

Doubly Linked List (XOR)

```
void insert (Node ** head-ref, int data)
```

```
{
```

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

```
    new-node->data = data;
```

```
    new-node->npx = *head-ref;
```

```
    if (*head-ref != NULL)
```

```
    {
```

```
        (*head-ref)->npx = XOR(new-node,  
                                (*head-ref->npx));
```

```
    }
```

```
    *head-ref = new-node;
```

```
}
```

void insert_end (Node** head_ref, int data).

{

Node* new_node = newNode();

new_node->data = data;

new_node->npx = ~~head_ref~~, tail XOR NULL;

~~new_node->npx = head_ref;~~

if (*head_ref == NULL)

{

*head_ref = new_node;

tail = new_node;

}

else

{

tail->npx = tail->npx XOR NULL XOR new;

new_node->npx = tail XOR NULL;

tail = new_node;

}

}