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Latihan Soal List Berkait

KAMUS UMUM

```
type ElType: integer
type Address: pointer to node
type Node : < info: ElType,
              next: Address >
type List : Address
const NIL NULL
const IDX_UNDEF -1
```

```
function countPos(l: List) → integer
```

KAMUS LOKAL

```
count : integer
p : Address
```

ALGORITMA

```
p ← l
count ← 0

while (p≠NIL) do
    if (p↑.info > 0) then
        count ← count + 1
    p ← p↑.next
→ count
```

```
function max(l: List) → integer
```

KAMUS LOKAL

```
max : integer
p : Address
```

ALGORITMA

```
p ← l
max ← p↑.info

while (p≠NIL) do
    if(p↑.info > max) then
        max ← p↑.info
    p ← p↑.next

→ max
```

```
function searchPos(l : List) → Address
```

KAMUS LOKAL

```
p: Address
found : boolean
```

ALGORITMA

```
p ← 1
found ← false

while (p≠NIL and not found) do
    if (p↑.info > 0) then
        found ← true
    else then
        p = p↑.next

if (found) then
    → p
else then
    p = NIL
    → p
```

```
procedure deleteNeg(input/output l: List)
```

KAMUS LOKAL

```
p, temp, prev: Address
```

ALGORITMA

```
p ← 1
prev ← NIL

while(p ≠ NIL) do
    if(p↑.info < 0) then
        if(prev = NIL) then
            l ← p↑.next
            temp ← p
            p ← p↑.next
            dealokasi(temp)
        else then
            prev↑.next ← p↑.next
            temp ← p
            p ← p↑.next
            dealokasi(temp)

    else then
        prev ← p
        p ← p↑.next
```

```
procedure insertFirst(input/output l: List, input val: ElType)
```

KAMUS LOKAL

p: Address

ALGORITMA

```
p ← newNode(val)
if p≠NIL then { alokasi berhasil }
    p↑.next ← l
    l ← p
```

procedure insertLast(input/output l: List, input val: ElType)

KAMUS LOKAL

p, last: Address

ALGORITMA

```
if isEmpty(l) then
    insertFirst(l, val)
else
    p ← newNode(val)
    if p≠NIL then
        last ← l
        while (last↑.next≠NIL) do { cari alamat node terakhir }
            last ← last↑.next
        {last↑.next=NIL}
        last↑.next ← p
```

procedure copyPos(input l1: List, output l2: List)

KAMUS LOKAL

p1: Address

ALGORITMA

```
p1 ← l1

while(p1 ≠ NIL) do
    if(p1.info > 0) then
        insertLast(l2, p1.info)
    p ← p1.next
```

procedure insertAt(input/output l: List, input val: ElType, input idx: integer)

KAMUS LOKAL

ctr: integer
p, loc: Address

ALGORITMA

```
if idx=0 then
    insertFirst(l, val)
else
    p ← newNode(val)
    if p≠NIL then { alokasi berhasil }
        ctr ← 0
```

```

loc ← 1
while ctr < idx-1 do
    ctr ← ctr+1
    loc ← loc↑.next
{ctr=idx-1}
p↑.next ← loc↑.next
loc↑.next ← p

```

procedure sortedInsert(input/output l: List, input x: Eltype)

KAMUS LOKAL

idx: integer

p: Address

ALGORITMA

p ← 1

idx ← 0

while(p≠NIL && p↑.info < x)

 idx ← idx + 1

 p ← p↑.next

insertAt(l, x, idx)

procedure updateList(input x,y: integer, input/output l: List)

KAMUS LOKAL

p: Address

found: boolean

ALGORITMA

p ← 1

found ← false

while(p≠NIL && not found) do

 if(p↑.info = x) then

 found ← true

 else then

 p ← p↑.next

if(found) then

 p↑.info ← y