2. We are given 3 strings: str1, str2, and str3. Str3 is said to be a shuffle of str1 and str2 if it can be formed by interleaving the characters of str1 and str2 in a way that maintains the left to right ordering of the characters from each string. For example, given str1="abc" and str2="def", str3="dabecf" is a valid shuffle since it preserves the character ordering of the two strings. So, given these 3 strings write a function that detects whether str3 is a valid shuffle of str1 and str2.

public class Main{

static boolean isInterleaved (String A, String B, String C)

{

int i = 0, j = 0, k = 0;

while (k != C.length())

{

if (i<A.length()&&A.charAt(i) == C.charAt(k))

i++;

else if (j<B.length()&&B.charAt(j) == C.charAt(k))

j++;

else

return false;

k++;

}

if (i < A.length() || j < B.length())

return false;

return true;

}

public static void main(String []args){

String A = "abc";

String B = "def";

String C = "dabecf";

if (isInterleaved(A, B, C) == true)

System.out.printf("%s is interleaved of %s and %s", C, A, B);

else

System.out.printf("%s is not interleaved of %s and %s", C, A, B);

}

}

**Output:**

