```
#include <stdio.h>
#include <stdlib.h>
#define S 3;

int front = -1;
int rear = -1;

int queue[S];
void Enque(int,int);
int Deque(int);
void display(int);
int main()
{
    int choice, SIZE;
    int item;
    printf("Enter the SIZE of queue: \n");
    scanf("%d", &SIZE);
    do
    {
     printf("\n 1. INSERT
                2. DELETE
                3. DISPLAY
                4. EXIT \n");
    printf("Enter Choice accordingly: ");
    scanf("%d", &choice);
    switch(choice)
    {
      case 1: if(((front == 0 && rear == SIZE-1)) ||
                                    (front == rear+1))
                {
                 printf("Queue is full");
                 break;
                }
```

```
        printf ("Enter the elem you want to INSERT");
        scanf ("%d", &item);
        Enque (SIZE, item);
        break;

case 2: item = Deque (SIZE);
        if (item == -999)
            printf ("Queue is Empty");
        else
        printf ("Removed: %d \n"), item);
        break;
case 3: display (SIZE);
        break;
case 4: printf ("EXITING ....\n");
        exit (0);
default: printf ("INVALID choice");
        break;
    }
}
while (choice != 4);
  return 0;
}
void Enque (int SIZE, int ele)
{
  if ((front == 0 && rear == SIZE-1)) || (front == rear+1))
  {
    printf ("Queue FULL");
    return;
  }

  else
  {
    rear = (rear+1) % SIZE;
    queue[rear] = ele;
```

```
    if (front == -1)
        front = 0;
    }
}

int Dequeue (int SIZE)
{
    int item;
    if ((front == -1) && (rear == -1))
    {
        return (-999);
    }
    else
    {
        item = queue[front];
        if (front == rear)
        {
            front = -1;
            rear = -1;
        }
        else
        {
            front = (front + 1) % SIZE;
        }
        return item;
    }
}

void display (int SIZE)
{
    int i;
    if ((front == -1) && (rear == -1))
    {
        printf("Queue is Empty");
```

```
        return;
    }
    else
    {
        printf ("Queue is EMPTY");
        return;
    }
else
{
    printf ("Queue contents : \n");
    for ( i=front; i!=rear; i= (i+1) %SIZE)
    {
        printf("%d", queue[i]);
    }
    Printf ("%d ", queue[i]);
}
}
```