

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

**Lab Report-01**

**Course Title: Cryptography and Network Security Lab**

**Course Code: CSE – 432**

|  |  |
| --- | --- |
| **Submitted By** | **Submitted To** |
| **Name:** Md. Nahid Hasan  **ID:** 221311131  **Section:** D  **Semester:** 9th  **Batch:** 29th  **Dept. Of CSE**  **Varendra University,**  **Rajshahi** | **Mohammad Faisal Al-Naser**  Lecturer  **Md. Fayzul Islam**  Lecturer  **Dept. Of CSE**  **Varendra University,**  **Rajshahi** |

**Submission date: 31.07.2025**

* **Experiment No:- 01**
* **Experiment Name: Caesar Cipher Implementation in c++.**
* **Input:**
* A string containing the plaintext.
* An integer key representing the shift amount.
* **Encryption Steps:**

1. Iterate through each character in the plaintext.
2. If the character is an uppercase letter:

* Shift it forward by the key positions within the range 'A' to 'Z'.

1. If the character is a lowercase letter:

* Shift it forward by the key positions within the range 'a' to 'z'.

1. If the character is non-alphabetic:

* Leave it unchanged.

1. Concatenate the result to form the ciphertext.

* **Decryption Steps:**
* Perform the same process but shift in the opposite direction by using (26 - key).
* **Code:**

|  |  |
| --- | --- |
| #include <iostream>  using namespace std;  string encrypt(string text, int key) {  string result = "";  for (char c : text) {  if (isupper(c))  result += char(int((c + key - 'A') % 26 + 'A'));  else if (islower(c))  result += char(int((c + key - 'a') % 26 + 'a'));  else  result += c;  }  return result;  }  string decrypt(string text, int key) {  return encrypt(text, 26 - key);  } | int main() {  string text;  int key;  cout << "Enter text: ";  getline(cin, text);  cout << "Enter key (0-25): ";  cin >> key;  string encrypted = encrypt(text, key);  string decrypted = decrypt(encrypted, key);  cout << "Encrypted: " << encrypted << endl;  cout << "Decrypted: " << decrypted << endl;  return 0;  } |

* **Output:**

