**Lab Practical #14:**

Implementation of parity bit check Using C/Java language with example.

**Practical Assignment #14:**

1. **C/Java Program: Implementation of parity bit check Using C/Java language.**

**INPUT**

import java.util.Scanner;

public class ParityCheck {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.print("Enter an 8-bit data (0–255): ");

int data = sc.nextInt();

int count = 0;

int temp = data;

// Count number of 1s in binary

while (temp > 0) {

if ((temp & 1) == 1)

count++;

temp >>= 1;

}

// Even parity

int parityBit = (count % 2 == 0) ? 0 : 1;

// Print data in binary

System.out.print("Data in binary with parity bit: ");

for (int i = 7; i >= 0; i--) {

System.out.print((data >> i) & 1);

}

System.out.println(" " + parityBit + " (parity bit)");

// Receiver side check

int totalOnes = count + parityBit;

if (totalOnes % 2 == 0)

System.out.println(" No error detected (Even parity maintained).");

else

System.out.println(" Error detected in transmission.");

}

}

**OUTPUT**

Enter an 8-bit data (0?255): 211

Data in binary with parity bit: 11010011 1 (parity bit)

No error detected (Even parity maintained).