import java.util.Scanner;

public class StringOperationsEnhanced {

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

// Input strings

System.out.print("Enter the first string: ");

String str1 = scanner.nextLine();

System.out.print("Enter the second string: ");

String str2 = scanner.nextLine();

// Display menu for string operations

System.out.println("\nChoose a string operation:");

System.out.println("1. Find Length");

System.out.println("2. Convert to Uppercase");

System.out.println("3. Convert to Lowercase");

System.out.println("4. Reverse the String");

System.out.println("5. Concatenate Strings");

System.out.println("6. Compare Strings");

System.out.println("7. Check if Substring Exists");

System.out.println("8. Replace a Character");

System.out.println("9. Find Character at Index");

System.out.println("10. Split the String");

System.out.println("11. Trim Whitespaces");

System.out.println("12. Check if String is Empty");

System.out.println("13. Convert to Character Array");

System.out.println("14. Exit");

int choice;

do {

System.out.print("\nEnter your choice: ");

choice = scanner.nextInt();

scanner.nextLine(); // Consume newline

switch (choice) {

case 1:

System.out.println("Length of first string: " + str1.length());

System.out.println("Length of second string: " + str2.length());

break;

case 2:

System.out.println("First string in uppercase: " + str1.toUpperCase());

System.out.println("Second string in uppercase: " + str2.toUpperCase());

break;

case 3:

System.out.println("First string in lowercase: " + str1.toLowerCase());

System.out.println("Second string in lowercase: " + str2.toLowerCase());

break;

case 4:

System.out.println("Reversed first string: " + new StringBuilder(str1).reverse());

System.out.println("Reversed second string: " + new StringBuilder(str2).reverse());

break;

case 5:

System.out.println("Concatenated string: " + str1.concat(str2));

break;

case 6:

int comparison = str1.compareTo(str2);

if (comparison == 0) {

System.out.println("Strings are equal.");

} else if (comparison > 0) {

System.out.println("First string is lexicographically greater.");

} else {

System.out.println("Second string is lexicographically greater.");

}

break;

case 7:

System.out.print("Enter a substring to check in the first string: ");

String substring = scanner.nextLine();

System.out.println("Substring exists in the first string: " + str1.contains(substring));

break;

case 8:

System.out.print("Enter the character to replace: ");

char oldChar = scanner.next().charAt(0);

System.out.print("Enter the new character: ");

char newChar = scanner.next().charAt(0);

System.out.println("First string after replacement: " + str1.replace(oldChar, newChar));

System.out.println("Second string after replacement: " + str2.replace(oldChar, newChar));

break;

case 9:

System.out.print("Enter the index to find the character (0-based): ");

int index = scanner.nextInt();

try {

System.out.println("Character at index " + index + " in first string: " + str1.charAt(index));

System.out.println("Character at index " + index + " in second string: " + str2.charAt(index));

} catch (IndexOutOfBoundsException e) {

System.out.println("Index out of range!");

}

break;

case 10:

System.out.print("Enter the delimiter to split the first string: ");

String delimiter = scanner.nextLine();

String[] parts = str1.split(delimiter);

System.out.println("First string split into parts:");

for (String part : parts) {

System.out.println(part);

}

break;

case 11:

System.out.println("First string after trimming: [" + str1.trim() + "]");

System.out.println("Second string after trimming: [" + str2.trim() + "]");

break;

case 12:

System.out.println("Is the first string empty? " + str1.isEmpty());

System.out.println("Is the second string empty? " + str2.isEmpty());

break;

case 13:

System.out.println("Character array of first string:");

for (char c : str1.toCharArray()) {

System.out.print(c + " ");

}

System.out.println();

break;

case 14:

System.out.println("Exiting...");

break;

default:

System.out.println("Invalid choice. Please try again.");

}

} while (choice != 14);

scanner.close();

}

}