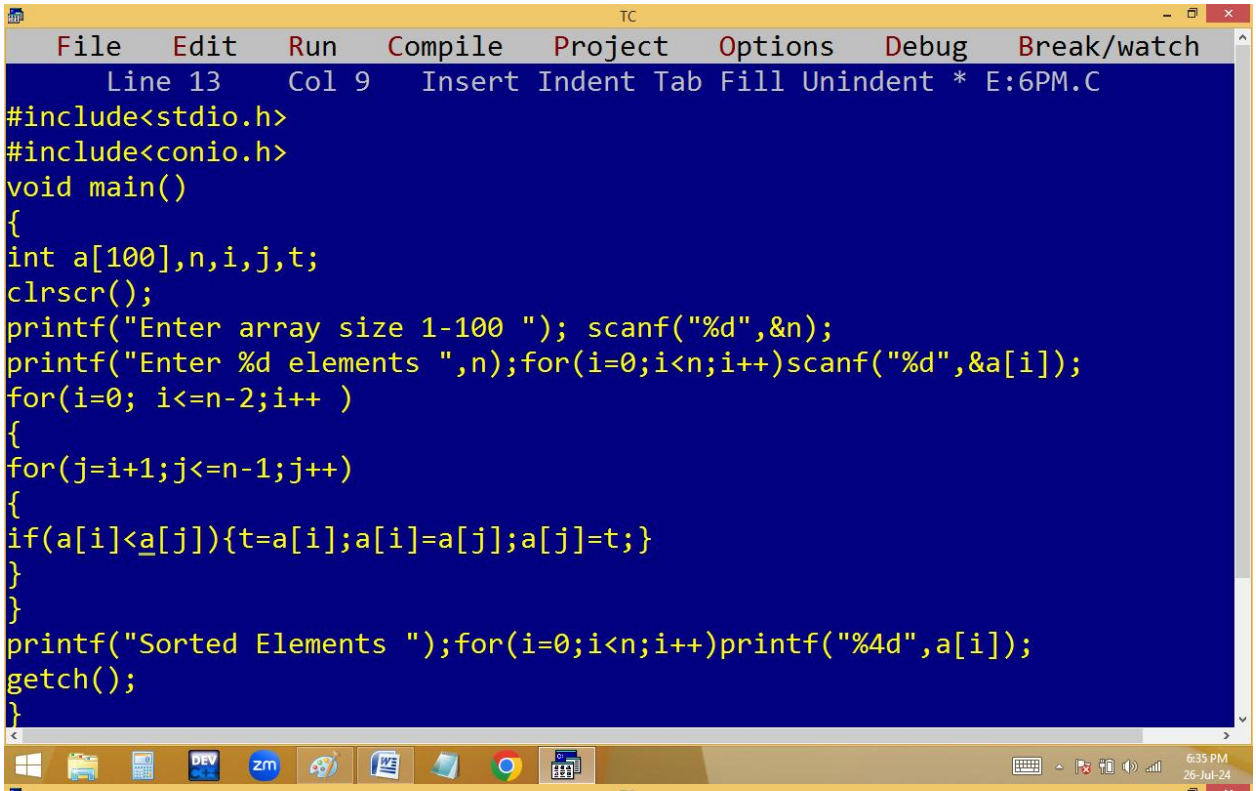


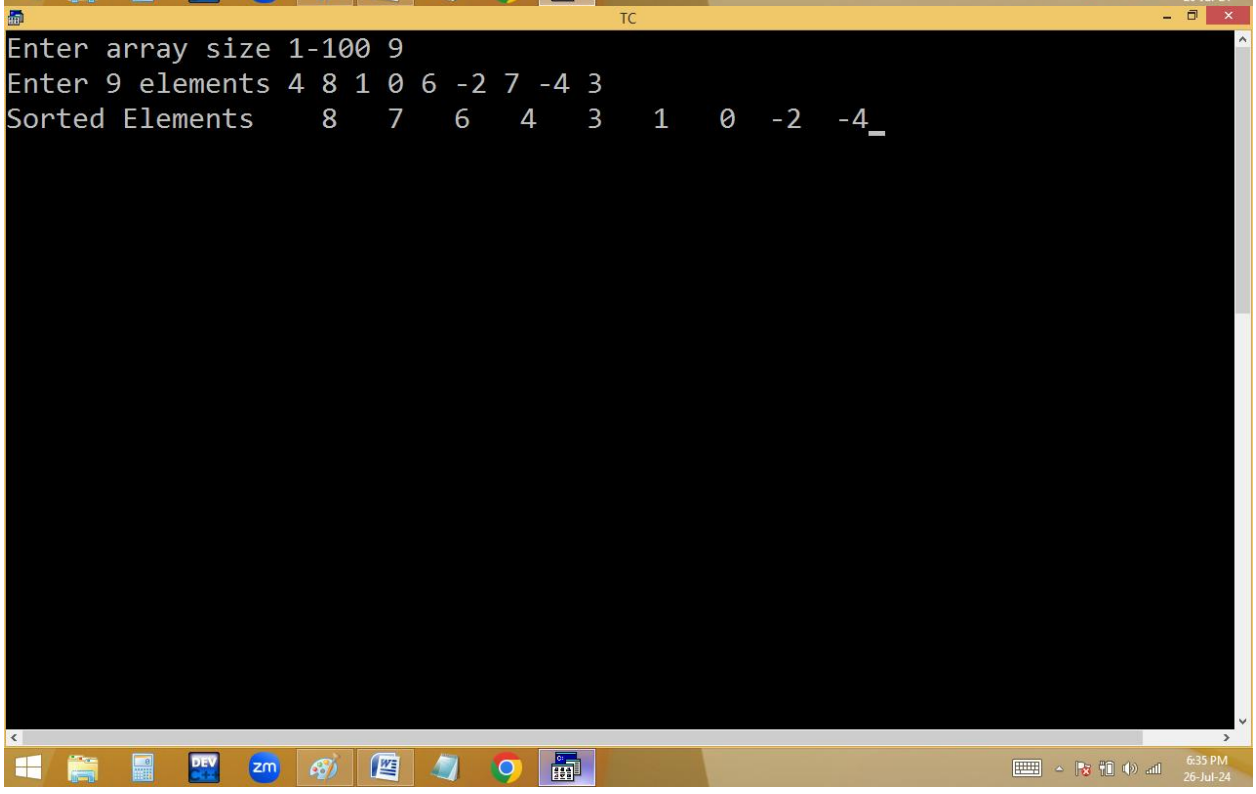
L	R
i	j
0	1,2,3,4
1	2,3,4
2	3,4
3	4



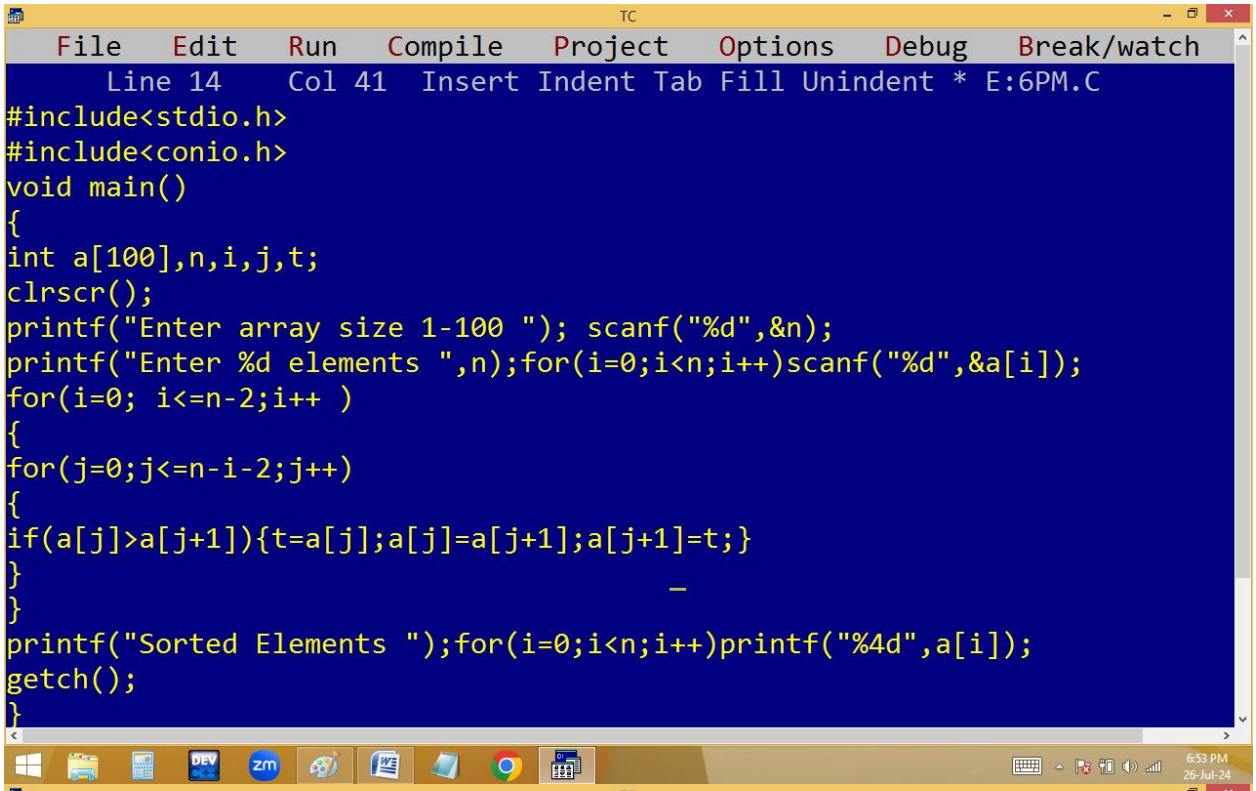


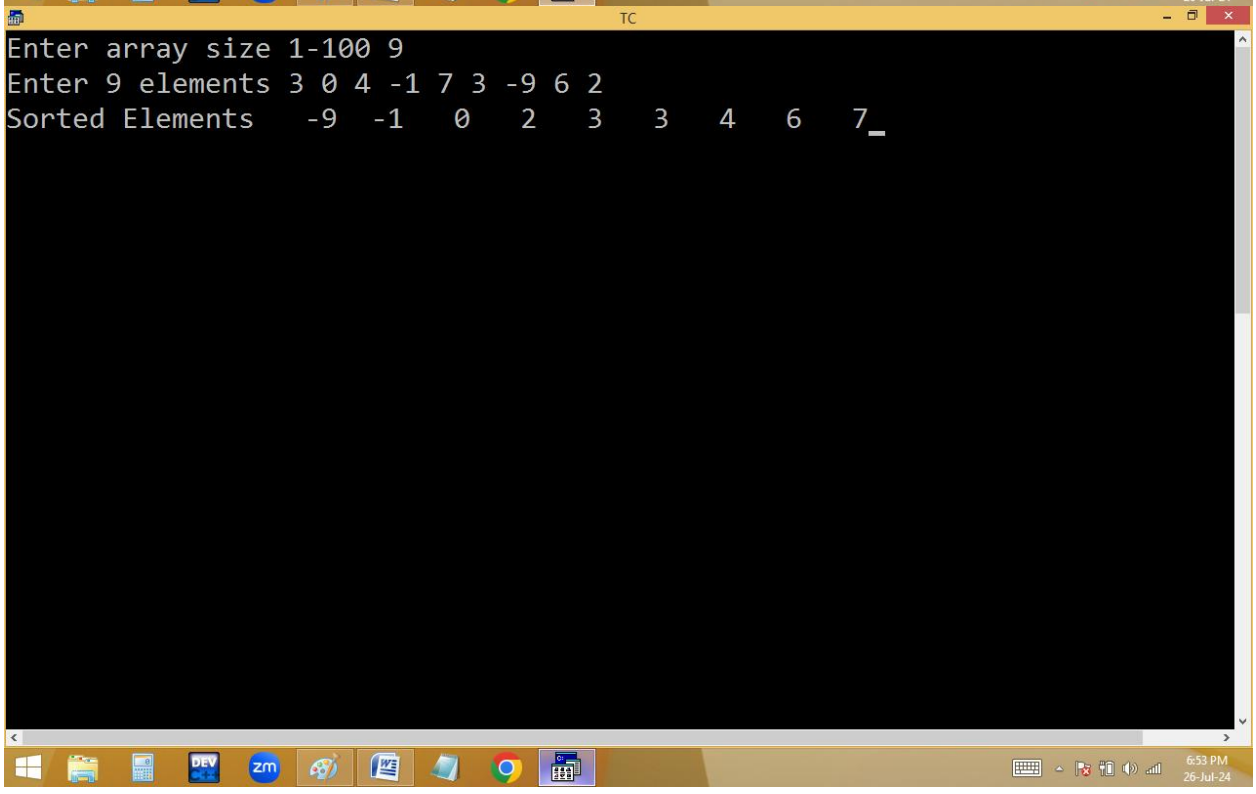
Descending order:


TC
File Edit Run Compile Project Options Debug Break/watch
Line 13 Col 9 Insert Indent Tab Fill Unindent * E:6PM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a[100],n,i,j,t;
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-2;i++)
{
for(j=i+1;j<=n-1;j++)
{
if(a[i]<a[j]){t=a[i];a[i]=a[j];a[j]=t;}
}
}
printf("Sorted Elements ");for(i=0;i<n;i++)printf("%4d",a[i]);
getch();
}


TC
Enter array size 1-100 9
Enter 9 elements 4 8 1 0 6 -2 7 -4 3
Sorted Elements 8 7 6 4 3 1 0 -2 -4

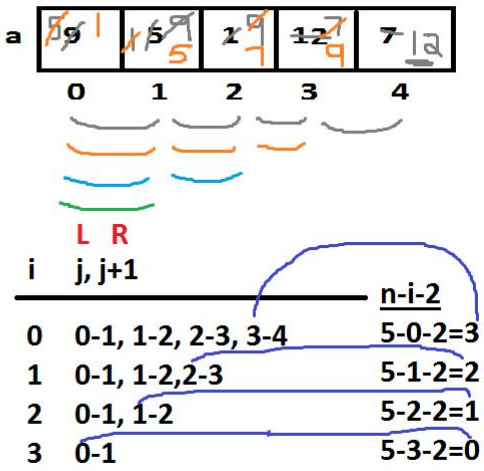
Bubble sort in Ascending order:


TC
File Edit Run Compile Project Options Debug Break/watch
Line 14 Col 41 Insert Indent Tab Fill Unindent * E:6PM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a[100],n,i,j,t;
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-2;i++)
{
for(j=0;j<=n-i-2;j++)
{
if(a[j]>a[j+1]){t=a[j];a[j]=a[j+1];a[j+1]=t;}
}
}
printf("Sorted Elements ");for(i=0;i<n;i++)printf("%4d",a[i]);
getch();
}

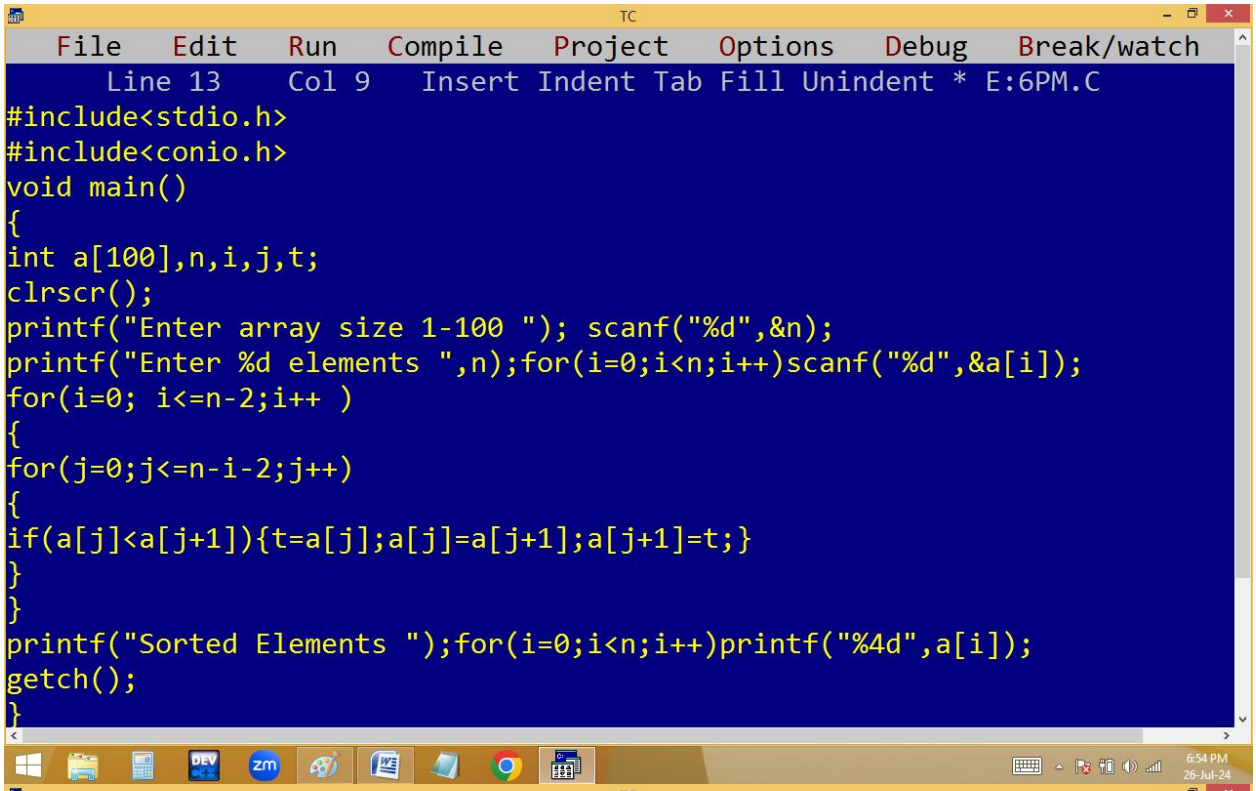

TC
Enter array size 1-100 9
Enter 9 elements 3 0 4 -1 7 3 -9 6 2
Sorted Elements -9 -1 0 2 3 3 4 6 7

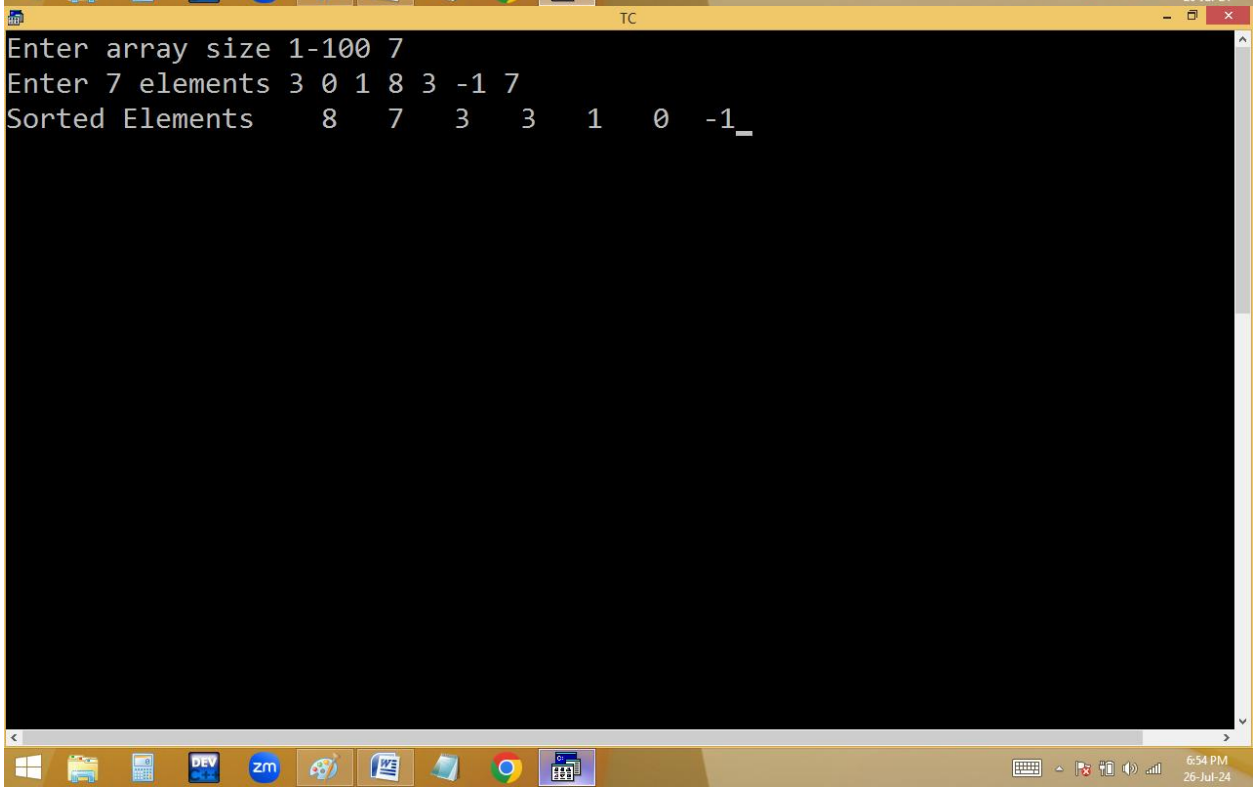
```
for( i=0; i<=n-2; i++ )
{
for( j=0; j<= n-i-2; j++)
{    L      R
if(a[j]>a[j+1])
{
t=a[j];a[j]=a[j+1];a[j+1]=t;
}
}
}
```

9	5	1	12	7
5	9	1	12	7
5	1	9	12	7
5	1	9	7	12
1	5	9	7	12
1	5	7	9	12

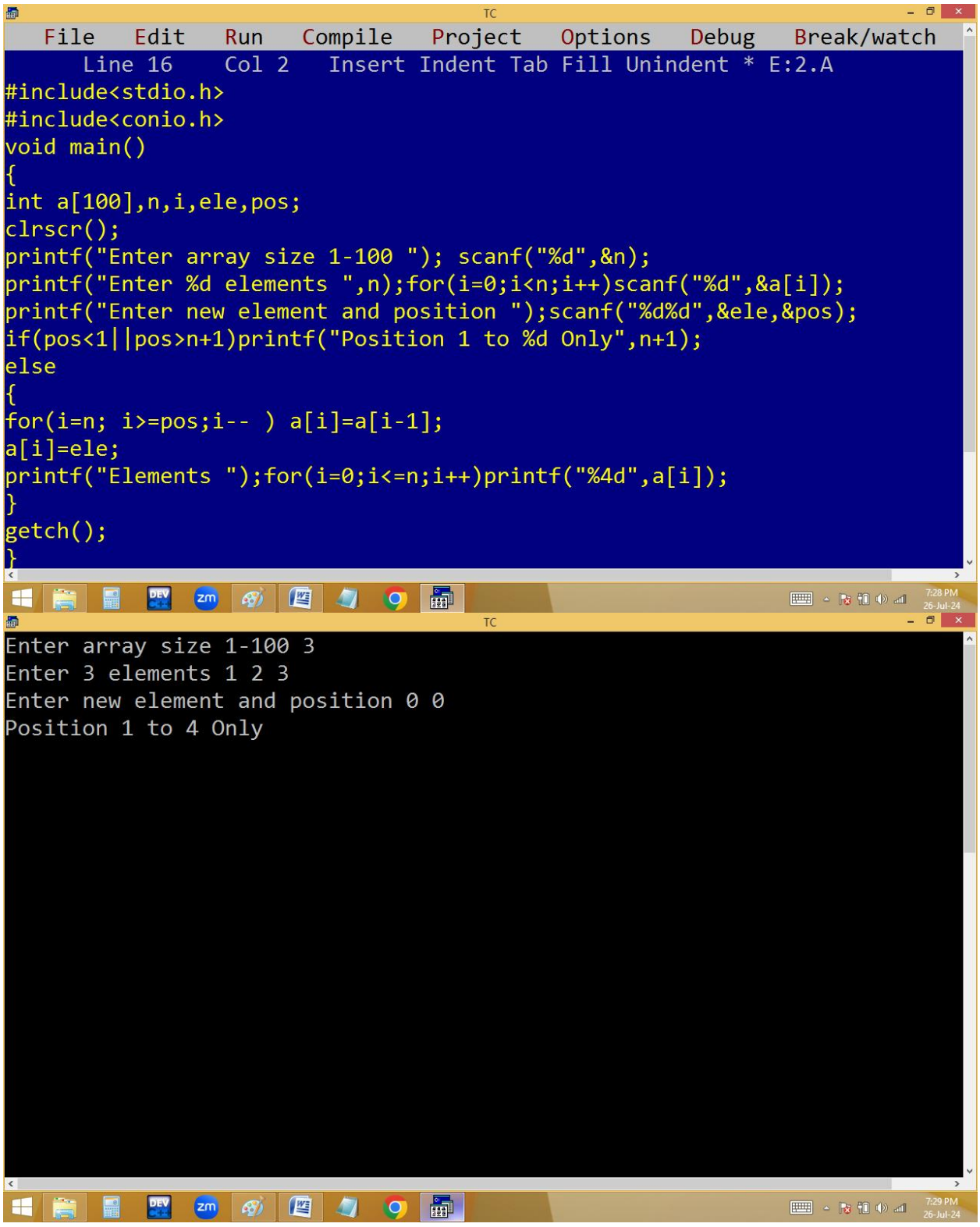


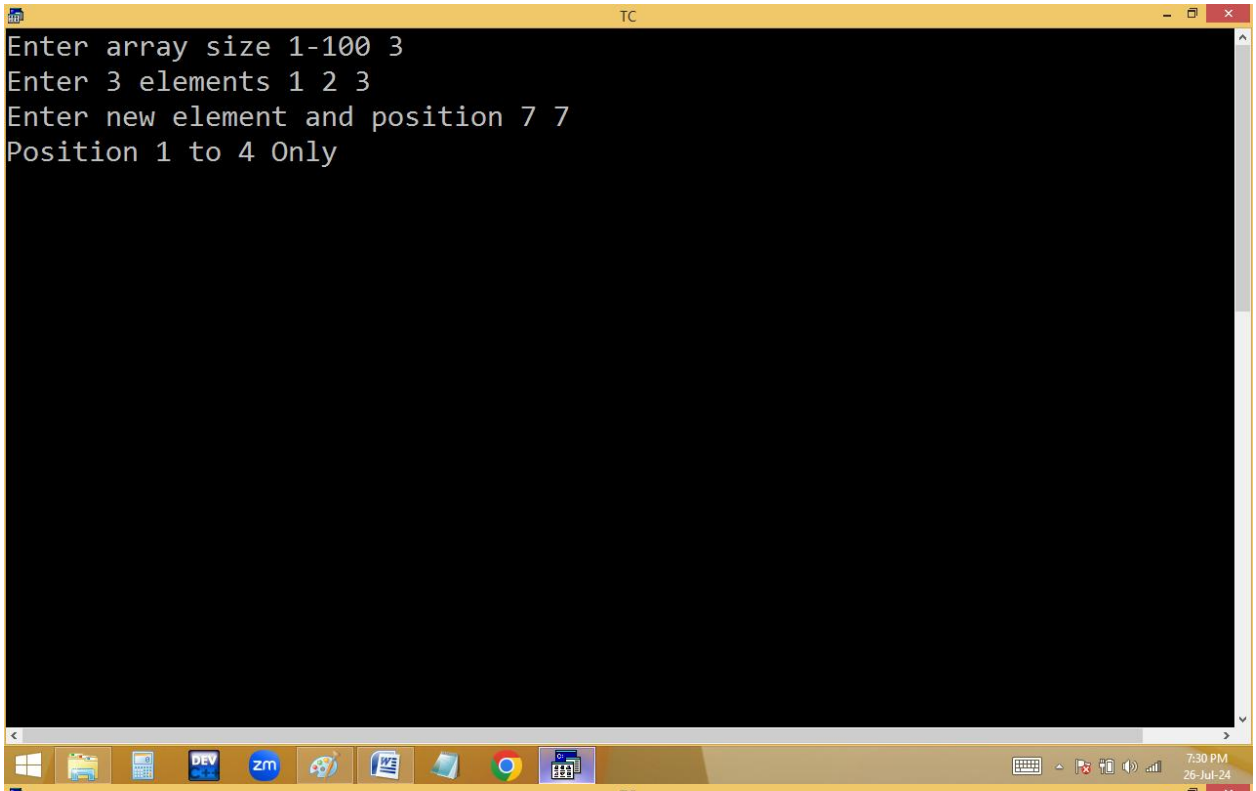
Descending order:

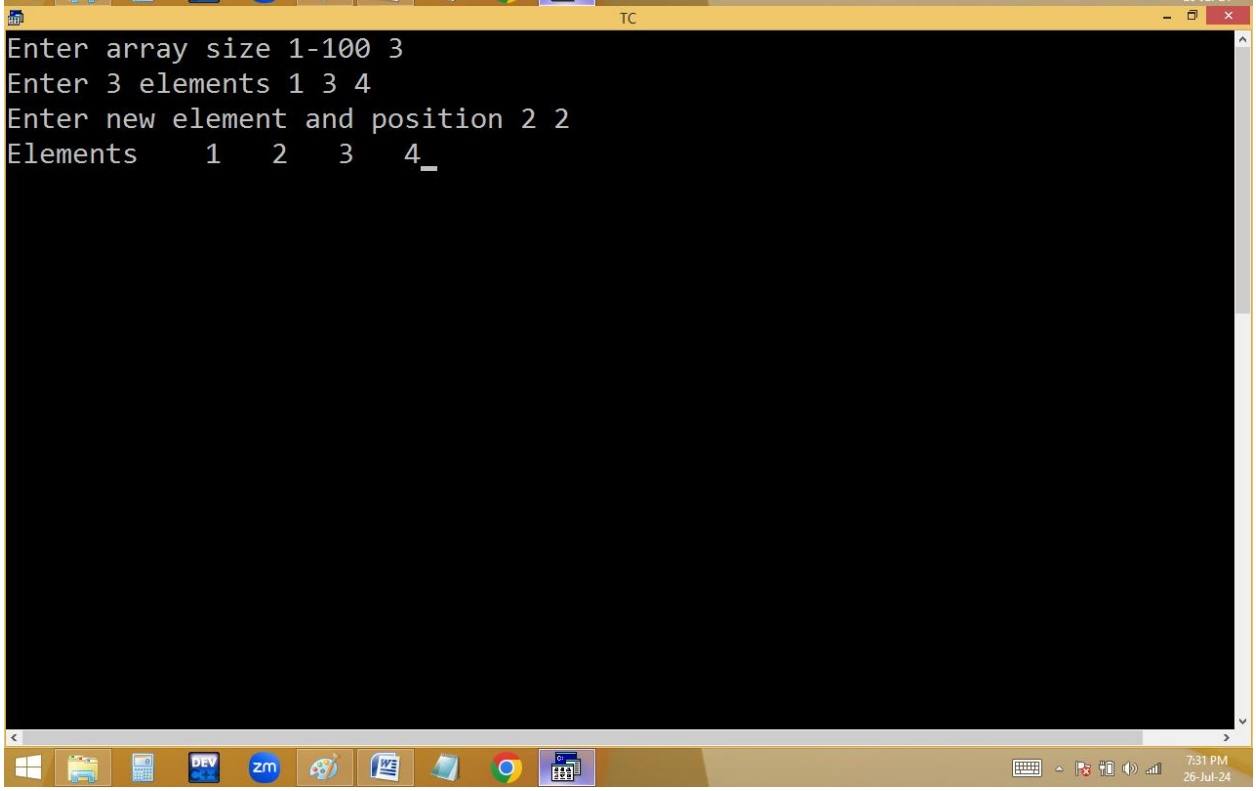

TC
File Edit Run Compile Project Options Debug Break/watch
Line 13 Col 9 Insert Indent Tab Fill Unindent * E:6PM.C
#include<stdio.h>
#include<conio.h>
void main()
{
int a[100],n,i,j,t;
clrscr();
printf("Enter array size 1-100 "); scanf("%d",&n);
printf("Enter %d elements ",n);for(i=0;i<n;i++)scanf("%d",&a[i]);
for(i=0; i<=n-2;i++)
{
for(j=0;j<=n-i-2;j++)
{
if(a[j]<a[j+1]){t=a[j];a[j]=a[j+1];a[j+1]=t;}
}
}
printf("Sorted Elements ");for(i=0;i<n;i++)printf("%4d",a[i]);
getch();
}

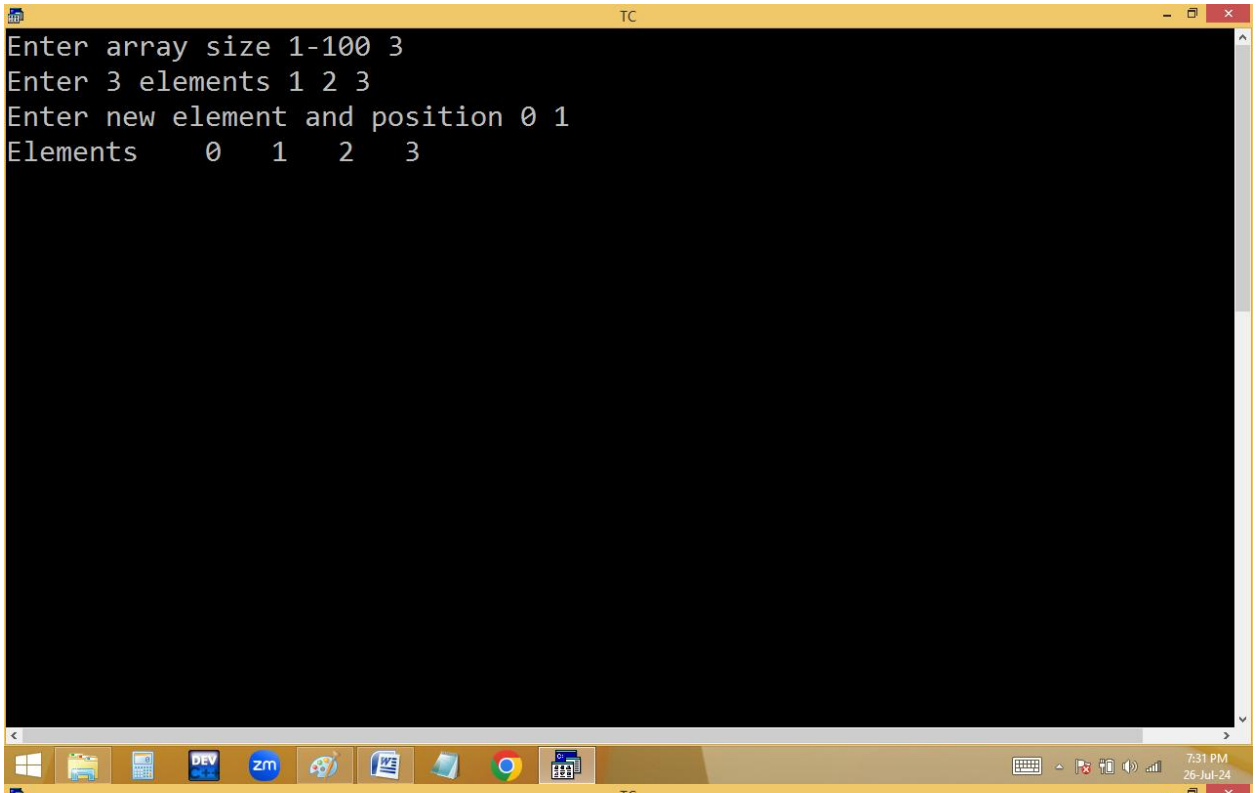

TC
Enter array size 1-100 7
Enter 7 elements 3 0 1 8 3 -1 7
Sorted Elements 8 7 3 3 1 0 -1

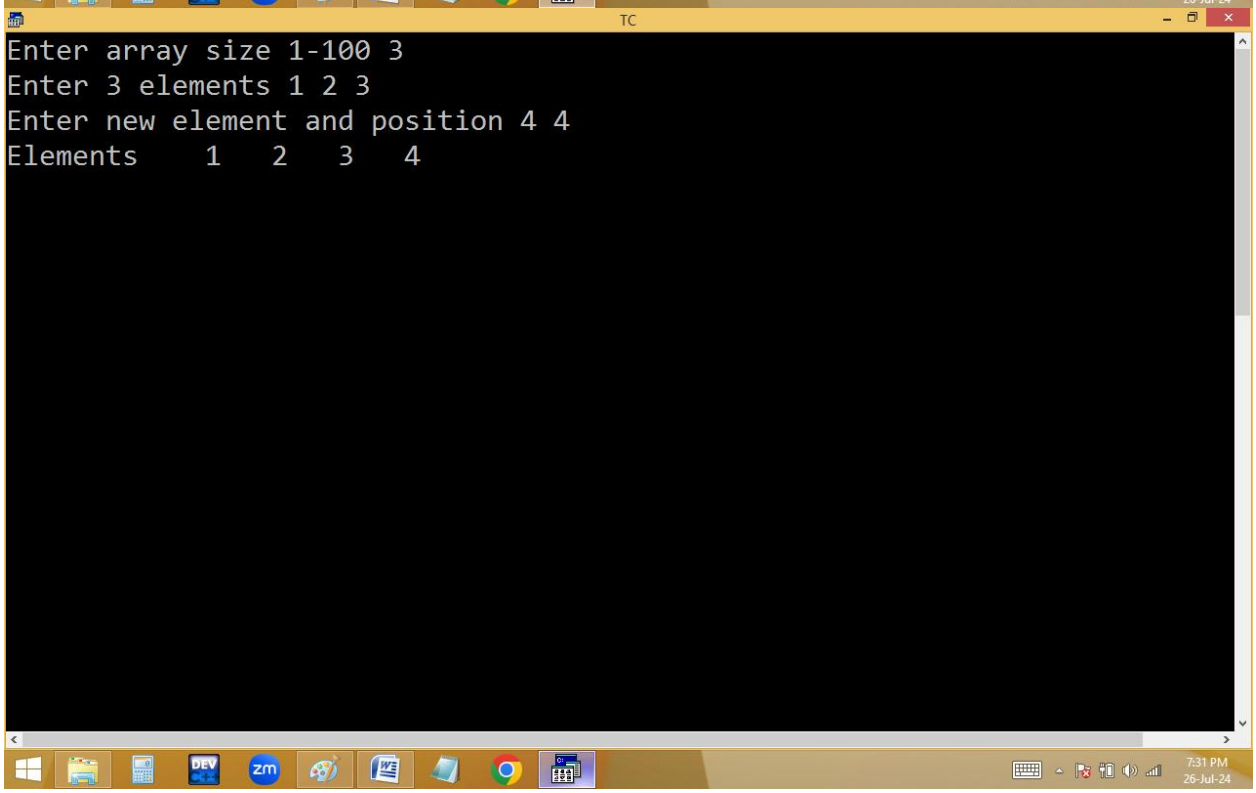
Inserting a new element into array at specified position [push] Right shifting of array elements:




TC
Enter array size 1-100 3
Enter 3 elements 1 2 3
Enter new element and position 7 7
Position 1 to 4 Only

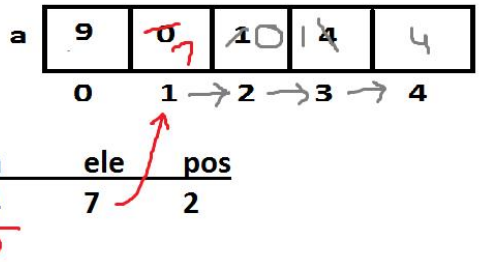

TC
Enter array size 1-100 3
Enter 3 elements 1 3 4
Enter new element and position 2 2
Elements 1 2 3 4


TC
Enter array size 1-100 3
Enter 3 elements 1 2 3
Enter new element and position 0 1
Elements 0 1 2 3
7:31 PM
26-Jul-24


TC
Enter array size 1-100 3
Enter 3 elements 1 2 3
Enter new element and position 4 4
Elements 1 2 3 4
7:31 PM
26-Jul-24

+

```
1>=2
2>=2        a[2]=a[1]
3>=2        a[3]=a[2]
i=4 4>=2    a[4]=a[3]
for( i=n; i>=pos; i-- ) a[i] = a[i-1];
a[i]=ele;
a[1]=7
```




```
3>=0    a[3]=a[2]
2>=0    a[2]=a[1]
1>=0    a[1]=a[0]
0>=0    a[0]=a[-1]
```

Home work:

Deleting array element permanently from array: