

```
#include<iostream>
#include<stdlib.h>
#include<conio.h>
using namespace std;
template<class T>class Node
{
public:
    T info;
    Node *next;
    Node(T data)
    {
        info=data;
        next=NULL;
    }

};
template<class T>class Queue
{
```

```
Node<T> *front,*rear;
```

```
public:
```

```
Queue()
```

```
{
```

```
    front=rear=NULL;
```

```
}
```

```
void enqueue(T data)
```

```
{
```

```
    Node<T> *newNode=new
```

```
Node<T>(data);
```

```
    if(rear==NULL)
```

```
        front=rear=newNode;
```

```
    else
```

```
    {
```

```
        rear->next=newNode;
```

```
        rear=newNode;
```

```
    }
```

```
}
```

```
T dequeue()
{
    if(rear==NULL) //case 1 when Stack
is empty
        cout<<"Stack is empty ";
    else if(front==rear) //case 2 when
linked list contains one value
    {
        int data=front->info;
        delete front;
        front=rear=NULL;
        return data;
    }
    else //case 3 when Stack contains
more than one value
    {
        T data=front->info;
        Node<T> *Current=front->next;
```

```
        delete front;
        front=Current;
        return data;
    }
}

void Display()
{
    Node<T> *temp=front;
    cout<<"Queue : ";
    if(temp!=NULL)
        while(temp!=NULL)
        {
            cout<<temp->info<<" ";
            temp=temp->next;
        }
    else
        cout<<"EMPTY ";
}
```

```
void Clear()
{
    if(rear==NULL)
        cout<<"Queue is empty ";
    else if(front==rear)
    {
        delete front;
        front=rear=NULL;
    }
    else
    {
        Node<T> *temp=front;
        Node<T> *current=front;
        while(temp->next!=NULL)
        {
            temp=current->next;
            delete current;
            current=temp;
        }
    }
}
```

```

    }
    delete temp;
    front=rear=NULL;
}
}
void menu()
{
    cout<<"MENU";
    cout<<"\n1.Enqueue. ";
    cout<<"\n2.Dequeue. ";
    cout<<"\n3.Display. ";
    cout<<"\n4.Clear. ";
    cout<<"\n5.Exit. ";
    choice();
}
void choice()
{
    T val,r;

```

```
int ch;  
char c='Y';  
cout<<"\nEnter your choice : ";  
cin>>ch;  
switch(ch)  
{  
    case 1: cout<<"Enter data : ";  
            cin>>val;  
            enqueue(val);  
            break;  
    case 2: r=dequeue();  
            cout<<"Value Deleted : "<<r;  
            break;  
    case 3: Display();  
            break;  
    case 4: Clear();  
            break;  
    case 5: exit(0);
```

```

        default: cout<<"Wrong input!! ";
    }
    cout<<"\nDo you want to
continue(Y/N) : ";
    cin>>c;
    if(c=='Y' || c=='y')
        choice();
    else
        cout<<"Press any key to exit ";
}
};
int main()
{
    Queue<int> q;
    Queue<float> q2;
    q.menu();
    q2.menu();
    getch();
}

```



```
return 0;
```

```
}
```



