Cyclic Redundancy Check (CRC) and 7-bit Hamming code

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1 Introduction

• **Objective:**: Simulating realistic error detection and correction by implementing Cyclic Redundancy Check (CRC) and 7-bit Hamming code using binary symmetric channel and random error generation.
• A digital data stream is entered and Hamming Code helps in detecting and correction of data.
• CRC helps in detecting error in the given data after a certain number of hops.
• Language used: JAVA-15
• IDE used: IntelliJ Idea

2 Assumptions used

1. Using CRC-8=x8 + x2 + x + 1 as divisor.
2. Only 2 hops are implemented in CRC.
3. In CRC dataword if tokenised into 16-bits and in hamming code it is tokenised into 4-bits.

3 Prerequisite

Basic knowledge of Java language and Logic of CRC and Hamming code.

REFERENCES: *https://docs.oracle.com/en/java/*
https://www.javatpoint.com
https://www.github.com
https://www.youtube.com/playlist?list=PLxxNGL9FOIGW7Q4TqAcuGiuB9p5TQARiO