Continuous Evaluation 2 (CE2)

Write a C++ code to implement CRC8 encoder and decoder. The structure of the code is as follows:

string crcencode(string s)	Takes a bitstream input as a string and returns an encoded bitstream as string. The divisor to be used for CRC8 is 100011101. The function first converts string to bitset variable and then appends 8 zeros to the bitstream. Perform modulo 2 division on the new bitstream and evaluate 8 bit remainder. The obtained 8 bit remainder is appended and the encoded bitstream is returned. Note: All manipulations need to be implemented on bitset variable. The code should work for an input bitstream of size 1-4 bytes.
crcdecode(string s)	Takes a bitstream input as a string and detects error. If there is no error it prints decoded string by removing the last 8 bits. If there is an error it prints "Error Detected. Ask for Retransmission." The function first converts string to bitset variable and performs modulo 2 division. If the syndrome is all zeros it prints no error. If syndrome is non-zero it detects error. Note: All operations need to be implemented on bitset variable. The code should work for an input bitstream of size 2-5 bytes.

Make necessary assumptions. Your output may look like following:

Enter bitstream to be encoded

11000010

Encoded bitstream

1100001000001111

Enter bitstream to be decoded

1100001000001111

Decoded Bitstream

No error; 11000010

Enter bitstream to be decoded

1101001000001101

Decoded Bitstream

Error Detected. Ask for Retransmission.

References:

(1) https://www.geeksforgeeks.org/cpp-bitset-and-its-application/

(2) https://www.csus.edu/indiv/p/pangj/166/f/d8/5_Modulo%202%20Arithmetic.pdf