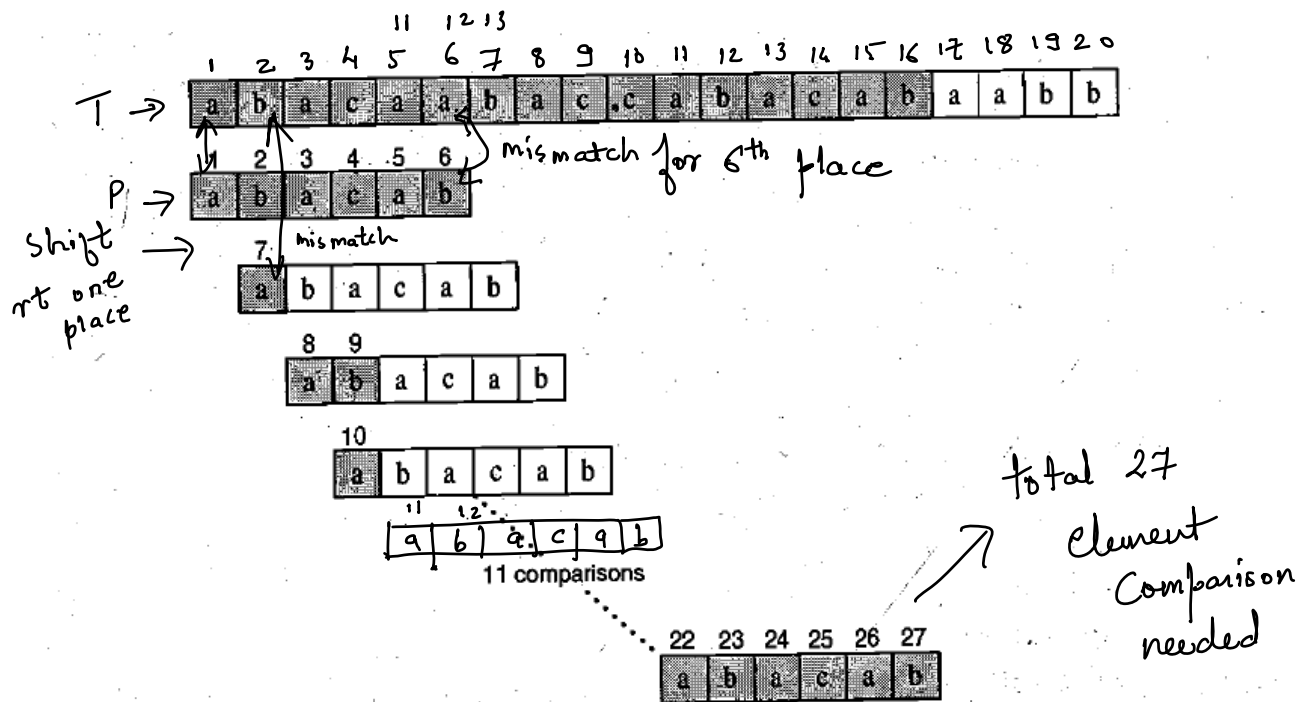
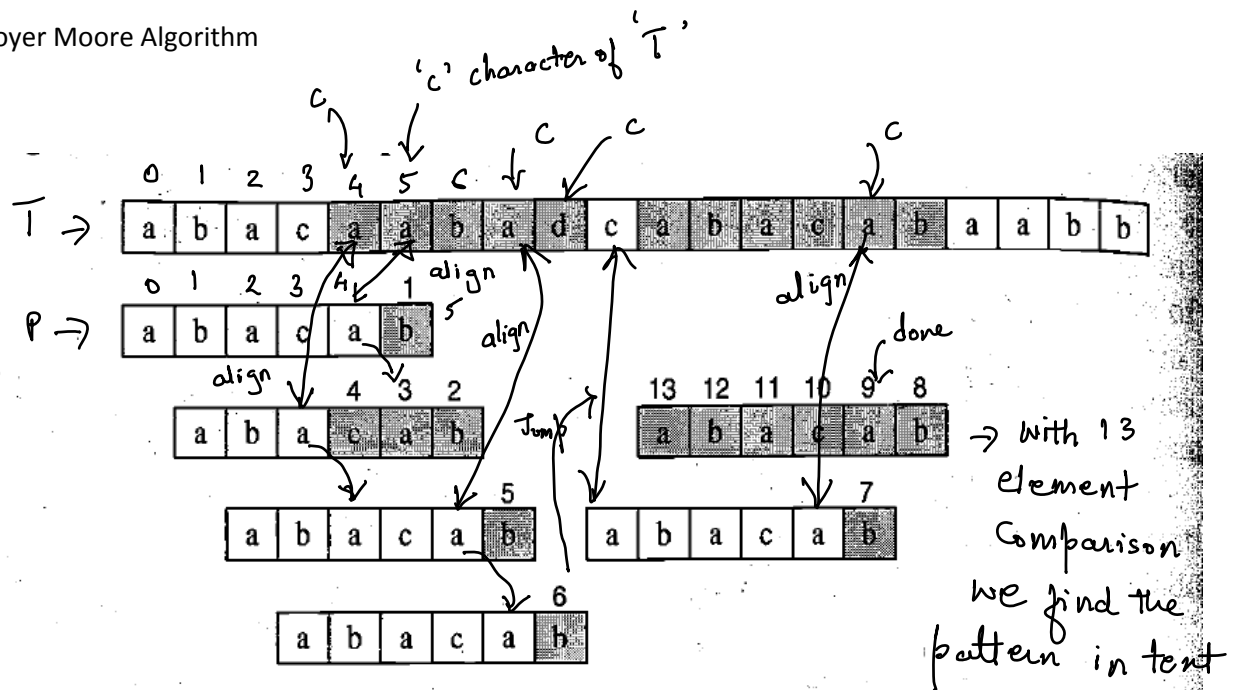


1. Brute Force Pattern Matching Algorithm



2. Boyer Moore Algorithm



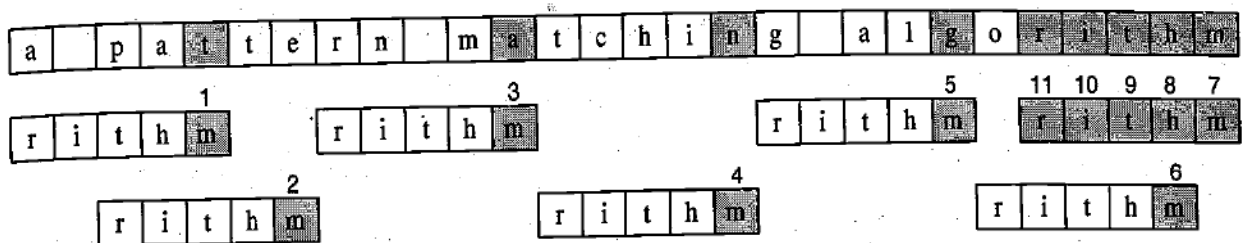
The last(c) function:

c	a	b	c	d
last(c)	4	5	3	-1

↑
last occurrence of 'a' in pattern

→ since 'd' is not in pattern

One more example of BM Algo.



3.KMP Algorithm

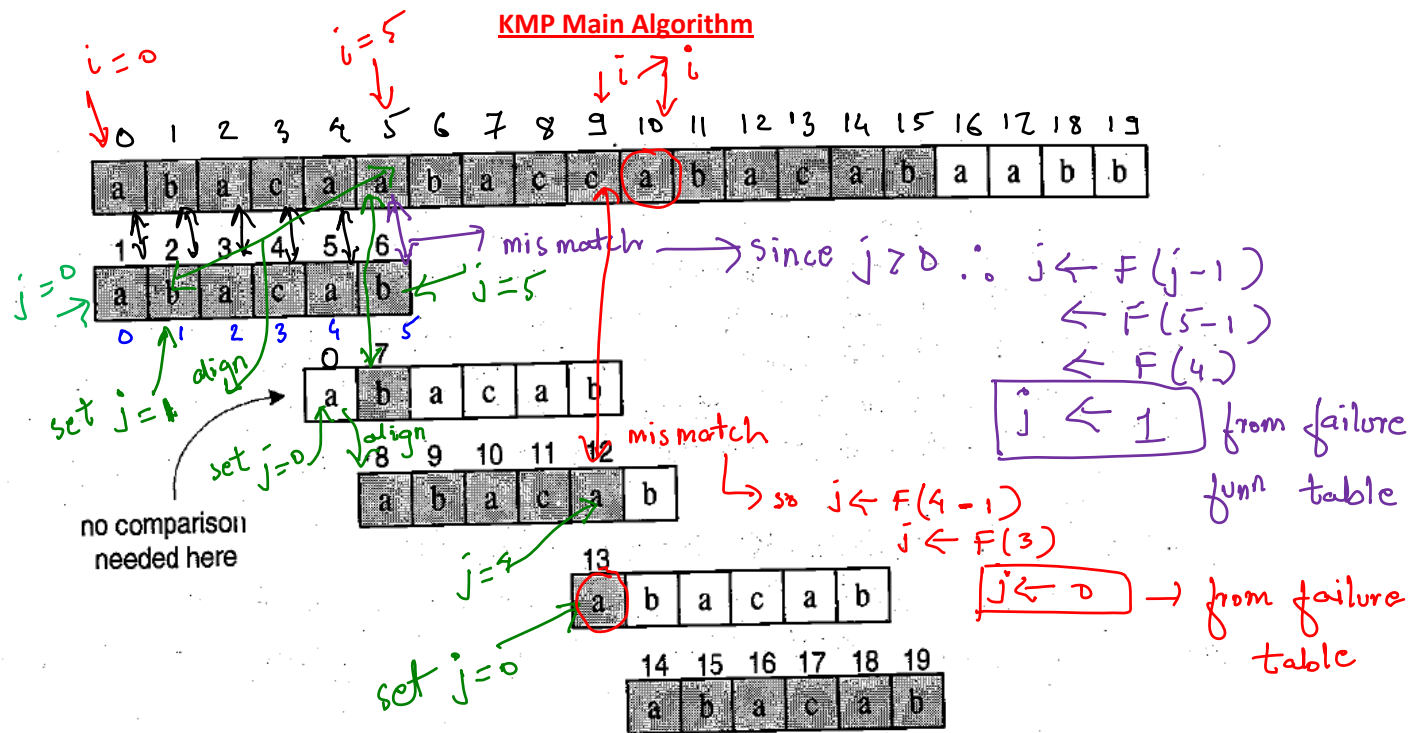
KMP Failure function computation

Example 9.2: Consider the pattern string $P = \text{"abacab"}$ from Example 9.1. KMP failure function $f(j)$ for the string P is as shown in the following table

j	0	1	2	3	4	5
$P[j]$	a	b	a	c	a	b
$f(j)$	0	0	1	0	1	2

$F(1) \downarrow$ $F(2) \downarrow$ $F(3) \uparrow$ $F(4) \uparrow$ $F(5) \leftarrow$
 $F(5) = j+1 = 0+1 = 1$
 $F(4) = j+1 = 0+1 = 1$
 $F(3) = j+1 = 1+1 = 2$
 $F(2) = j+1 = 1+1 = 2$
 $F(1) = j+1 = 0+1 = 1$
 $F(0) = 0$

if match then $F(i) = j+1$
 $i++$
 $j++$
 else if $j > 0$ then
 $j \leftarrow F(j-1)$
 else no match
 then $F(i) = 0$
 $i \leftarrow i+1$



- Initially $i=0, j=0$
- ① If match then $i++$, $j++$
 - ② if not match & $j > 0$ then $j \leftarrow F(j-1)$
from failure funⁿ table
 - ③ otherwise $\rightarrow i++$