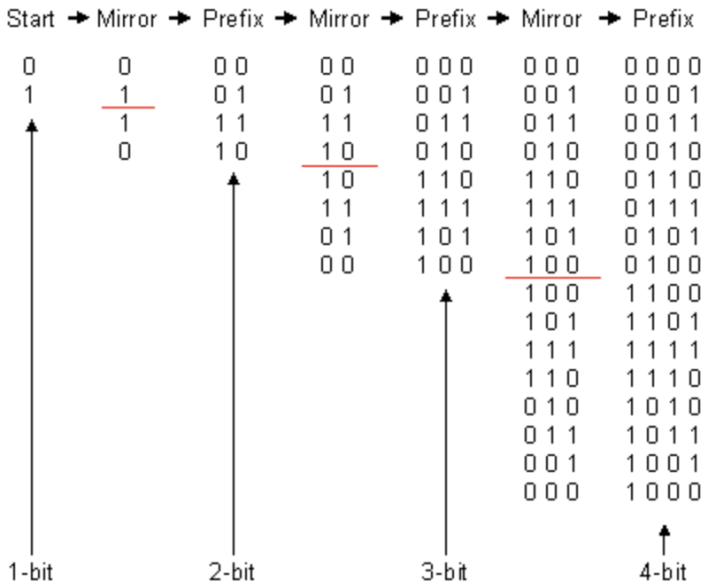
Encoding Scheme & Error Detection/Correction

1. Please write the entire 4-bit Gray code by reflecting and prefixing.



2. Please Convert the following Gray code word to binary code.

1 0 0 1 1 0 1 0

1 1 1 0 1 1 0 0

3. Convert the following Binary code word to Gray code.

1 0 0 1 1 0 1 0

1 1 0 1 0 1 1 1

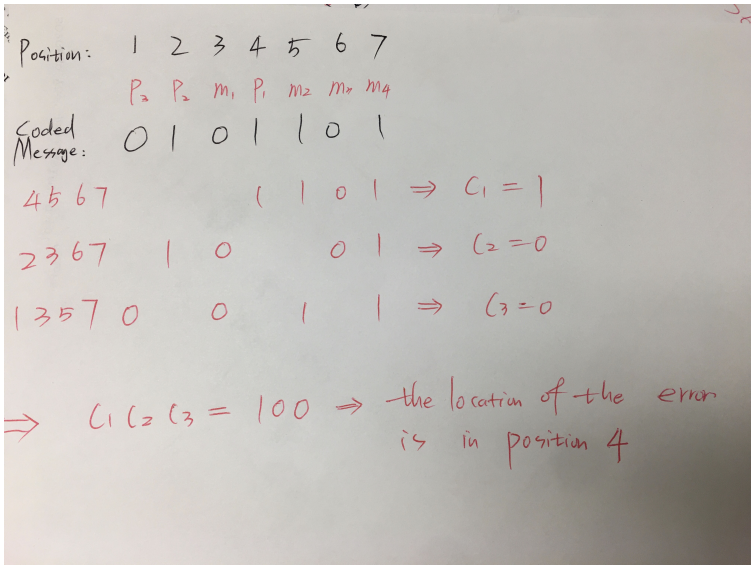
The following hamming code word was received. Use it to answer questions 4 - 9.

0 1 0 1 1 0 1

4. Circle the parity bits

0 1 0 1 1 0 1

5. What position number is generated to determine if an error has ocurred in transmission?



4567 parity check: c1 = 1
2367 parity check: c2 = 0
1357 parity check: c3 = 0

100

6. Did an error occur in transmission?

Yes. The location of the error is in position 4.

7. What was the transmitted code word?

0 1 0 0 1 0 1

8. What was the transmitted message?

0 1 0 1

9. If the message is binary, what is the decimal value?

5

10. Encode a decimal 4 using each of the following codes.

A. Binary Code **0100**
B. BCD Code **0100**
C. Gray Code **0110**
D. Excess-3 Code **0111**
E. 7-bit Hamming Code **1001100**

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