

```
#include <stdio.h>
```

```
# define max 6
```

```
int queue[max];
```

```
int front=-1;
```

```
int rear=-1;
```

```
// function to insert an element in a circular queue
```

```
void enqueue(int element)
```

```
{
```

```
    if(front== -1 && rear== -1) // condition to check queue is empty
```

```
    {
```

```
        front=0;
```

```
        rear=0;
```

```
        queue[rear]=element;
```

```
    }
```

```
    else if((rear+1)%max==front) // condition to check queue is full
```

```
    {
```

```
        printf("Queue is overflow..");
```

```
    }
```

```
    else
```

```
    {
```

```
        rear=(rear+1)%max; // rear is incremented
```

```
        queue[rear]=element; // assigning a value to the queue at the rear position.
```

```
    }
```

```
}
```

```
// function to delete the element from the queue
```

```
int dequeue()
```

```
{
```

```
    if((front== -1) && (rear== -1)) // condition to check queue is empty
```

```
    {
```

```
        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;
}
}
// function to display the elements of a queue
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;
        }
    }
}
int main()
{
    int choice=1,x; // variables declaration

    while(choice<4 && choice!=0) // while loop
    {
        printf("\nPress 1: Insert an element");
        printf("\nPress 2: Delete an element");
        printf("\nPress 3: Display 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();
```

```
}}
```

```
return 0;
```

```
}
```

```
Press 1: Insert an element
Press 2: Delete an element
Press 3: Display the element
Enter your choice 1
Enter the element which is to be inserted34

Press 1: Insert an element
Press 2: Delete an element
Press 3: Display the element
Enter your choice 1
Enter the element which is to be inserted21

Press 1: Insert an element
Press 2: Delete an element
Press 3: Display the element
Enter your choice 3

Elements in a Queue are :34,21,
Press 1: Insert an element
Press 2: Delete an element
Press 3: Display the element
Enter your choice █
```