

- \* Substitution & Subsequens
- \* Hash → Caesar Cipher

$S = "OSN OSN OSN"$

\* subsekuens  $\leftarrow$  dan  $S$   
 $\leftarrow = OSN$

Pilih dari karakter  $S$  urut  
ngabennik  $\leftarrow$

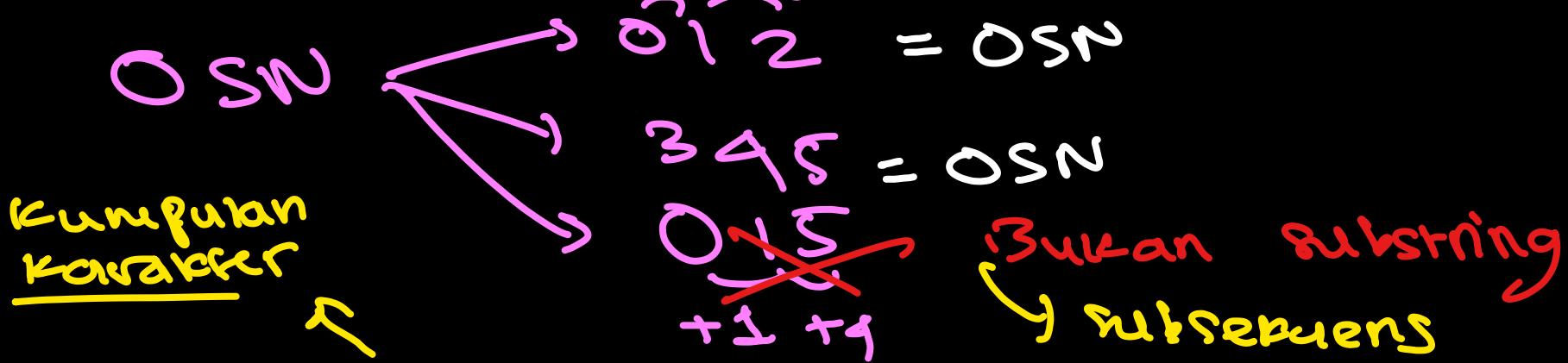
$s[i:j]$  dan  $s[j:j]$ ,  $s \dots [\leftarrow]$   
 $i < j < \leftarrow < \dots$

$OSN \rightarrow 012 \rightarrow OSN$  } Menaik  
 $095 \rightarrow 095 \rightarrow OSN$  }

\* substring  $\neq$  dari  $S$

Pilih karakter dari  $S$

untuk Membentuk  $\neq \rightarrow S[i:j], S[i+1:j],$   
 $\vdash = OSN$       substring  
                         $i:j$



$S = \text{"a b c a b c d e"}$  abc di mana ? 3<sup>5</sup>

S. find ("abc") = 0  $\rightarrow ? = -1$

S. find (substr, start) = cari substr nubi  
dari start

S. find ("abc", 2) = 3

Diagram illustrating string S = "a b c a b c d e". A red oval highlights the first occurrence of "a b c" from index 0 to 2. A yellow oval highlights the second occurrence of "a b c" from index 3 to 5. An arrow points from the start of the second "a b c" to index 3.

S. find ("abc", 0) = 0

S. Find C("abc", 2) = 3

S. Find C("abc", 5) = -1 (break)

0                  2                   $0 + 3 - 1 = 2$   
a    b    c  
③    4    5  
a    b    c  
 $\rightarrow 3 + 3 - 1 = 5$

$S = abcba$

left = 0  
right = 4

$S.\text{substr}(4, 0) =$

$S.\text{substr}(x, y)$  = Nampiin substring  
Mulaikan dari indeks  
 $x$  sd  $x+y-1$

$S.\text{substr}(0, 3) = "abc"$

$S.\text{substr}(\text{right}, \text{left}) = S.\text{substr}(4, 0)$   
=  $4 \rightarrow 4+0-1$   
=  $4 \rightarrow 3$

$\rightarrow cba$   
 $\rightarrow cba$  } same = Palindrome  
 S.size = sanjil

$\rightarrow bg$   
 $\rightarrow bg$  } same = Palindrome  
 mid = 2

$S.\text{substr}(0, \text{mid}) = abc \rightarrow O(1)$

for Kanan  $\rightarrow$  mid:  $\rightarrow O(N/2)$   
 $\rightarrow O(N^2/2)$

a b c b a

$$\text{mid} = 2$$

$3-1 =$   
0 1 2 3  
a b b a  
0 1 2 3 4  
a b b b a

3 → size - 1  
size - 1  
S From right = (size(S) - 1)  
to mid

0 1 2 3 4 5  
a b b b a  
3-1

S From right =  
(size(S) - 1)  
to mid

S from left = substr  
(0, 3)

S from right =  
 $S \rightarrow 3 \ abba$

Recursive < formula →  $F(n) = F(n-1) + F(n-2)$   
Operasi → Dinamis - bergerak  
Ke kiri →  $f(x-1, y)$   
Ke kanan →  $f(x, y-1)$

Base case → inisiasi

- \* Fibonacci →  $f(0) = 0, f(1) = 1, f(2) = 1$
- \* Perkalian / Faktorial →  $f(0) = 1 \rightarrow 0! = 1$
- \* Pangkat  $f(0) = 1$

Misalkan kita punya lantai berukuran  $1 \times N$ , diisi dengan ubin berukuran  $1 \times 1$ ,  $1 \times 2$ .  
Berapa banyak cara mengisi lantai untuk  $N = 5$ .

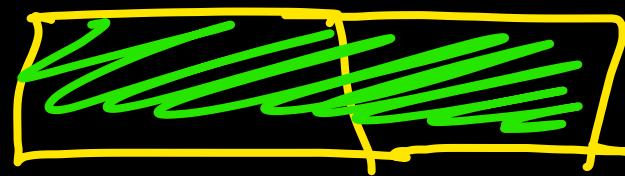
$$f(n) = f(n-1) + f(n-2)$$

orde

$$n=1$$

$$ord=2 \rightarrow f(i), f(i+1)$$

$$n=1 \rightarrow f(1) = 1$$



$$\begin{cases} f(2) = 2 \\ 2 \text{ cara} \\ \text{isi } 1 \times 2 \end{cases}$$

$f^{(n-1)} + f^{(n)} \xrightarrow{\text{order 3}}$

$f^{(1)}, f^{(2)}, f^{(3)}$

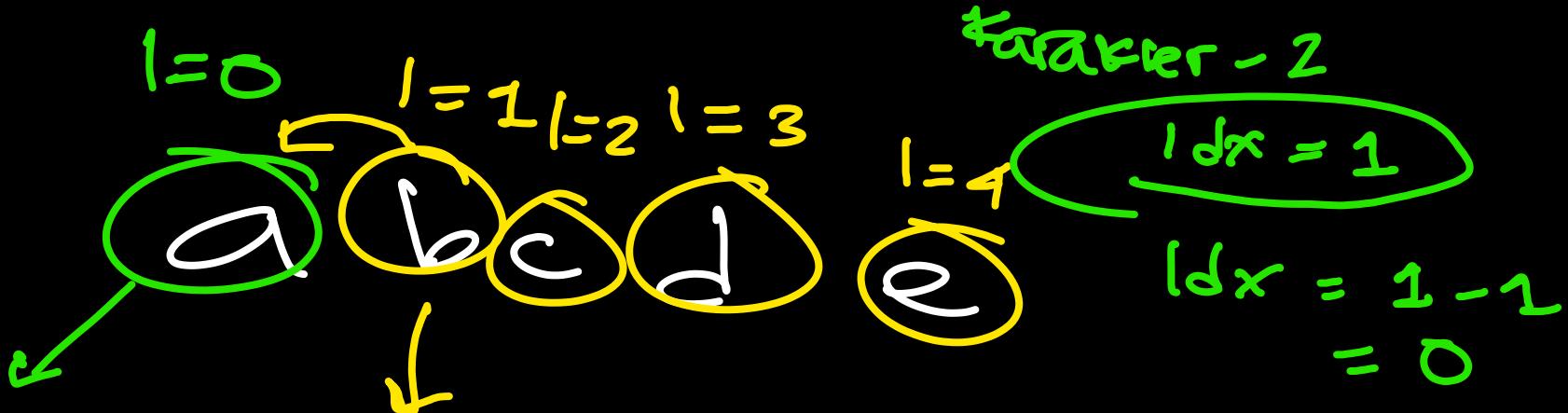
$f(s, x, l) \rightarrow$  cetak string s dari indeks ke l sampe x.

$s = "a b c d e"$        $l = 1, 2, 3, 4, 5$   
 $q, r \rightarrow 1$

$f(s, 2, 4) = s[4]$

$f(s, 2, 3) \rightarrow s[3]$

$f(s,$



Jangan dicarik, berikan  
 Karakter ke - x

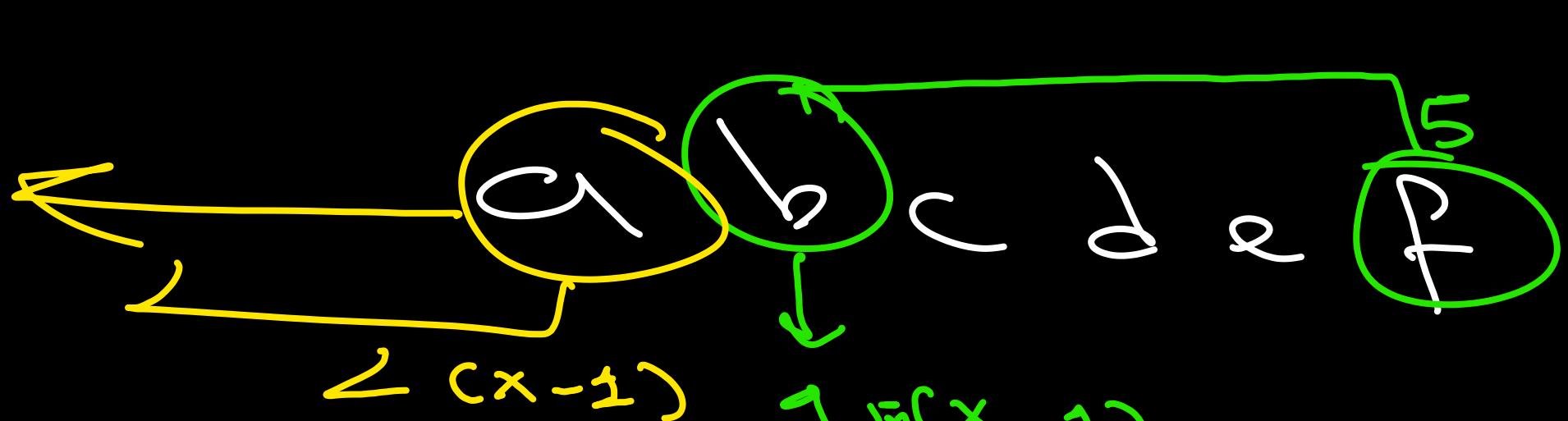
$$ldx = \underline{x - 1}$$

Karakter  $[x - 1]$   
 Ceruk ?

ldx dicarik mulai  $ldx - 1$

$$x - 1 - 1 =$$

$$\begin{aligned} & x - 1 - 1 \\ & = x - 2 \end{aligned}$$



$\angle(x-1)$

$1_{\text{an}}(x-1)$

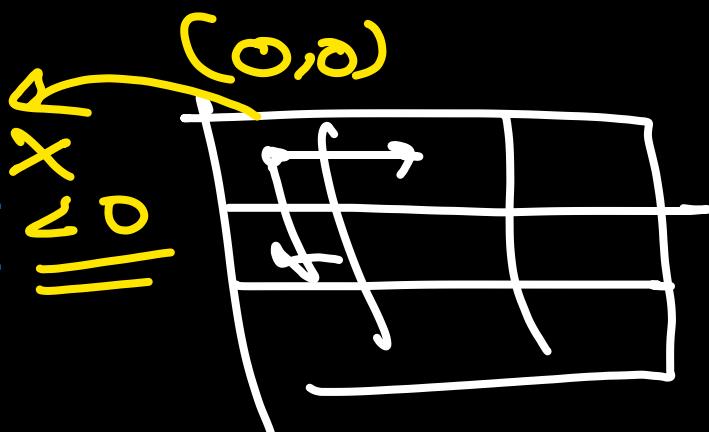
$1_{\text{d}} x \overset{5}{\cancel{\alpha}} \rightarrow x-1$   
 $x = 2$   
 $1_{\text{d}} x = 1$

$(x, y)_{\min} = (0, 0)$

```
if(x < 0 atau y < 0){  

    return ;  

}
```



f

ke kin  $(x-1, y)$

$f(x-1, y)$

root = None  
()

5

5 3 10 ↙ 3

° 1 2 3 4 5 6 + 0 9  
Kasur Rusak

$$\text{mid} = 10/2$$

N { Benar  
Banjil

\* Kasus N Banjil

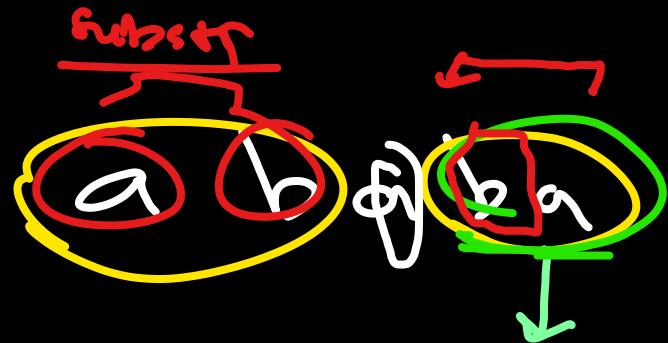
° 1 0 3 4  
a b q b a

$$\text{mid} = \text{len}/2 = 5/2 = 2$$



Cek(4 → 3) == Cek(0 → 2)

{ DnC }



$$ab \Leftrightarrow ba$$

$$\alpha b = = \alpha b$$

$$\text{Cev}(5, 0, 0)$$

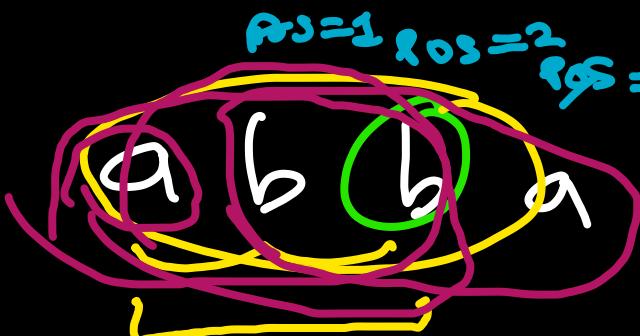
$$\underline{\text{Cev}(5, 4, 3)}$$

2

$$\underline{\text{Cev}(2, 4, 3)}$$



$$\text{ab} = \alpha b \quad \text{Palindrome}$$



$$\boxed{\text{mid} = 2}$$

$$\underline{\alpha b b}$$

$$\frac{\text{mid} - 1}{\text{pos}} \}$$

$$\frac{\text{pos} > \text{mid} - 1}{}$$

$$\frac{\text{pos} \geq \text{mid}}{}$$

} 6 этап