

## PRACTICAL - 01

### Code:

```
// Ashwin Navange A-38 CSE
#include <bits/stdc++.h>
using namespace std;

string RandomString(int len)
{
    char alpha[26] = { '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' };

    string key = "";

    for (int i = 0; i < len; i++)
        key = key + alpha[rand() % 26];

    return key;
}

string stringEncryption(string text, string key)
{
    string cipherText = "";

    int cipher[key.length()];

    for (int i = 0; i < key.length(); i++) {
        cipher[i] = text.at(i) - 'A' + key.at(i) - 'A';
        cipher[i] = cipher[i] % 26;
    }

    for (int i = 0; i < key.length(); i++) {
        int x = cipher[i] + 'A';
        cipherText += (char)x;
    }

    return cipherText;
}

string stringDecryption(string s, string key)
{
    string plainText = "";

    int plain[key.length()];

    for (int i = 0; i < key.length(); i++) {
        plain[i] = s.at(i) - 'A' - (key.at(i) - 'A');
    }
}
```

```

for (int i = 0; i < key.length(); i++) {
    if (plain[i] < 0) {
        plain[i] = plain[i] + 26;
    }
}

for (int i = 0; i < key.length(); i++) {
    int x = plain[i] + 'A';
    plainText += (char)x;
}
return plainText;
}

int main()
{
    cout << "Ashwin Navange A-38 CSE " << endl << endl;

    string plainText;
    cout<<"Enter Plain Text: ";
    getline(cin,plainText);

    int len = plainText.length();

    for(int i=0; i<len; i++) {
        plainText[i] = toupper(plainText[i]);
    }

    string key = RandomString(len);
    cout << "Key Generated: " << key << endl;

    string encryptedText = stringEncryption(plainText,key);

    cout << "Cipher Text: " << encryptedText << endl;

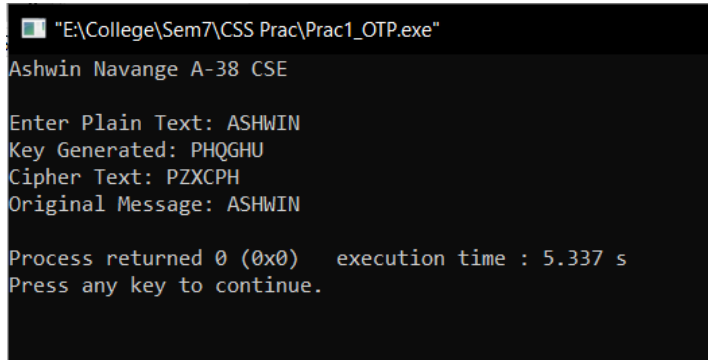
    cout << "Original Message: " << stringDecryption(encryptedText, key);

    cout<<endl;

    return 0;
}

```

### Output:



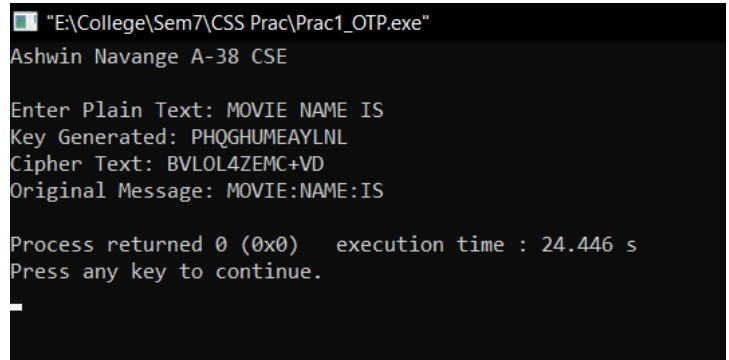
```

E:\College\Sem7\CSS Prac\Prac1_OTP.exe
Ashwin Navange A-38 CSE

Enter Plain Text: ASHWIN
Key Generated: PHQGHU
Cipher Text: PZXCPH
Original Message: ASHWIN

Process returned 0 (0x0)   execution time : 5.337 s
Press any key to continue.

```



```

E:\College\Sem7\CSS Prac\Prac1_OTP.exe
Ashwin Navange A-38 CSE

Enter Plain Text: MOVIE NAME IS
Key Generated: PHQGHUMEAYLNL
Cipher Text: BVL0L4ZEMC+VD
Original Message: MOVIE:NAME:IS

Process returned 0 (0x0)   execution time : 24.446 s
Press any key to continue.

```