Assignment- E13

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Problem Statement: Pizza parlor accepting maximum M orders. Orders are served on a first come first served basis. Order once placed cannot be cancelled. Write C++ program to simulate the system using a circular queue using arrays.

Program :-

```
#include<iostream>
#include<windows.h>
using namespace std;
const int MAX=5;

class PizzaParlour
{
	int front,rear;
	int orders[MAX];
	public:
		PizzaParlour()
		{
			front=rear=-1;
		}
		bool addOrder(int data);
		void serveOrder();
		void display();
};
bool PizzaParlour::addOrder(int id){
	if(rear==-1)
	{
		front=rear=0;
		orders[rear]=id;
		return true;
	 }
	 else
	 {
		int pos=(rear+1)%MAX;
		if(pos==front)
		{
			cout<<"\nCafe is Full.Please wait.\n";
			return false;
```

```
                }
                else
                {
                        rear=pos;
                        orders[rear]=id;
                        return true;
                }
        }
}

void PizzaParlour::serveOrder()
{
        if(front==-1)
        {
                cout<<"\n No Orders in Cafe.[Cafe is Empty)\n";
                return;
        }
        else
        {
                cout<<"\n Order No. "<<orders[front]<<" is processed.\n";
                if(front==rear) //only one order
                {
                        front=rear=-1;
                }
                else
                {
                        front=(front+1)%MAX;
                }
        }
}

void PizzaParlour::display()
{
        int i=0;
        if(front==-1)
        {
                cout<<"\nCafe is Empty.No orders.\n";
                return;
        }
        else
        {
                cout<<"Order Id's: \n";
                for(i=front;i!=rear;i=((i+1)%MAX))
                {
```

```
                cout<<orders[i]<<"  ";
            }
            cout<<orders[rear];
        }
}
void intro()
{       char name[50]={"\n  Cafe \n"};
            for(int i=0;name[i]!='\0';i++)
        {
            Sleep(50);
            cout<<name[i];

        }
}
int main()
{
        int ch,id=0;

        PizzaParlour q;

        do
        {
            cout<<"\n-----------------";
        intro();
            cout<<"-----------------";
            cout<<"\n****Menu*****\n";
            cout<<"1. Accept order\n";
            cout<<"2. Serve order\n";
            cout<<"3. Display orders\n";
            cout<<"4. Exit";

            cout<<"\nChoice: ";
            cin>>ch;

            switch(ch)
            {
            case 1:
                        id++;
                        if(q.addOrder(id))
                        {
                            cout<<"Thank you for order.Order id is : "<<id;
                        }
                        else
                        {
```

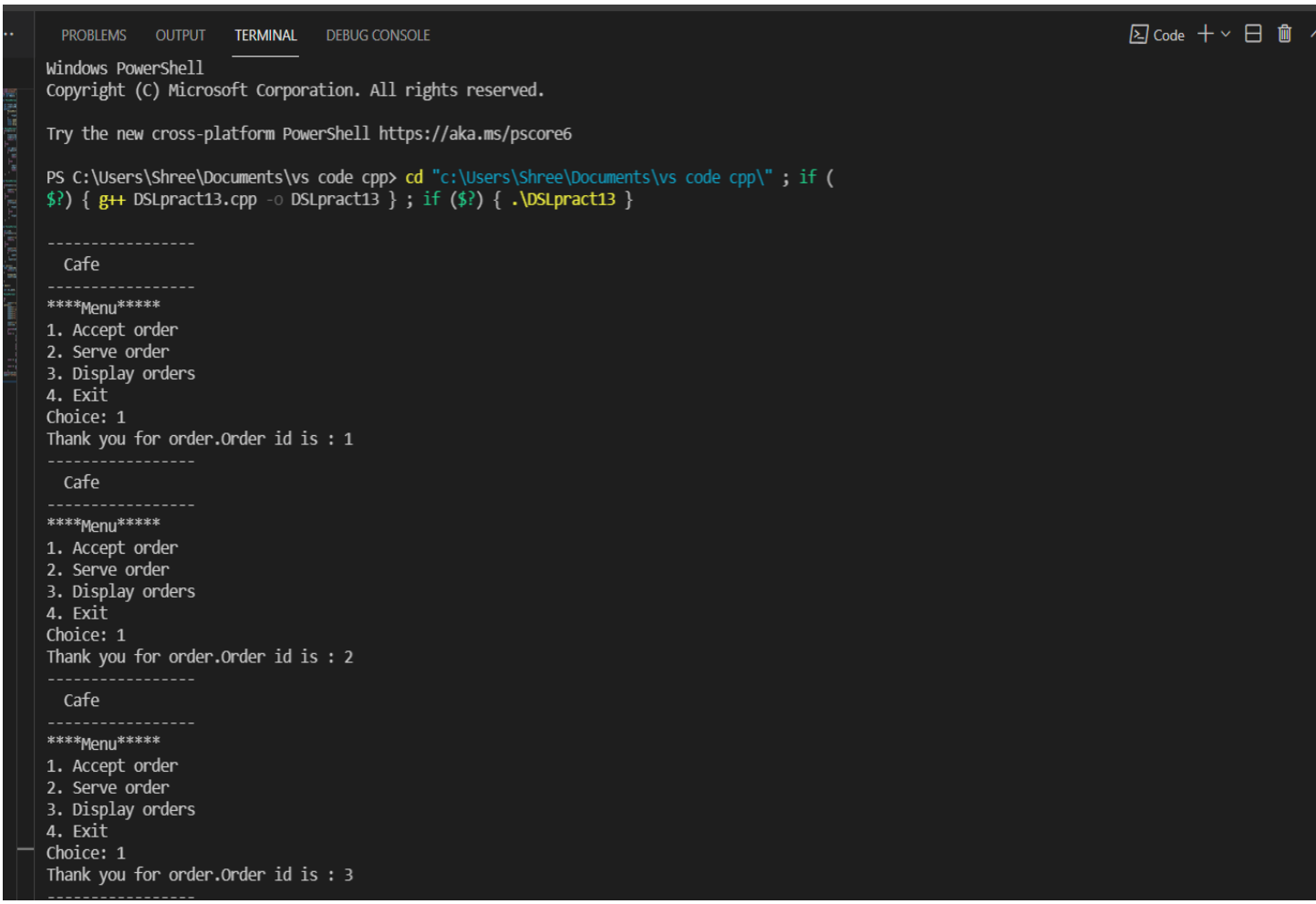
```
                    id--;
                }
                break;

        case 2: q.serveOrder();
                break;

        case 3: q.display();
                break;
        }
    }while(ch!=4);
    cout<<"\nThank You.Keep Visiting.";

}
```

Output :-



```
----------------
  Cafe
----------------
****Menu*****
1. Accept order
2. Serve order
3. Display orders
4. Exit
Choice: 1
Thank you for order.Order id is : 3
----------------
  Cafe
----------------
****Menu*****
1. Accept order
2. Serve order
3. Display orders
4. Exit
Choice: 2

 Order No. 1 is processed.

----------------
  Cafe
----------------
****Menu*****
1. Accept order
2. Serve order
3. Display orders
4. Exit
Choice: 3
Order Id's:
2  3
----------------
  Cafe
----------------
****Menu*****
1. Accept order
2. Serve order
3. Display orders
4. Exit
Choice: 4

Thank You.Keep Visiting.
```