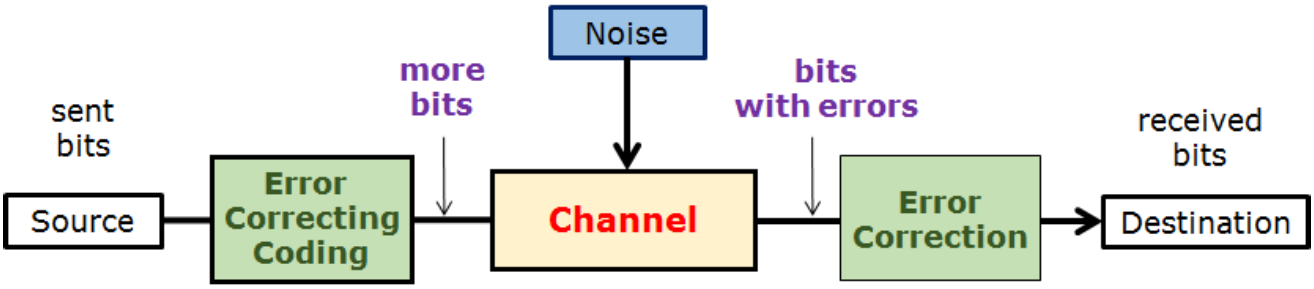
The objective of this lab is to implement the (3, 1, 3) repetition code to improve the bit error rate performance of a communication system. The basic idea is to add some redundant information to the transmitted bit sequence so that bit errors can be detected and even corrected at the receiver.



There are three tasks in this lab.

In task 1, you will write the code to build the (3, 1, 3) repetition code encoder.

In task 2, you will write the code to build the (3, 1, 3) repetition code decoder.

In task 3, you will simulate the transmission of a binary sequence throught a binary channel using error correction channel coding and compute the BER performance.