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COTB07

ASSIGNMENT 03

import java.util.\*;

public class DESAlgorithmSimulation {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.print("Enter 64-bit plain text (as 8 characters): ");

String input = sc.nextLine();

if (input.length() != 8) {

System.out.println("Error: Input must be exactly 8 characters (64 bits).");

return;

}

int left = getBits(input.substring(0, 4)); // First 32-bit block

int right = getBits(input.substring(4, 8)); // Second 32-bit block

System.out.println("Initial Left Block: " + Integer.toBinaryString(left));

System.out.println("Initial Right Block: " + Integer.toBinaryString(right));

int newRight = left ^ right;

int newLeft = right; // STEP-4: Swap left and right blocks

System.out.println("\nEncrypted Left Block: " + Integer.toBinaryString(newLeft));

System.out.println("Encrypted Right Block: " + Integer.toBinaryString(newRight));

String cipherText = getChars(newLeft) + getChars(newRight);

System.out.println("\nEncrypted Cipher Text: " + cipherText);

}

private static int getBits(String text) {

int result = 0;

for (char c : text.toCharArray()) {

result = (result << 8) | (int) c;

}

return result;

}

private static String getChars(int value) {

char[] chars = new char[4];

for (int i = 3; i >= 0; i--) {

chars[i] = (char) (value & 0xFF);

value >>= 8;

}

return new String(chars);

}

}