1.A Bit Manipulation Basics

public class SetBitCounter {

public static int countSetBits(int n) {

int count = 0;

while (n > 0) {

count += n & 1;

n >>= 1;

}

return count;

}

public static void main(String[] args) {

int num = 9;

System.out.println("Number of set bits in " + num + ": " +countSetBits(num));

}

}

Output: Number of set bits in 9: 2

2.A Unique Elements Identification

public class NonRepeatingElementsFinder {

public static void main(String[] args) {

int[] arr = {2, 4, 7, 9, 2, 4};

int xor = 0;

for (int num : arr) {

xor ^= num;

}

int rightmostSetBit = xor & -xor;

int x = 0, y = 0;

for (int num : arr) {

if ((num & rightmostSetBit) != 0) {

x ^= num;

} else {

y ^= num;

}

}

System.out.println("The non-repeating elements are " + x + " and " + y);

}

}

Output for the given example: The non-repeating elements are 7 and 9.