CS 2204-01 Communications and Networking

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Learning Journal Unit 2

This explains why the CRC is placed in the trailer rather than in the header of the frame.

When a data frame is transmitted, the sender calculates a CRC value based on the contents of the entire frame. This CRC value is used to verify the integrity and correctness of the frame. If the CRC is placed in the header of the frame, the frame content must be added after the CRC value is calculated. This method is inefficient because the CRC value must be calculated before the frame content is determined.

In contrast, adding the CRC to the frame trailer allows the CRC value to be calculated and added to the frame after all frame contents have been determined, thereby streamlining the process of generating and sending data frames while effectively ensuring the integrity and accuracy of the data being transmitted. This streamlines the process of generating and sending data frames while effectively ensuring the integrity and accuracy of the data being transmitted. In addition, after receiving the frame, the receiver can use the last-added CRC value to verify the data. This is an important process to ensure that there are no errors in the data transmission and to perform error correction if necessary.