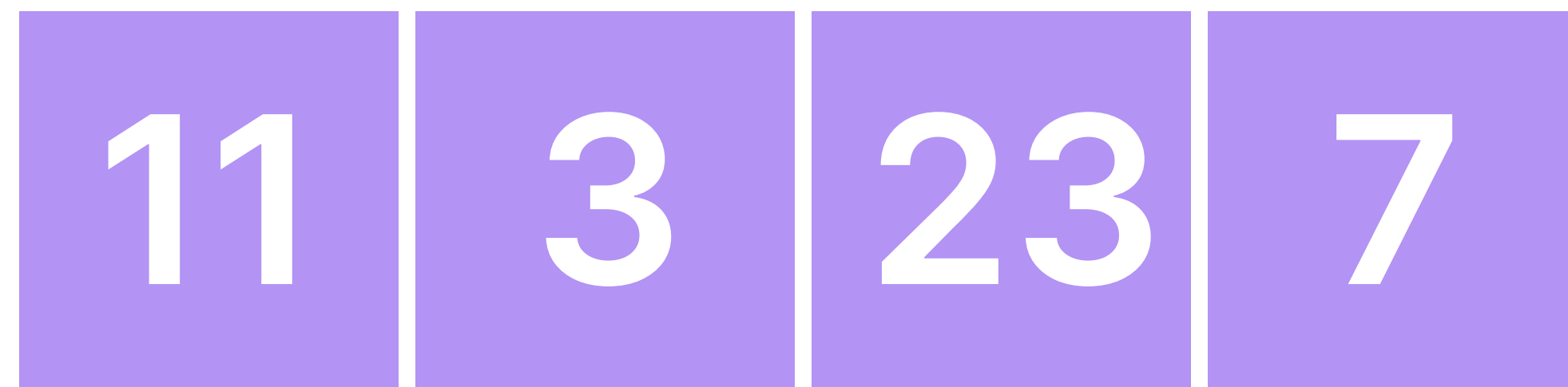


LINKED LISTS

ARRAY

11	3	23	7
0	1	2	3

LINKED LISTS



LINKED LISTS

11

3

23

7

LINKED LISTS

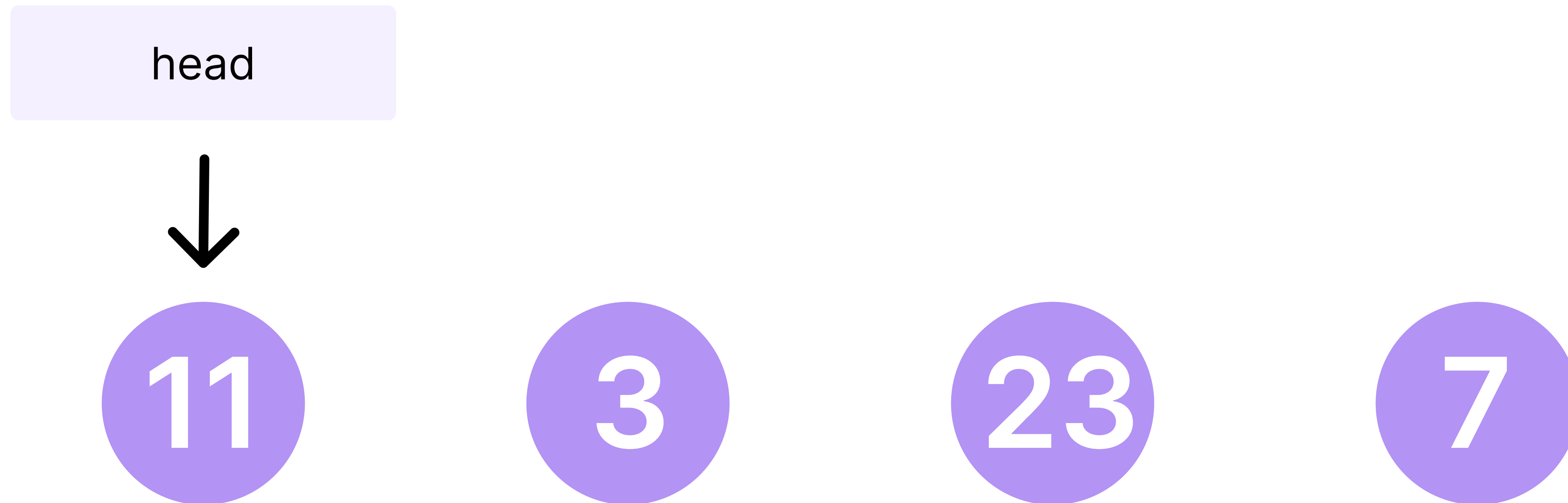
11

3

23

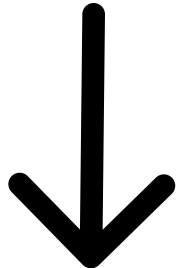
7

LINKED LISTS



LINKED LISTS

head

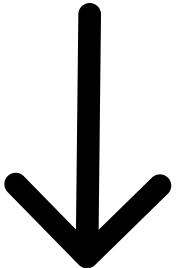


11

3

23

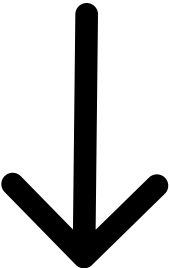
tail



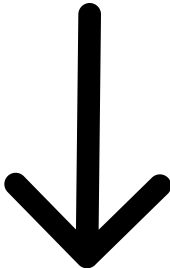
7

LINKED LISTS

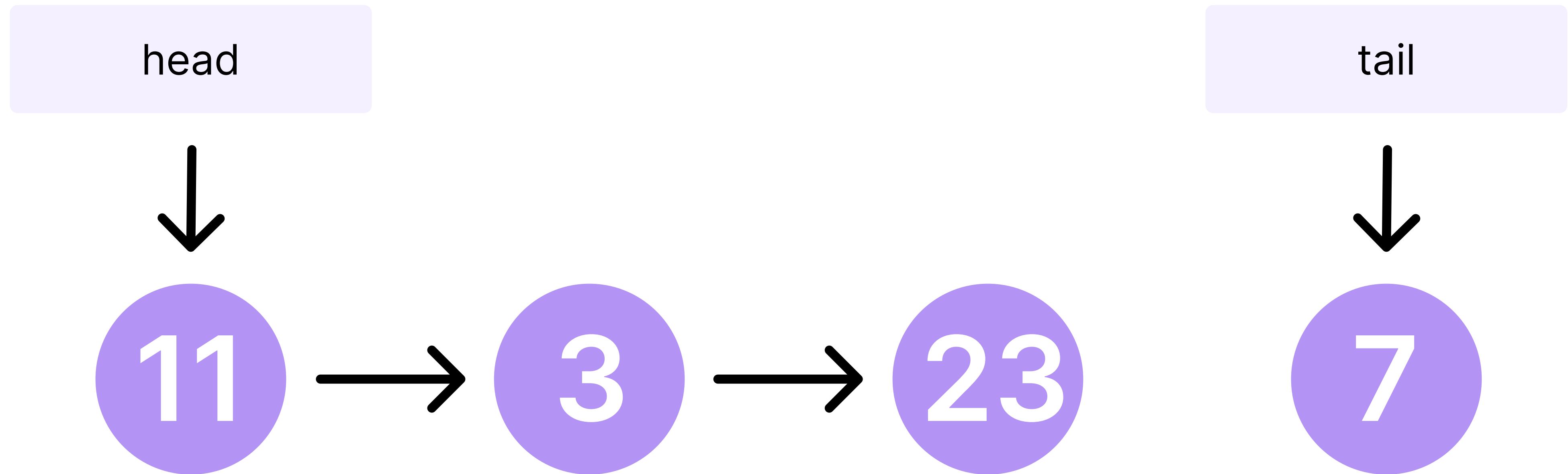
head



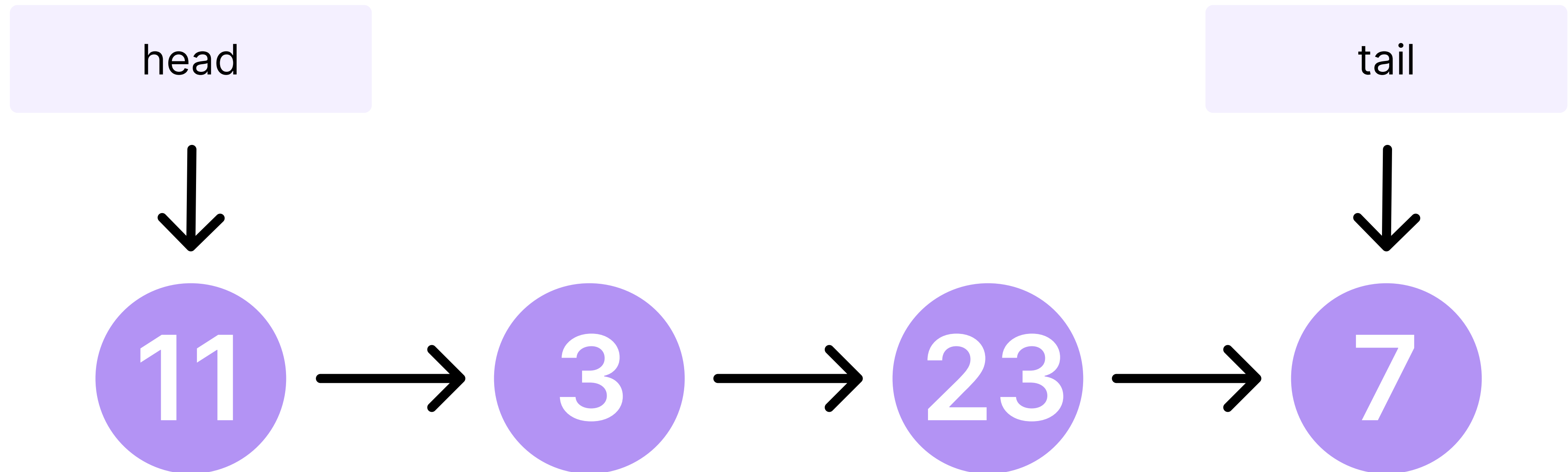
tail



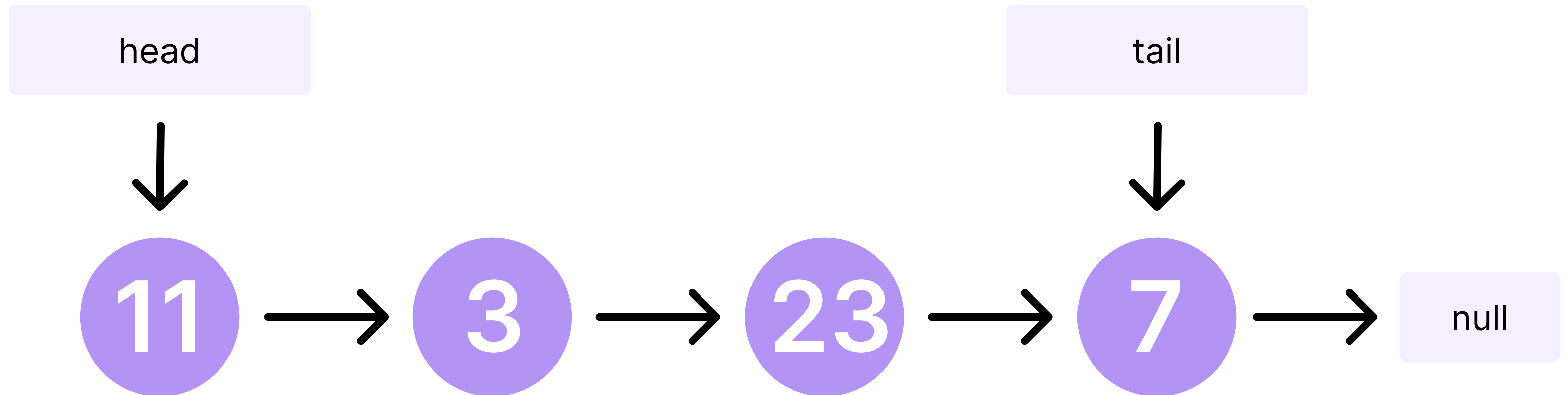
LINKED LISTS



LINKED LISTS



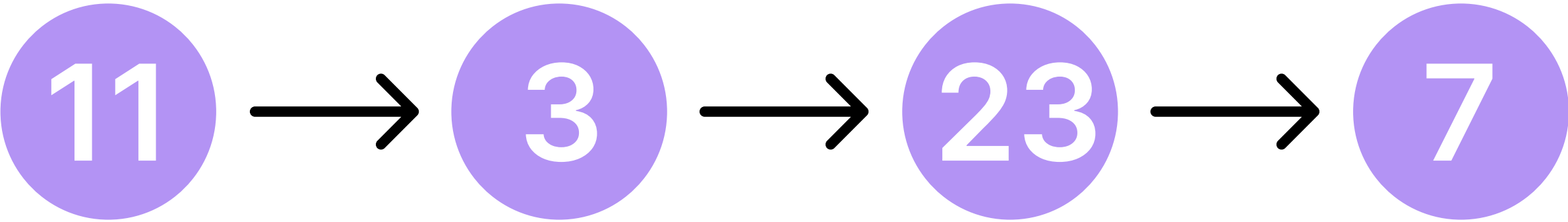
LINKED LISTS



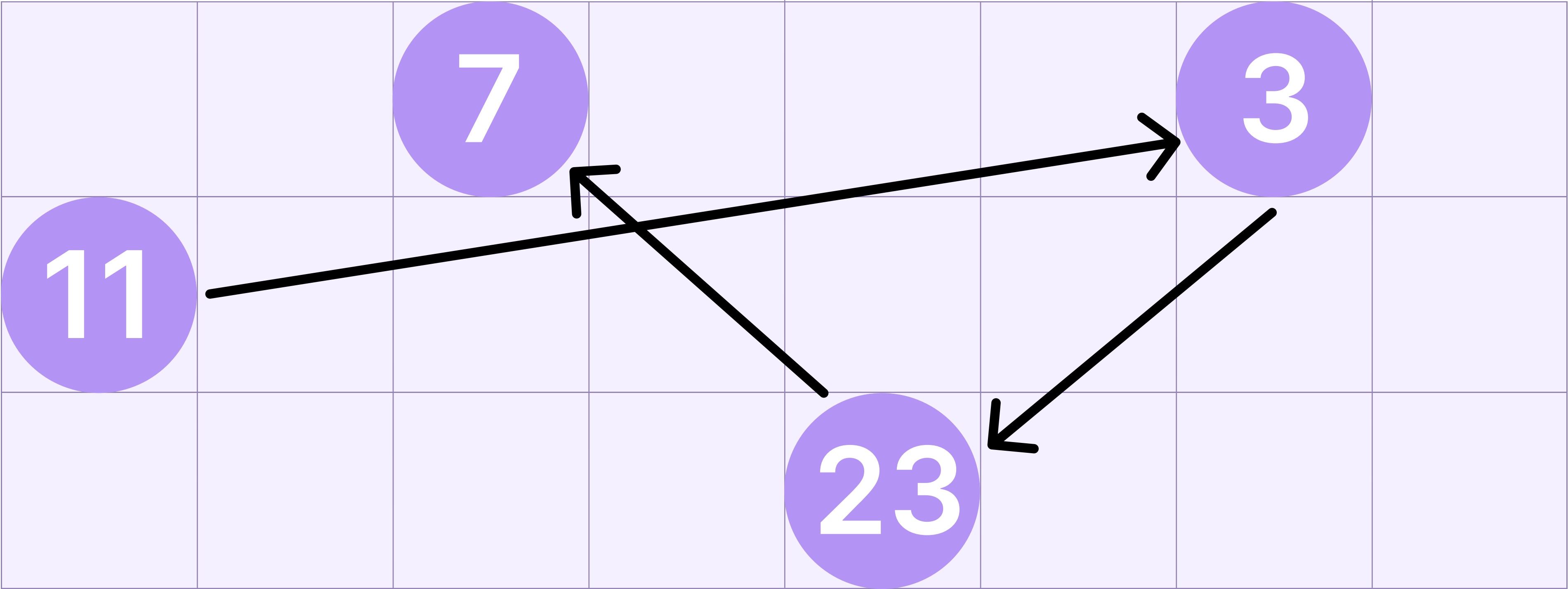
LINKED LISTS

		11	3	23	7		

LINKED LISTS

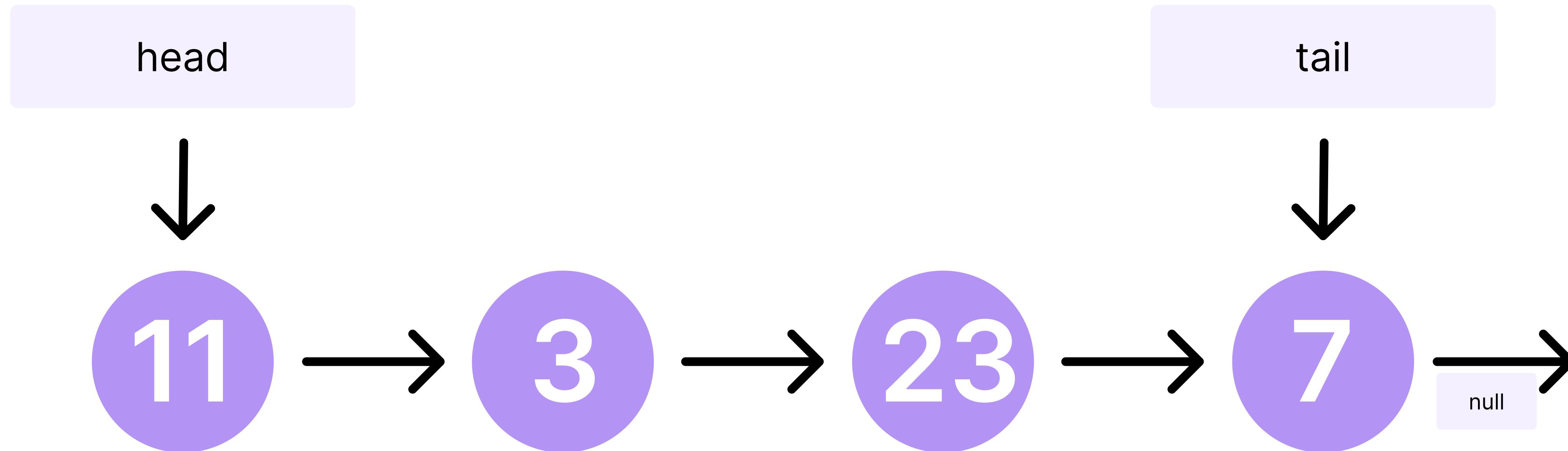


LINKED LISTS



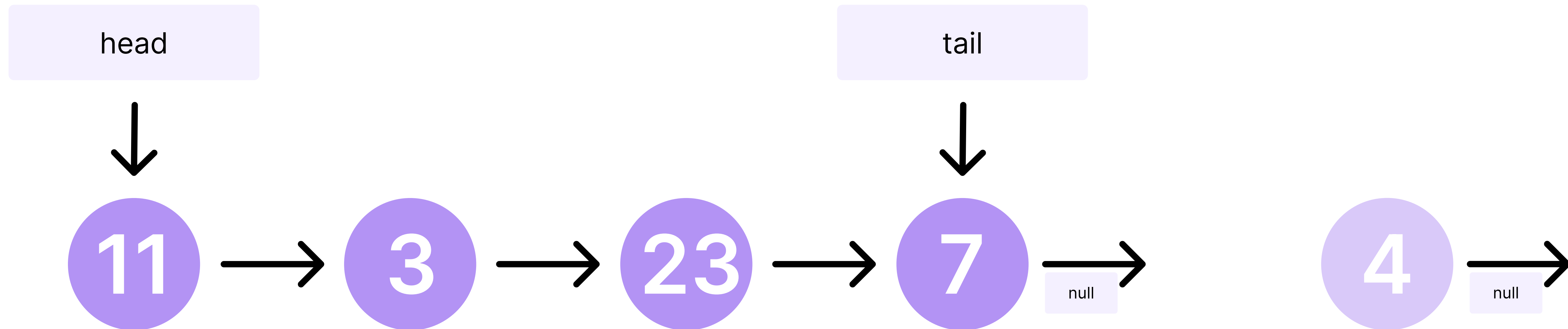
LINKED LISTS

agregar un elemento



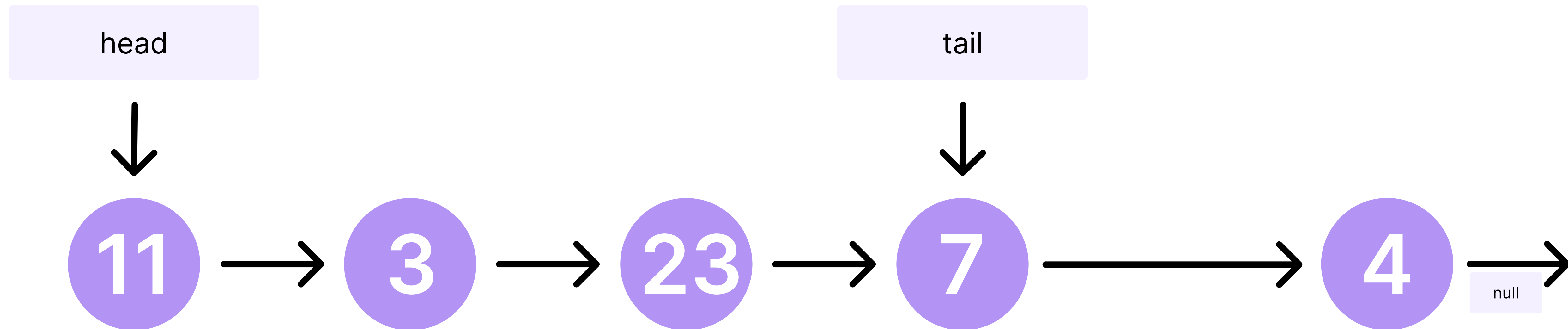
LINKED LISTS

agregar un elemento



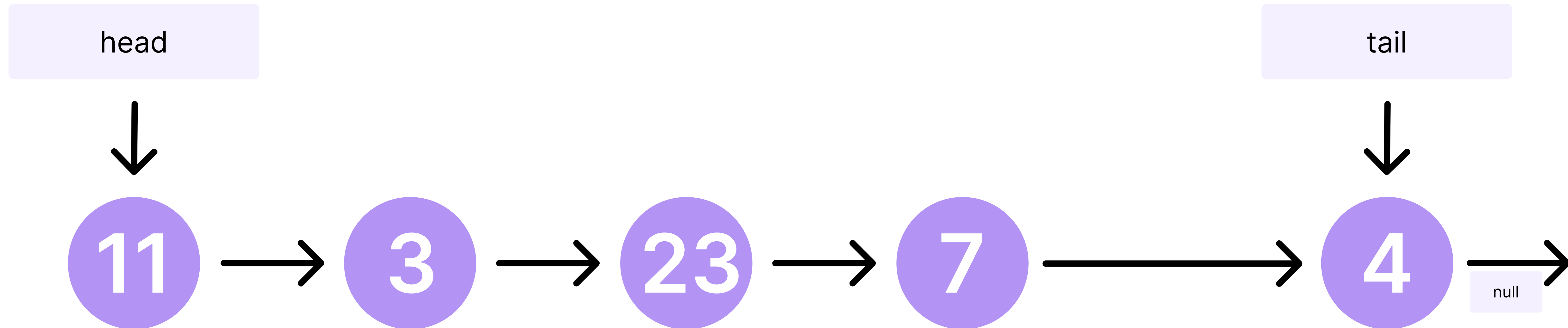
LINKED LISTS

agregar un elemento



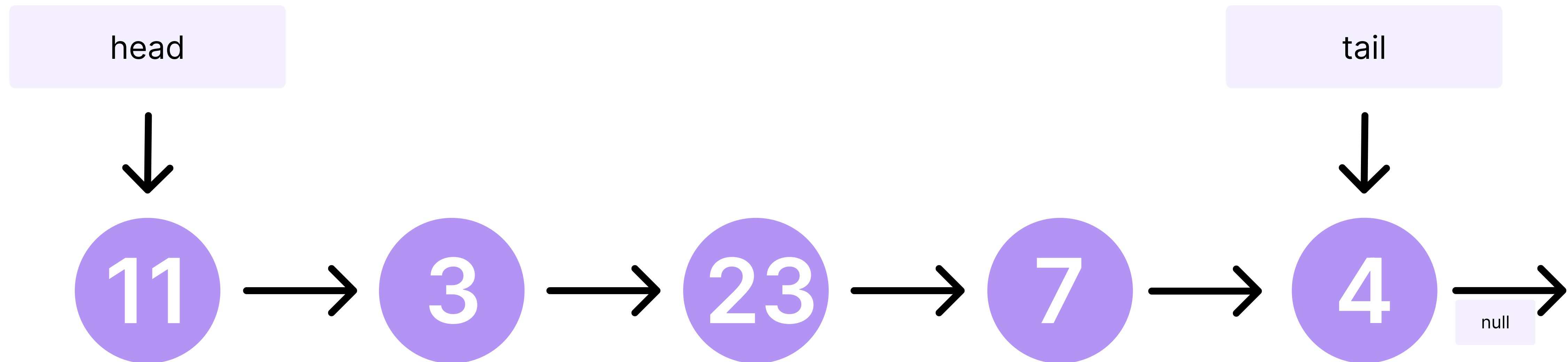
LINKED LISTS

agregar un elemento



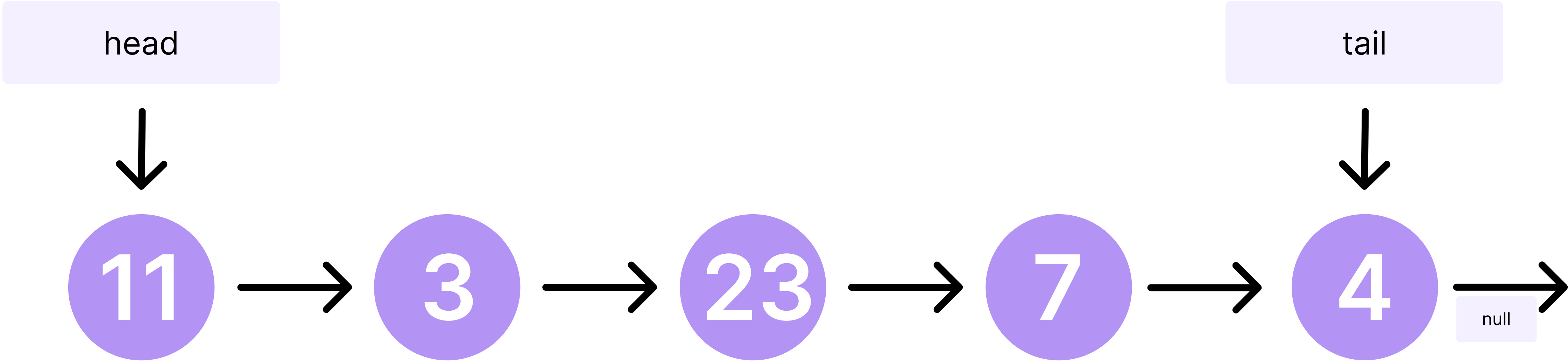
LINKED LISTS

agregar un elemento



LINKED LISTS

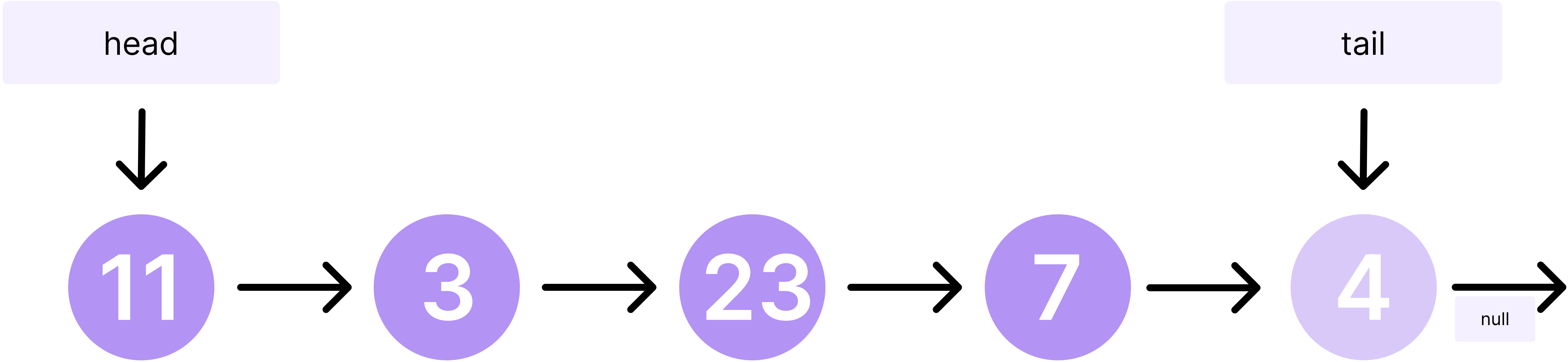
agregar un elemento



$O(1)$

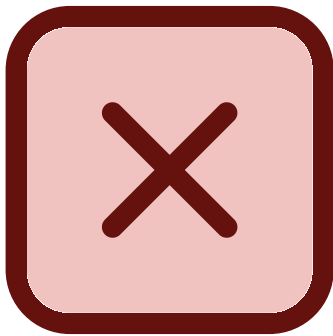
LINKED LISTS

eliminar un elemento

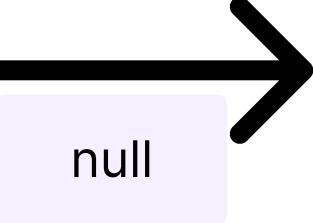
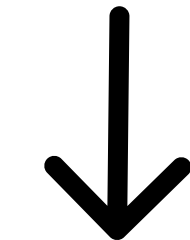


LINKED LISTS

eliminar un elemento

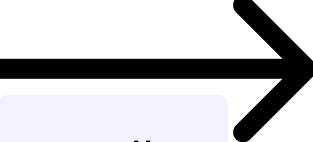
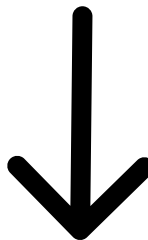


head



null

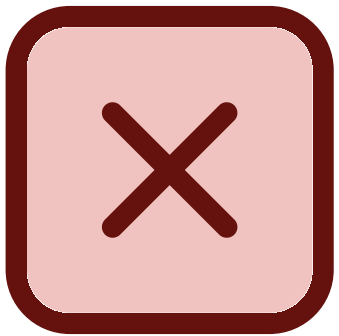
tail



null

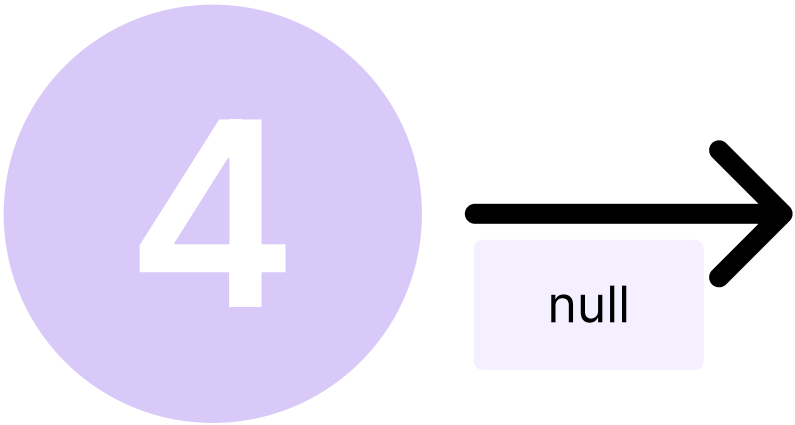
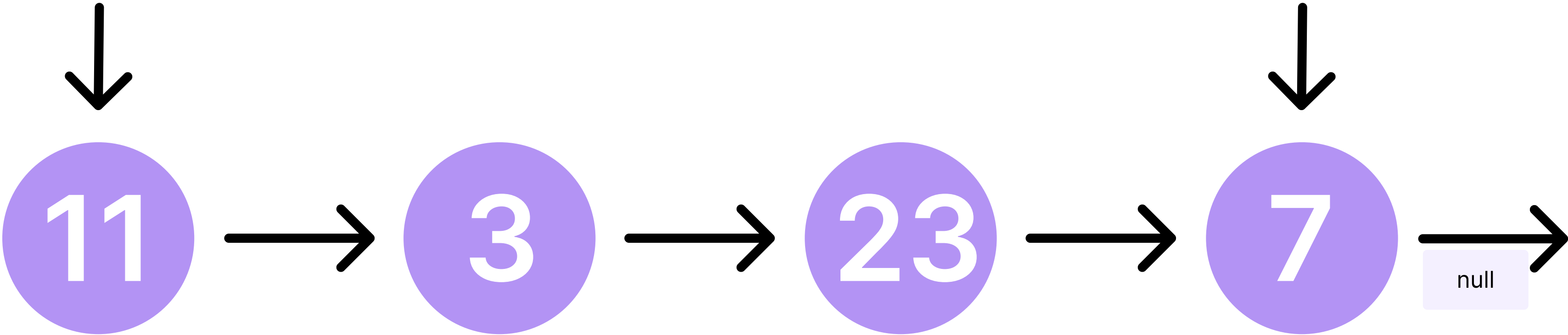
LINKED LISTS

eliminar un elemento



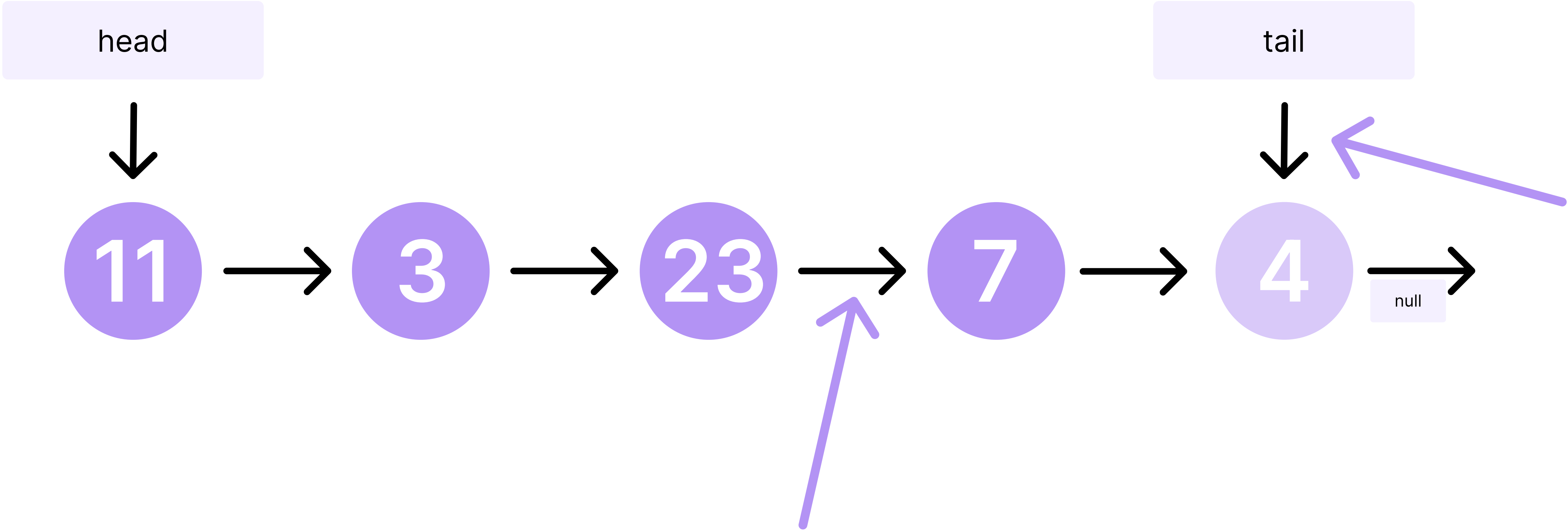
head

tail



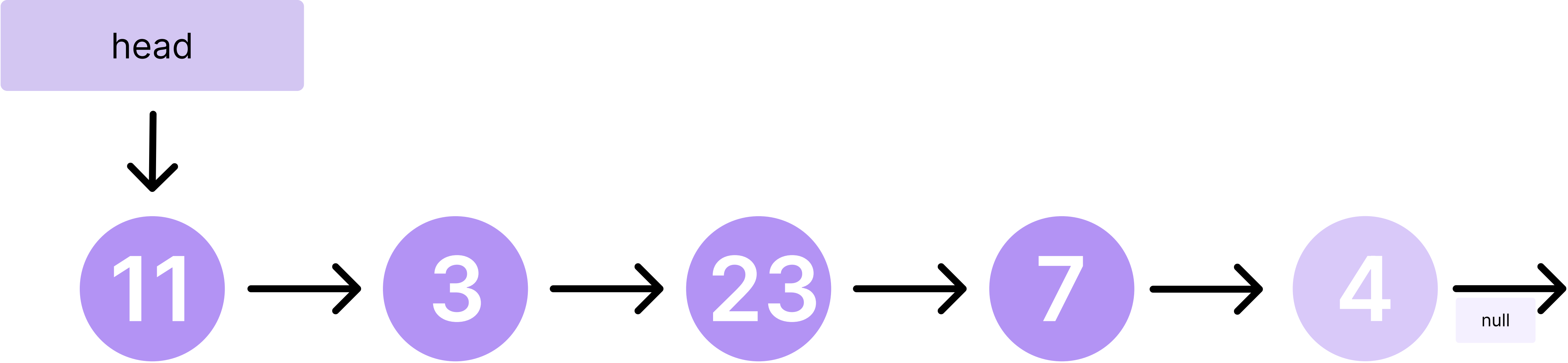
LINKED LISTS

eliminar un elemento



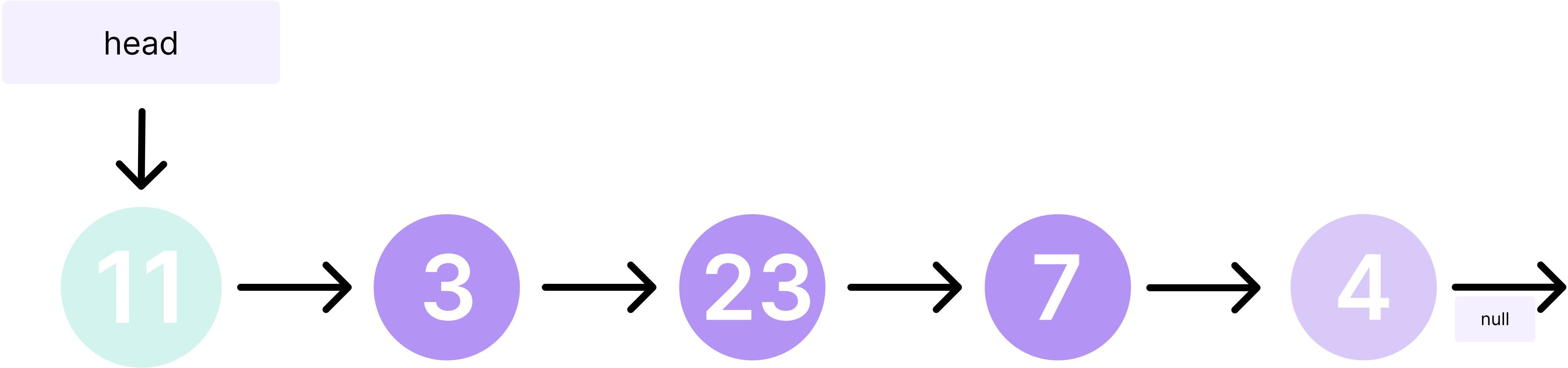
LINKED LISTS

eliminar un elemento



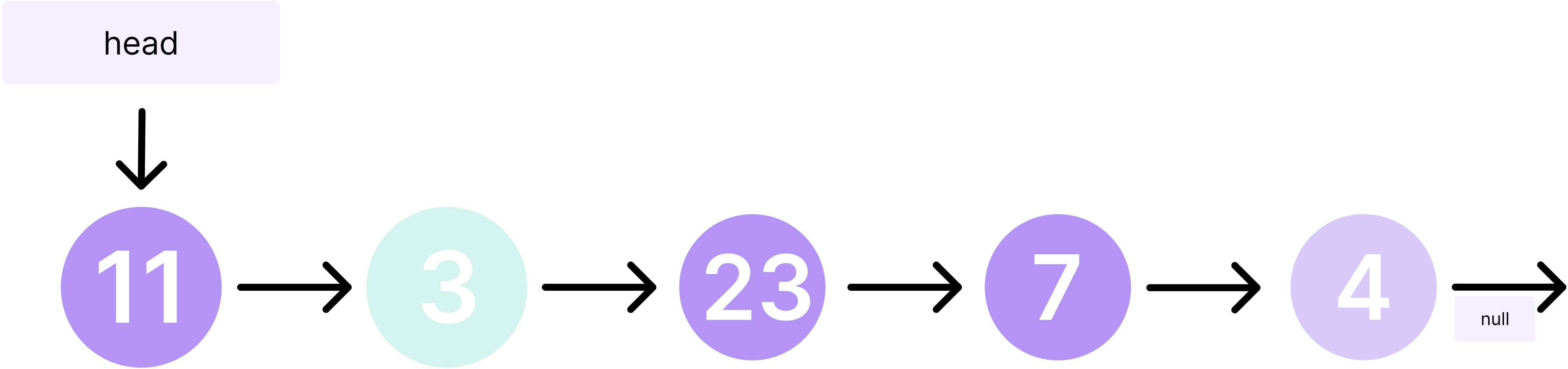
LINKED LISTS

eliminar un elemento



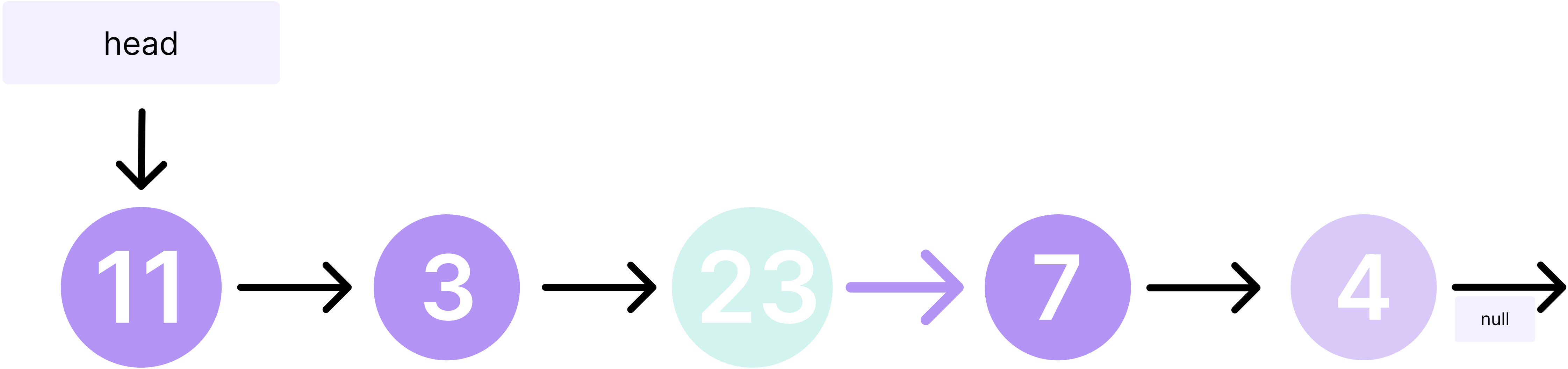
LINKED LISTS

eliminar un elemento



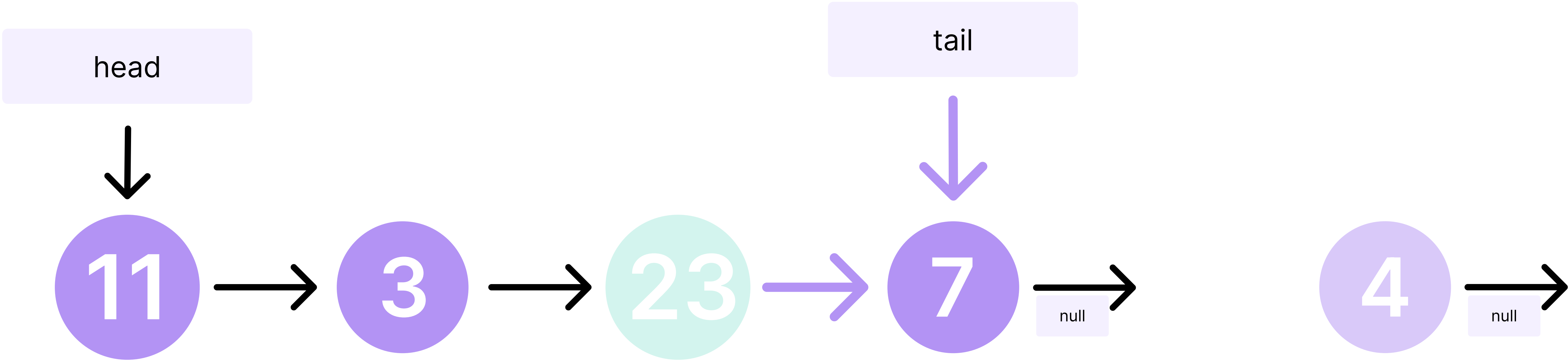
LINKED LISTS

eliminar un elemento



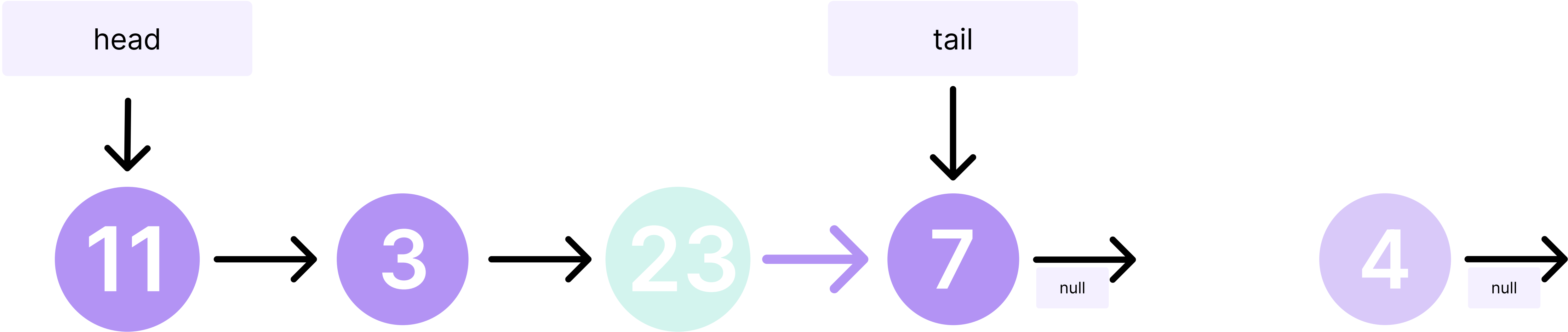
LINKED LISTS

eliminar un elemento



LINKED LISTS

eliminar un elemento



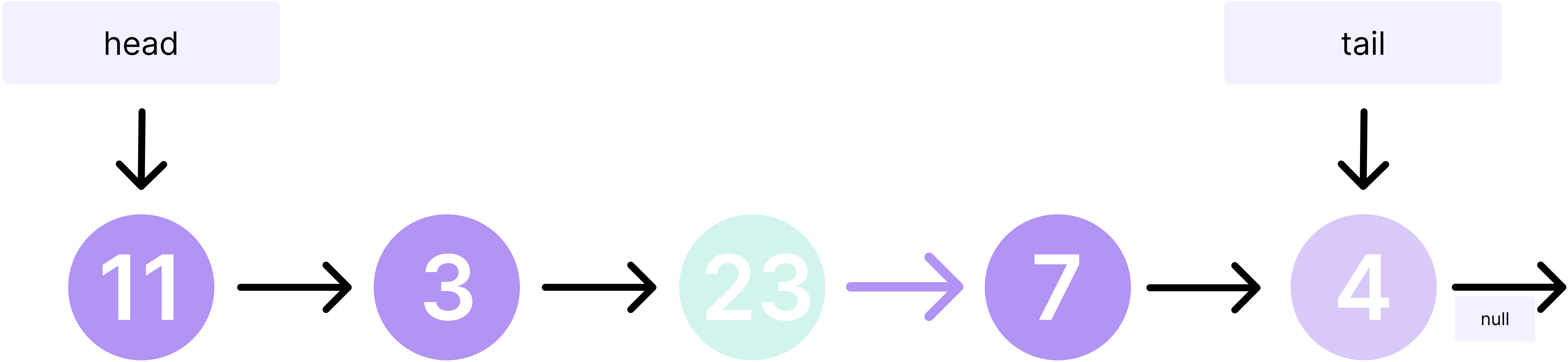
$O(n)$

LINKED LISTS

	Linked Lists	Arrays
Push	$O(1)$	$O(1)$
Pop	$O(n)$	$O(1)$
Shift	$O(1)$	$O(n)$
Unshift	$O(1)$	$O(n)$
Insert	$O(n)$	$O(n)$
Delete	$O(n)$	$O(n)$
Lookup by Index	$O(n)$	$O(1)$
Lookup by Value	$O(n)$	$O(n)$

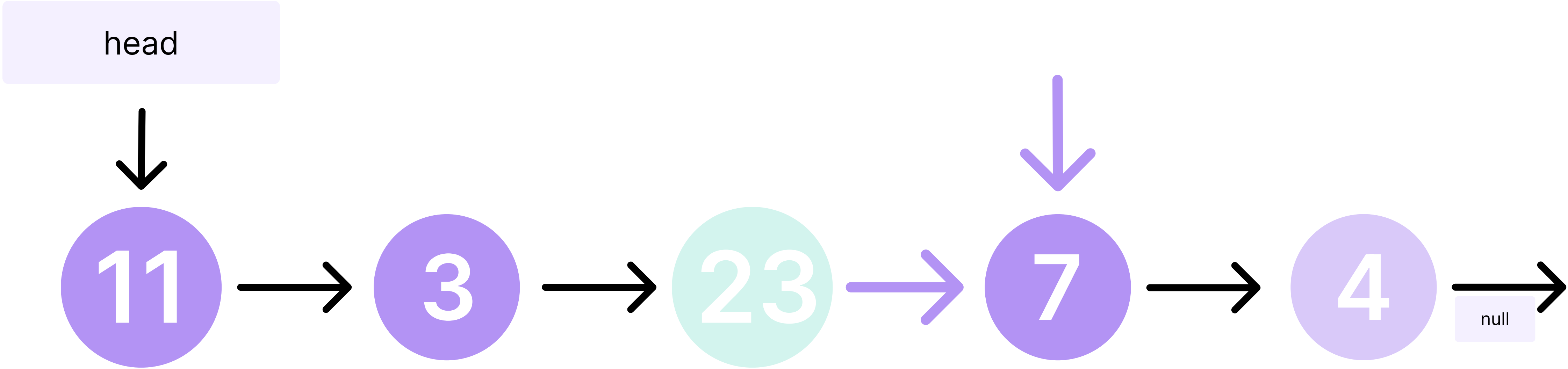
LINKED LISTS

eliminar un elemento



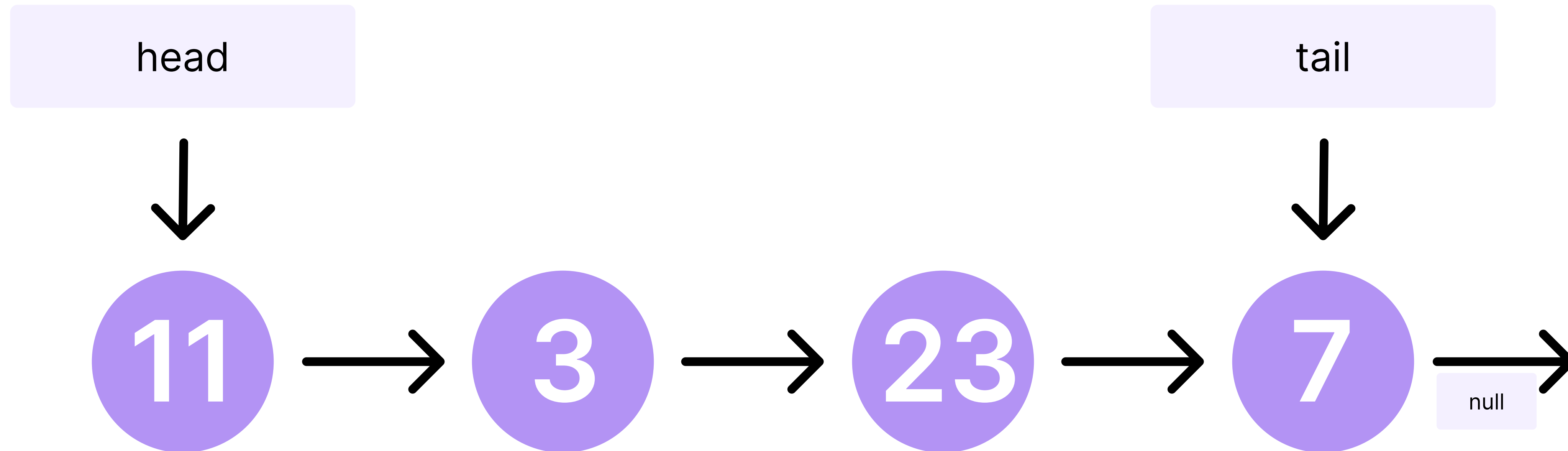
LINKED LISTS

eliminar un elemento



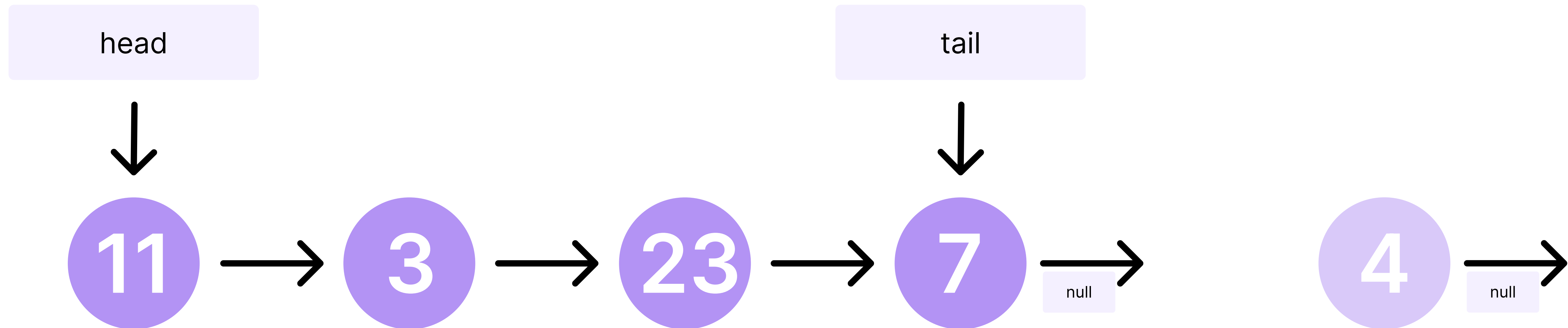
LINKED LISTS

agregar un elemento



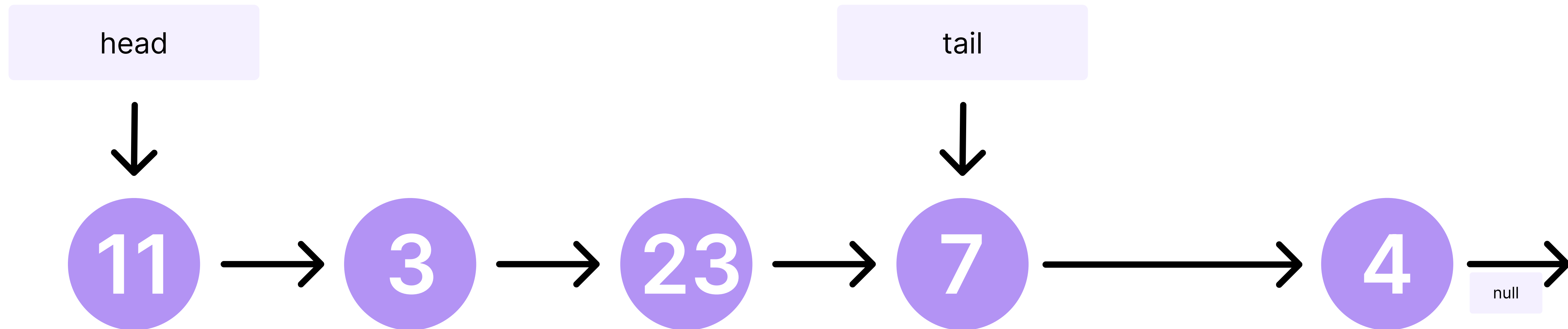
LINKED LISTS

agregar un elemento



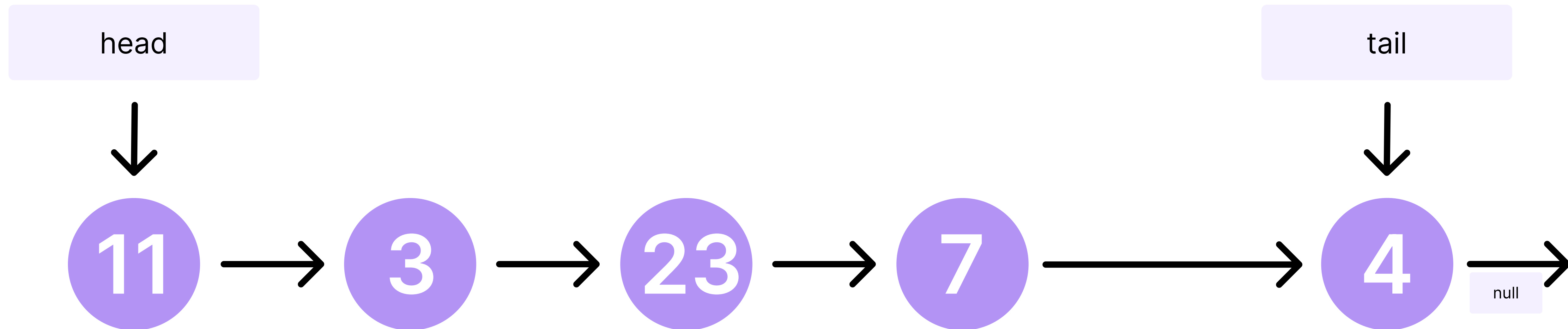
LINKED LISTS

agregar un elemento



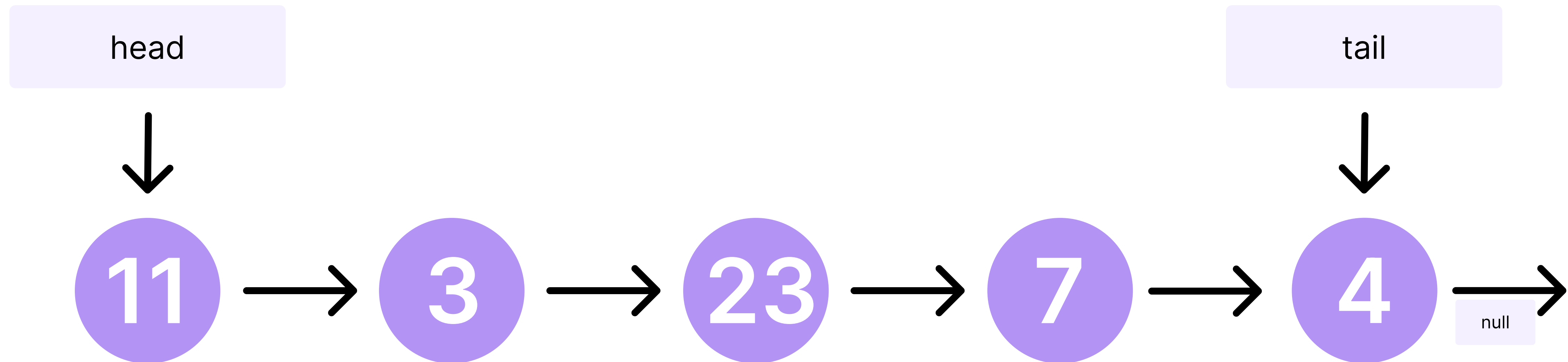
LINKED LISTS

agregar un elemento



LINKED LISTS

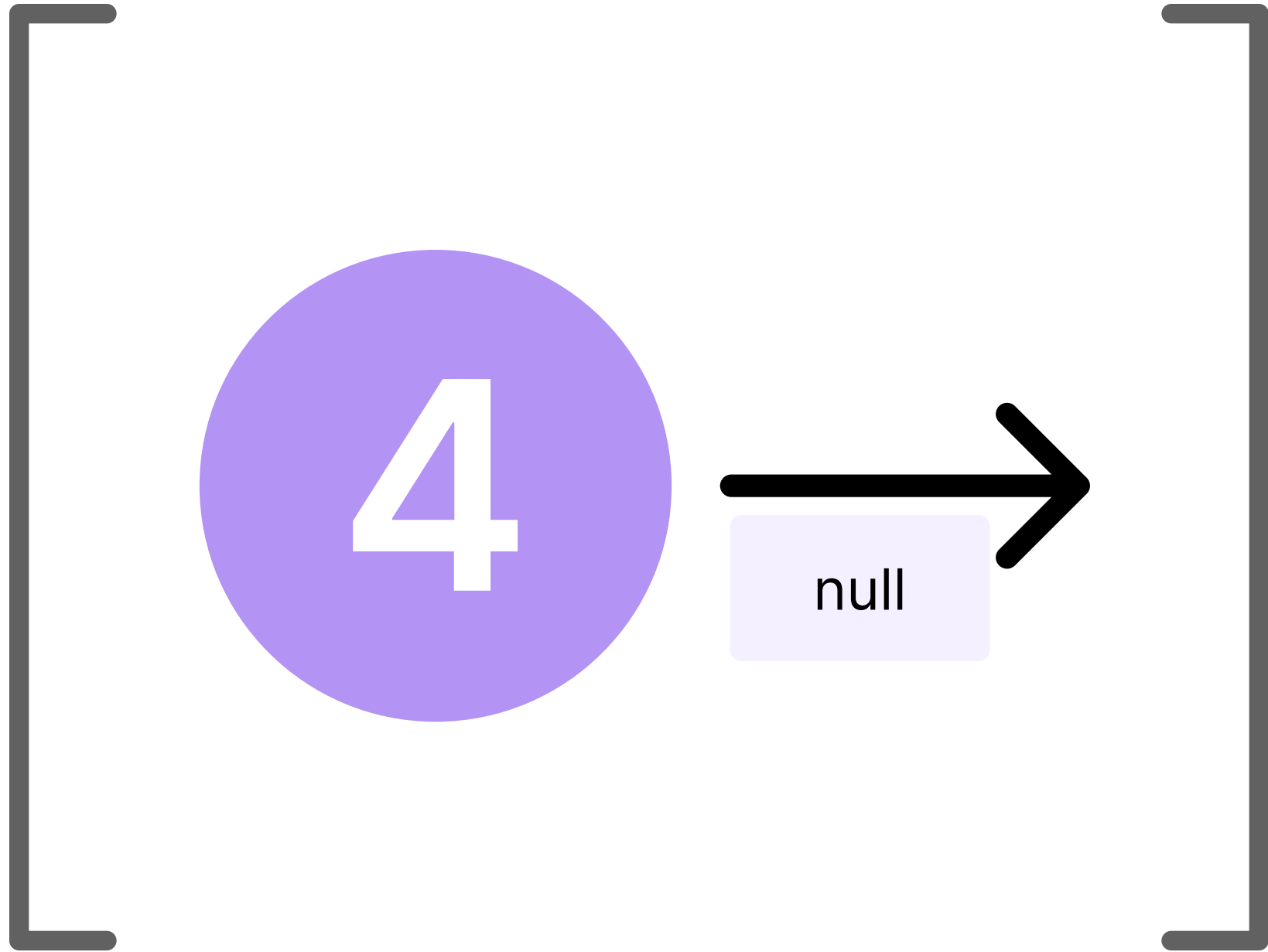
agregar un elemento



NODOS

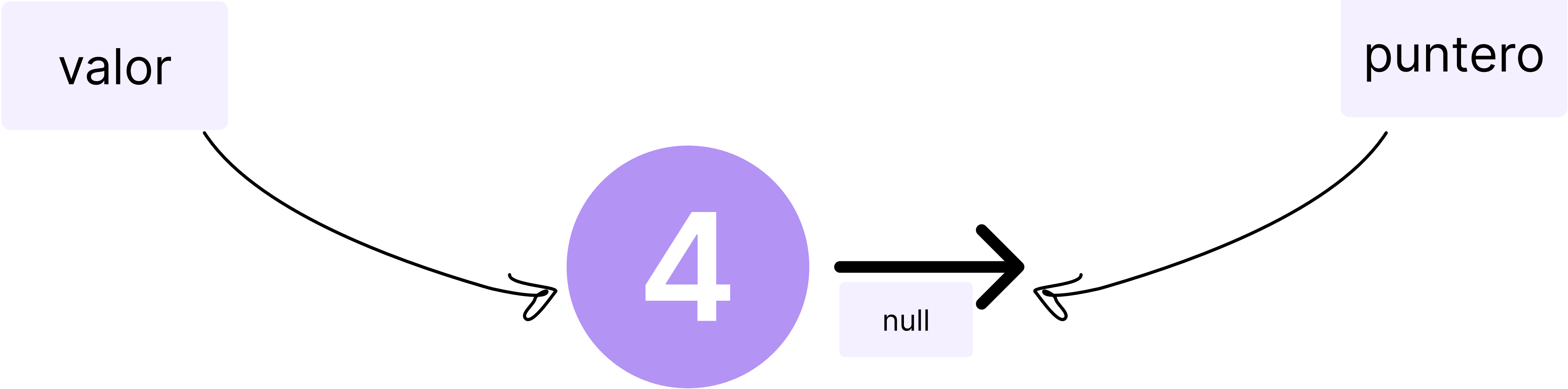


NODOS

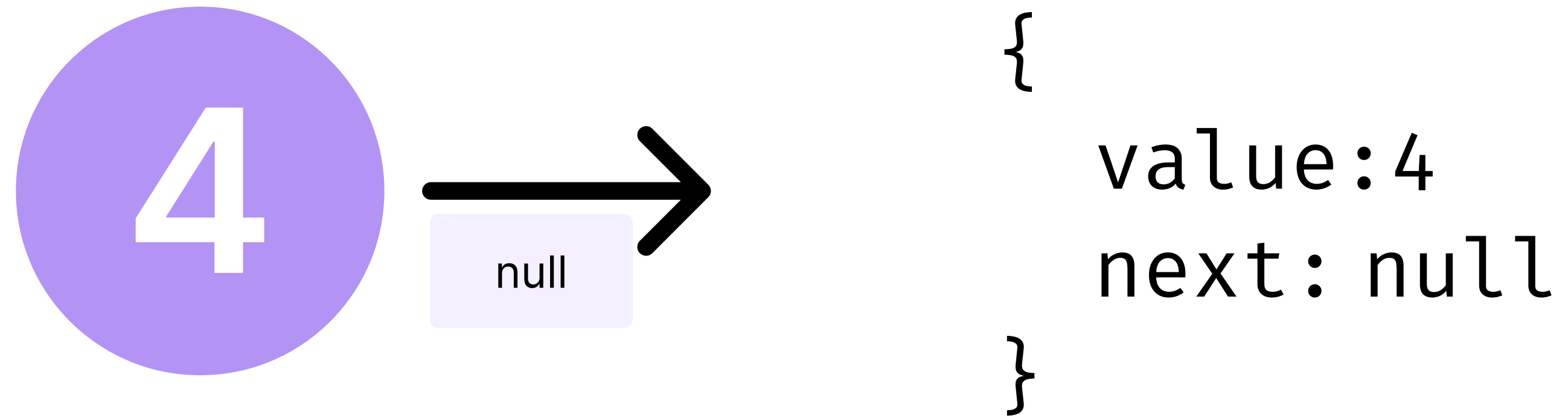


NODO

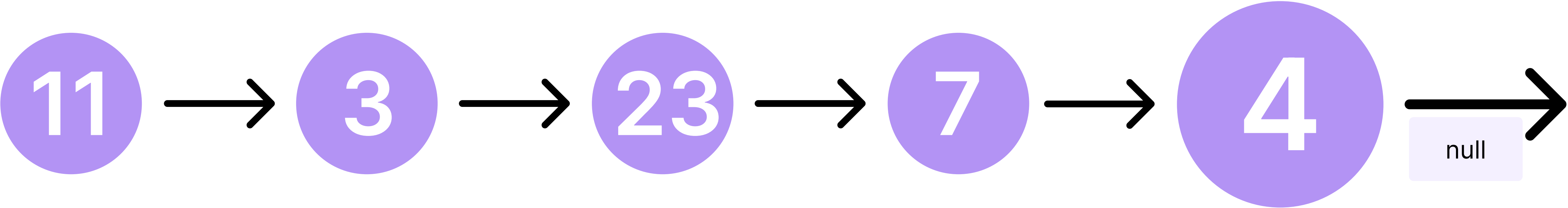
NODOS



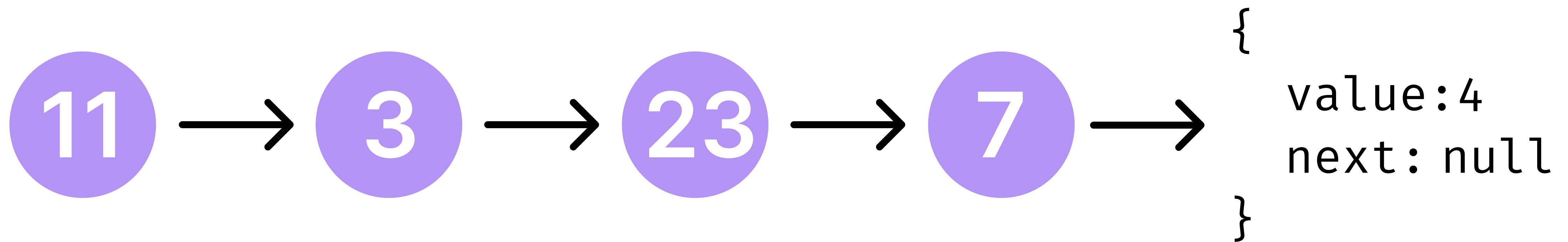
NODOS



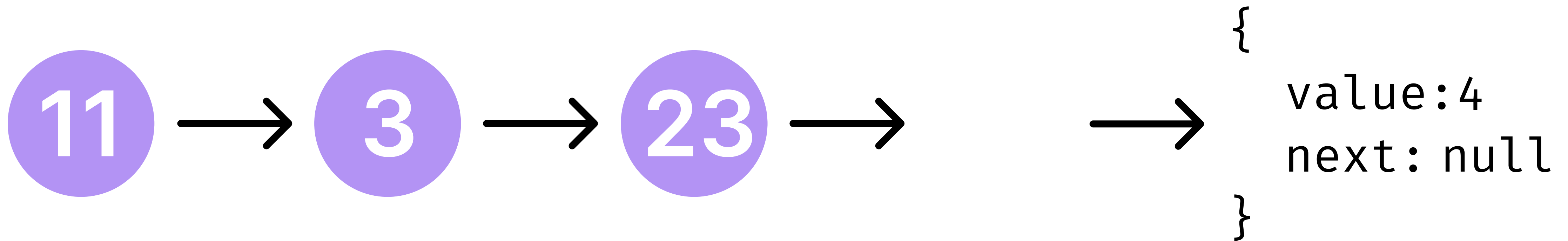
NODOS



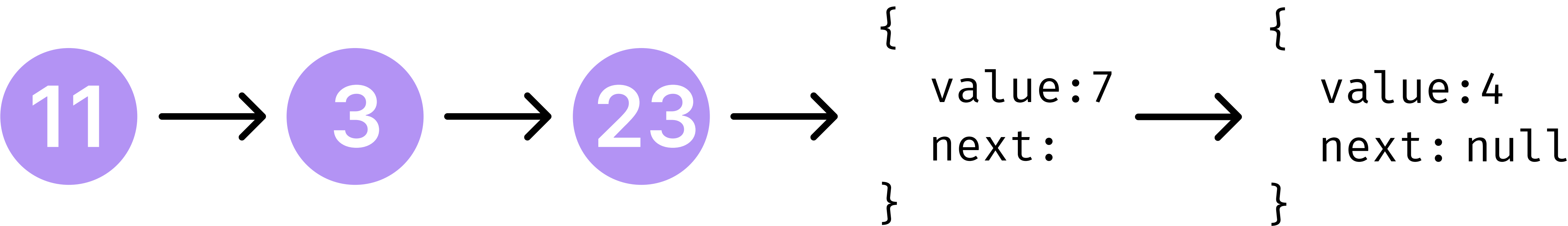
NODOS



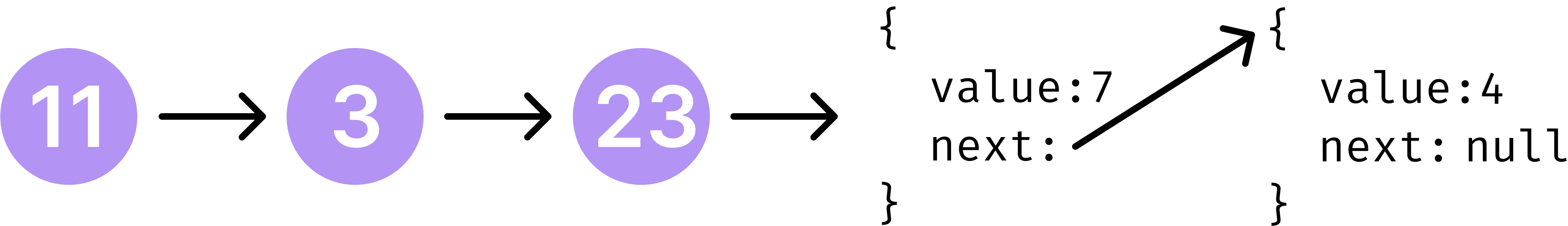
NODOS



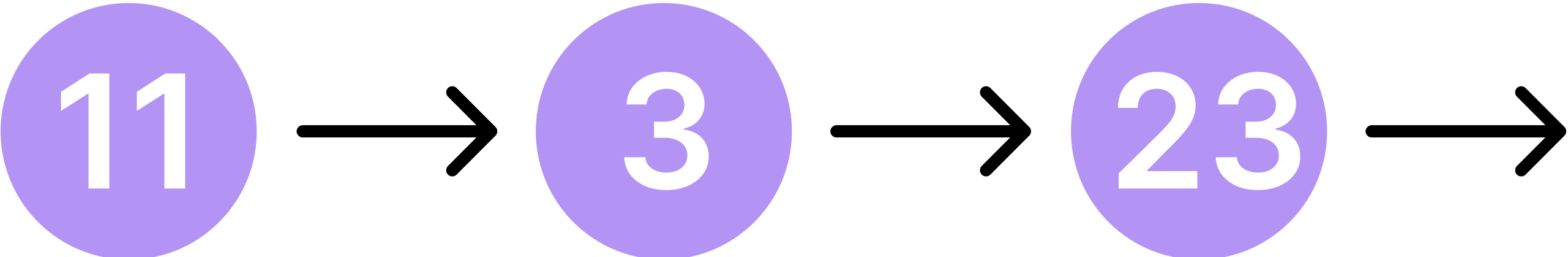
NODOS



NODOS

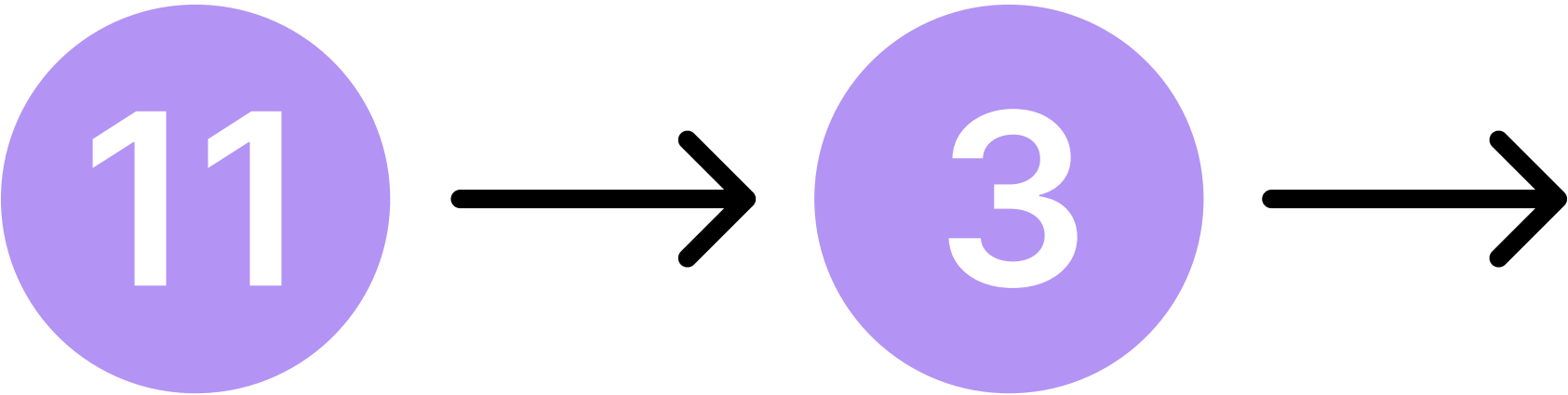


NODOS



```
{  
  value:7  
  next: {  
    value:4  
    next: null  
  }  
}
```

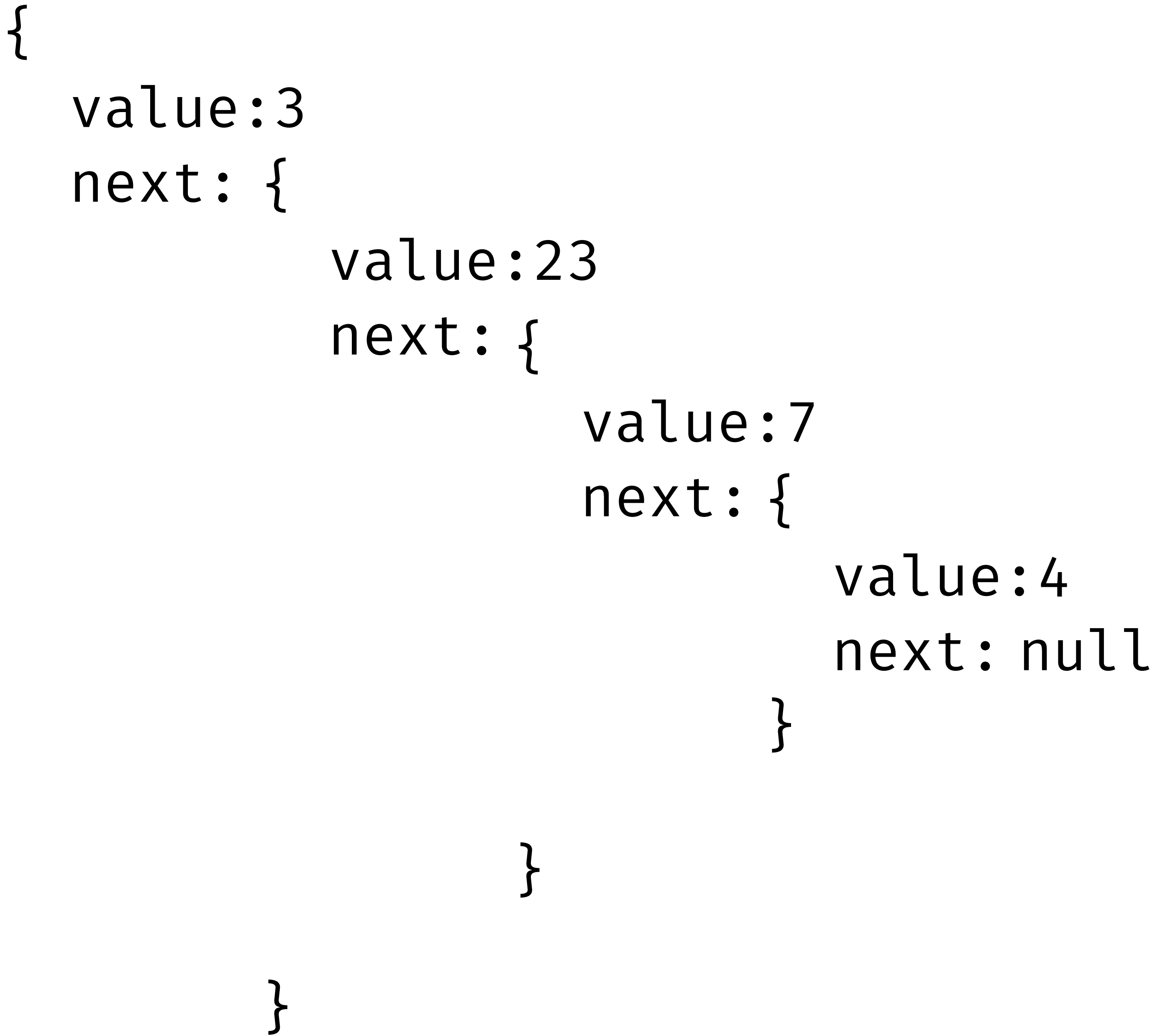
NODOS



```
{
  value:23
  next: {
    value:7
    next: {
      value:4
      next: null
    }
  }
}
```


NODOS

11



NODOS

```
{  
  value:11  
  next: {  
    value:3  
    next: {  
      value:23  
      next: {  
        value:7  
        next: {  
          value:4  
          next: null  
        }  
      }  
    }  
  }  
}
```

NODOS

```
class linkedlist {  
    constructor(value) { ... }  
}
```

NODOS

```
class linkedlist {  
    constructor(value) { ... }  
    push(value) { ... }  
}
```

NODOS

```
class linkedlist {  
    constructor(value) { ... }  
    push(value) { ... }  
    unshift(value) { ... }  
}
```

NODOS

```
class linkedlist {  
    constructor(value) { ... }  
    push(value) { ... }  
    unshift(value) { ... }  
    insert(value) { ... }  
}
```

NODOS

```
class linkedlist {  
    constructor(value) { ... }  
    crear un nuevo nodo  
    push(value) { ... }  
    unshift(value) { ... }  
    insert(value) { ... }  
}
```

NODOS

```
class linkedlist {  
    constructor(value) { ... }  
    crear un nuevo nodo  
    push(value) { ... }  
    crear un nuevo nodo  
    agregar nodo al final  
    unshift(value) { ... }  
    insert(value) { ... }  
}
```


NODOS

```
class linkedlist {  
    constructor(value) { ... }  
    crear un nuevo nodo  
    push(value) { ... }  
    crear un nuevo nodo  
    agregar nodo al final  
    unshift(value) { ... }  
    crear un nuevo nodo  
    agregar nodo al principio  
    insert(value) { ... }  
}
```

NODOS

```
class linkedlist {  
    constructor(value) { ... }  
    crear un nuevo nodo  
    push(value) { ... }  
    crear un nuevo nodo  
    agregar nodo al final  
    unshift(value) { ... }  
    crear un nuevo nodo  
    agregar nodo al principio  
    insert(value) { ... }  
    crear un nuevo nodo  
    insertar nodo  
}
```

NODOS

```
class linkedlist {  
    constructor(value) { ... }  
    crear un nuevo nodo  
    push(value) { ... }  
    crear un nuevo nodo  
    agregar nodo al final  
    unshift(value) { ... }  
    crear un nuevo nodo  
    agregar nodo al principio  
    insert(value) { ... }  
    crear un nuevo nodo  
    insertar nodo  
}
```

NODOS

crear un nuevo nodo

crear un nuevo nodo

crear un nuevo nodo

crear un nuevo nodo

```
class linkedlist {  
    constructor(value) { ... }  
    push(value) { ... }  
    unshift(value) { ... }  
    insert(value) { ... }  
        insertar nodo  
}
```

NODOS

```
class Node {  
  
}
```

```
class linkedlist {  
    constructor(value) { ... }  
    push(value) { ... }  
    unshift(value) { ... }  
    insert(value) { ... }  
        insertar nodo  
}
```