

# Words Commutation

Problem Code: **WORDCOMM**



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You are provided with a dictionary with selected set of words. Given two words, you are required to transform the first word to the second word such that at every step of the transformation you change only one character. A change is defined as inserting, deleting or modifying a character. At every step the resulting word should be a part of the dictionary. Given two words return the minimum number of steps required to change the first word to the second. Given words will be a part of the dictionary.

**All Submissions**  
(/DI17R122/status/WORDCOMM)

**Successful Submissions**

+

## Input

The input will consist of a list of words constituting a dictionary. Each word will appear on a separate line and will consist of lower case characters only. A line containing 'END' marks the end of dictionary. The maximum size of the dictionary  $N \leq 120$  and every word in the dictionary will be less than 40 characters in length. The following lines will each consist of two strings separated by a space.

## Output

Return the minimum number of steps required to transform the first string to the other with the above mentioned rules. In case the transformation is not possible return -1.

## Example

**Input:**

```
cat
mat
hat
ham
mate
END
cat mate
```

**Output:**

```
2
```

Author: [directi\\_campus \(/users/directi\\_campus\)](#)

Tags: [directi\\_campus \(/tags/problems/directi\\_campus\)](#)

Date Added: 4-08-2012

Time Limit: 1 secs

Source Limit: 50000 Bytes

Languages: C, CPP 4.3.2, CPP 6.3, CPP14, JAVA, PERL, PYTH 3.5

## Comments ▶

### **CodeChef (<http://www.codechef.com>) - A Platform for Aspiring Programmers**

CodeChef was created as a platform to help programmers make it big in the world of algorithms, **computer programming** and **programming contests**. At CodeChef we work hard to revive the geek in you by hosting a **programming contest** at the start of the month and another smaller programming challenge in the middle of the month. We also aim to have training sessions and discussions related to **algorithms**, **binary search**, technicalities like **array size** and the likes. Apart from providing a platform for **programming competitions**, CodeChef also has various algorithm tutorials and forum discussions to help those who are new to the world of **computer programming**.

### **Practice Section (<https://www.codechef.com/problems/easy>) - A Place to hone your 'Computer Programming Skills'**

Try your hand at one of our many practice problems and submit your solution in a language of your choice. Our **programming contest** judge accepts solutions in over 35+ programming languages. Preparing for coding contests were never this much fun! Receive points, and move up through the CodeChef ranks. Use our practice section to better prepare yourself for the multiple **programming challenges** that take place through-out the month on CodeChef.

### **Compete (<https://www.codechef.com/problems/easy>) - Monthly Programming Contests and Cook-offs**

Here is where you can show off your **computer programming skills**. Take part in our 10 day long monthly coding contest and the shorter format Cook-off **coding contest**. Put yourself up for recognition and win great prizes. Our **programming contests** have prizes worth up to INR 20,000 (for Indian Community), \$700 (for Global Community) and lots more CodeChef goodies up for grabs.

### **Programming Tools**

[Online IDE \(https://www.codechef.com/ide\)](https://www.codechef.com/ide)  
[Upcoming Coding Contests \(http://www.codechef.com/contests#FutureContests\)](http://www.codechef.com/contests#FutureContests)  
[Contest Hosting \(http://www.codechef.com/hostyourcontest\)](http://www.codechef.com/hostyourcontest)  
[Problem Setting \(http://www.codechef.com/problemsetting\)](http://www.codechef.com/problemsetting)  
[CodeChef Tutorials \(http://www.codechef.com/wiki/tutorials\)](http://www.codechef.com/wiki/tutorials)  
[CodeChef Wiki \(https://www.codechef.com/wiki\)](https://www.codechef.com/wiki)

### **Practice Problems**

[Easy \(https://www.codechef.com/problems/easy\)](https://www.codechef.com/problems/easy)  
[Medium \(https://www.codechef.com/problems/medium\)](https://www.codechef.com/problems/medium)  
[Hard \(https://www.codechef.com/problems/Hard\)](https://www.codechef.com/problems/Hard)  
[Challenge \(https://www.codechef.com/problems/challenge\)](https://www.codechef.com/problems/challenge)  
[Peer \(https://www.codechef.com/problems/extcontest\)](https://www.codechef.com/problems/extcontest)  
[School \(https://www.codechef.com/problems/school\)](https://www.codechef.com/problems/school)  
[FAQ's \(https://www.codechef.com/wiki/faq\)](https://www.codechef.com/wiki/faq)

### **Initiatives**

[Go for Gold \(http://www.codechef.com/qoforgold\)](http://www.codechef.com/qoforgold)  
[CodeChef for Schools \(http://www.codechef.com/school\)](http://www.codechef.com/school)  
[Campus Chapters \(http://www.codechef.com/campus\\_chapter/about\)](http://www.codechef.com/campus_chapter/about)  
[Domain Registration in India \(http://www.bigrock.in/\)](http://www.bigrock.in/) and [Web Hosting \(http://www.bigrock.com/web-hosting/\)](http://www.bigrock.com/web-hosting/) powered by BigRock