13-A

邓俊辉

deng@tsinghua.edu.cn

术语

T	s	i	n	g	h	u	a

```
  0   1   2   ......    i    ......   n-1
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*	*	*	......	*	......	*
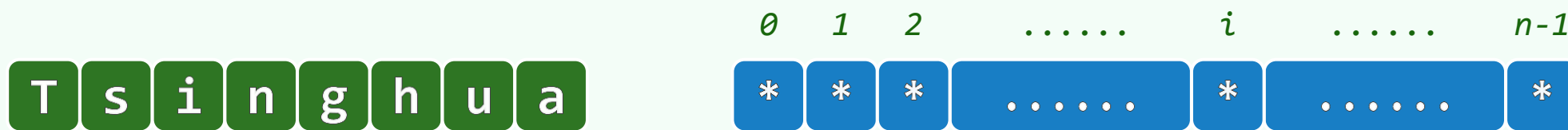
$$S.substr(i,k) = S[i, i+k),\ 0 \leq i < n,\ 0 \leq k$$

[0, i)	[i, i+k)	[i+k, n)

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

[0, k)	[k, n)

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

[0, n-k)	[n-k, 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)
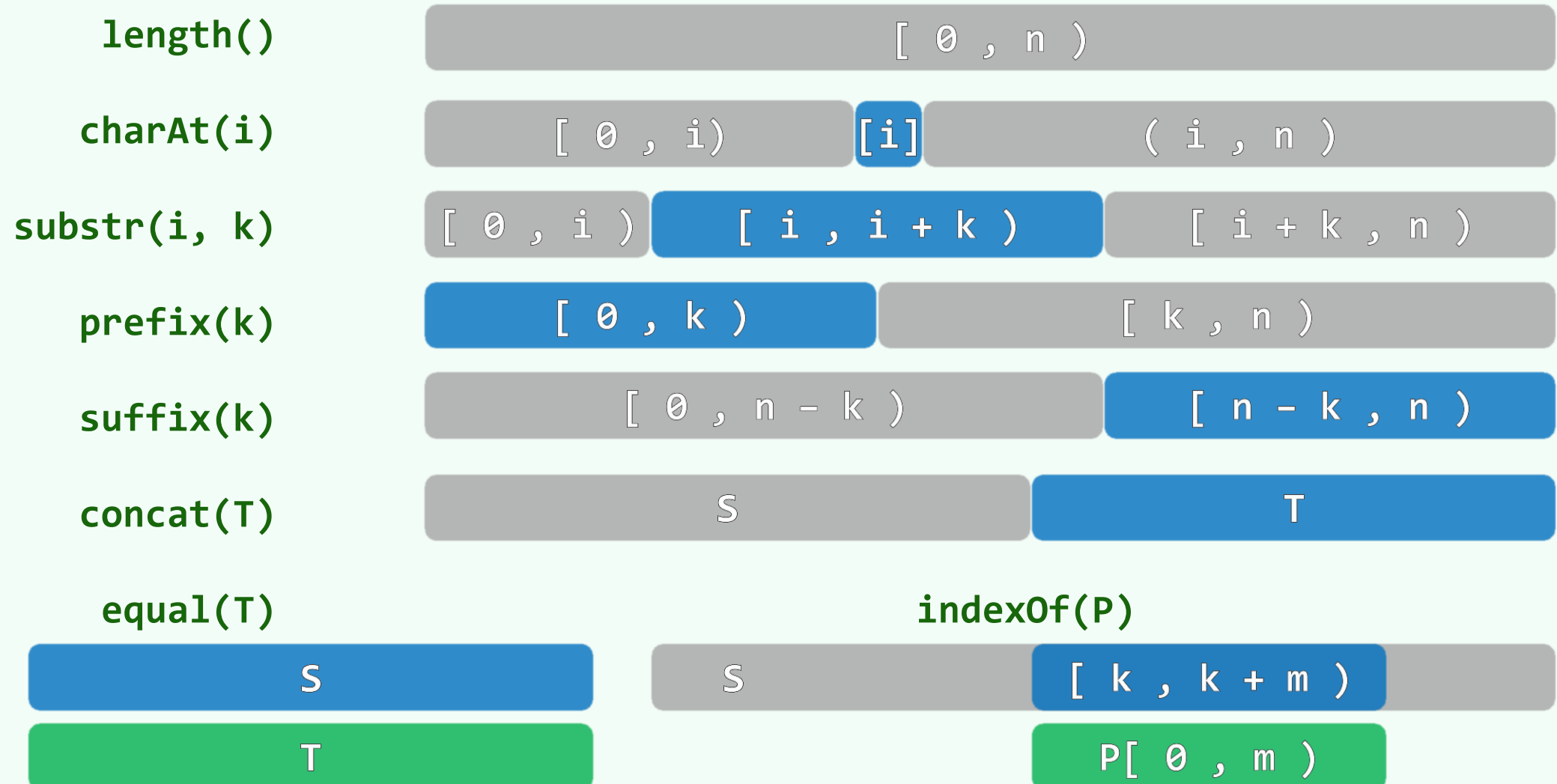
实例

❖ "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