```
#include <iostream>
 using namespace std;
 class Queue
 {
 int *q, front, rear;
 int count;
 int size;
 public:
 Queue(int size);
 bool isFull();
 bool isEmpty();
 void enQueue(int item);
 int deQueue();
 int top();
 void display();
 void demo();
 int menu();
 };
 Queue::Queue(int size)
 {
 front = 0;
 rear = -1;
 count =0;
 this->size= size;
 q= new int[size];
 }
 // Check if the queue is full
 bool Queue::isFull()
```

```
{
if (count == size)
return true;
else
return false;
}
// Check if the queue is empty
bool Queue::isEmpty()
{
if (count == 0)
return true;
else
return false;
}
// Adding an item
void Queue::enQueue(int item)
{
if (isFull())
{
cout << "Queue is full";
cout<<"\n Terminating the program"; exit(-1);
}
rear = (rear + 1) % size;
q[rear] = item;
count++;
}
// Removing an item
int Queue::deQueue()
```

```
{
int item;
if (isEmpty())
{
cout << "Queue is full";
cout<<"\n Terminating the program"; exit(-1);
}
item = q[front];
front= (front+1)%size;
count--;
return item;
}
// Removing an item
int Queue::top()
{
int item;
if (isEmpty())
{
cout << "Queue is full";
cout<<"\n Terminating the program"; exit(-1);
}
item = q[front];
return item;
}
void Queue::display()
{
// Function to display status of Circular Queue int c,f;
if (isEmpty())
```

```
{
cout << endl<< "Empty Queue" << endl; }
else
{
cout << "Front -> ";
for (int c=count,f=front; c > 0; f = (f + 1) % size,c--) cout << q[f]<<"->";
cout << "Rear " ;
}
}
void Queue::demo()
{
int item;
while(1)
{
switch(menu())
{
case 1:
cout<<"\n Enter item to add in queue = "; cin>>item;
enQueue(item);
cout<<"\n Queue is : "; display();
break;
case 2:
item=deQueue();
cout<<"\n Item deleted = "<<item; break;
case 3:
item=top();
cout<<"\n Item at front = "<<item; break;
case 4:
```

```
cout<<"\n Queue is \n"; display();
break;
case 5:
exit(0);
}
}
}
int Queue::menu()
{
int ch;
cout<<"\n Enter the choice: \n1: for add item in queue \n2: for delete item from queue" "\n3: for read item from queue" "\n4: for display queue \n5: for terminate the program" "\n Enter your choice...";
cin>>ch;
return ch;
}
int main()
{
Queue q(10);
q.demo();
return 0;
}
```