

# Parity Checking

- Parity bit means nothing but an additional bit added to the data at the transmitter before transmitting the data. Before adding the parity bit, number of 1's or zeros is calculated in the data. Based on this calculation of data an extra bit is added to the actual information / data. The addition of parity bit to the data will result in the change of data string size.
- This means if we have an 8 bit data, then after adding a parity bit to the data binary string it will become a 9 bit binary data string.
- Parity check is also called as “Vertical Redundancy Check (VRC)”.
- There is two types of parity bits in error detection, they are
- Even parity
- Odd parity

3 bit data			Message with even parity		Message with odd parity	
A	B	C	Message	Parity	Message	Parity
0	0	0	000	0	000	1
0	0	1	001	1	001	0
0	1	0	010	1	010	0
0	1	1	011	0	011	1
1	0	0	100	1	100	0
1	0	1	101	0	101	1
1	1	0	110	0	110	1
1	1	1	111	1	111	0

# **Error Detection Methods : parity check**

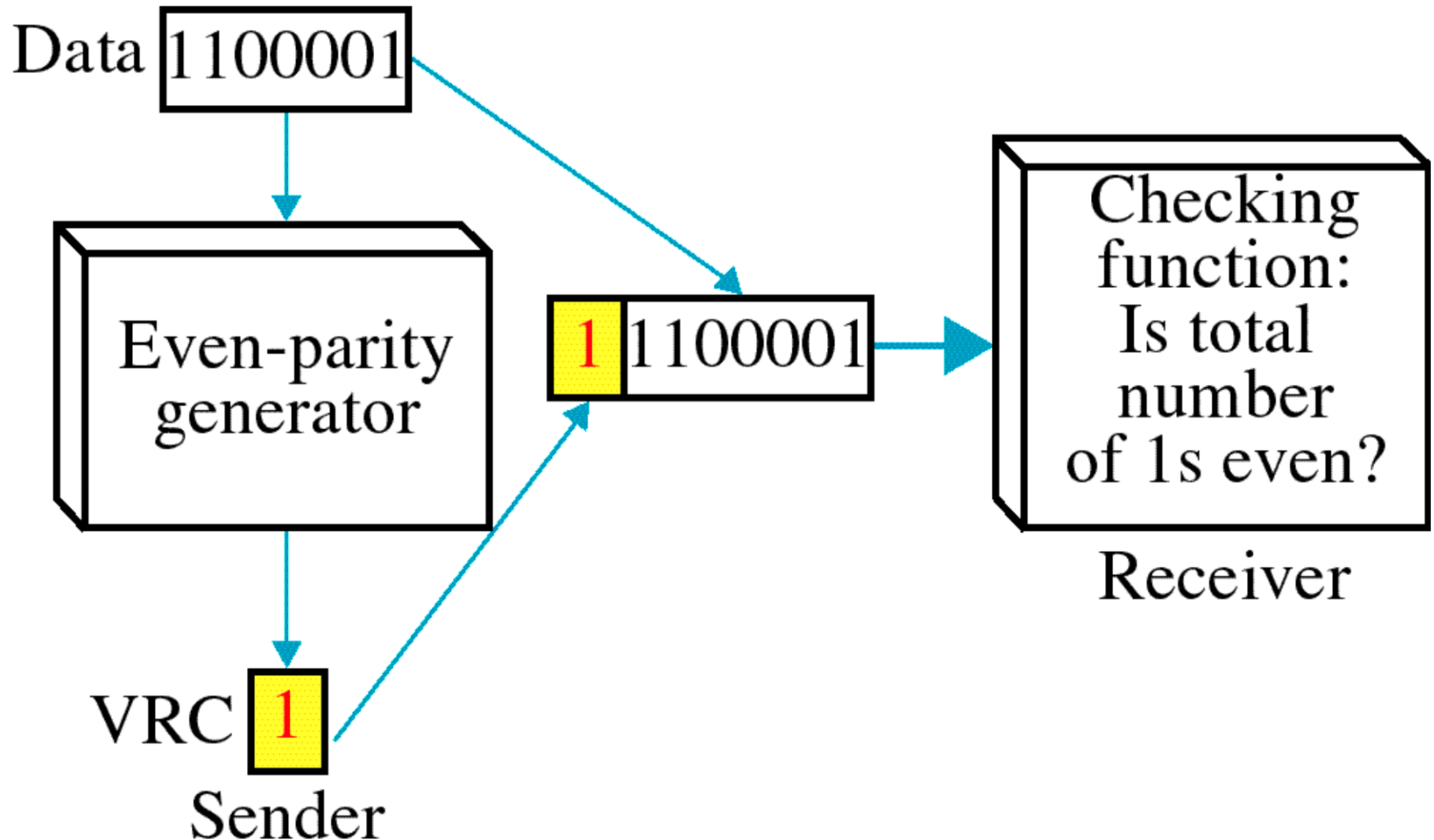
## **Even parity:**

- **To maintain even no of 1's in data**

## **Odd paity:**

- **To maintain odd no of 1's in data**

# Error Detection Methods : Even parity check



Calculate and attach parity bit at the end

a. Using Even Parity

i. 1001100

ii. 1111111

b. Using Odd Parity

i. 0110101

ii. 0101111

Calculate and attach parity bit at the end

a. Using Even Parity

i. 1001100 -> 10011001

ii. 1111111 -> 11111111

b. Using Odd Parity

i. 0110101 -> 01101011

ii. 0101111 -> 01011110