**Assignment 1:**

import java.util.ArrayList;

import java.util.List;

import java.util.Scanner;

public class PackedWord {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.print("Enter the number of elements in the packed word: ");

int total = sc.nextInt();

List<Integer> bitSize = new ArrayList<>();

List<Integer> bitValue = new ArrayList<>();

int totalBitSize = 0;

int memory = 0b0;

for (int i = 0; i < total; i++) {

System.out.print("Enter the size of the element " + (i + 1) + ": ");

bitSize.add(sc.nextInt());

totalBitSize += bitSize.get(i);

}

System.out.println(totalBitSize);

System.out.println("Now");

for (int i = 0; i < total; i++) {

System.out.print("Enter the value of the element " + (i + 1) + ": ");

bitValue.add(sc.nextInt());

}

for (int i = 0; i < total; i++) {

String tempString = "";

int temp1 = 0;

int temp2 = 0;

for (int j = 0; j < bitSize.get(i); ++j) {

tempString += "1";

}

temp1 = Integer.parseInt(tempString, 2);

int k = i;

while (k != 0) {

temp1 = temp1 << bitSize.get(k - 1);

--k;

}

temp2 = ~temp1;

memory &= temp2;

tempString = "";

temp1 = bitValue.get(i);

k = i;

while (k != 0) {

temp1 = temp1 << bitSize.get(k - 1);

--k;

}

memory |= temp1;

}

System.out.println("After insertion the memory is: " + getBitState(memory));

}

private static String getBitState(String current) {

while (current.length() < 32) {

current = "0" + current;

}

return current;

}

public static String getBitState(int current1) {

String current = Integer.toBinaryString(current1);

while (current.length() < 32) {

current = "0" + current;

}

return current;

}

}