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NIVEL 2

EJERCICIO A. MESSAGE	Archivo: message.cpp message.java

Jack and Jill developed a special encryption method, so they can enjoy conversations without worrrying about eavesdroppers. Here is how: let L be the length of the original message, and M be the smallest square number greater than or equal to L. Add (M−L) asterisks to the message, giving a padded message with length M. Use the padded message to fill a table of size K×K, where $K^2 = M$. Fill the table in row-major order (top to bottom row, left to right column in each row). Rotate the table 90 degrees clockwise. The encrypted message comes from reading the message in row-major order from the rotated table, omitting any asterisks. For example, given the original message 'iloveyouJack', the message length is L=12. Thus the padded message is 'iloveyouJack**', with length M=16. Below are the two tables before and

After rotation:

Then we read the secret message as 'Jeiaylcookuv'.

The Input:

The first line of input is the number of original messages, N   ($1 \le N \le 100$). The following N lines each have a message to encrypt. Each message contains only characters a–z (lower and upper case), and has length L($1 \le L \le 10000$)

The Output:
For each original message, output the secret message.

Input	Output
2	iteiloylloooJuv
iloveyoutooJill	OsoTvtnheiterseC
TheContestisOver	