Practical – 3

Aim: Write a C program to perform the following micro-operations.

a) Circular shift left

Code:

```
#include<stdio.h>
int main()
{
   int i,n,a[100],temp,c;
   do
   {
      printf("Enter The Number Of Elements : \n");
      scanf("%d",&n);
      printf("Enter The Elements\n");
      for(i=0;i<n;i++)
      {
         scanf("%d",&a[i]);
      }
      printf("Original Array : \n");
      for(i=0;i<n;i++)
      {
         printf("%d ",a[i]);
      }
```

```
        temp=a[0];
        for(i=0;i<n-1;i++)
        {
           a[i]=a[i+1];
        }
        a[n-1]=temp;
        printf("\nNew Array After Rotating By One Position In The Left Direction : \n");
        for(i=0;i<n;i++)
        {
           printf("%d ",a[i]);
        }
        printf("\nEnter 1 To Do Operation Again : ");
        scanf("%d",&c);
    }while(c==1);
    return 0;
}
```

Output:

```
Enter The Number Of Elements :
5
Enter The Elements
1
2
3
4
5
Original Array :
1 2 3 4 5
New Array After Rotating By One Position In The Left Direction :
2 3 4 5 1
Enter 1 To Do Operation Again : 1
Enter The Number Of Elements :
5
Enter The Elements
1
0
1
1
0
Original Array :
1 0 1 1 0
New Array After Rotating By One Position In The Left Direction :
0 1 1 0 1
Enter 1 To Do Operation Again : 0

Process returned 0 (0x0)   execution time : 18.941 s
Press any key to continue.
```

b) Circular shift right

Code:

```
#include<stdio.h>

int main()

{

   int i,n,a[100],temp,c;

   do

   {

      printf("Enter The Number Of Elements :\n");

      scanf("%d",&n);

      printf("Enter The Elements\n");

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

      {

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

      }

      printf("Original Array : \n");

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

      {

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

      }

      temp=a[n-1];

      for(i=n-1;i>0;i--)
```

```
        {
            a[i]=a[i-1];
        }
        a[0]=temp;
        printf("\nNew Array After Rotating By One Position In The Right Direction : \n");
        for(i=0;i<n;i++)
        {
            printf("%d ",a[i]);
        }
        printf("\nEnter 1 To Do Operation Again : ");
        scanf("%d",&c);
    }while(c==1);
    return 0;
}
```

Output:

```
Enter The Number Of Elements :
5
Enter The Elements
1
2
3
4
5
Original Array :
1 2 3 4 5
New Array After Rotating By One Position In The Right Direction :
5 1 2 3 4
Enter 1 To Do Operation Again : 1
Enter The Number Of Elements :
5
Enter The Elements
1
0
1
1
0
Original Array :
1 0 1 1 0
New Array After Rotating By One Position In The Right Direction :
0 1 0 1 1
Enter 1 To Do Operation Again : 0

Process returned 0 (0x0)   execution time : 23.353 s
Press any key to continue.
```