

## Circular Queue Using Linked List-

### Enqueue And Dequeue -

// Online C++ compiler to run C++ program online

```
#include <iostream>
```

```
using namespace std;
```

```
class Node{
```

```
public:
```

```
int data;
```

```
Node* next;
```

```
Node(int data){
```

```
    this->data=data;
```

```
    this->next=NULL;
```

```
}
```

```
};
```

```
class circularQueue{
```

```
public:
```

```
Node* front;
```

```
Node* rear;
```

```
public:
```

```
circularQueue(){
```

```
    front=nullptr;
```

```
    rear=nullptr;
```

```
}
```

```
bool isEmpty(){
```

```
    return(front==nullptr);
```

```
}
```

```
void Enqueue(int data){
```

```
    Node* newqueue=new Node(data);
```

```
    if(isEmpty()){
```

```

    front=rear=newqueue;
    rear->next=front;
} else {
    rear->next=newqueue;
    rear=newqueue;
    rear->next=front;
}
cout<<"INSERTED"<<data<<endl;
}

void Display(){
    if(isEmpty()){
        cout<<"Queue is Empty";
    }
    Node* temp=front;
    do{
        cout<<temp->data<<" ";
        temp=temp->next;
    } while(temp!=front);
    cout<<endl;
}

void Dequeue() {
    if (isEmpty()) {
        cout << "Queue is Empty! Cannot Dequeue." << endl;
        return;
    }

    Node* temp = front;
    int removedData = temp->data;

    if (front == rear) {
        front = rear = nullptr;
    } else {
        front = front->next;
        rear->next = front;
    }
}

```

```
}  
  
delete temp;  
cout << "Removed: " << removedData << endl;  
}  
};
```

```
int main() {  
    circularQueue cq;  
    cq.Enqueue(20);  
    cq.Enqueue(90);  
    cq.Display();  
    cq.Dequeue();  
    cq.Display();  
    return 0;  
}
```

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