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[kmp [1,2,5] [0,1,2,3,1,2,5,6] 1](#_Toc177681588)

[kmp "ABCABD" "ABCABCABD" 2](#_Toc177681589)

# kmp [1,2,5] [0,1,2,3,1,2,5,6]

init' = make [1,2,5] Nil

= Node [1,2,5] next0 rest0

next0 = make [2,5] (step Nil 1)

check Nil 1 = False

=> rest0 = Nil

#0:

step init' 0

check [1,2,5] 0 = False

=> step rest0 0

= step Nil 0

= init'

#1:

step init' 1

check [1,2,5] 1 = True

=> next1

#2:

step next1 2

check [2,5] 2 = True

=> next2

next1 = make [2,5] (step Nil 1) -- from init'

next2 = make [5] (step (step Nil 1) 2)

#3:

step next2 3

check [5] 3 = False

next2 = make [5] (step (step Nil 1) 2) -- from #2

= Node [5] next3 rest3

check (step (step Nil 1) 2)) 3

= check (step init' 2) 3

= check (step Nil 2) 3

= check init' 3

= False

rest3 = init'

#4:

step init' 1

= #1

#5

= #2

#6:

step next2 5

check [5] 5 = True

=> next6

next6 = make [] (step init' 5) --- from #3

done = True

# kmp "ABCABD" "ABCABCABD"

init' = make "ABCABD" Nil

= Node "ABCABD" next0 rest0

next0 = make "BCABD" (step Nil 'A')

check Nil 'A' = False

=> rest0 = Nil

#0

step init' 'A'

check init' 'A' = True

=> next0

#1

step next0 'B'

check next0 'B' = True

=> next1

= make "CABD" (step (step Nil 'A') 'B')

#2

step next1 'C'

check next1 'C' = True

=> next2

= make "ABD" (step (step (step Nil 'A') 'B') 'C')

#3

step next2 'A'

check next2 'A' = True

=> next3

= make "BD" (step (step (step (step Nil 'A') 'B') 'C') 'A')

#4

step next3 'B'

check next3 'B' = True

=> next4

= make 'D' (step (step (step (step (step Nil 'A') 'B') 'C') 'A') 'B')

#5

step next4 'C'  
 check next4 'C' = False

next4 = make 'D' (step (step (step (step (step Nil 'A') 'B') 'C') 'A') 'B')

= make 'D' (step (step (step (step init' 'B') 'C') 'A') 'B')

= make 'D' (step (step (step init' 'C') 'A') 'B')

= make 'D' (step (step init' 'A') 'B')

= make 'D' (step next0 'B') -- from #0

= make 'D' next1 -- from #1

check next1 'D'= False

rest next4 = next1

step next1 'C'= #2

= next2

#6

step next2 'A'

= #3

= next3

#7

step next3 'B'

= #4

= next4

#8

step next4 'D'

= next5

= make '' ?

done = True