

# Error Correcting Codes

## Chapter 1

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- Reliable Communication
- Noise
- Single Channel
- Redundancy

# Code definitions

## Definition

Code symbols or Alphabet is a  $\Sigma$

We will need structure: Field, vector space, etc.

## Definition

A code of block length  $n$  over an alphabet  $\Sigma$  is a subset of  $\Sigma^n$ .

$$q \triangleq |\Sigma|.$$

## Definition

The dimension of a code  $C \subseteq \Sigma^n$  is

$$k \triangleq \log_q |C|$$

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