LEARNING OBJECTIVES - Lecture 7 (Variable-Length Coding)

After attending lecture and completing the associated readings, you should be able to:

1. Define variable-length codes, as well as the properties of unique decodability and prefix-free.
2. State and prove the Kraft inequality for prefix-free codes.
3. State the optimization problem for optimal prefix-free codes and use to derive upper/lower bounds on performance as well as basic construction of Shannon-Fano-Elias codes.
4. Construct Huffman codes.
5. Prove optimality of Huffman codes.