#include <stdio.h>

#include <string.h>

#include <ctype.h>

void generatePlayfairMatrix(char key[], char matrix[5][5]) {

char alphabet[26] = "ABCDEFGHIKLMNOPQRSTUVWXYZ";

int keylen = strlen(key);

int alphalen = strlen(alphabet);

int i, j, k;

int keypos[26] = {0};

for (i = 0; i < keylen; i++) {

if (key[i] == 'J') {

keypos['I' - 'A'] = 1;

} else {

keypos[toupper(key[i]) - 'A'] = 1;

}

}

k = 0;

for (i = 0; i < 5; i++) {

for (j = 0; j < 5; j++) {

while (keypos[alphabet[k] - 'A'] == 1) {

k++;

}

matrix[i][j] = alphabet[k];

keypos[alphabet[k] - 'A'] = 1;

k++;

}

}

}

void playfairEncrypt(char matrix[5][5], char plaintext[]) {

}

int main() {

char key[] = "KEYWORD";

char plaintext[] = "HELLO";

char matrix[5][5];

generatePlayfairMatrix(key, matrix);

printf("Playfair Matrix:\n");

for (int i = 0; i < 5; i++) {

for (int j = 0; j < 5; j++) {

printf("%c ", matrix[i][j]);

}

printf("\n");

}

printf("Plaintext: %s\n", plaintext);

playfairEncrypt(matrix, plaintext);

return 0;

}

