

Lecture 1

Course webpage:

<http://www.ece.uah.edu/~dwpan/course/ee614/>

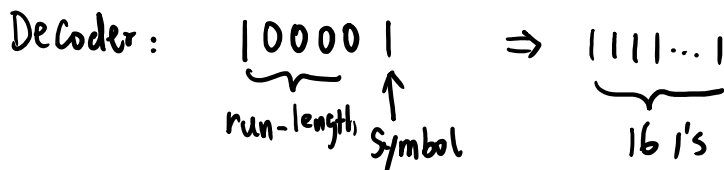
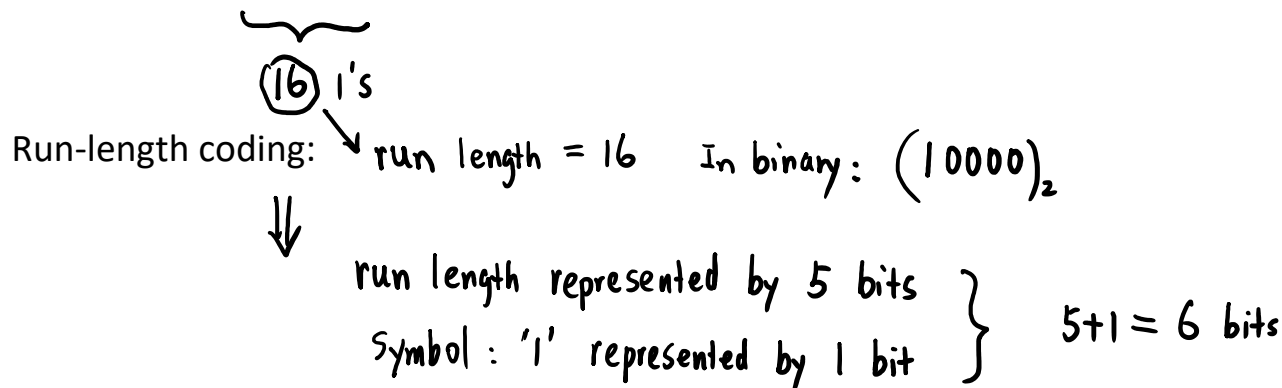
Data Compression: Compacting the data

Lossless Compression:

Original Data --> Encoder (Compressor) -> Compressed Bitstream -> Decoder (Decompressor) -> Reconstructed Data

Original Data = Reconstructed Data

Example: Original Data: 1111 ... 1



Compression Ratio (CR) = Original Data Size / Compressed Bitstream Size

$$= \frac{16}{6} \doteq 2.7:1$$

$$\text{Rate} = \text{Compressed Bitstream Size} / \text{Original Data Size} = \frac{6}{16} = \frac{3}{8} \text{ bits/symbol}$$

Lossy Compression:

Original Data --> Encoder (Compressor) -> Compressed Bitstream -> Decoder (Decompressor) -> Reconstructed Data

Original Data \neq Reconstructed Data