

Longest Growing / Common Huffman

Seminar 10.

It's Hoffman, babe

Definition


- Alphabet of **symbols** $A = \{a_1, \dots, a_n\}$
- Each symbol's **weight** $W = \{w_1, \dots, w_n\}$
- Each symbol's binary **code** $C = \{c_1, \dots, c_n\}$

It's Huffman, babe

algo

'ABRACADABRA'  Alphabet $A = \{A, B, R, C, D\}$

equals to the
number of
repetitions in text

 Weights $W = \{5, 2, 2, 1, 1\}$

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algo

$\{A, B, R, \mathbf{C}, \mathbf{D}\}$

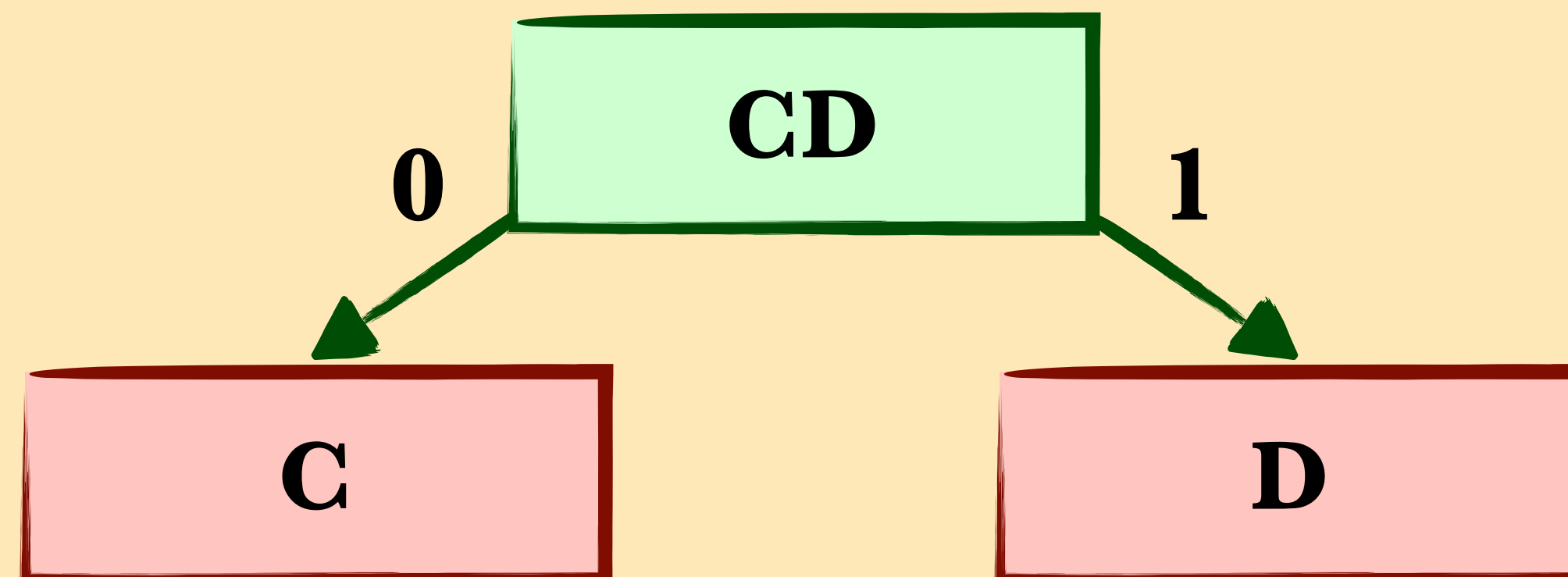
$\{5, 2, 2, \mathbf{1}, \mathbf{1}\}$

C

D

It's Hoffman, babe algo

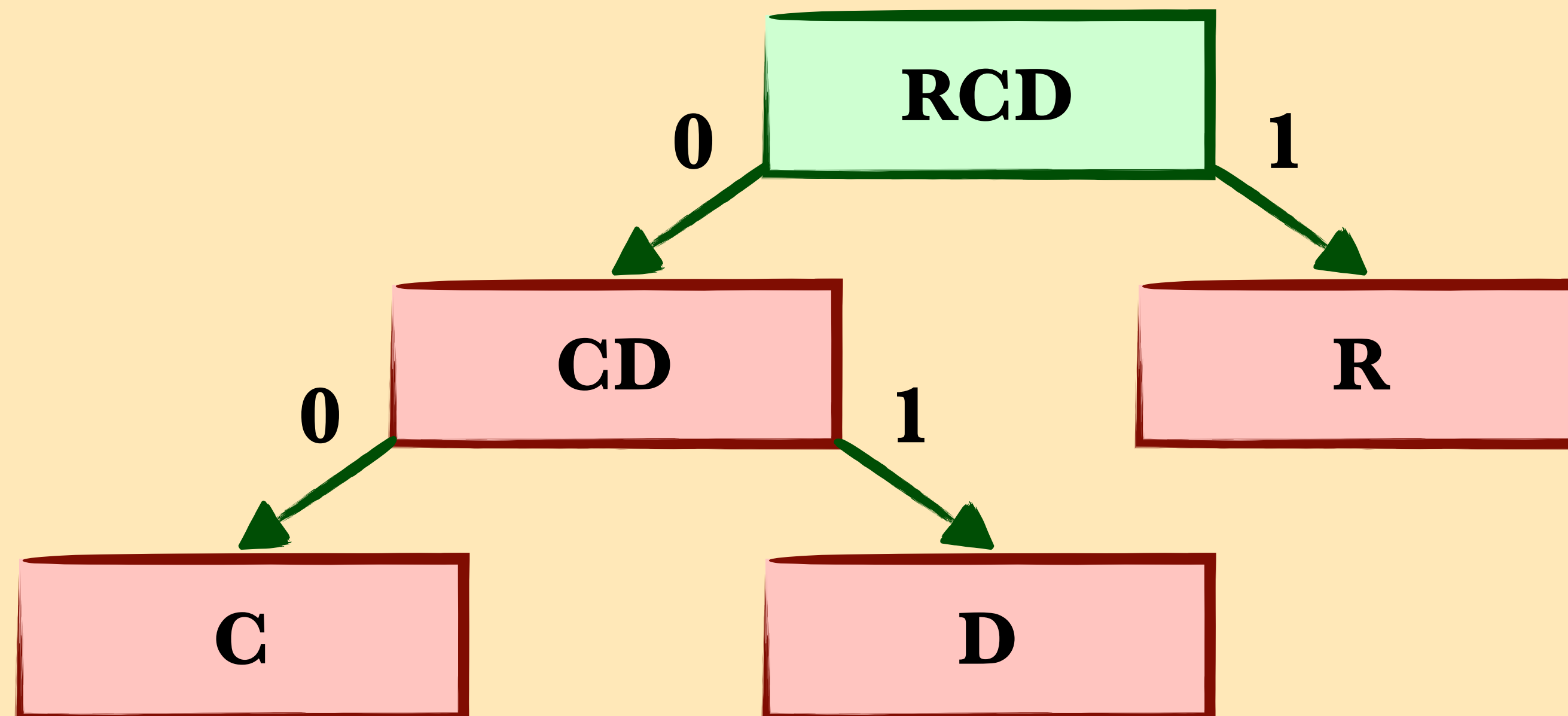
$\{A, B, R, \mathbf{CD}\}$
 $\{5, 2, 2, \mathbf{2}\}$



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algo

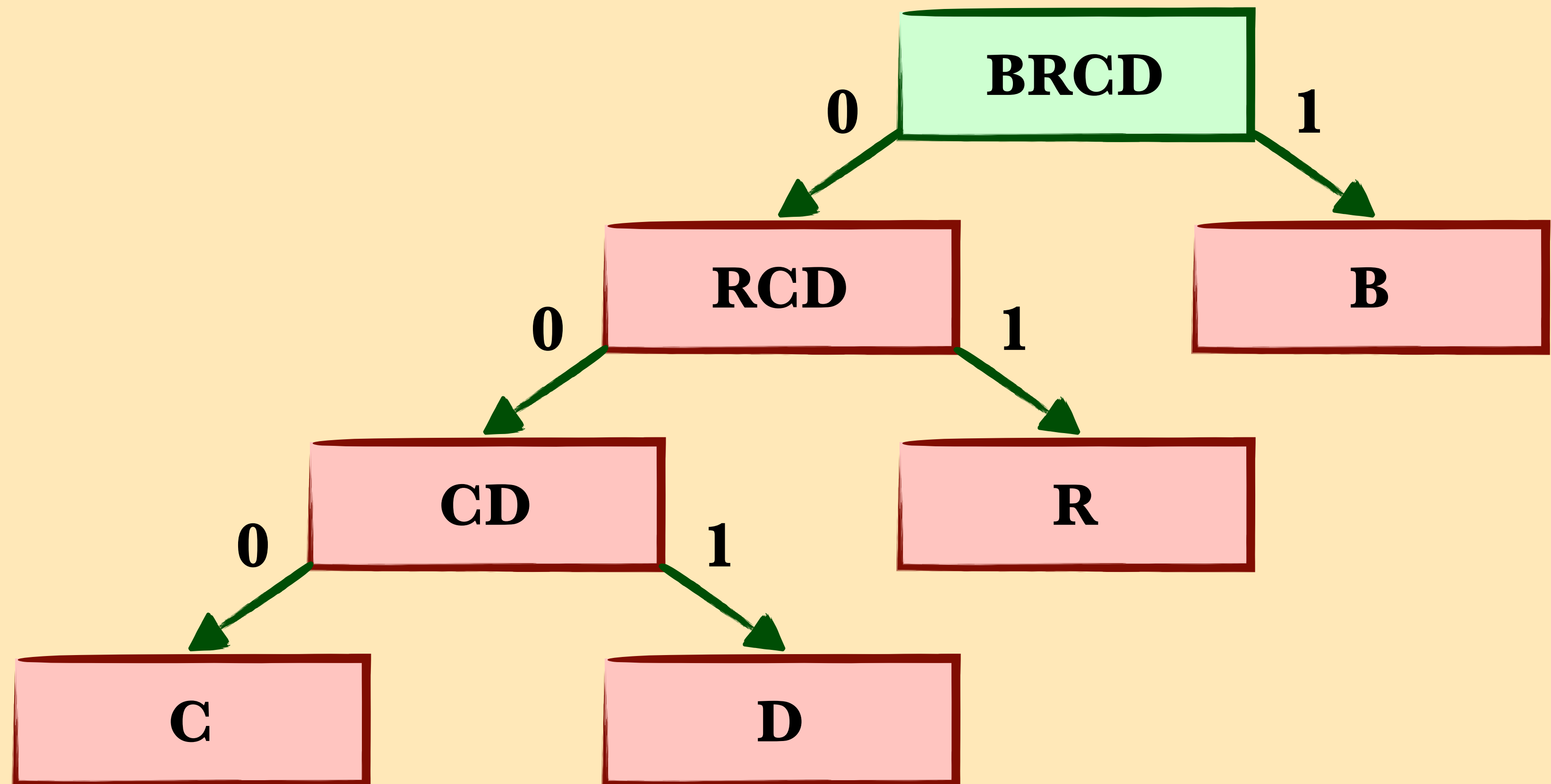
$\{A, B, \mathbf{RCD}\}$
 $\{5, 2, \mathbf{4}\}$



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algo

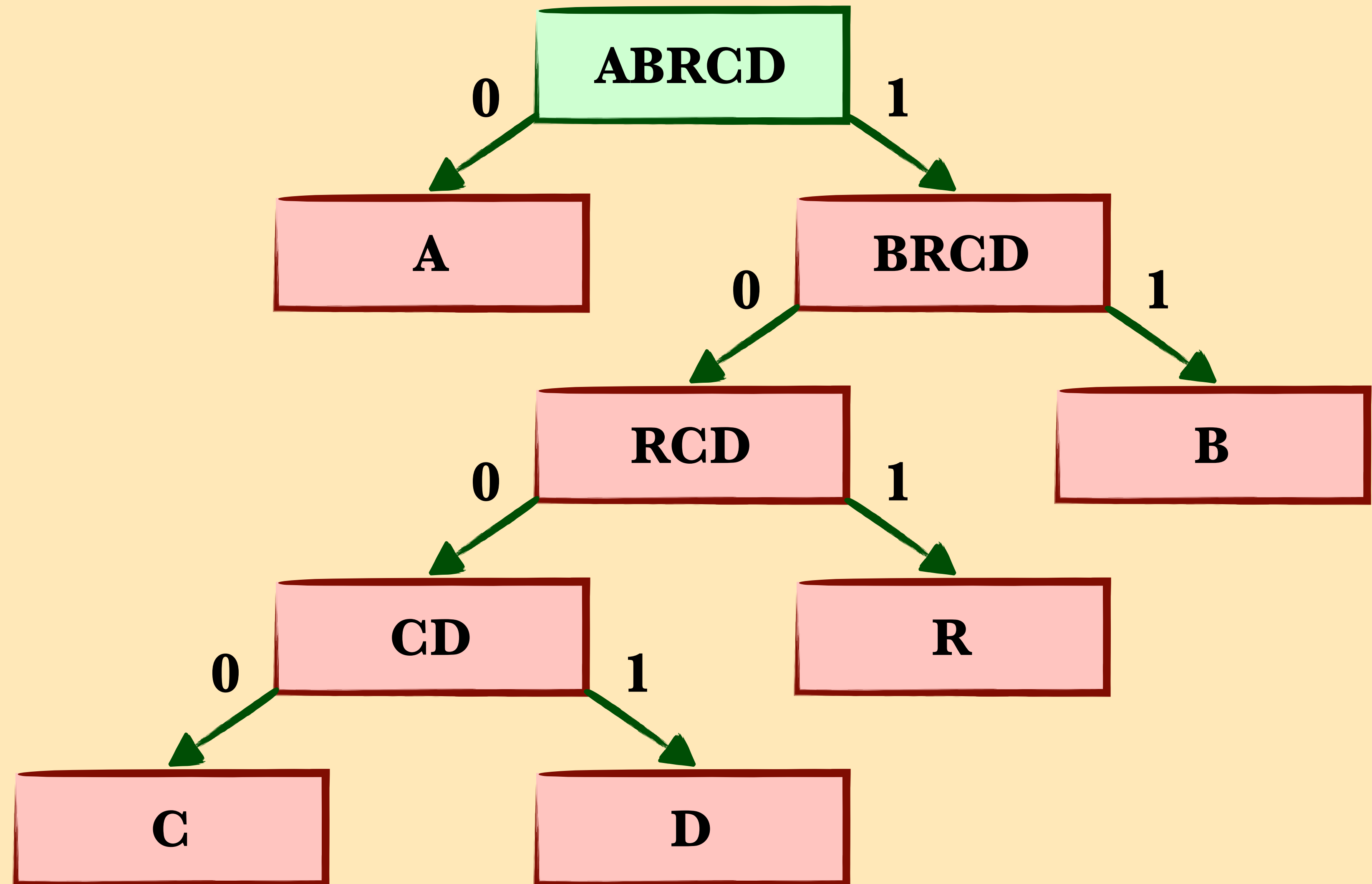
$\{A, \mathbf{BRCD}\}$
 $\{5, \mathbf{6}\}$



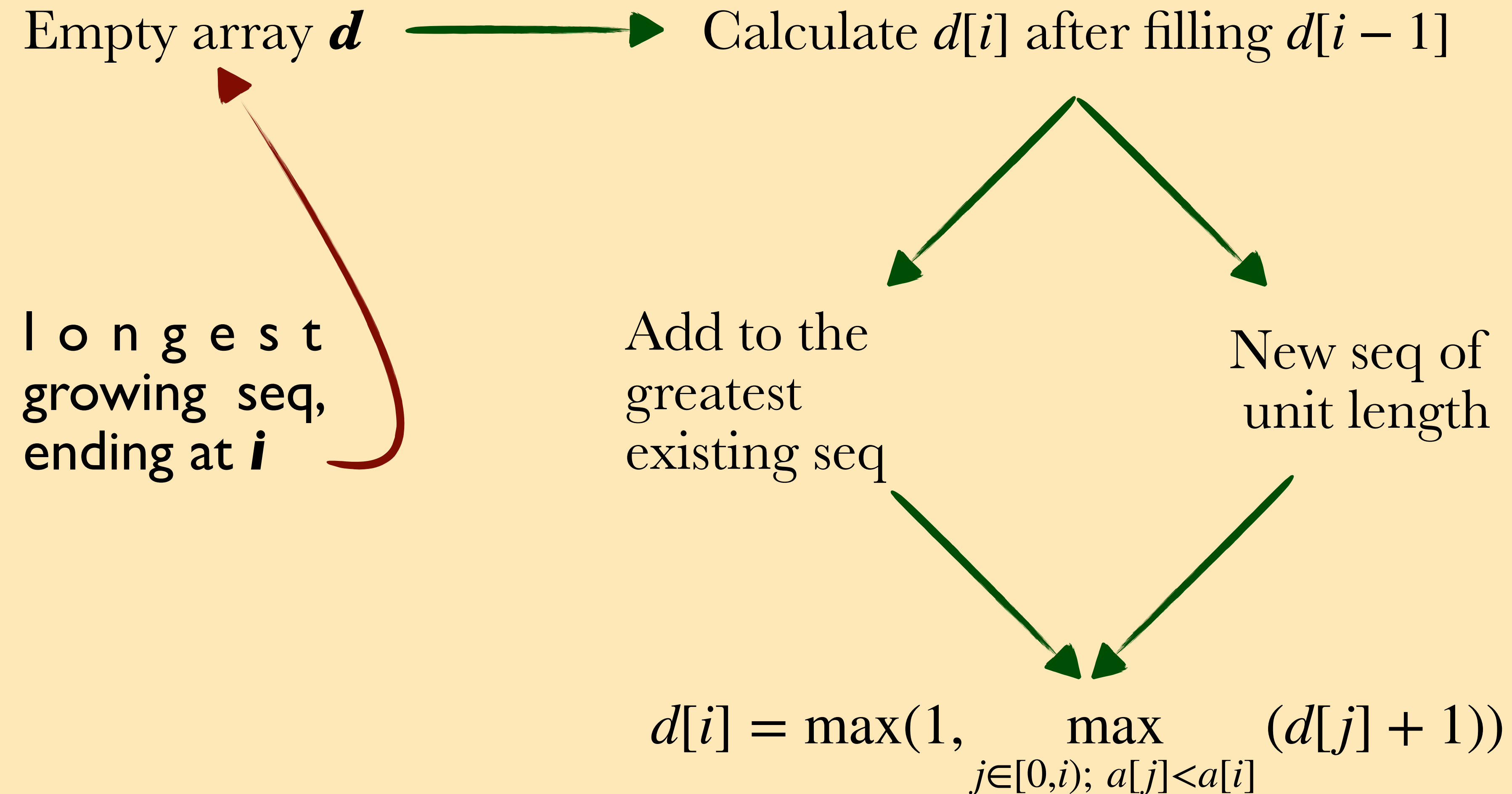
It's Hoffman, babe

algo

{ABRCD}
{11}

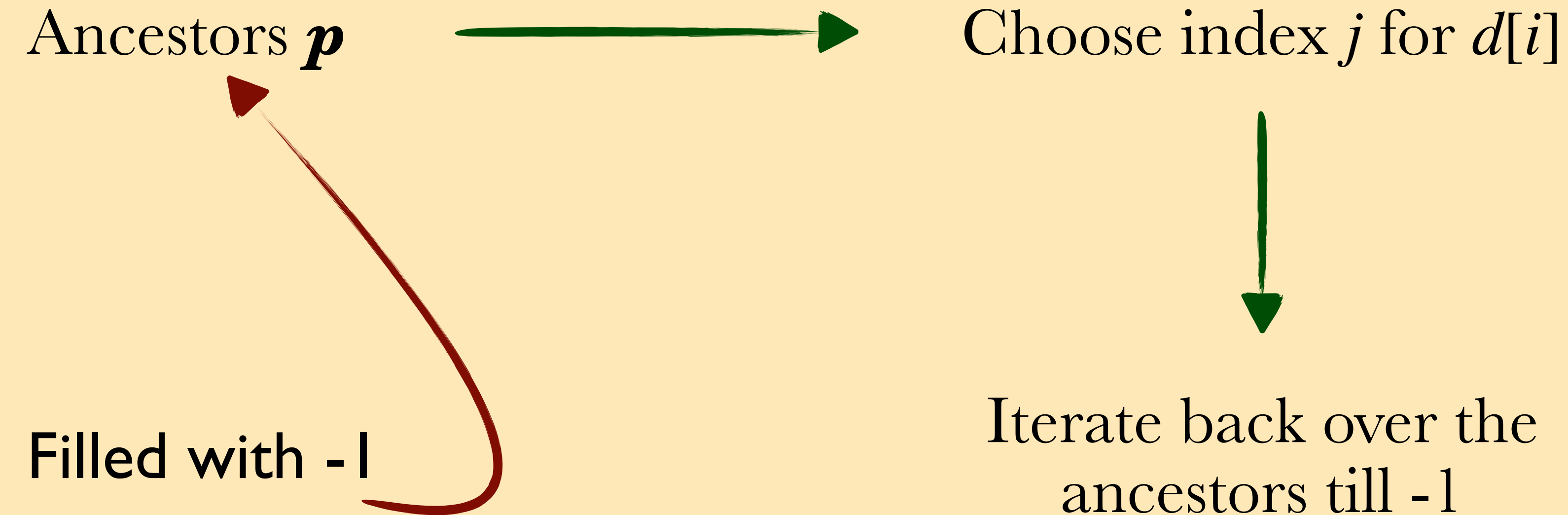


Greatest growing sequence algo



Greatest growing sequence

getting the seq



Greatest growing sequence

nlogn algo

Array a

Values d

[illegible]

Greatest growing sequence

nlogn algo

Array a

1	4	7	9	11	3	2	5	10	8	3
---	---	---	---	----	---	---	---	----	---	---

Values d

1	4	7	9	11						
---	---	---	---	----	--	--	--	--	--	--

Greatest growing sequence

nlogn algo

Array a

1	4	7	9	11	3	2	5	10	8	3
---	---	---	---	----	---	---	---	----	---	---

Values d

1	3	7	9	11						
---	---	---	---	----	--	--	--	--	--	--

Greatest growing sequence

nlogn algo

Array a

1	4	7	9	11	3	2	5	10	14	3
---	---	---	---	----	---	---	---	----	----	---

Values d

1	2	5	9	10	14					
---	---	---	---	----	----	--	--	--	--	--

Greatest common sequence

		H	A	R	B	O	U	R
	0	0	0	0	0	0	0	0
H	0	1	1	1	1	1	1	1
A	0	1	2	2	2	2	2	2
B	0	1	2	2	3	3	3	3
R	0	1	2	3	3	3	3	4
A	0	1	2	3	3	3	3	4
H	0	1	2	3	3	3	3	4
A	0	1	2	3	3	3	3	4
B	0	1	2	3	4	4	4	4
R	0	1	2	3	4	4	4	5

The diagram illustrates the path of the longest common subsequence (LCS) between the two strings 'HARBOR' and 'HARBOR'. The path is highlighted by arrows connecting the cells with the maximum value at each step, starting from the bottom-right cell (R, R) with value 5 and moving towards the top-left cell (H, H) with value 1. The path consists of the following cells: (R, R) with value 5, (B, B) with value 4, (R, R) with value 3, (A, A) with value 2, and (H, H) with value 1. The cells along this path are highlighted in yellow, while the other cells are highlighted in green or blue.