**Date: 11/09/25**

# 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.**

#include <stdio.h>

// Function to count number of 1 bits int countOnes(int num) {

int count = 0; while (num) {

count += num & 1; // if last bit is 1 num >>= 1; // right shift

}

return count;

}

int main() {

int data, parityBit; char type;

// Input data

printf("Enter data (in decimal, e.g., 7 = 111): "); scanf("%d", &data);

// Input parity type

printf("Enter parity type (E for Even, O for Odd): "); scanf(" %c", &type);

// Input received parity bit

printf("Enter received parity bit (0 or 1): "); scanf("%d", &parityBit);

int ones = countOnes(data);

int totalOnes = ones + parityBit; if (type == 'E' || type == 'e') {

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if (totalOnes % 2 == 0)

printf(" Data is correct (Even parity matched)\n"); else

printf(" Error detected (Even parity mismatch)\n");

}

else if (type == 'O' || type == 'o') { if (totalOnes % 2 == 1)

printf(" Data is correct (Odd parity matched)\n"); else

printf(" Error detected (Odd parity mismatch)\n");

}

else {

printf("Invalid parity type entered.\n");

}

return 0;

}