1. C program to insert a number at a given location in an array.

```c
#include<stdio.h>
#include<conio.h>
void main()
{
int a[10],pos,i,n,val;
clrscr();
printf("\nEnter number of elements in array: ");
scanf("%d",&n);
printf("Enter %d elements:\n",n);
for(i=0;i<n;i++)
scanf("%d",&a[i]);
printf("Enter the location at which to insert an element: ");
scanf("%d",&pos);
printf("Enter the value to insert: ");
scanf("%d",&val);
for(i=n-1;i>=pos;i--)
{
a[i+1]=a[i];
}
a[pos]=val;
printf("Resultant array:\n");
for(i=0;i<=n;i++)
printf("%d \t",a[i]);
getch();
}
```

OUTPUTS

```
Enter number of elements in array: 3
Enter 3 elements:
5
6
43
Enter the location at which to insert an element: 2
Enter the value to insert: 4
Resultant array:
5       6       4       43
```

```
Enter number of elements in array: 2
Enter 2 elements:
32
4
Enter the location at which to insert an element: 0
Enter the value to insert: 1
Resultant array:
1       32      4
```

```
Enter number of elements in array: 4
Enter 4 elements:
1
3
4
5
Enter the location at which to insert an element: 1
Enter the value to insert: 2
Resultant array:
1       2       3       4       5
```

2.C program to insert a number in an array that is already sorted in ascending order.

```c
#include<stdio.h>
#include<conio.h>
void main()
{
int a[10],i,j,n,num;
clrscr();
printf("\nEnter number of elements in array: ");
scanf("%d",&n);
printf("Enter %d elements in ascending order:\n",n);
for(i=0;i<n;i++)
scanf("%d",&a[i]);
printf("Enter the number you wish to insert: ");
scanf("%d",&num);
for(i=0;i<n;i++)
{
if(a[i]>num)
{
for(j=n-1;j>=i;j--)
a[j+1]=a[j];
a[i]=num;
break;
}
```

```
}

printf("Resultant array:\n");

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

printf("%d \t",a[i]);

getch();

}
```

OUTPUTS

```
Enter number of elements in array: 3
Enter 3 elements in ascending order:
1
3
4
Enter the number you wish to insert: 2
Resultant array:
1       2       3       4
```

```
Enter number of elements in array: 2
Enter 2 elements in ascending order:
4
8
Enter the number you wish to insert: 6
Resultant array:
4       6       8
```

```
Enter number of elements in array: 4
Enter 4 elements in ascending order:
3
6
8
9
Enter the number you wish to insert: 5
Resultant array:
3       5       6       8       9
```

3.C program to delete a number at a given location in an array.

#include<stdio.h>

#include<conio.h>

void main()

{

int a[10],pos,i,n;

clrscr();

printf("\nEnter number of elements in array: ");

scanf("%d",&n);

printf("Enter %d elements:\n",n);

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

scanf("%d",&a[i]);

printf("Enter the location where you wish to delete element: ");

scanf("%d",&pos);

if(pos>=n+1)

printf("Deletion is not posible\n");

else

```
{
for(i=pos;i<n-1;i++)
a[i]=a[i+1];
printf("Resultant array:\n");
for(i=0;i<n-1;i++)
printf("%d \t",a[i]);
}
getch();
}
```

OUTPUTS

```
Enter number of elements in array: 5
Enter 5 elements:
8
3
5
7
2
Enter the location where you wish to delete element: 3
Resultant array:
8       3       5       2
```

```
Enter number of elements in array: 3
Enter 3 elements:
5
7
3
Enter the location where you wish to delete element: 0
Resultant array:
7       3       _
```

```
Enter number of elements in array: 4
Enter 4 elements:
3
8
7
2
Enter the location where you wish to delete element: 1
Resultant array:
3       7       2
```