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#include <stdio.h>
#include <stdlib.h>
#define SIZE 3

int front = -1;
int rear = -1;
int queue[SIZE];

void Enque(int x){
    if((front == 0 && rear == SIZE-1) ||
       (front == rear+1)){
        printf("The queue is full.\n");
        return;
    }
    else {
            rear = (rear+1) % SIZE;
            queue[rear] = x;
            if (front == -1){
            front = 0;
            }
    }
}


void Deque(){
    if (front == -1 && rear == -1) {
        printf("The queue is empty!\n");
        return;
    }
    else {
        if (front == rear) {
            front = -1;
            rear = -1;
        }
```

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        else{
            front = (front + 1) % SIZE;
        }
    }
}

void display(){
    if ((front == -1) && (rear == -1)) {
        printf("The queue is empty.\n");
        return;
    }

    if (front > rear)
    {
        for (int i = front; i <= SIZE ; i++)
            printf("\t%d", queue[i]);
        for (int j=0; j <= rear; j++)
            printf("\t%d", queue[j]);
    }
    else
    {
        printf("Contents of circular queue
                are:\n");
        for (int i = front; i <= rear; i++)
            printf("\t%d", queue[i]);
    }
}

int main(){
    int option, num;

    do{
```

```
printf("\n------CIRCULAR QUEUE------\n");
printf("Enter your choice\n");
printf("1. To add an element to the
        queue (Enqueue).\n");
printf("2. To remove an element from
        the queue (Dequeue).\n");
printf("3. To display elements of the
        queue.\n");
printf("4. To exit.\n");
scanf("%d", &option);

switch(option){
    case 1: printf("Enter the element\n");
            scanf("%d", &num);
            Enque(num);
            break;
    case 2: Deque();
            break;
    case 3: display();
            break;
    case 4: exit(0);
  }
}while(option != 4);

return 0;
}
```