

## Problem Set 9

1. Edit distance between a pair of strings is the minimum number of adds / deletes / updates required to convert the first string into the second. For instance, the edit distance between *abc* and *abcd* is 1, between *abc* and *abd* is 1, between *abc* and *1233* is 4. Write a program to read two strings and print their edit distance.
2. Check if a given input string is a valid C variable, keyword, or a number.
3. Remove extra spaces from a string input. Leading and trailing spaces are extra. Similarly, multiple in-between spaces should be converted to a single space. For instance, for the input “ remove leading spaces&trailing spaces, and extra in-between spaces “, the output should be “remove leading spaces&trailing spaces, and extra in-between spaces”.
4. Create a program to encrypt-decrypt a secret message. Read a string and encrypt it using the mapping below. Apply the same program on the encrypted message, and it should decrypt the message. The mapping is *a* maps to *z*, *b* to *y*, *c* to *x*, ..., *m* to *n*. *iitm* gets encrypted to *rrgn*. Try out your program on the following *r droo gib nb yvhg rm gsrh xlfihv*.
5. Read a message containing text with decimal, hexadecimal, octal and binary numbers. Convert the text by changing the numbers to their decimal values. For instance, for input message *on XB-O11-2016, rupesh created problem set B1001 for the course cs1100*, the output message is *on 11-9-2016, rupesh created problem set 9 for the course cs1100*. Note that hexadecimal numbers are indicated with starting *X*, octal with *O* and binary with *B*.
6. Given two strings, check if the second string is interspersed in the first. For instance, string *abcd* is interspersed in *ewafdsbsddciurewd*.
7. Find the sum of all the numbers contained in a string. For instance, for the input string *33slakj2klfe5a88dddwqwqewq0*, the output should be *128*.
8. Read pairs of parent-child names, followed by a query name. For the query name, print its grandfather(s). For instance, if the input is as below:  
harivansh amitabh  
amitabh abhishek  
jaya abhishek  
tarun jaya  
pratap harivansh  
indira jaya  
harivansh ajitabh  
saraswati harivansh  
with query name being abhishek, the output should be  
harivansh  
tarun  
indira