CMSC 204

Huffman Lab

1. Create a Huffman Tree and generate the codes for each character of the following input:

create a huffman tree

For consistency:

1. If same frequency – put in priority queue alphabetically; put space before other characters of the same frequency
2. Add subtrees to end of group with same priority
3. Lower number has higher priority (goes to front)



5

7

e

9

14

a

21

|  |  |
| --- | --- |
| Character | Frequency |
| Space | 3 |
| A | 3 |
| C | 1 |
| E | 4 |
| F | 2 |
| H | 1 |
| M | 1 |
| N | 1 |
| R | 2 |
| T | 2 |
| U | 1 |

Space

t

4

5



r

4

u

f



n

3



m

2

c

h



Now encode “create a huffman tree”

create a huffman tree

c r e a t e space a space h u f f m a n space t r e e

1111110 1101 01 00 100 01 101 00 101 1111111 1110 1100 1100 111110 00 11110 101 100 1101 01 01

1. Based on the following Huffman tree and binary sequence, what is the text



1110 011 101 101 1111 1101 000 1100 010 001 100 100

H u f f m a n space t r e e

huffman tree