DSA through C++

Circular doubly linked list

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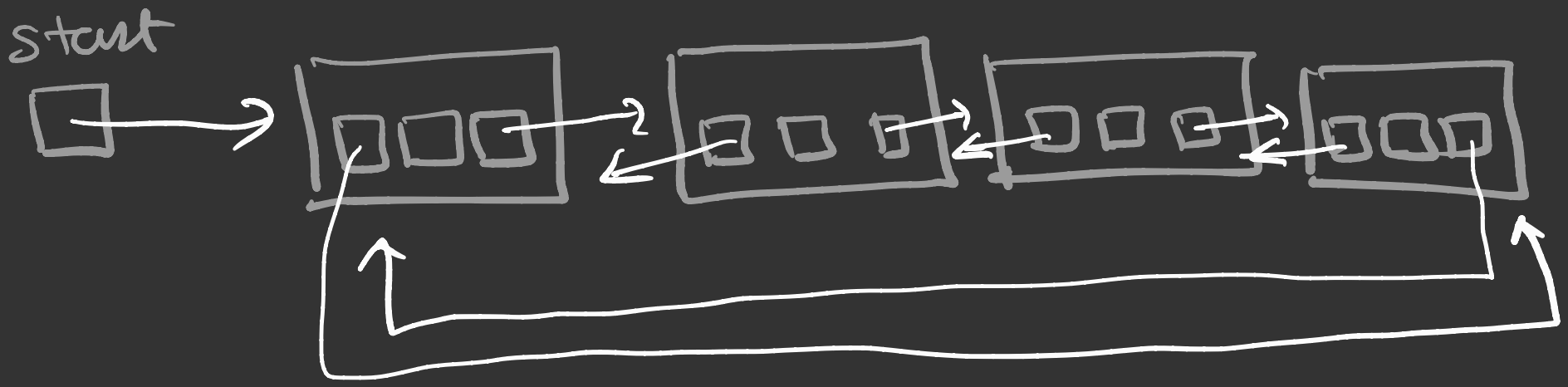
Agenda

1. Not utilizing next and prev pointers in DLL
2. Circular doubly linked list
3. node
4. insertion and deletion

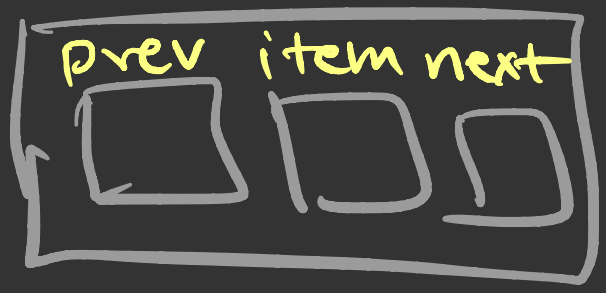
Not utilizing next and prev pointers in DLL

Circular Doubly Linked List



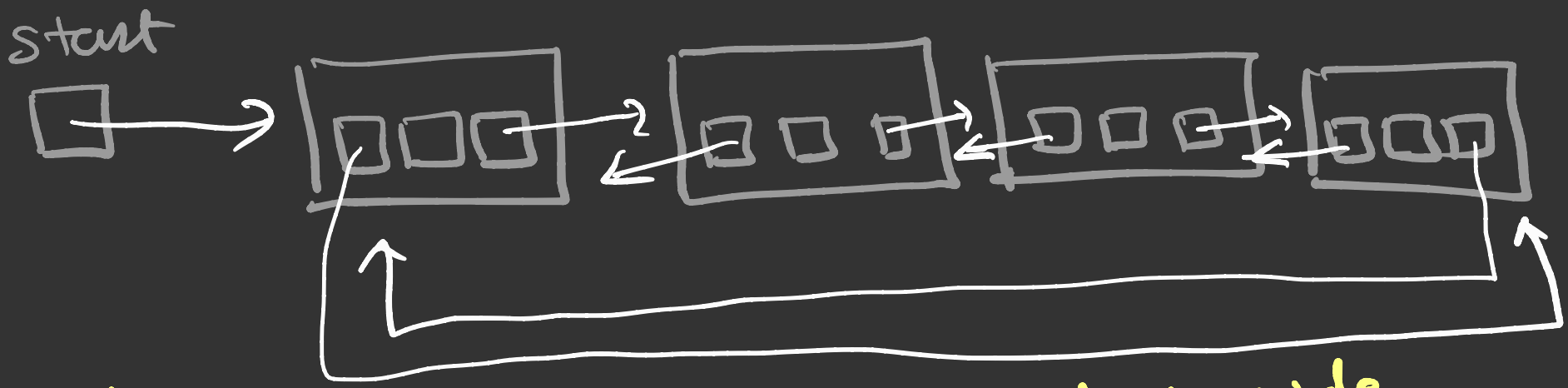
node

```
struct node
{
    node *prev;
    int item;
    node *next;
};
```



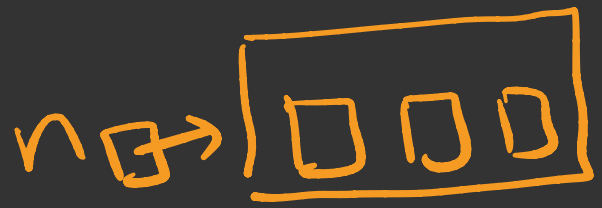
Insertion in CDLL

```
node *n = new node;
n->item = data;
```



First node

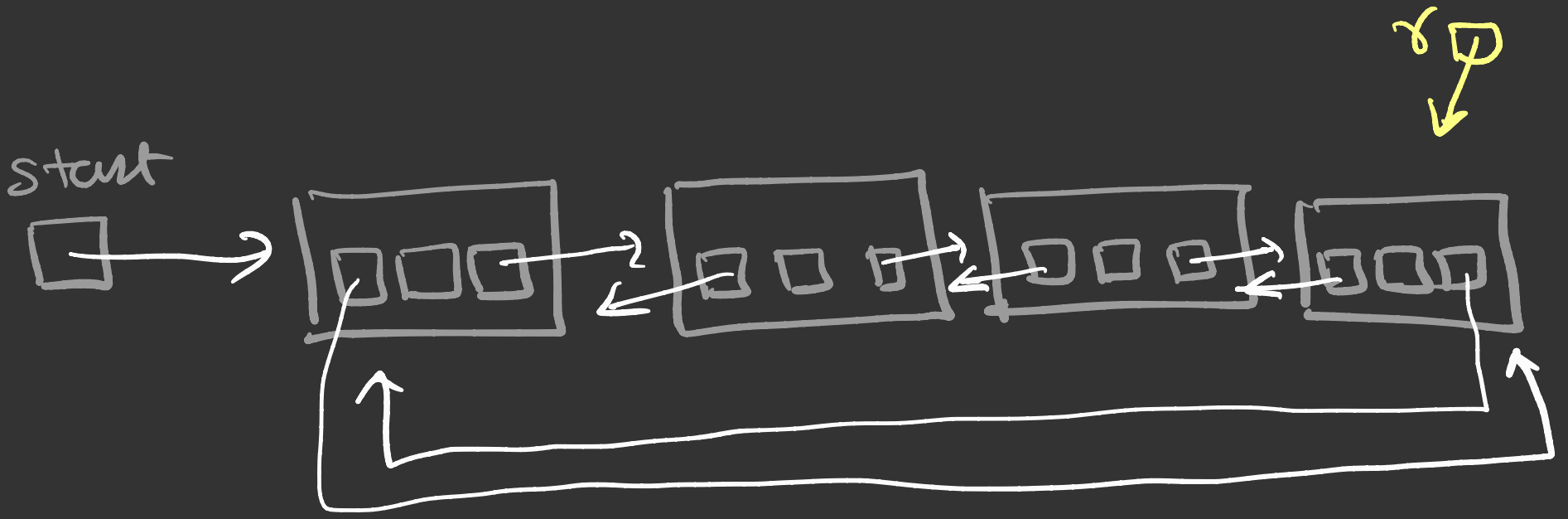
```
n->prev = start->prev;
n->next = start;
n->next->prev = n;
n->prev->next = n;
start = n;
```



last node

```
n->prev = start->prev;
n->next = start;
n->prev->next = n;
n->next->prev = n;
```

Deletion in CDLL




```
r = start;
start->prev->next = r->next;
r->next->prev = r->prev;
start = r->next;
delete r;
```

```
r->prev->next = start;
start->prev = r->prev;
delete r;
```