Problem 4. «16QAM»

For sending messages, Alice and Bob use a fiber-optic communication via 16QAM technology. This technology allows to send messages whose alphabet consists of 16 letters, where each letter is usually encoded with a 4-bit Gray code. While a message is transmitted in the channel, single errors in codewords of the Gray code are possible.

Alice has read an interesting book and would like to share her enthusiasm with Bob! Alice sent a short fragment from the book to Bob. Due to the characteristics of the communication channel used, she divided the text into two parts and sent them separately. In the first part, she placed all of the 16 consonants that occurred in this fragment; in the second part, she placed vowels, a hyphen and punctuation marks. Then Alice also encoded the letters with Hamming code to be able to correct single errors. She applied a 7-bit Hamming code with the parity-check matrix whose columns are written in lexicographical order.

Bob received the following two parts of ciphertext (given in hexadecimal notation):

Part 1
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66674C36666F43D3C199900AA1AA325992A
67A59D9B4A8B69330D1BC000153367A5E33
D30E6692D0F349D3321FFFF0ED706667A7F
670D999679F4AA67561BA679B4AA54F34D5
AB0F4AACCF000055CE633670D9DA54CE37F
660DE19CD995335495523CCAAA8F1E03325
86CF48A98CD9B387FD9D546A99E9D200033
3201513FE5B4AA00CCCE9667554CD2CCCB3
330F32A666553CD756AC3E0674E9D369E1D
C6A9999780007F00961E66465519FEA8B25
14CCCB332AA63332CCCE6D2A99AACCCC004
```

Part 2
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66CA61967319CCD2CE76998CE6433332D19
B46784C65334E999A402ADA0265A99A6633
33319B32D3299698CCC96986619967134CC
B4CE23333334CC6730CE90170CCCD2CE669
996A61999EA63332CCA4C3332D4CD3334CC
D3319994730CCCD3A6669D96A66999699B3
98640CC86CE619676AD4CD3308999866D33
79321C33210B4C6732199B53218019A404C
D2DE65A986663398CCCCB5319CC6665997
B96A63398CD9CCD2CD9A399A66339866619
98CD9CC325A6339CCE619998C04C66CE633
996A61998CF66967334CC66CA6199865E(0)₂
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Also, he received the following number sequence: 22, 19, 3, 3, 36, 53, 3, 33, 20, 28. Each number indicates how many consonants are contained between the punctuation marks.

Recover the text and find the main character of the book Alice has read!