

DATA STRUCTURES

Huffman Coding •

Priority Queues •

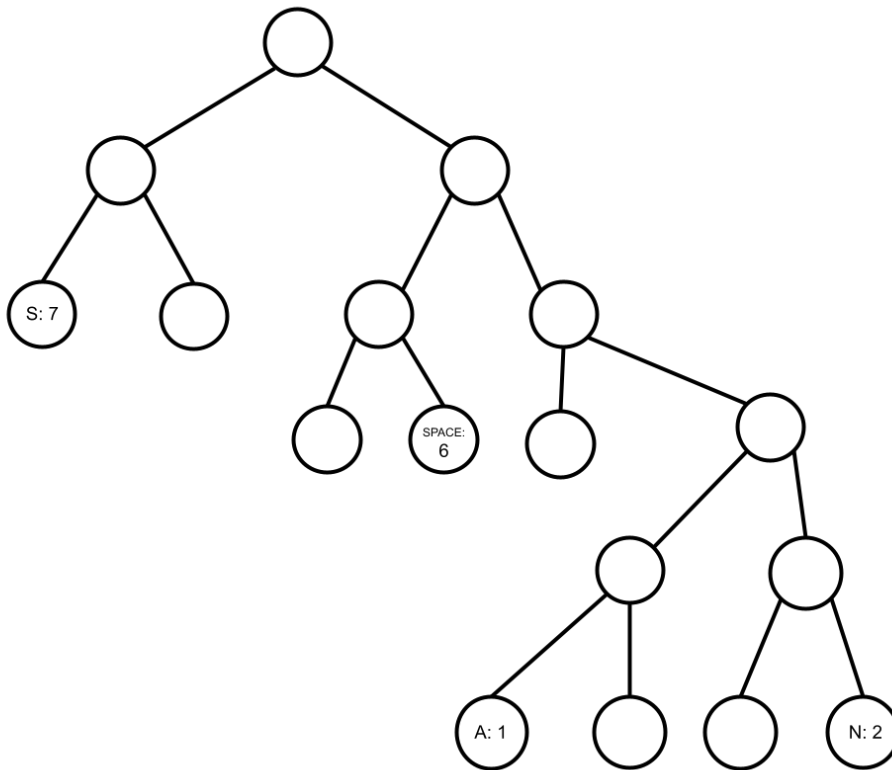
Binary Trees •

Bits

Huffman Coding

Consider the priority queue [A:1, T:1, G:2, N:2, H:5, SPACE:6, P:6, S:7, I:8] formed from the frequencies of characters in an input string.

1. Complete the Huffman Coding Tree below by (1) filling in the nodes and (2) labeling the edges (0 for a left edge, 1 for a right edge).



2. Write the encoding (bit sequence) for each character underneath the leaf nodes.



3. Use your Huffman Coding Tree to decode the following bit string:

```
11101100010010101001011110010100100011101010010001110110
0111111111101010010001110110011111111110101001000111000
```



WordSearch

priority, height, node, Huffman, complete, heap, binary, queue, tree, full, path, bit

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C H C O M P L E T E
Q Q V E E E Y M K Q
B P U K I N Q F H W
C I R E E Y I U E B
P N N I U R X L A I
A X C A O E N L P T
T X U J R R H O M T
H H K Q T Y I C D R
H U F F M A N T B E
Z F H E I G H T Y E
```