

Compression Puzzle: Spanish Christmas Carol 1

Big files take up a lot of memory. The bigger the file the more it takes. We therefore compress files - shrink them without losing anything. If the files contain text, we can swap words for numbers and just send the numbers with a code book saying which number is which word.

To get the message back, just keep swapping numbers for 'words' from the codebook.

For example, given the message: 3 2 2 2 3 1 1 1 codebook: 1[Da] 2[Do] 3[De]

Replace 1s in the message with "Da" from the codebook, 2 with "Do" and 3 with "De", we get "De Do Do Do De Da Da Da" (which is the title of a song about abusing words):

You must sing this Spanish Christmas Carol to the tune of Jingle Bells but first you must decompress it:

12
12

Codebook:

1 [alegria]
 2 [de]
 3 [día]
 4 [es]
 5 [felicidad]
 6 [hoy]
 7 [Navidad]
 8 [un]
 9 [y]
 10 [7 7 6 4 7]
 11 [4 8 3 2 1 9 5]
 12 [10 11]



After singing it you might want to translate it using our mini Spanish-English Dictionary below. It is a lot like a codebook! A computer Scientist might implement them both as a lookup table - using generalisation.

alegría - cheer
 de - of
 día - day
 es - it's
 felicidad - good fortune
 hoy - today
 Navidad - Christmas
 un - a
 y - and