

```
func insertFirst (Node head, int data):
```

```
    Node new-node = new Node();
```

```
    new-node → data = data
```

```
    if head != NULL:
```

```
        head → nextnext = XOR(new-node, head → next)
```

```
    head = new-node
```

```
func insertLast (Node head, int data):
```

```
    Node new-node = new Node();
```

```
    new-node → data = data
```

```
    if head == NULL:
```

```
        head = new-node
```

```
    return
```

```
    while Node cur = head
```

```
        Node prev = NULL
```

```
    while (cur != NULL)
```

```
        next = XOR(prev, cur → next)
```

```
        prev = cur
```

```
        cur = next
```

```
    new-node → next = XOR cur
```

```
    cur → next = XOR(prev, new-node)
```