```c
#include <stdio.h>

# define max 6
int queue[max];
int front=-1;
int rear=-1;
void enqueue(int element)
{
   if(front==-1 && rear==-1)
   {
      front=0;
      rear=0;
      queue[rear]=element;
   }
   else if(((rear+1)%max==front)|| (front == rear + 1))
   {
      printf("Queue is overflow..");
   }
   else
   {
      rear=(rear+1)%max;
      queue[rear]=element;
   }
}


int dequeue()
{
   if((front==-1) && (rear==-1))
   {
      printf("\nQueue is underflow..");
```

```
    }
 else if(front==rear)
{
  printf("\nThe dequeued element is %d", queue[front]);
  front=-1;
  rear=-1;
}
else
{
   printf("\nThe dequeued element is %d", queue[front]);
  front=(front+1)%max;
}
}
void display()
{
   int i=front;
   if(front==-1 && rear==-1)
   {
      printf("\n Queue is empty..");
   }
   else
   {
      printf("\nElements in a Queue are :");
      while(i<=rear)
      {
         printf("%d,", queue[i]);
         i=(i+1)%max;
      }
   }
}
void search()
```

```
{
   int item,i,c=0;
 printf("Enter the element which is to be searched");
scanf("%d", &item);
for(i=front;i<=rear;i++)
{

if(item==queue[i])
{
printf("item found at location %d ",i+1);
c++;
}
}
if(c==0)
printf("item not found");
}
int main()
{
   int choice=1,x;

   while(choice<4 && choice!=0)
   {
   printf("\n Press 1: Insert an element");
   printf("\nPress 2: Delete an element");
   printf("\nPress 3: Display the element");
   printf("\nPress 4: search the element");
   printf("\nEnter your choice");
   scanf("%d", &choice);

   switch(choice)
   {
```

```
        case 1:

        printf("Enter the element which is to be inserted");
        scanf("%d", &x);
        enqueue(x);
        break;
        case 2:
        dequeue();
        break;
        case 3:
        display();
        break;
        case 4:
        search();
        break;

    }}
    return 0;
}
```

Output

```
 Press 1: Insert an element
Press 2: Delete an element
Press 3: Display the element
Press 4: search the element
Enter your choice1
Enter the element which is to be inserted1

 Press 1: Insert an element
Press 2: Delete an element
Press 3: Display the element
Press 4: search the element
Enter your choice1
Enter the element which is to be inserted2

 Press 1: Insert an element
Press 2: Delete an element
Press 3: Display the element
Press 4: search the element
Enter your choice1
Enter the element which is to be inserted3

 Press 1: Insert an element
Press 2: Delete an element
Press 3: Display the element
Press 4: search the element
Enter your choice1
Enter the element which is to be inserted4

 Press 1: Insert an element
Press 2: Delete an element
Press 3: Display the element
Press 4: search the element
Enter your choice1
Enter the element which is to be inserted5
```

```
 Press 1: Insert an element
Press 2: Delete an element
Press 3: Display the element
Press 4: search the element
Enter your choice3

Elements in a Queue are :1,2,3,4,5,
 Press 1: Insert an element
Press 2: Delete an element
Press 3: Display the element
Press 4: search the element
Enter your choice2

The dequeued element is 1
 Press 1: Insert an element
Press 2: Delete an element
Press 3: Display the element
Press 4: search the element
Enter your choice3

Elements in a Queue are :2,3,4,5,
```