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IMPLEMENTATION OF CIRCULAR QUEUE USING ARRAY

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```c
/*
implemaintaction Of Circular Queue
*/
#include<stdio.h>
#define N 5

int queue[N];
int front=-1,rear=-1;
//Function Declaractions
void Enqueue();
void Dequeue();
void Peek();
void Display();

//Driver Program
int main(){
        int choice;
        do{
                printf("\n***Circular Queue***\n");
                printf("1. Enqueue\n");
                printf("2. Dequeue\n");
                printf("3. Peek\n");
                printf("4. Display\n");
                printf("0 To Exit\n");
                printf("Enter Choice ");
                scanf("%d",&choice);
                switch(choice){
                        case 1:
```

```
                                Enqueue();
                                break;
                        case 2:
                                Dequeue();
                                break;
                        case 3:
                                Peek();
                                break;
                        case 4:
                                Display();
                                break;
                        default:
                                printf("\n!Wrong Choice!\n");
                }
        }while(choice!=0);
        return 0;
}

void Enqueue(){
        int x;
        if(front==-1 && rear==-1){
                printf("\nEnter X ");
                scanf("%d",&x);
                front=rear=0;
                queue[rear]=x;
        }
        else if((rear+1)%N==front){
                printf("\nQueue Is Full\n");
        }
        else{
                printf("\nEnter X ");
                scanf("%d",&x);
                rear=(rear+1)%N;
                queue[rear]=x;
        }
}

void Dequeue(){
        if(front==-1 && rear==-1){
                printf("\nQueue Is Empty\n");
        }
        else if(front==rear){
                front=rear=-1;
```

```
72.         }
73.         else{
74.                 printf("%d",queue[front]);
75.                 front=(front+1)%N;
76.         }
77. }
78.
79. void Peek(){
80.         if(front==-1 && rear==-1){
81.                 printf("\nQueue Is Empty\n");
82.         }
83.         else{
84.                 printf("%d ",queue[front]);
85.         }
86. }
87.
88. void Display(){
89.         int i=front;
90.         if(front==-1 && rear==-1){
91.                 printf("\nQueue Is Empty\n");
92.         }
93.         else{
94.                 while(i!=rear){
95.                         printf("%d ",queue[i]);
96.                         i=(i+1)%N;
97.                 }
98.                 printf("%d",queue[i]);
99.         }
100. }
```

OUTPUT