

A[1]	A[2]	A[3]	A[4]	A[5]	A[6]	A[7]	A[8]	A[9]	A[10]
5	3	7	4	9	2	11	8	13	10
opt[1]=1	opt[2]=1	opt[3]=2	opt[4]=2	opt[5]=3	opt[6]=1	opt[7]=4	opt[8]=3	opt[9]=5	opt[10]=4
-	-	$\pi[3]=2$ (or 1)	$\pi[4]=2$	$\pi[5]=3$	-	$\pi[7]=5$	$\pi[8]=3$ (or 4)	$\pi[9]=7$	$\pi[10]=5$ (or 8)

Longest increasing sequence containing the last element for:

A[1] is just 5;

A[1..2] is just 3, because 3 cannot extend 5 ($3 < 5$);

A[1..3] is either (3,7) or (5,7) because $7 > 3$ and $7 > 5$;

A[1..4] is (3,4) because 4 can extend only sequence for 3

A[1..5] is (3,7,9) because $9 > 7$ so 9 can extend (3,7);

A[1..6] is just 2 because 2 cannot extend any of the previous sequences;

A[1..7] is (3,7,9,11) because 11 can extend (3,7,9);

A[1..8] is (2,7,8) because 8 can only extend (2,7);

A[1..9] is (3,7,9,11,13) because 13 can extend all previous maximal increasing sequences, but the longest is (3,7,9,11)

A[1..10] is (3,7,9,10) or (3,7,8,10)

Optimal solution is opt(9)=5 for achieved for i=9.

So the sequence is:

A[2]	A[3]	A[5]	A[7]	A[9]
3	7	9	11	13