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main.c



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```
1 #include <stdio.h>
2 #include <string.h>
3 #include <ctype.h>
4 #define ALPHABET_LEN 26
5 void generateCipherAlphabet(char keyword[], char cipher[]) {
6     int used[26] = {0};
7     int i, j = 0;
8     for (i = 0; keyword[i] != '\0'; i++) {
9         char ch = toupper(keyword[i]);
10        if (ch >= 'A' && ch <= 'Z' && !used[ch - 'A']) {
11            cipher[j++] = ch;
12            used[ch - 'A'] = 1;
13        }
14    }
15    for (i = 0; i < ALPHABET_LEN; i++) {
16        if (!used[i]) {
17            cipher[j++] = 'A' + i;
18        }
19    }
20 }
```

Generated Cipher Alphabet:

Plain : A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Cipher: C I P H E R A B D F G J K L M N O Q S T U V W X Y Z

Enter plaintext: DEEPA

Encrypted text: HEENC

=== Code Execution Successful ===

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```
19
20 cipher[j] = '\0';
21 }
22 void encrypt(char plaintext[], char cipher[], char ciphertext[]) {
23     for (int i = 0; plaintext[i] != '\0'; i++) {
24         char ch = tolower(plaintext[i]);
25         if (ch >= 'a' && ch <= 'z') {
26             ciphertext[i] = cipher[ch - 'a'];
27         } else {
28             ciphertext[i] = plaintext[i];
29         }
30     }
31     ciphertext[strlen(plaintext)] = '\0';
32 }
33 int main() {
34     char keyword[] = "CIPHER";
35     char cipher[ALPHABET_LEN + 1];
36     char plaintext[1000], ciphertext[1000];
37     generateCipherAlphabet(keyword, cipher);
38     printf("Generated Cipher Alphabet:\n");
```

Output

Clear

```
Generated Cipher Alphabet:
Plain : A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
Cipher: C I P H E R A B D F G J K L M N O Q S T U V W X Y Z

Enter plaintext: DEEPA
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```

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main.c

```
36 char plaintext[1000], ciphertext[1000];
37 generateCipherAlphabet(keyword, cipher);
38 printf("Generated Cipher Alphabet:\n");
39 printf("Plain : ");
40 for (int i = 0; i < ALPHABET_LEN; i++) {
41     printf("%c ", 'A' + i);
42 }
43 printf("\nCipher: ");
44 for (int i = 0; i < ALPHABET_LEN; i++) {
45     printf("%c ", cipher[i]);
46 }
47 printf("\n\nEnter plaintext: ");
48 fgets(plaintext, sizeof(plaintext), stdin);
49 plaintext[strcspn(plaintext, "\n")] = 0;
50 encrypt(plaintext, cipher, ciphertext);
51 printf("Encrypted text: %s\n", ciphertext);
52 return 0;
53 }
54
```

Output

Clear

```
Generated Cipher Alphabet:
Plain : A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
Cipher: C I P H E R A B D F G J K L M N O Q S T U V W X Y Z

Enter plaintext: DEEPA
Encrypted text: HEENC

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```