**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:**

 