PROGRAM

```
import java.util.Scanner;
public class DLinkedList{
   class Node{
          int data;
          Node next;
          Node prev;
          Node(int data){
                  this.data=data;
                  this.prev=null;
                  this.next=null;
          }
   }
   public Node head;

   public void addNode(int data){
           Node newNode = new Node(data);
          if(head==null)
                  head=newNode;
          else{
                  Node temp =head;
                  while(temp.next!=null)
                          temp=temp.next;
                  temp.next=newNode;
                  newNode.prev=temp;
          }
   }
   public void removeNode(int data){
      if(head==null){
                  System.out.println("List empty");
                  return;
      }
      if(head.data==data){
                  if(head.next!=null)
                          head.next.prev=null;
                  head=head.next;
                  return;
      }
      Node temp =head;
      while(temp!=null){
                   if(temp.data==data)
                  break;
                  temp=temp.next;
      }
      if(temp==null){
                  System.out.println("data not found");
                  return;
```

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        }
        if(temp.next!=null)
                        temp.next.prev=temp.prev;
        temp.prev.next=temp.next;
    }

    public void display(){
        if(head==null){
              System.out.println("Empty List ");
               return;
        }
        Node temp=head;
        System.out.print("List :");
        while(temp!=null){
               System.out.print(temp.data+" ");
                temp=temp.next;
        }
    }

    public static void main(String args[]){
        DLinkedList list =new DLinkedList();
        while(true){
            System.out.println("\nEnter \n1. add Node\n2 remove Node\n3 exit");
            Scanner sc =new Scanner(System.in);
            char ch= sc.nextLine().charAt(0);
            switch(ch){
                case '1': System.out.print("enter the data :");
                          list.addNode(sc.nextInt());
                          list.display();
                          break;
                case '2':System.out.print("enter the data to be delete:");
                         list.removeNode(sc.nextInt());
                         list.display();
                         break;
                case'3': return;
            }
        }
    }
}
```

OUTPUT

```
Enter
1. add Node
2 remove Node
3 exit
1
enter the data :3
List :3
Enter
1. add Node
2 remove Node
3 exit
1
enter the data :2
List :3 2
Enter
1. add Node
2 remove Node
3 exit
1
enter the data :8
List :3 2 8
Enter
1. add Node
2 remove Node
3 exit
1
enter the data :21
List :3 2 8 21
Enter
1. add Node
2 remove Node
3 exit
1
enter the data :4
List :3 2 8 21 4
Enter
1. add Node
2 remove Node
3 exit
2
enter the data to be delete:8
List :3 2 21 4
Enter
1. add Node
2 remove Node
3 exit
2
enter the data to be delete:21
List :3 2 4
Enter
1. add Node
2 remove Node
3 exit
1
enter the data :5
List :3 2 4 5
Enter
1. add Node
2 remove Node
3 exit
3
```