Program 35 C program for Caesar cipher, known as the affine Caesar cipher,

#include <stdio.h>

#include <ctype.h>

// Function to encrypt a single character using the affine Caesar cipher

char encryptAffineCaesar(char plaintext, int a, int b) {

if (isalpha(plaintext)) {

char base = isupper(plaintext) ? 'A' : 'a';

return (char)(((a \* (plaintext - base) + b) % 26 + 26) % 26 + base);

} else {

return plaintext; // Non-alphabetic characters remain unchanged

}

}

// Function to encrypt a string using the affine Caesar cipher

void encryptStringAffineCaesar(const char \*plaintext, int a, int b) {

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

printf("Ciphertext: ");

for (int i = 0; plaintext[i] != '\0'; ++i) {

char encryptedChar = encryptAffineCaesar(plaintext[i], a, b);

printf("%c", encryptedChar);

}

printf("\n");

}

int main() {

const char \*plaintext = "HELLO";

int a = 5; // Example value for 'a'

int b = 8; // Example value for 'b'

encryptStringAffineCaesar(plaintext, a, b);

return 0;

}

Output:

