DSA using Python

Singly Linked List

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Agenda

1. What is a list?
2. What is a node?
3. Defining a node
4. Singly Linked List
5. Elementary operations

What is a list?

List is a linear collection of data items also known as List Item

Example 1: list of marks int

30, 32, 20, 35, 41, 38

Example 2: list of city names str

"Bhopal" "Itarsi", "Indore", "Delhi", "Jaipur"
"Pune", "Gwalior", "Mumbai" "Jabalpur"

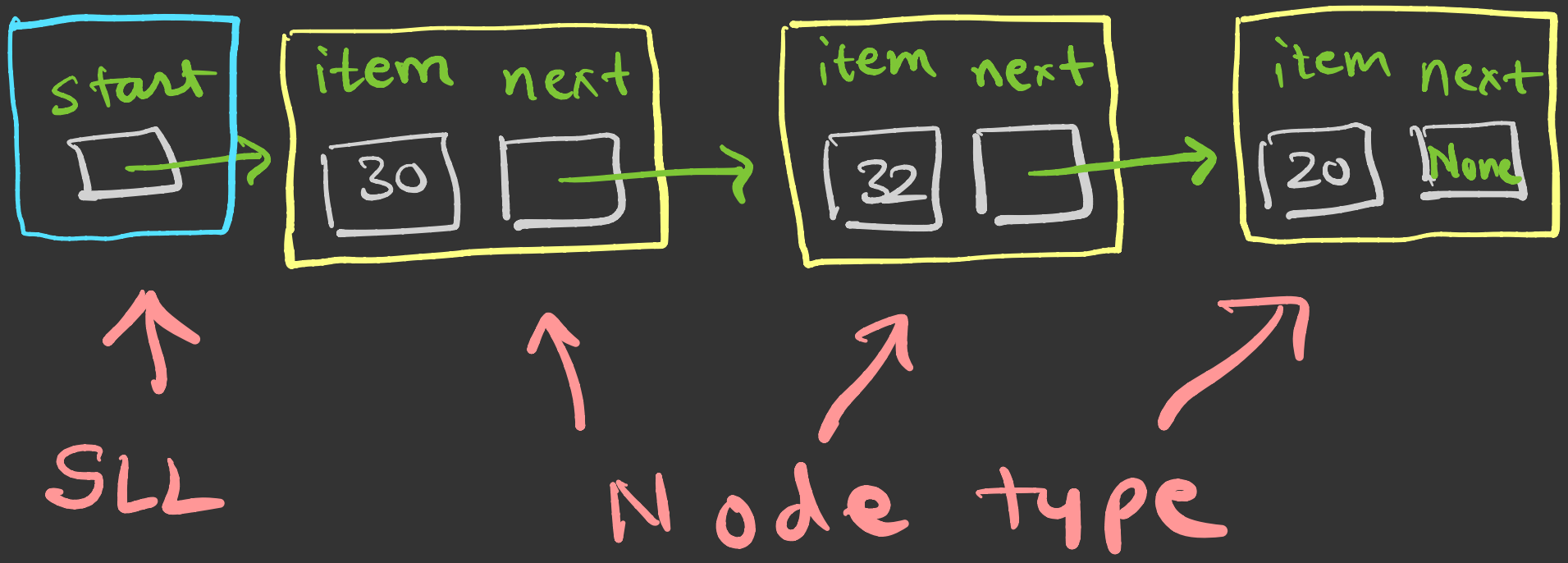
Example 3: list of Employees Employee

100	101	102	103	104
"Atul"	"Savita"	"Akshay"	"Shivam"	"Jenil"
25000	35000	40000	30000	50000

What is a node?

Example 1: list of marks int

30, 32, 20, 35, 41, 38



Defining a node

```
class Node:
    def __init__(self, item = None, next = None):
        self.item = item
        self.next = next
```

Singly Linked List

- SLL is a linear data structure.
- It can grow and shrink
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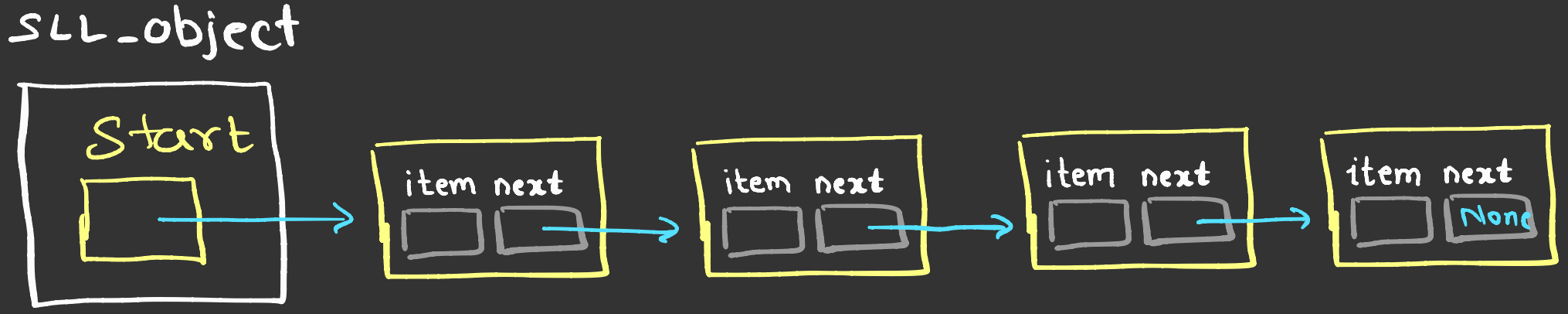

Operations on Singly Linked List

insertion

deletion

is_empty

traverse

```
obj = SLL()
obj.insert_at_start(10)
obj.insert_at_last(20)
obj.insert_at_start(50)
obj.delete_first()
```

```
for x in obj:
    print(x)
```