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RollNo - 16 - 1022726

Ans-5

```

#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#define SIZE 30

```

```

void toLowerCase(char plain[], int Ps)
{
    int i;

```

```

    for (i=0; i<Ps; i++) {
        if (plain[i] > 64 && plain[i] < 91)
            plain[i] += 32; } }

```

```

int removeSpaces(char * plain, int Ps)
{
    int i, count = 0;

```

```

    for (i=0; i<Ps; i++)
        if (plain[i] != ' ')

```

```

            plain[count++] = plain[i];
    plain[count] = '\0';
    return count; }

```

```

void generateKeyTable (char key[], int Ks,
    char keyT[5][5]) {

```

```

    int i, j, k, flag = 0, *dicty;

```

```

    dicty = (int*) calloc (26, sizeof(int));

```

```

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

```



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```
if (key[i] != 'j')
```

```
    dicty[key[i] - 97] = 2; }
```

```
dicty['j' - 97] = 1;
```

```
i = 0; j = 0;
```

```
for (k = 0; k < ks; k++) {
```

```
    if (dicty[key[k] - 97] == 2) {
```

```
        dicty[key[k] - 97] == 2) {
```

```
            dicty[key[k] - 97] = 1;
```

```
            keyT[i][j] = key[k];
```

```
            j++;
```

```
            if (j == 5) {
```

```
                i++; j = 0; } } }
```

```
for (k = 0; k < 26; k++) {
```

```
    if (dicty[k] == 0) {
```

```
        keyT[i][j] = (char)(k + 97);
```

```
        j++;
```

```
        if (j == 5) {
```

```
            i++; j = 0;
```

```
        } } } }
```



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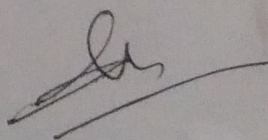
```

void search(char KeyT[5][5], char a, char b, int arr[])
{
    int i, j;
    if (a == 'j')
        a = 'i';
    else if (b == 'j');
        b = 'i';
    for (i = 0; i < 5; i++) {
        for (j = 0; j < 5; j++) {
            if (KeyT[i][j] == a) {
                arr[0] = i;
                arr[1] = j;
            } else if (KeyT[i][j] == b) {
                arr[2] = i;
                arr[3] = j;
            }
        }
    }
}

int mods(int a)
{
    return (a % 5);
}

int prepare(char str[], int ptrs)
{
    if (ptrs % 2 != 0) {
        str[ptrs++] = 'z';
        str[ptrs] = '\0';
    }
    return ptrs;
}

```





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```
void encryptByPlayfair(cipher(char str[], char key[]))
{
    char ps, ks, keyT[5][5];
    ks = strlen(key);
    ks = removeSpace(key, ks);
    toLowercase(key, ks);
    ps = strlen(str);
    toLowercase(str, ps);
    ps = removeSpaces(str, ps);
    encrypt(str, keyT, ps);
}

int main() {
    char str[size], key[size];
    strcpy(key, "Monarchy");
    printf("key text: %.5s\n", key);
    strcpy(str, "instruments");
    printf("plain text: %.5s\n", str);
    encryptByPlayfair(cipher(str, key));
    printf("cipher text: %.5s\n", str);
    return 0;
}
```

Key text: key

Plain text: go with the flow

Cipher text: hnumzozoydmixu

-----  
Process exited after 0.034 seconds with return value 0

Press any key to continue . . .