COS226 Week 11 Activity

Algorithms 4th edition, Section 5.4, 5.5

1. Using the textbook construction, create the NFA for the regular expression:

((B | M) (A (N A) *) *)

2. Write the states that are reachable in the above NFA before and after matching each character of the word BANANA.

3. Give the LZW encoding for the following string using the compress() method of Algorithm 5.11.

B A	N	D	A	N	A	В	A	N	A	N	A		
see B				w1 	rit 42	te 2						put BA,	81
A					4:	1							
N					40	Э							
D					44	1							

end 80 (EOF)

4. Using the same input as in the previous question, build the Huffman trie, list the codewords and frequencies for each of the 4 letters, and state the length in bits of the encoded message.

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