IMPLEMENTATION OF QUEUE USING ARRAY

```
#include <stdio.h>
#define MAX 5
int Queue[MAX], front = -1, rear = -1;
int IsFull();
int IsEmpty();
void Enqueue(int ele);
void Dequeue();
void Display();
int main()
{
int ch, e;
do
{
printf("1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT");
printf("\nEnter your choice : ");
scanf("%d", &ch);
switch(ch)
{
case 1:
printf("Enter the element : ");
scanf("%d", &e);
Enqueue(e);
break;
case 2:
Dequeue();
break;
case 3:
Display();
break;
}
} while(ch <= 3);
return 0;
}
int IsFull()
{
if(rear == MAX - 1)
return 1;
else
return 0;
}

int IsEmpty()
{
if(front == -1)
return 1;
else
return 0;
}
void Enqueue(int ele)
{
if(IsFull())
printf("Queue is Overflow...!\n");
else
{
rear = rear + 1;
Queue[rear] = ele;
if(front == -1)
front = 0;
```

```
}
}
void Dequeue()
{
if(IsEmpty())
printf("Queue is Underflow...!\n");
else
{
printf("%d\n", Queue[front]);
if(front == rear)
front = rear = -1;
else
front = front + 1;
}
}
void Display()
{
int i;
if(IsEmpty())
printf("Queue is Underflow...!\n");
else
{
for(i = front; i <= rear; i++)
printf("%d\t", Queue[i]);
printf("\n");
}
}
```

Output

```
1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT
Enter your choice : 1
Enter the element : 10
1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT
Enter your choice : 1
Enter the element : 20
1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT
Enter your choice : 1
Enter the element : 30
1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT
Enter your choice : 1
Enter the element : 40
1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT
Enter your choice : 1
Enter the element : 50
1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT
Enter your choice : 1
Enter the element : 60
Queue is Overflow...!
1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT
Enter your choice : 3
10 20 30 40 50
1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT
Enter your choice : 2
10
1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT
Enter your choice : 2
20
1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT
Enter your choice : 2
30
1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT
```

```
Enter your choice : 2
40
1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT
Enter your choice : 2
50
1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT
Enter your choice : 2
Queue is Underflow...!
1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT
Enter your choice : 3
Queue Underflow...!
1.ENQUEUE 2.DEQUEUE 3.DISPLAY 4.EXIT
Enter your choice : 4
```