BINARY CODES

The digital data is represented, stored and transmitted as group of binary digits (bits). The group of bits also known as binary code represents both numbers and letters of the alphabets as well as many special characters and control functions.

1. Binary codes are classified as
    i. Numeric
    ii. Alphanumeric

Numeric codes are used to represent numbers.

Alphanumeric codes are used to represent both numbers and letters.

Classification of binary codes

1. Weighted
2. Non weighted
3. Reflective
4. Sequential
5. Error detecting and correcting
6. Alphanumeric

1. Weighted codes

Each digit position of the number represents a specific weight.

Ex: In weighted (8421)codes each digit has a weight 8,4,2,1

2. Non weighted codes

Non weighted codes are not assigned with any weight to each digit position.

Ex: Excess-3 , gray code

3. Reflective codes or complemented codes

A code is said to be reflective when the code for ‘9’ is the complement for ‘0’,8 for 1……

Ex : 2421, 5211 and excess-3

4. Sequential codes

In sequential codes each succeeding code is one binary number (or each bit position weight) greater than its preceding code.

Ex: 8421, excess-3

5. Alphanumeric codes

This code consists of both numbers and alphabetic characters.

Ex: ASCII, EBCDIC

BCD (8-4-2-1)

- BCD means binary coded decimal
- In this code each digit of a decimal number is represented by a separate group of bits.
- The most co
- mmon code is BCD 8421 code.

2421 BCD CODE

- The 2421 BCD is another self complementing code.

Decimal digit	2-4-2-1 code
0	0000
1	0001
2	0010
3	0011
4	0100
5	1011
6	1100
7	1101
8	1110
9	1111

EXCESS-3 CODE

- Excess-3 code is a modified form of a BCD number.
- The excess-3 code can be derived from the natural BCD code by adding 3 to each coded number

Decimal digit	Excess -3 code
0	0011
1	0100
2	0101
3	0110
4	0111
5	1000
6	1001
7	1010
8	1011
9	1100

chapter 3).

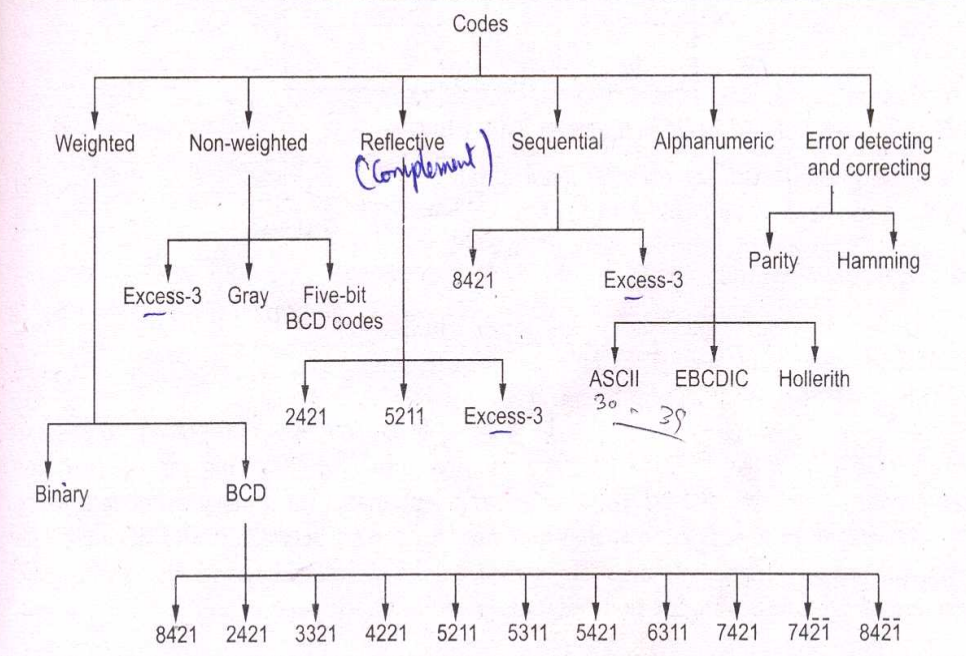

Fig. 2.1 Classification of various binary codes