```
#include <iostream>
#define MAX 5
using namespace std;

class cqueuepizza
{
        int q[MAX],rear,front;
public:
        cqueuepizza();
        void insert(int);
        int delete1();
        void display();
};

cqueuepizza :: cqueuepizza()
{
        front=rear=-1;
}
void cqueuepizza::insert (int value)
{
        if (((rear == MAX-1) && (front == -1))|| (rear -front)==-1)
                /*
                 * Reference : Fundamentals of Data Structures in C
                 * by Horowitz, Sahani, Freed. Page 116
                 * To distinguish queue full and queue empty ( as both have  FRONT =
REAR),
                 * Queue full allows MAX - 1 elements , rather than MAX
                 */
                cout<<"\n Queue is Full";
        else
        {
                if (rear == MAX-1)   //creating circular link
                        rear = -1;
                rear ++;
                q[rear] = value;
                cout<<"Order added at "<<rear<<endl;
        }
}

int cqueuepizza::delete1 ( )
{
        int value;
        if (rear == front)
        {
                cout<<endl<<"Queue is Empty";
                        return -999;
        }
        else
        {
                if ((front == MAX-1) && rear < front)       //creating circular link
```

```
                front = -1;
            front ++;
            value = q[front];
            cout<<"Order removed from "<<front<<endl;
            return value;
        }
}

void cqueuepizza :: display()
{
        int i;

        cout<<endl;
            if(front <= rear)
            {
                i = front+1;
                while(i <= rear)
                        cout<<q[i++]<<"  ";
            }
            else
            {
                i = front+1;
                while(i <= MAX - 1)
                        cout<<q[i++]<<"  ";
                i = 0;
                while(i <= rear)
                        cout<<q[i++]<<"  ";
            }



}
int main()
{
        int choice,x,y;
        char ans;
        cqueuepizza q1;
        do
        {

            cout<<"\n*****MENU*****";
            cout<<"\n1. Place an order id ";
            cout<<"\n2. Remove an order id ";
            cout<<"\n3. Display the queue ";
            cout<<"\nEnter your choice: ";
            cin>>choice;
            switch(choice)
            {
            case 1: cout<<"\n Enter the order id  :  ";
                        cin>>y;
                        q1.insert(y);
                        q1.display();
```

```
                        break;
                case 2:  x=q1.delete1();
                        if(x!=-999)
                                cout<<"\nThe removed order is: "<<x;
                        q1.display();
                        break;
                case 3:  q1.display();
                        break;
                default: cout<<"\nWrong choice!!";
                        break;
                }
                cout<<"\nDo you want to continue(y/n)??";
                cin>>ans;
        }while(ans=='y');

        return 0;

}
```