

*

```
#include <stdio.h>
#include <stdlib.h>
#define MAX 3
int front = -1;
int rear = -1;
int queue[MAX];
void Enqueue(int);
int Dequeue();
void display();
int main (int argc, char **argv)
{
    int option;
    int item;
    do {
        printf("Circular queue\n");
        printf("\n 1. Insert to queue (Enqueue)");
        printf("\n 2. delete from queue (Dequeue)");
        printf("\n 3. Display the content ");
        printf("\n 4. Exit\n");
        printf("Enter the option: ");
        scanf("%d", &option);
        switch(option)
        {
```

```

case 1 : printf ("Enter the element\n");
          scanf ("%d", &item);
          Enqueue (item);
          break;

```

```

case 2 : item = Dequeue();
          if (item == -1)
            printf ("Queue is empty");
          else
            printf ("Removed element from the queue %d", item);
          break;

```

```

case 3 : display();
          break;

```

```

case 4 : exit(0);

```

```

}

```

```

while (option != 4);

```

```

return 0;

```

```

}

```

```

void Enqueue (int ele)

```

```

{

```

```

  if ((front == 0 && rear == MAX-1) || (front == rear+1))

```

```

  {

```

```

    printf ("Queue is full\n");

```

```

    return;

```

```

  }

```

```

  else

```

```

  {

```

3

```
rear = (rear + 1) % MAX;
```

```
queue[rear] = ele;
```

```
if (front == -1)
```

```
front = 0;
```

```
}
```

```
}
```

```
int Dequeue()
```

```
{
```

```
int item;
```

```
if ((front == -1) && (rear == -1))
```

```
{
```

```
return(-1);
```

```
}
```

```
else
```

```
{
```

```
item = queue[front];
```

```
if (front == rear)
```

```
{
```

```
front = -1;
```

```
rear = -1;
```

```
}
```

```
else
```

```
{
```

```
front = (front + 1) % MAX;
```

```
}
```

```
return item; }
```

4

```
void display ()
```

```
{
```

```
int i;
```

```
if ((front == -1) && (rear == -1)) || (front == rear))
```

```
{
```

```
printf("Queue is empty\n"); return;
```

```
}
```

```
else
```

```
{
```

```
printf("\n Queue contents : \n");
```

```
for(i = front; i <= rear; i++)
```

```
printf("%d ", queue[i]);
```

```
}
```

```
}
```