5.5 Huffman Coding Demo

Huffman coding demo

- Count frequency for each character in input.

char	freq	encoding
A		
B		
C		
D		
R		
!		

input

A B R A C A D A B R A !

Huffman coding demo

- Count frequency for each character in input.

~~char~~	~~freq~~	~~encoding~~
A	5	
B	2	
C	1	
D	1	
R	2	
!	1	

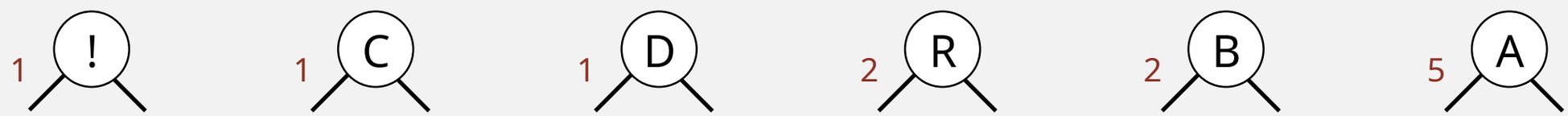
input

A B R A C A D A B R A !

Huffman coding demo

- Start with one node corresponding to each character with weight equal to frequency.

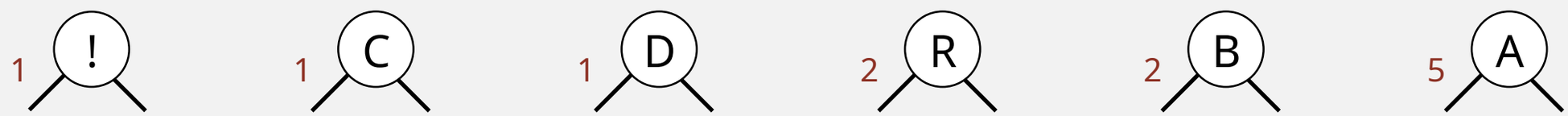
~~char~~	~~freq~~	~~encoding~~
A	5	
B	2	
C	1	
D	1	
R	2	
!	1	



Huffman coding demo

- Select two tries with min weight.
- Merge into single trie with cumulative weight.

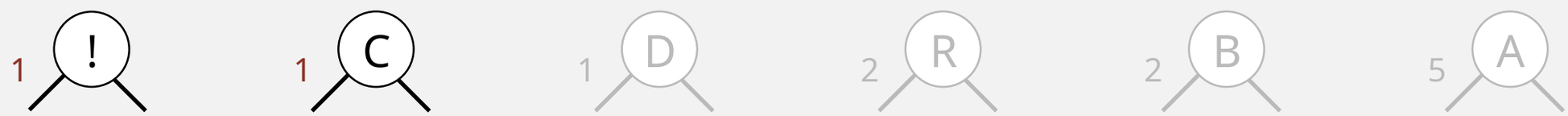
~~char~~	~~freq~~	~~encoding~~
A	5	
B	2	
C	1	
D	1	
R	2	
!	1	



Huffman coding demo

- Select two tries with min weight.
- Merge into single trie with cumulative weight.

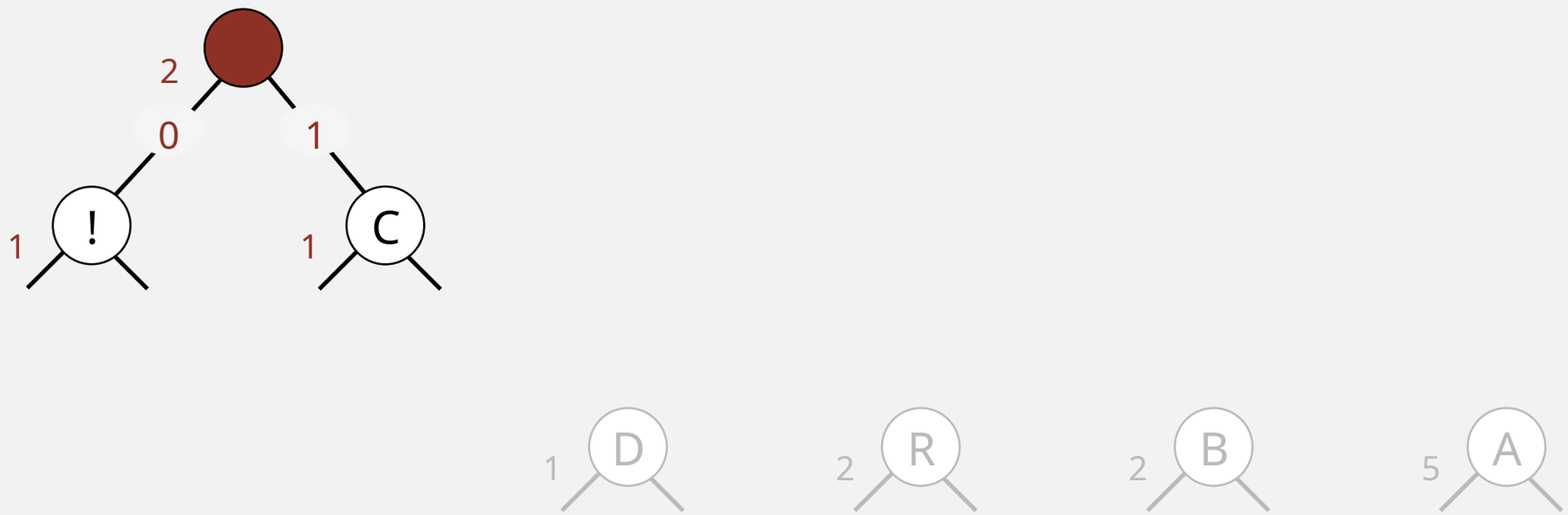
char	freq	encoding
A	5	
B	2	
C	1	
D	1	
R	2	
!	1	



Huffman coding demo

- Select two tries with min weight.
- Merge into single trie with cumulative weight.

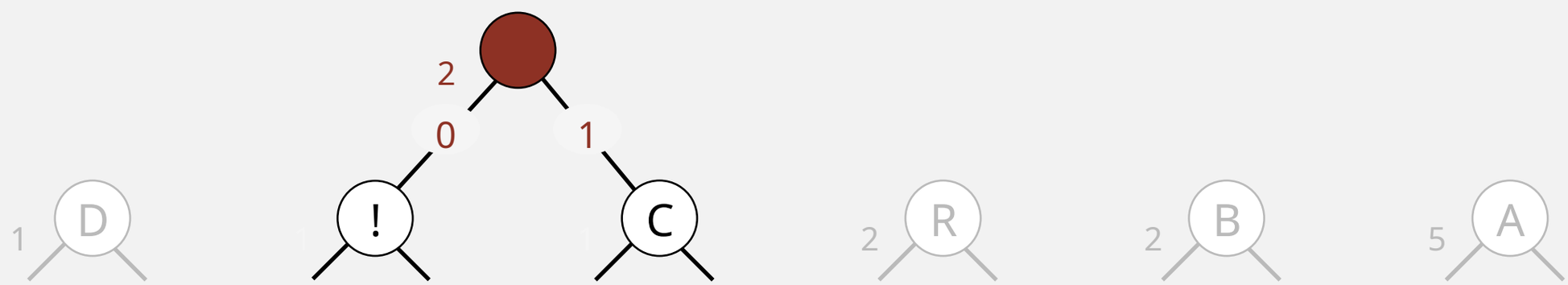
~~char~~	~~freq~~	~~encoding~~
A	5	
B	2	
C	1	1
D	1	
R	2	
!	1	0



Huffman coding demo

- Select two tries with min weight.
- Merge into single trie with cumulative weight.

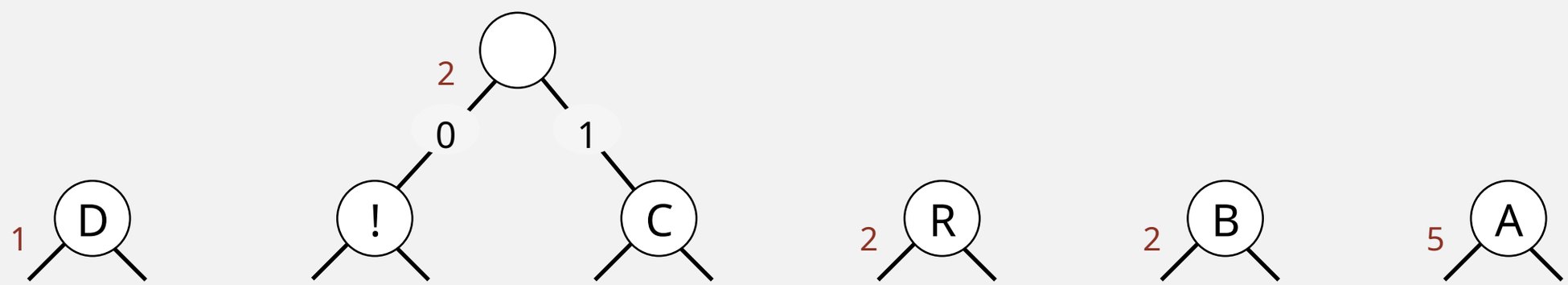
~~char~~	~~freq~~	~~encoding~~
A	5	
B	2	
C	1	1
D	1	
R	2	
!	1	0



Huffman coding demo

- Select two tries with min weight.
- Merge into single trie with cumulative weight.

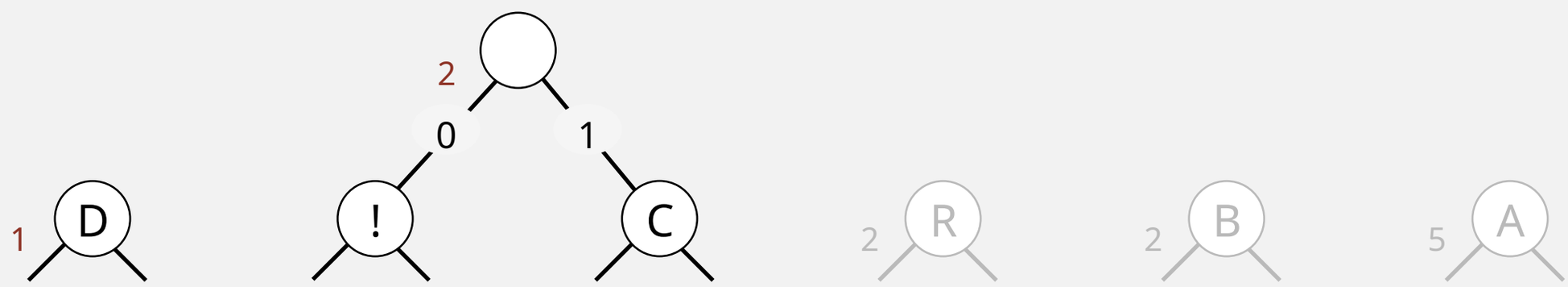
~~char~~	~~freq~~	~~encoding~~
A	5	
B	2	
C	1	1
D	1	
R	2	
!	1	0



Huffman coding demo

- Select two tries with min weight.
- Merge into single trie with cumulative weight.

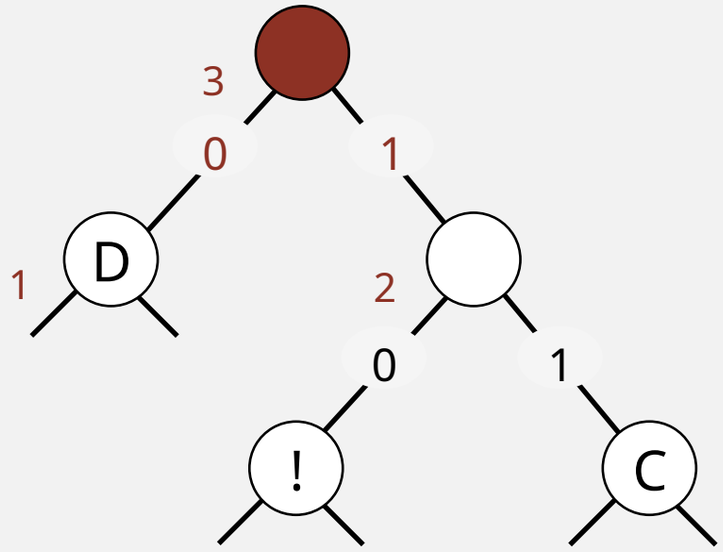
~~char~~	~~freq~~	~~encoding~~
A	5	
B	2	
C	1	1
D	1	
R	2	
!	1	0



Huffman coding demo

- Select two tries with min weight.
- Merge into single trie with cumulative weight.

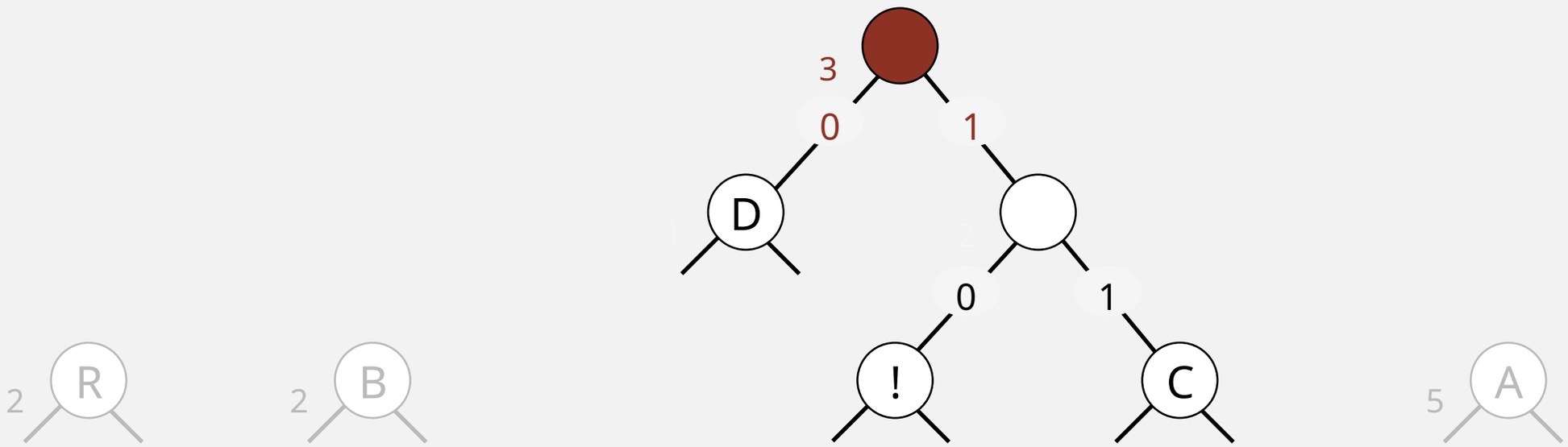
~~char~~	~~freq~~	~~encoding~~
A	5	
B	2	
C	1	1 1
D	1	0
R	2	
!	1	1 0



Huffman coding demo

- Select two tries with min weight.
- Merge into single trie with cumulative weight.

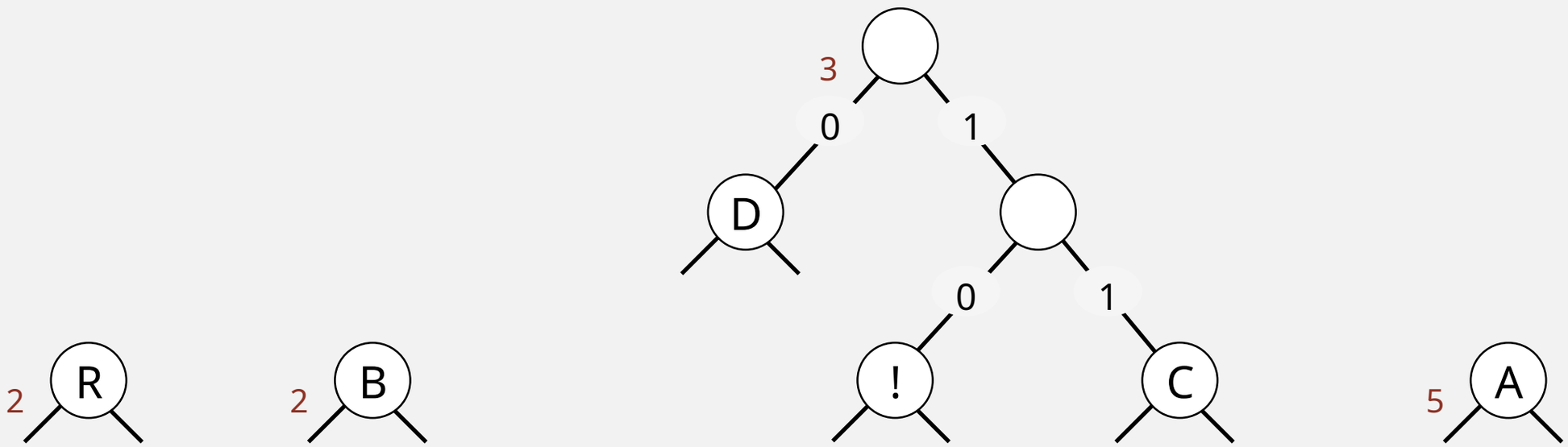
~~char~~	~~freq~~	~~encoding~~
A	5	
B	2	
C	1	1 1
D	1	0
R	2	
!	1	1 0



Huffman coding demo

- Select two tries with min weight.
- Merge into single trie with cumulative weight.

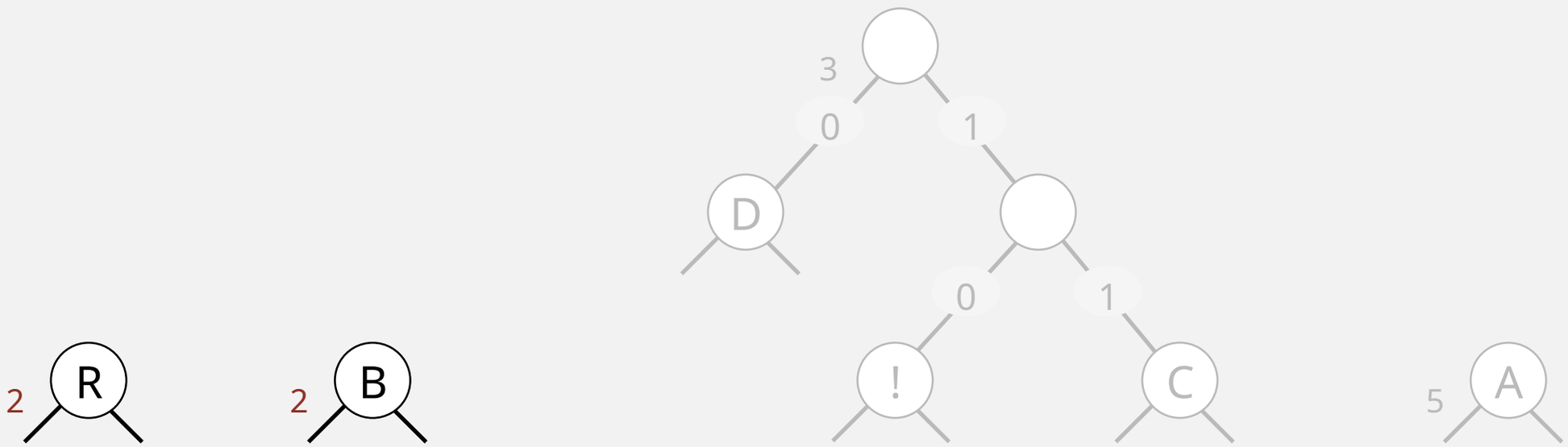
~~char~~	~~freq~~	~~encoding~~
A	5	
B	2	
C	1	1 1
D	1	0
R	2	
!	1	1 0



Huffman coding demo

- Select two tries with min weight.
- Merge into single trie with cumulative weight.

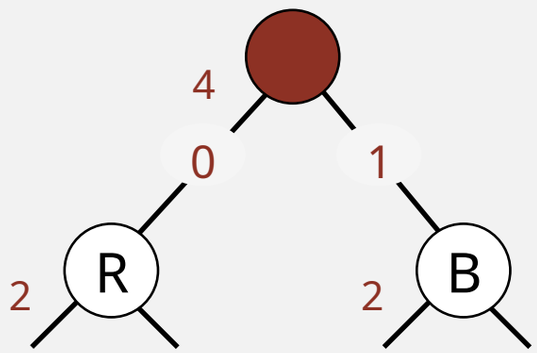
~~char~~	~~freq~~	~~encoding~~
A	5	
B	2	
C	1	1 1
D	1	0
R	2	
!	1	1 0

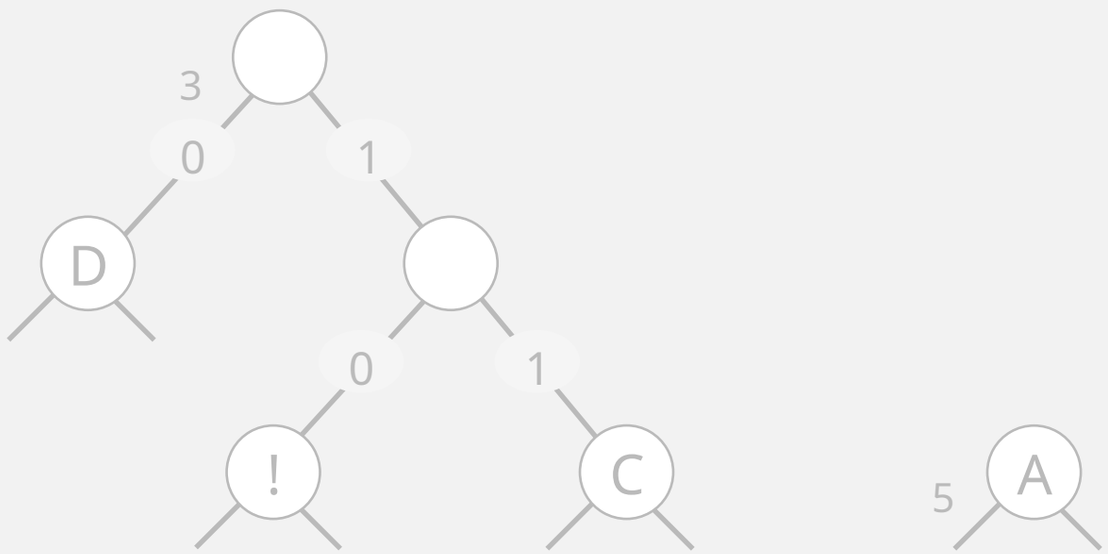


Huffman coding demo

- Select two tries with min weight.
- Merge into single trie with cumulative weight.

~~char~~	~~freq~~	~~encoding~~
A	5	
B	2	1
C	1	1 1
D	1	0
R	2	0
!	1	1 0

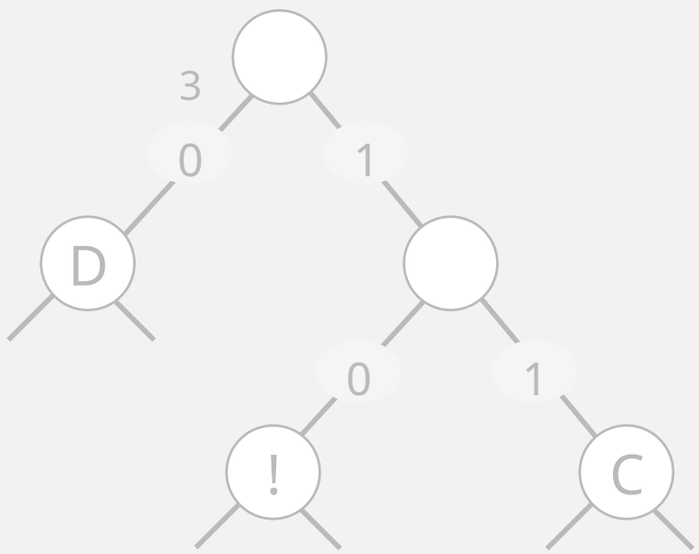


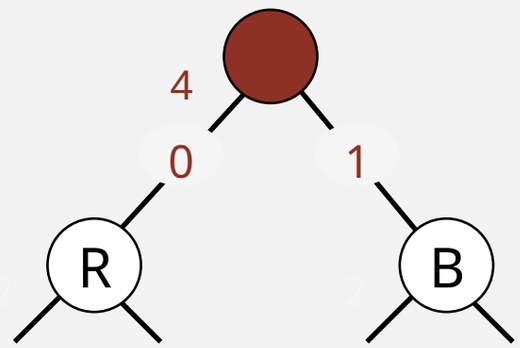


Huffman coding demo

- Select two tries with min weight.
- Merge into single trie with cumulative weight.

~~char~~	~~freq~~	~~encoding~~
A	5	
B	2	1
C	1	1 1
D	1	0
R	2	0
!	1	1 0

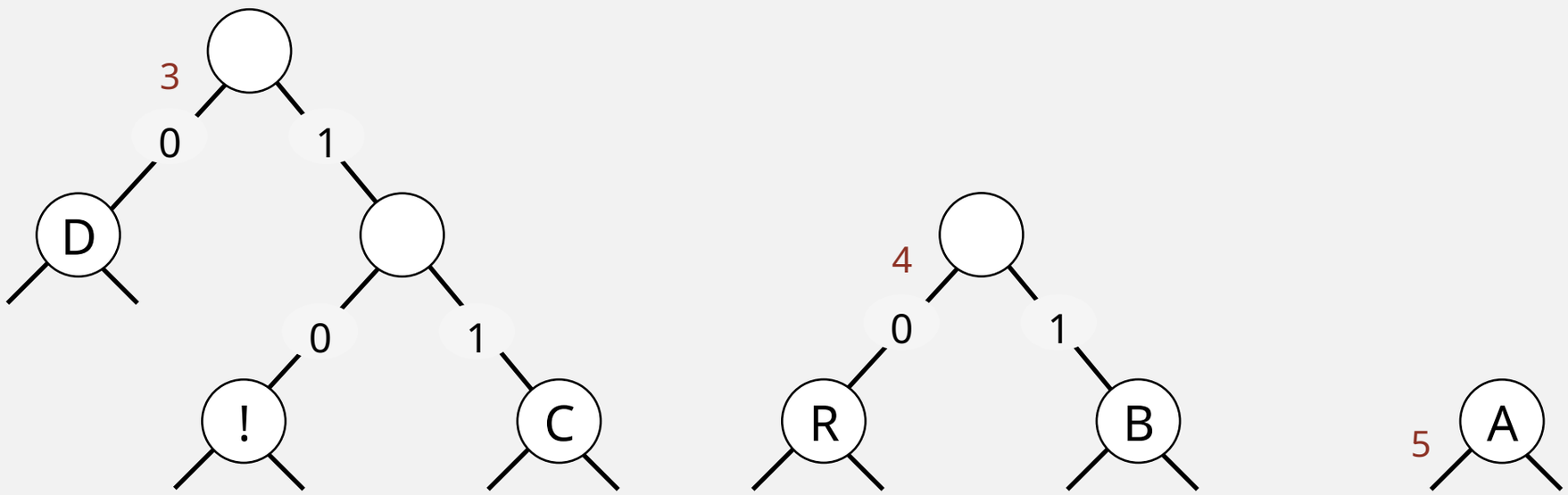




Huffman coding demo

- Select two tries with min weight.
- Merge into single trie with cumulative weight.

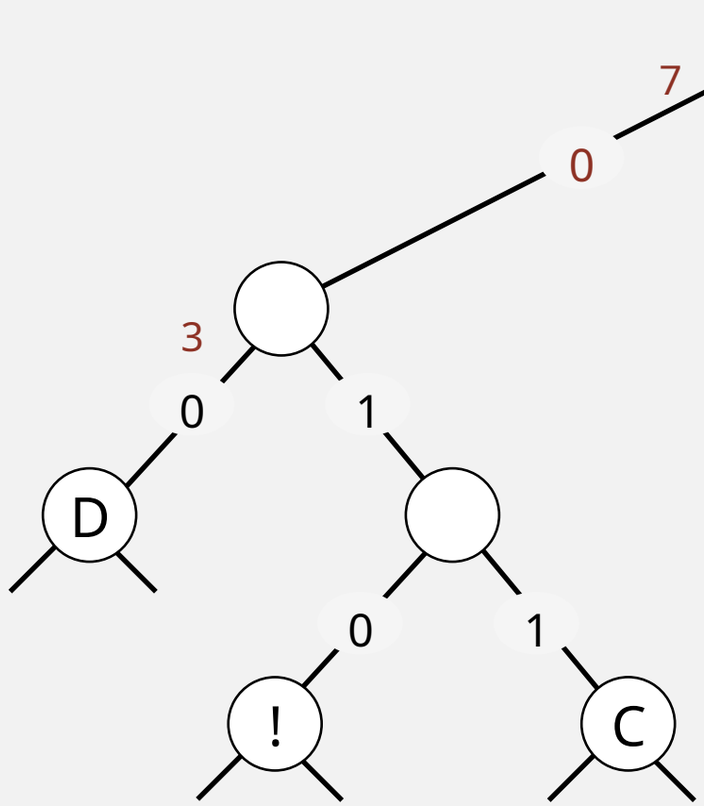
~~char~~	~~freq~~	~~encoding~~
A	5	
B	2	1
C	1	1 1
D	1	0
R	2	0
!	1	1 0

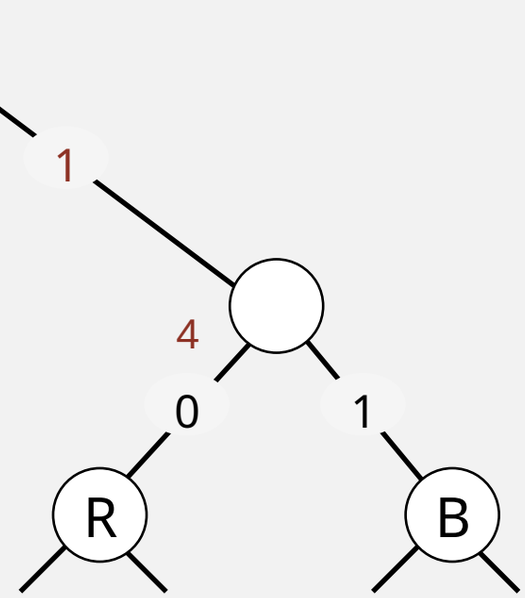


Huffman coding demo

- Select two tries with min weight.
- Merge into single trie with cumulative weight.

char	freq	encoding
A	5	
B	2	1 1
C	1	0 1 1
D	1	0 0
R	2	1 0
!	1	0 1 0

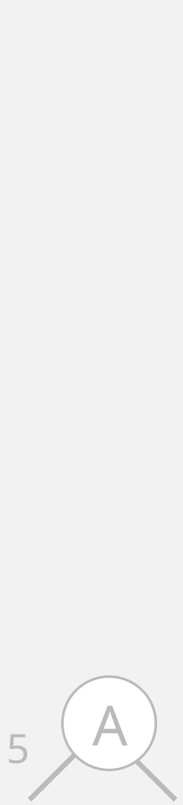


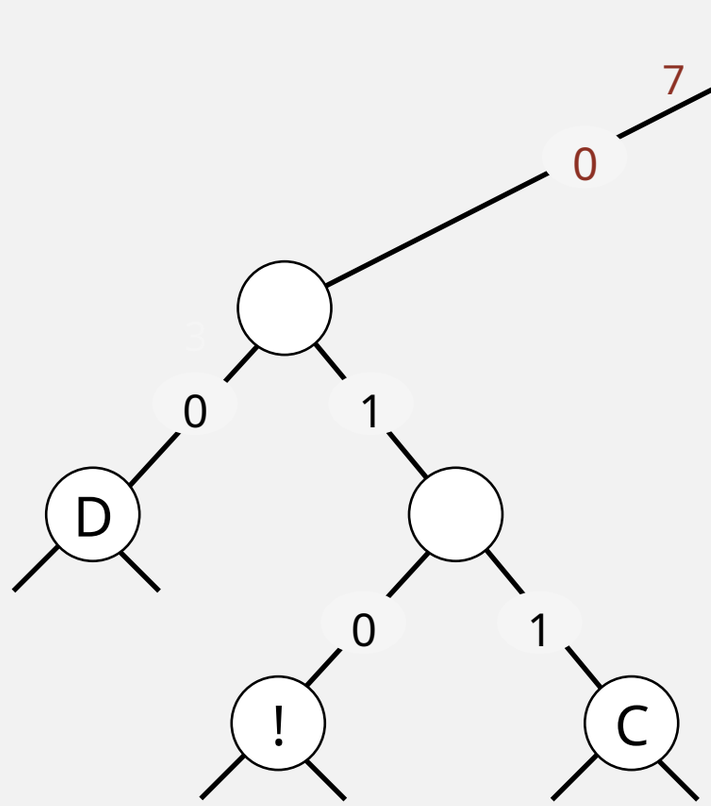


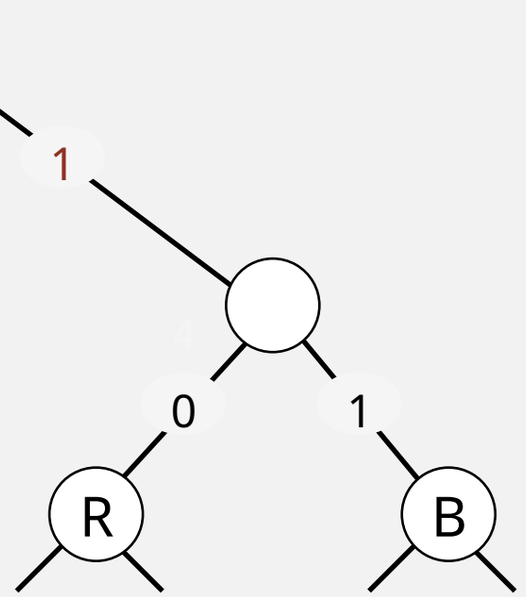
Huffman coding demo

- Select two tries with min weight.
- Merge into single trie with cumulative weight.

~~char~~	~~freq~~	~~encoding~~
A	5	
B	2	1 1
C	1	0 1 1
D	1	0 0
R	2	1 0
!	1	0 1 0



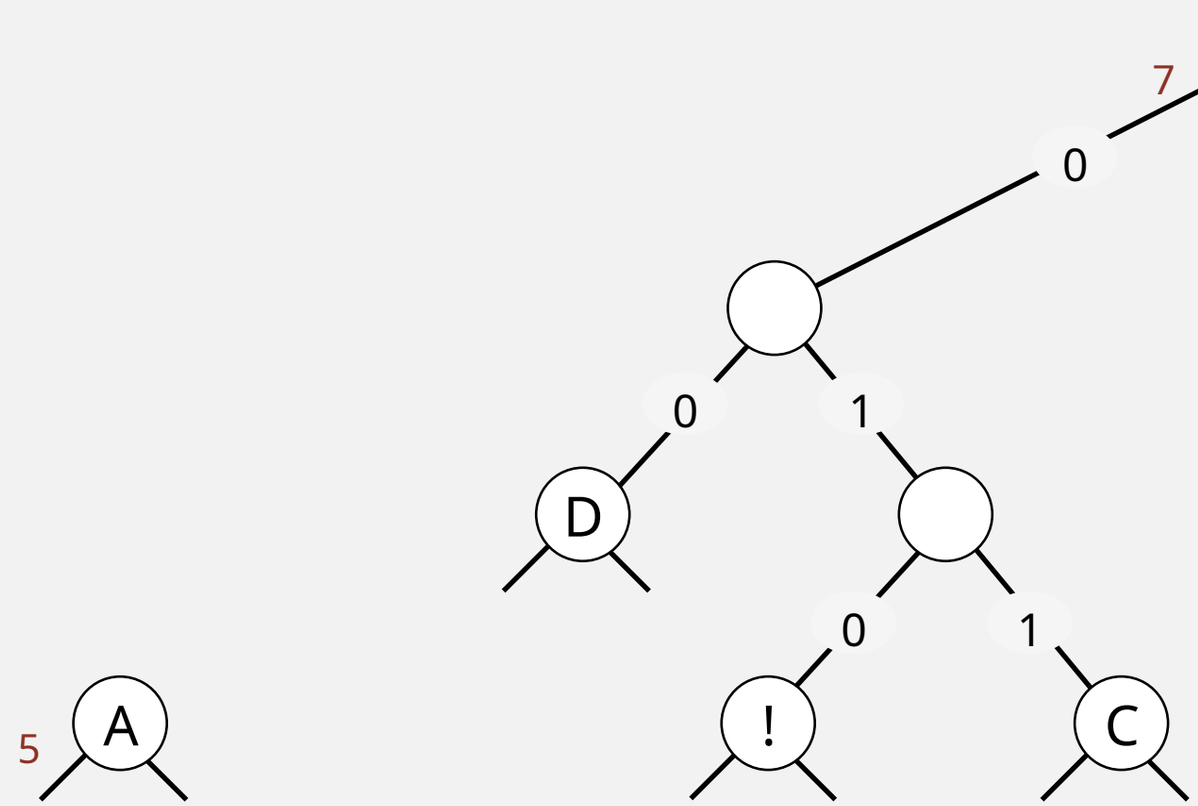




Huffman coding demo

- Select two tries with min weight.
- Merge into single trie with cumulative weight.

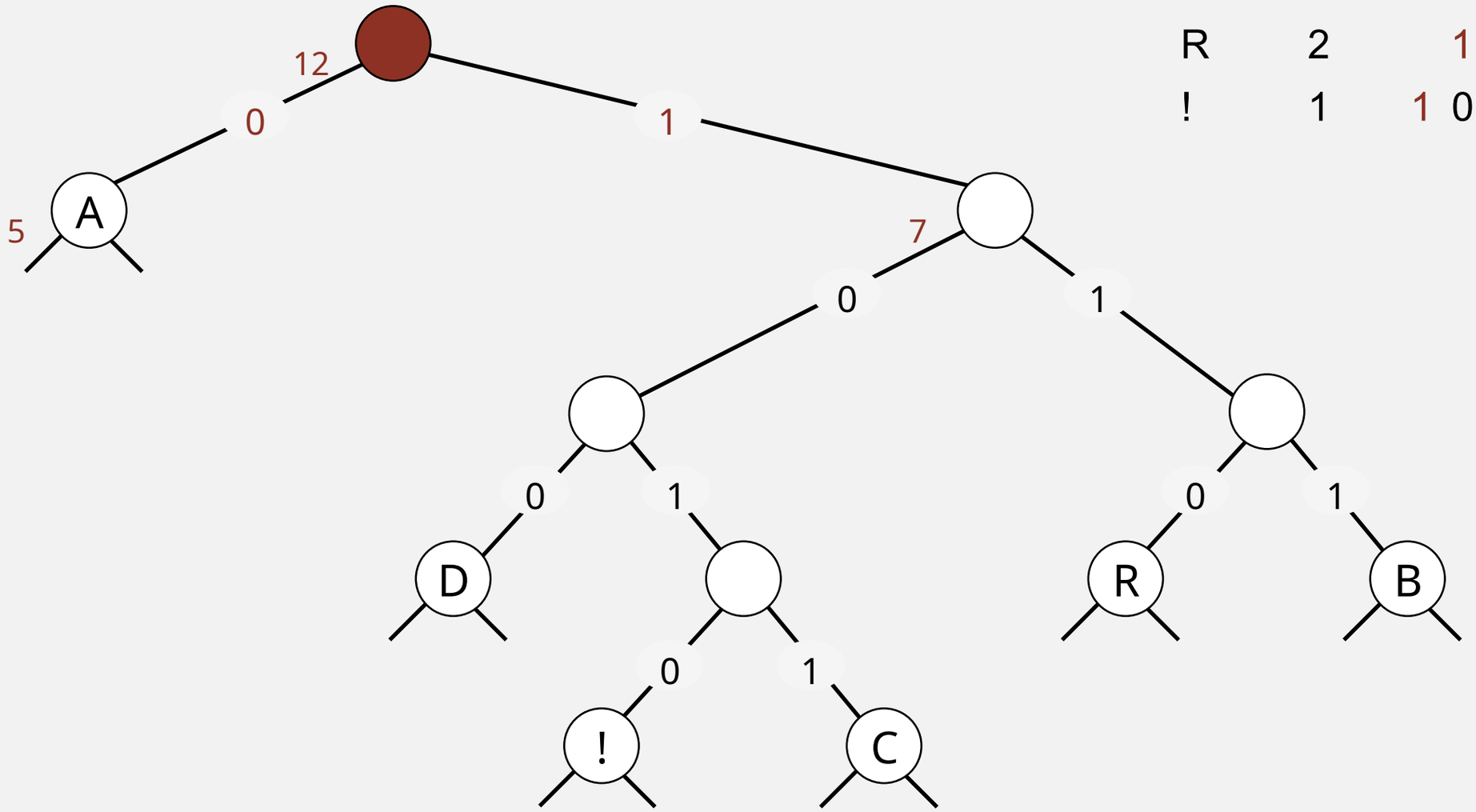
char	freq	encoding
A	5	
B	2	1 1
C	1	0 1 1
D	1	0 0
R	2	1 0
!	1	0 1 0



Huffman coding demo

- Select two tries with min weight.
- Merge into single trie with cumulative weight.

~~char~~	~~freq~~	~~encoding~~
A	5	0
B	2	1 1 1
C	1	1 0 1 1
D	1	1 0 0
R	2	1 1 0
!	1	1 0 1 0



Huffman coding demo

~~char~~	~~freq~~	~~encoding~~
A	5	0
B	2	1 1 1
C	1	1 0 1 1
D	1	1 0 0
R	2	1 1 0
!	1	1 0 1 0