13-A

串

ADT

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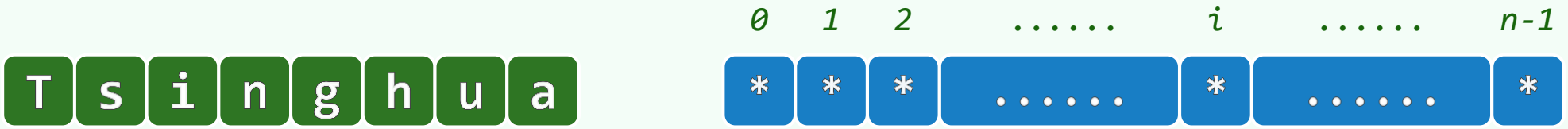
术语



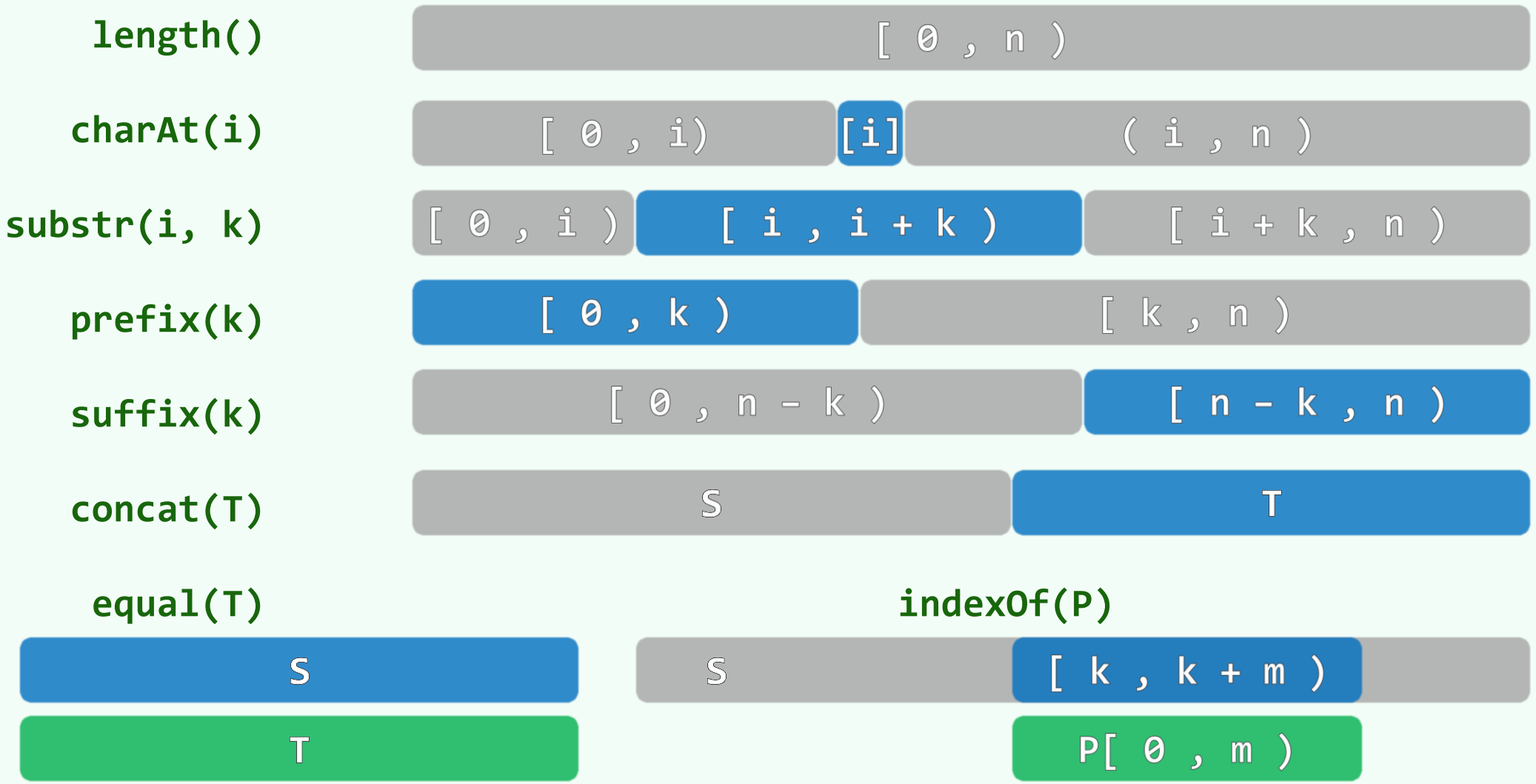
$$S.substr(i,k) = S[i, i+k),\ 0 \le i < n,\ 0 \le k$$

$$S.prefix(k) = S.substr(0,k) = S[0,k),\ 0 \le k \le n$$

$$S.suffix(k) = S.substr(n-k,k) = S[n-k,n),\ 0 \le k \le n$$

$$S.substr(i,k) = S.prefix(i+k).suffix(k) = S.suffix(n-i).prefix(k)$$

ADT


length()
[0 , n)
charAt(i)
[0 , i)
[i]
(i , n)
substr(i, k)
[0 , i)
[i , i + k)
[i + k , n)
prefix(k)
[0 , k)
[k , n)
suffix(k)
[0 , n − k)
[n − k , n)
concat(T)
S
T
equal(T)
S
T
indexOf(P)
S
[k , k + m)
P[0 , m)

实例

- "data structures".length() = 15　　"data structures".charAt(5) = 's'

  "data structures".prefix(4) = "data"　"data structures".suffix(10) = "structures"

  "data structures".concat(" & algorithms") = "data structures & algorithms"

  "algorithms".equal("data structures") = false

  "data structures and algorithms".indexOf("string") = -1

  "data structures and algorithms".indexOf("algorithm") = 20

- <string.h>中的对应功能：strlen()、strcpy()、strcat()、strcmp()、strstr()

- 以下，直接利用字符数组实现字符串，转而重点讨论串匹配算法