```c
/*
  TITLE:ARRAY IMPLEMENTATION OF CIRCULAR QUEUE
  NAME:Tauseef Mushtaque Ali Shaikh
  CLASS: S.Y.[CO]
  ROLLNO: 18CO63
  SUBJECT: DS
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  DISCRIPTION: In this Program a Circular queue is created to store, search the location of data in queue, delete and display the data through the instructions given by the user.
*/
#include<stdio.h>
#include<stdlib.h>
#define MAX 7

struct Queue
{
    int data[MAX];
    int Front,Rear;
};

void initialize (struct Queue *q)
{
    q->Rear=q->Front=-1;
}

int isEmpty(struct Queue *q)
{
    return (q->Rear==-1);
}

int isFull(struct Queue *q)
{
    return (q->Front==((q->Rear+1)%MAX))?1:0;
}
int Insert(struct Queue *q,int d)
{
    if(isFull(q))
    return 0;
    else
    {
    q->Rear=(q->Rear+1)%MAX;
    q->data[q->Rear]=d;
    if(q->Front==-1)
    q->Front=0;
    return 1;
}
}
int Delete(struct Queue *q)
{
    if(q->Rear==-1)
    printf("\n\t Queue is Empty!");
    else
    {
    int m;
    m=q->data[q->Front];
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    if(q->Front==q->Rear)
    q->Front=q->Rear=-1;
    else
    q->Front=(q->Front+1)%MAX;
    printf("\n\t Element Deleted From Queue!");
}
}
int Search(struct Queue *q,int k)
{
    int i=0;
    for(i=q->Front;i!=q->Rear;i=(i+1)%MAX)
    if(q->data[i]==k)
    return i;
    if(q->data[i]==k)
    return i;
    return -1;
}
void Display(struct Queue *q)
{
    int i;
    if(q->Rear==-1)
    printf("\n\t Queue is Empty!");
    else
    {
        printf("\n Queue contents are:\n");
        for(i=q->Front;i!=q->Rear;i=(i+1)%MAX)
        {
            printf("%d\n",q->data[i]);
        }
        printf("%d\n",q->data[i]);
    }
}
int main()
{
    int ch,d;
    struct Queue q;
    initialize(&q);
    while(1)
    {
        printf("\n\t\t\tMENU\n1.INSERT\n2.DLELETE\n3.SEARCH\n4.DISPLAY\n0.EXIT\n");
    printf("ENTER YOUR CHOICE: ");
        scanf("%d",&ch);
        switch(ch)
        {
            case 1:
            printf("ENTER DATA TO BE INSERTED: ");
            scanf("%d",&d);
            Insert(&q,d);
            printf("\n DATA INSERTION SUCCESFULLY!");
            break;

            case 2:
            Delete(&q);
            break;

            case 3:
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111                 printf("\n ENTER THE ELEMENT FOR SEARCH: ");
112                 scanf("%d",&d);
113                 d=Search(&q,d);
114                 if(d==-1)
115                 printf("\nTHE ELEMENT IS NOT FOUND!\n");
116                 else
117                 printf("THE ELEMENT IS FOUND IS AT %d",d);
118                 break;
119
120                 case 4:
121                 Display(&q);
122                 break;
123
124                 case 0:
125                 exit(0);
126                 break;
127
128
129                 default:
130                 printf("ENTER A VALID CHOICE");
131             }
132         }
133     }
134
```