

CS1356 Introduction to Information Engineering

Homework 10

Read textbook 1.9: Communication Errors (pp86) and do all Questions and Exercises (pp90). Answer the following questions.

1. Please explain why should we do error detection?
2. How to do **error detection**?
3. What is the **odd parity** system? What is the **even parity** system?
4. Please fill in the corresponding bit of the following question.
 - I. Odd parity
(1) _01000001 (2) _01000110
 - II. Even parity
(1) _01000001 (2) _01000110
5. How to check the parity when receiving data?
6. What is a **checkbyte** (checksum) made up? How to do check using checkbyte (checksum)?
7. What is the difference between **error-detection codes** and **error-correcting codes**?
8. What is the meaning of **Hamming distance**? If there is a code 11010011 being received in the pattern of 11111111. What is the Hamming distance of those two bit patterns?
9. How to figure out what the original bit pattern is by using the Hamming distance to check the received data?
10. How to do **error correction**?