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1  //CODEBLOCKS
2  //SHREYAS SAWANT D7A 55
3  //Implement circular queue using array
4
5
6  #include <stdio.h>
7  #include <stdlib.h>
8
9  int max;
10 int qrray[1000];
11 int front=-1;
12 int rear=-1;
13
14 void enqueue(int a)
15 {
16     if(front== -1 && rear== -1)
17     {
18         front=0;
19         rear=0;
20         qrray[rear]=a;
21     }
22     else if((rear+1)%max==front)
23     {
24         printf("\nQueue Overflow\n");
25     }
26     else
27     {
28         rear=(rear+1)%max;
29         qrray[rear]=a;
30     }
31 }
32
33 int dequeue()
34 {
35     if((front== -1) && (rear== -1))
36     {
37         printf("\nQueue Underflow\n");
38     }
39     else if(front==rear)
40     {
41         printf("\nThe dequeued element is %d", qrray[front]);
42         front=-1;
43         rear=-1;
44     }
45     else
46     {
47         printf("\nThe dequeued element is %d\n", qrray[front]);
48         front=(front+1)%max;
49     }
50 }
51
52 void display()
53 {
54     int i=front;
55     if(front== -1 && rear== -1)
56     {
57         printf("\nQueue is empty\n");
58     }
59     else
60     {
61         printf("\nElements in a Queue are: ");
62         for (i=front; i!=rear; i=(i+1)%max)
63         {
64             printf("%d ", qrray[i]);
65         }
66         printf("%d \n", qrray[rear]);
67     }
68 }
69
70 int main()
71 {
72     int choice=1,x;
73     printf("Enter size of circular array ");
74     scanf("%d", &max);
75     int qrray[max];
76     while(1)
77     {
78         printf("\n1.Insert element to queue \n2.Delete element from queue \n3.Display all
elements of queue \n4.Quit\nEnter your choice: ");
79         scanf("%d", &choice);
80
81         switch(choice)
82         {
83             case 1:

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84         printf("\nEnter the element which is to be inserted ");
85         scanf("%d", &x);
86         enqueue(x);
87         break;
88     case 2:
89         dequeue();
90         break;
91     case 3:
92         display();
93         break;
94     case 4:
95         exit(1);
96     default:
97         printf("\nINVALID\n");
98     }
99 }
100 return 0;
101 }
102
```